City of Arcadia

2015 Urban Water Management Plan

June 2016

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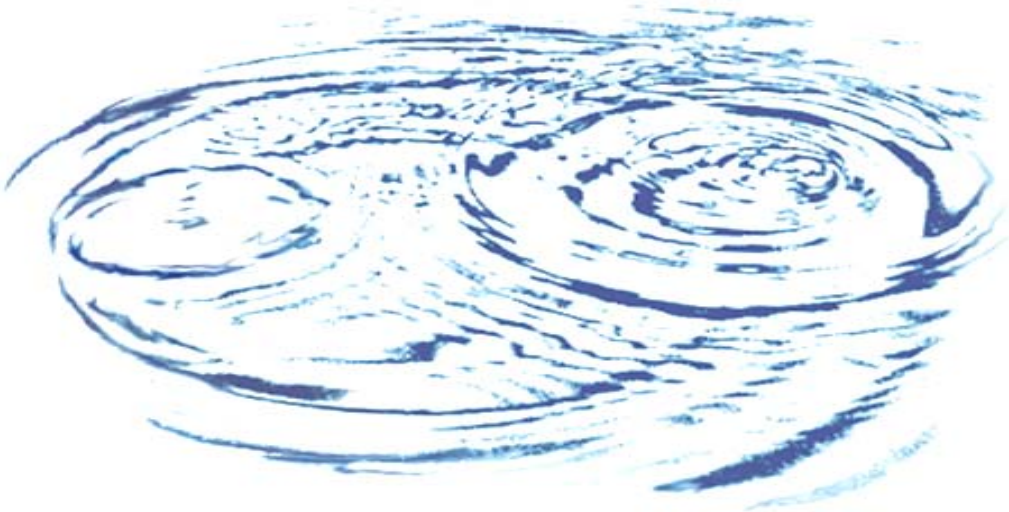
Northern California ▪ Southern California ▪ Arizona ▪ Colorado

City of Arcadia

2015
Urban Water Management Plan



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CHAPTER 1

PLAN PREPARATION

1.1 BACKGROUND AND PURPOSE

The City of Arcadia (City) is a water supplier and is required to prepare an Urban Water Management Plan (Plan) in accordance with the California Urban Water Management Planning Act (UWMP Act) which was established in 1983. The Act requires every "urban water supplier" to prepare and adopt a Plan, periodically review its Plan at least once every five years and make any amendments or changes which are indicated by the review. Pursuant to California Water Code Section 10617, 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 acre-feet of water annually. The primary objective of the UWMP Act is to direct urban water suppliers to evaluate their existing water conservation efforts and, to the extent practicable, review and implement alternative and supplemental water conservation measures. The UWMP Act is directed primarily at retail water purveyors where programs can be immediately affected upon the consumer**.** The UWMP Act, originally known as Assembly Bill (AB) 797, is included in Appendix A.

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, due to recent changes in Urban Water Management Plan requirements, California State law has extended the deadline for the 2015 Plans to July 1, 2016. The City's 2015 Plan is an update to the City's 2010 Plan.

1.2 URBAN WATER MANAGEMENT PLANNING AND THE CALIFORNIA WATER CODE

1.2.1 URBAN WATER MANAGEMENT PLANNING ACT OF 1983

The City is a water supplier and is required to prepare a Plan in accordance with the UWMP Act established in 1983. The UWMP Act is included in the California Water Code (CWC) under Sections 10610 through 10656. A copy of the UWMP Act is provided in Appendix A. The UWMP Act requires water agencies develop UWMPs to provide a framework for long term water planning as well as information regarding long-term resource planning to ensure sufficient water supplies are available to meet existing and future demands. Urban water suppliers are required to report, describe, and evaluate water deliveries and uses, water supply sources, efficient water uses, demand management measures, and water shortage contingency planning.

1.2.2 APPLICABLE CHANGES TO THE WATER CODE SINCE 2010

In compliance with the UWMP Act, the City last updated its Urban Water Management Plan in 2010. There have been new amendments added and some reorganization of the California Water Code sections since the City's last update. The following tabulation is a summary of the new requirements which were incorporated in the City's 2015 Plan, as applicable:

Change Number	Topic	CWC Section	Legislative Bill	Summary	Guidebook Section
1	Demand Management Measures	10631 (f)(1) and (2)	AB 2067, 2014	Requires water suppliers to provide narratives describing their water demand management measures, as provided. Requires retail water suppliers to address the nature and extent of each water demand management measure implemented over the past 5 years and describe the water demand management measures that the supplier plans to implement to achieve its water use targets.	Chapter 9
2	Submittal Date	10621 (d)	AB 2067, 2014	Requires each urban water supplier to submit its 2015 plan to the Department of Water Resources by July 1, 2016.	Chapter 10
3	Electronic Submittal	10644 (a) (2)	SB 1420, 2014	Requires the plan, or amendments to the plan, to be submitted electronically to the department.	Chapter 10
4	Standardized Forms	10644 (a) (2)	SB 1420, 2014	Requires the plan, or amendments to the plan, to include any standardized forms, tables, or displays specified by the department.	CH 1, Section 1.4
5	Water Loss	10631 (e) (1) (J) and (e) (3) (A) and (B)	SB 1420, 2014	Requires a plan to quantify and report on distribution system water loss.	Appendix L
6	Estimating Future Water Savings	10631 (e) (4)	SB 1420, 2014	Provides for water use projections to display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans, when that information is available and applicable to an urban water supplier.	Appendix K
7	Voluntary Reporting of Energy Intensity	10631.2 (a) and (b)	SB 1036, 2014	Provides for an urban water supplier to include certain energy-related information, including, but not limited to, an estimate of the amount of energy used to extract or divert water supplies.	Appendix O
8	Defining Water Features	10632	AB 2409, 2010	Requires urban water suppliers to analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	CH 8, Section 8.2.4

Source: Department of Water Resources' March 2016 Final "Guidebook for Urban Water Suppliers, Appendix C

1.2.3 WATER CONSERVATION ACT OF 2009 (SB X7-7)

The Water Conservation Act of 2009 (SB X7-7) required retail urban water suppliers to report the following conservation goals in their 2010 Plans:

- Base Daily per Capita Water Use;
- 2015 Interim Urban Water Use Target;
- 2020 Urban Water Use Target; and
- Compliance Daily per Capita Water Use

A discussion addressing the requirements of the Water Conservation Act is found in Chapter 5 of the City's 2015 Plan.

1.3 URBAN WATER MANAGEMENT PLANNING IN RELATION TO OTHER PLANNING EFFORTS

The City is a sub-agency of Upper San Gabriel Valley Municipal Water District (Upper District), a wholesale water agency. Upper District prepared a 2015 Plan which is incorporated in the City's 2015 Plan by reference. In addition, the City provided its 2015 Plan to Upper District which includes water use projections in five-year increments for normal, single dry, and multiple dry year conditions over the next 20 years.

1.4 UWMP ORGANIZATION

The City's 2015 Plan was prepared consistent with the recommended organization provided in the Department of Water Resources' (DWR) Final "Guidebook for Urban Water Suppliers", dated March 2016. The City's 2015 Plan consists of the following Chapters:

Chapter 1 - Introduction and Overview
Chapter 2 - Plan Preparation
Chapter 3 - System Description
Chapter 4 - System Water Use
Chapter 5 - Baselines and Targets
Chapter 6 - System Supplies
Chapter 7 - Water Supply Reliability
Chapter 8 - Water Shortage Contingency Planning

Chapter 9 - Demand Management Measures

Chapter 10 - Plan Adoption, Submittal, and Implementation

Pursuant to California Water Code requirements, the City's 2015 Plan incorporates DWR's standardized tables for the reporting and submittal of UWMP data. The standardized tables are provided within the body of the 2015 Plan text as well as in Appendix B. The City also submitted the UWMP data (standardized tables) electronically through DWR's Online Submittal Tool.

The City's 2015 Plan also provides supporting documents (appendices) including notification letters of the UWMP update, public notice of the UWMP hearing, adoption resolution from the City's governing body, the City's Water Shortage Contingency Plan, and the California Urban Water Conservation Council (CUWCC) Best Management Practices (BMP) Reports. Further discussions regarding these supporting documents are provided within the individual Chapters of the City's 2015 Plan.

1.5 UWMP AND GRANT OR LOAN ELIGIBILITY

Pursuant to DWR's Final "Guidebook for Urban Water Suppliers," "*In order for an urban water supplier to be eligible for any water management grant or loan administered by DWR, the agency must have a current UWMP on file that has been determined by DWR to address the requirements of the CWC. A current UWMP must also be maintained by the water supplier throughout the term of any grant or loan administered by DWR… An UWMP may also be required in order to be eligible for other State funding, depending on the conditions that are specified in the funding guidelines."* The City's 2015 Plan has been prepared in order to meet eligibility requirements for grants and loans administered by the State and/or DWR.

1.6 TIPS FOR UWMP PREPARERS

The City's 2015 Plan is considered an update to the City's 2010 Plan. However, the 2015 Plan is considered a stand-alone document. As discussed in Section 1.4, the City's 2015 Plan was prepared consistent with the recommended organization provided in DWR's Final "Guidebook for Urban Water Suppliers," dated March 2016. A checklist of specific UWMP requirements is included in Appendix C. The checklist includes the page number where the required elements are addressed to assist in DWR's review of the submitted Plan.

CHAPTER 2

PLAN PREPARATION

2.1 BASIS FOR PREPARING A PLAN

CWC 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.

CWC 10620.

(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.

CWC 10621.

(a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero, except as provided in subdivision (d).

(d) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

This Urban Water Management Plan (Plan) was prepared in accordance with the UWMP Act which was established in 1983. The UWMP 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 acre-feet (AF) of water annually. The primary objective of the UWMP 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 UWMP 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 UWMP Act, originally known as Assembly Bill (AB) 797, is included in Appendix A.

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 2015 Plans to July 1, 2016.

The City is an "urban water supplier" pursuant to Section 10617 of the California Water Code and directly serves potable water to more than 3,000 customers and supplies more than 3,000 acre-feet per year (AFY) at retail for municipal purposes. The City does not provide water at wholesale for municipal purposes. This 2015 Plan is an update to the City's 2010 Plan.

2.1.1 PUBLIC WATER SYSTEMS

CWC 10644.

(a)(2) The plan, or amendments to the plan, submitted to the department … shall include any standardized forms, tables, or displays specified by the department.

CWC 10608.52.

(a) The department, in consultation with the board, the California Bay-Delta Authority or its successor agency, the State Department of Public Health, and the Public Utilities Commission, shall develop a single standardized water use reporting form to meet the water use information needs of each agency, including the needs of urban water suppliers that elect to determine and report progress toward achieving targets on a regional basis as provided in subdivision (a) of Section 10608.28. (b) At a minimum, the form shall be developed to accommodate information sufficient to assess an urban water supplier's compliance with conservation targets pursuant to Section 10608.24… The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

California Health and Safety Code 116275.

(h) "Public water system" means a system for the provision of water for human consumption through pipes or other constructed conveyances that has 15 or more service connections or regularly serves at least 25 individuals daily at least 60 days out of the year.

Pursuant to California Water Code requirements, the City's 2015 Plan incorporates DWR's standardized tables for the reporting and submittal of UWMP data. The standardized tables are provided within the body of the 2015 Plan text as well as in Appendix B. The City also submitted the UWMP data (standardized tables) electronically through DWR's Online Submittal Tool. In addition, the City is a Public Water System and is regulated by the State Water Resources Control Board - Division of Drinking Water (SWRCB-DDW). The SWRCB-DDW requires water agencies provide the number of connections, water usage, and other information annually. The

information provided to SWRCB-DDW indicates the City serves potable water to more than 3,000 customers and supplies more than 3,000 AFY.

2.1.2 AGENCIES SERVING MULTIPLE SERVICE AREAS / PUBLIC WATER SYSTEMS

The City serves only a single Public Water System. Table 2-1 provides the City's Public Water System name and number.

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
CA1910003	City of Arcadia	14,264	14,692
	TOTAL	14,264	14,692
NOTES:			

Table 2-1 Public Water Systems

2.2 REGIONAL PLANNING

The City has developed its 2015 Plan reporting solely on its service area to address all requirements of the California Water Code. The City's 2015 Plan was not developed as a Regional Plan.

2.3 INDIVIDUAL OR REGIONAL PLANNING AND COMPLIANCE

As shown in Table 2-2, the City's 2015 Plan is an "Individual UWMP". The City has developed its 2015 Plan reporting solely on its service area to address all requirements of the California Water Code. The City notified and coordinated with appropriate regional agencies and constituents (See Section 2.5).

2.3.1 REGIONAL UWMP

CWC 10620.

(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.

As indicated in Table 2-2, the City's 2015 Plan was developed as an "Individual UWMP" and not part of a Regional Plan.

2.3.2 REGIONAL ALLIANCE

CWC 10608.20.

(a)(1) …Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28…

CWC 10608.28.

(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:
(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).
(3) Through a regional water management group as defined in Section 10537.
(4) By an integrated regional water management funding area.
(5) By hydrologic region.
(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

As indicated in Table 2-2, the City's 2015 Plan was developed as an "Individual UWMP" and not part of a Regional Alliance.

Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* *drop down list*
	Individual UWMP		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
	Regional Urban Water Management Plan (RUWMP)		
NOTES:			

Table 2-2 Plan Identification

2.4 FISCAL OR CALENDAR YEAR AND UNITS OF MEASURE

CWC 10608.20.

(a)(1) Urban retail water suppliers…may determine the targets on a fiscal year or calendar year basis.

2.4.1 FISCAL OR CALENDAR YEAR

The data provided in the City's 2015 Plan is reported on a fiscal year (FY) basis, unless noted otherwise, as show in Table 2-3. A fiscal year begins on July 1st of every year.

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
	Agency is a wholesaler
	Agency is a retailer
Fiscal or Calendar Year (select one)	
	UWMP Tables Are in Calendar Years
	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
07/01	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

Table 2-3 Agency Identification

2.4.2 REPORTING COMPLETE 2015 DATA

The data provided in the City's 2015 Plan is provided on a fiscal year basis through June 30, 2015.

2.4.3 UNITS OF MEASURE

As shown in Table 2-3, the data provided in the City's 2015 Plan is reported in units of acre-feet (AF), unless noted otherwise.

2.5 COORDINATION AND OUTREACH

CWC 10631.

(j) An urban water supplier that relies 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 or 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).

2.5.1 WHOLESALE AND RETAIL COORDINATION

The City is a sub-agency of Upper District, a wholesale agency. As indicated in Table 2-4, the City has provided its 2015 Plan to Upper District which includes water use projections in five-year increments for normal, single dry, and multiple dry year conditions over the next 20 years.

Table 2-4 Retail: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
Upper San Gabriel Valley Municipal Water District (Upper District)
NOTES:

Table 2-4 Retail Water Supplier Information Exchange

2.5.2 COORDINATION WITH OTHER AGENCIES AND THE COMMUNITY

CWC 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.

CWC 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.

The City is a retail water supplier that serves the majority of the residents within the City of Arcadia. The City is required to coordinate the preparation of the Plan with appropriate agencies in the area, including appropriate water suppliers that share a common source. Therefore, the City coordinated the preparation of its Urban Water Management Plan with the Raymond Basin Management Board, County of Los Angeles, Main San Gabriel Basin Watermaster (Main Basin Watermaster), Upper District, San Gabriel Valley Water Company, City of Sierra Madre, City of Pasadena Water and Power, Golden State Water Company, East Pasadena Water Company,

Sunny Slope Water Company, and City of Monrovia. As discussed in Section 10.2, the City notified these agencies, as well as to the cities and county within which the City provides water supplies, at least sixty (60) days prior to the public hearing of the preparation of the 2015 Plan and invited them to participate in the development of the Plan.

2.5.3 NOTICE TO CITIES AND COUNTIES

CWC 10621.

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before 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.

As discussed in Section 10.2, notification was provided to the cities and county within which the City provides water supplies that the City was reviewing and considering amendments (updates) to the 2010 Plan, and as a result prepare the 2015 Plan Update.

CHAPTER 3

SYSTEM DESCRIPTION

3.1 GENERAL DESCRIPTION

CWC 10631.

(a) Describe the service area of the supplier.

The City of Arcadia is a mature residential community encompassing approximately 11.5 square miles, which lies northeast of Los Angeles in the north central area of the San Gabriel Valley and extends northward into the southerly slopes of the San Gabriel Mountains.

The City was incorporated in 1903, and in 1914 its citizens decided to develop a municipal water system. A bond issue was passed and by 1916 the City had purchased an existing water company, drilled wells, built reservoirs and installed thousands of feet of water main as well as fire hydrants and water meters.

In 1918, the State of California granted the City a domestic water supply permit. Since then, the City has improved its water system by drilling additional wells, building additional reservoirs, constructing booster pumps, and installing many miles of water mains. These improvements were assisted through two bond issues. The last bond was redeemed in 1966, and since then, all additional improvements have been funded by water sales, developers and federal grants.

The City provides water service to a majority of the City of Arcadia and encompasses an area of approximately 11.0 square miles, as shown in Figure 1. The

City currently derives its water supply from groundwater wells that produce water from two groundwater basins, the Main San Gabriel Basin and the Raymond Basin, with the Main San Gabriel Basin as the City's primary groundwater source. The City is also a sub-agency of Upper District, a wholesale water agency. A discussion of the City's sources of water supply is provided in Chapter 6.

3.2 SERVICE AREA BOUNDARY MAP

As discussed in Section 3.1, the City's current water service area covers approximately 11.0 square miles encompassing the majority of the city. A service area boundary map is provided in Figure 1. The City's service area boundary relative to the City of Arcadia's municipal boundary is provided in Figure 2.

3.2.1 MAP FORMAT RECOMMENDATIONS

The City's service area map was submitted online through DWR's Population Tool in a "KML" file format (i.e. Google Earth format). The KML file was originally created in a Geographical Information Systems (GIS) shape file format and converted into a KML format. To the extent information was available, metadata was included in the KML file (including map projection, contact information, start and end dates for which the map is valid, constraints, attribute table definitions, and digitizing base).

3.3 SERVICE AREA CLIMATE

CWC 10631.

(a) Describe the service area of the supplier, including… climate…

The historical average temperatures (including minimum and maximum), historical average rainfall, and historical evapotranspiration (ETo) in the vicinity of the City's service area is summarized in the tabulation below. Historical climate information was obtained from the Western Regional Climate Center (WRCC) and from DWR's California Irrigation Management Information System (CIMIS).

Service Area Climate Information

Month	Average Temperature (F)	Average Min. Temperature (F)	Average Max. Temperature (F)	Average Total Precipitation (Inches)	ETo (Inches)
January	54.7	42.6	66.5	4.39	2.20
February	56.1	44.1	67.8	4.54	2.41
March	58.2	45.9	69.9	3.39	3.71
April	61.2	48.8	73.4	1.39	4.36
May	64.4	52.2	76.3	0.43	5.29
June	68.9	55.7	81.7	0.13	5.78
July	74.3	59.9	88.4	0.03	6.55
August	74.9	60.3	89.2	0.08	6.02
September	73.1	58.5	87.1	0.36	4.87
October	67.2	53.4	80.6	0.70	3.40
November	60.6	47.2	73.8	1.67	2.38
December	55.3	43.2	67.2	3.14	1.90
Annual	64.1	51.0	76.8	20.24	48.87

Source:

Historical average monthly precipitation and temperature information was obtained from the Western Regional Climate Center (http://www.wrcc.dri.edu/) and is based on data collected from Station 046719 (Pasadena, CA) from 1893 through 2015. Historical monthly average ETo information was obtained from the California Irrigation Management Information Systems (http://wwwcimis.water.ca.gov) and is based on data collected from Station 159 (Monrovia).

The historical average rainfall in the vicinity of the City's service area is about 20.2 inches. Annual rainfall near the City's service area from 1893 to 2015 is provided as Appendix D. The City's service area in the San Gabriel Valley has a dry climate and summers can reach maximum daily temperatures in the high 80s. 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, based on historical data and projected demands.

3.3.1 CLIMATE CHANGE

The California Water Code does not require the City to address climate change. However, a discussion on single-dry year and multiple dry years is provided in Section 7.2 and a discussion on potential impacts to basin management practices is provided in Section 6.2. A discussion regarding the regional impacts of climate change on demand and supply are provided in Metropolitan Water District of Southern California's 2015 Plan, which is incorporated by reference.

3.4 SERVICE AREA POPULATION AND DEMOGRAPHICS

CWC 10631.

(a) Describe the service area of the supplier, including current and projected population... 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.

The City provides water service to an area with a current population of approximately 55,340. Table 3-1 presents the current and projected population of the area encompassed by the City from 2015 to 2040. The City is projected to have a population of approximately 62,753 by 2040. Projected populations in the City'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. The population estimate for 2015 in Table 3-1 is consistent with DWR requirements discussed in Section 5.4.1.

Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040*(opt)*
	55,342	56,713	58,166	59,657	61,186	62,753
NOTES: Based on 2015 population using the DWR Population Tool (see Section 5.4.1) and projected populations from the Southern California Association of Governments (SCAG) for the City						

Table 3-1 Retail: Population – Current and Projected

3.4.1 OTHER DEMOGRAPHIC FACTORS

CWC 10631.

(a) Describe the service area of the supplier, including… other demographic factors affecting the supplier's water management planning.

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

CHAPTER 4

SYSTEM WATER USE

4.1 RECYCLED VERSUS POTABLE AND RAW WATER DEMAND

Chapter 4 addresses the City's potable water demands. Recycled water demands are addressed separately in Section 6.5, however, a summary is provided in Table 4-3. Raw water is not served by the City and is not applicable.

4.2 WATER USES BY SECTOR

CWC 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).

The City's current and projected water demands are provided in five-year increments through 2040 in Tables 4-1, 4-2 and 4-3. Water demand sectors are also identified (see Section 4.2.1). The City's total water demand projections are based on

the SB X7-7 calculations prepared in Section 5.7. The water demands for each individual water demand sector were projected based on the percentage breakdown of water demands from each individual water demands sector in 2015 (the percentages were then applied to the projected total water demands).

4.2.1 DEMAND SECTORS LISTED IN WATER CODE

As shown in Table 4-1, the City's service area includes the following water demand sectors listed in the California Water Code:

- Single-family residential
  (A single-family dwelling unit is a lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling. Single-family residential water demands are included in retail demands.)

- Multi-family
  (Multiple dwelling units are contained within one building or several buildings within one complex. Multi-family residential water demands are included in retail demands.)

- Commercial
  (Commercial users are defined as water users that provide or distribute a product or service. Commercial water demands are included in retail demands.)

- Institutional (and governmental)
  (Institutional users are defined as water user dedicated to public service. Institutional users include, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions. Institutional water demands are included in retail demands.)

- Irrigation
  (Landscape connections supply water solely for landscape irrigation. Landscapes users may be associated with multi-family, commercial, industrial, or institutional/governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation. Landscape water demands are included in retail demands.)

- Distribution system losses
  (Distribution system losses are discussed in Section 4.3)

4.2.2 DEMAND SECTORS IN ADDITION TO THOSE LISTED IN THE WATER CODE

The City's service area does not include other water demand sectors which are not listed in the California Water Code (including exchanges, surface water augmentation, transfers, and wetlands or wildlife habitat).

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type (Add additional rows as needed)	2015 Actual		
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	Level of Treatment When Delivered Drop down list	Volume
Single Family		Drinking Water	9,098
Multi-Family		Drinking Water	1,944
Commercial		Drinking Water	2,093
Institutional/Governmental		Drinking Water	780
Landscape		Drinking Water	776
Losses		Drinking Water	635
		TOTAL	15,326
NOTES: Losses include distribution system water losses (443 AF) and unbilled water (192 AF).			

Table 4-1 Retail: Demands for Potable and Raw Water – Actual

Table 4-2 Retail: Demands for Potable and Raw Water - Projected						
Use Type (Add additional rows as needed)	Additional Description (as needed)	Projected Water Use Report To the Extent that Records are Available				
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		2020	2025	2030	2035	2040-opt
Single Family		8,976	9,206	9,441	9,684	9,932
Multi-Family		1,918	1,968	2,018	2,070	2,122
Commercial		2,065	2,118	2,172	2,227	2,285
Institutional/Governmental		766	785	805	826	847
Landscape		770	788	809	830	852
Losses		626	642	658	675	692
	TOTAL	15,119	15,507	15,904	16,312	16,730
NOTES:						

Table 4-2 Retail: Demands for Potable and Raw Water – Projected

Table 4-3 Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040 (opt)
Potable and Raw Water *From Tables 4-1 and 4-2*	15,326	15,119	15,507	15,904	16,312	16,730
Recycled Water Demand* *From Table 6-4*	0	0	0	0	0	0
TOTAL WATER DEMAND	15,326	15,119	15,507	15,904	16,312	16,730
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES:						

Table 4-3 Retail: Total Water Demands

4.3 DISTRIBUTION SYSTEM WATER LOSSES

CWC 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:…
(J) Distribution system water loss

CWC 10631(e)(3).

(A) For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

The City has reviewed its distribution system water losses by using the American Water Works Association (AWWA) water audit software, which is a spreadsheet-based water audit tool. The City has submitted the reporting worksheet from the AWWA water audit in an Excel format through DWR's Online Submittal Tool. In addition, a copy of the reporting worksheet from the AWWA water audit is provided in Appendix E.

The City's distribution system water losses during FY 2014-15, are provided in Table 4-1. The City's projected distribution system water losses are provided in Table 4-2. In addition, the City's distribution system water losses during the most recent 12-month period available (FY 2014-15) are provided in Table 4-4.

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
07/2014	443
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: AWWA Audit Worksheet provided in Appendix E.	

Table 4-4 Retail: Water Loss Summary Most Recent 12 Month Period Available

4.4 ESTIMATED FUTURE WATER SAVINGS (OPTIONAL)

CWC 10631(e)(4).

(A) If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following: (i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

DWR had deemed Section 4.4 as optional. The City is not required by DWR to complete this section.

4.5 WATER USE FOR LOWER INCOME HOUSEHOLDS

CWC 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.

California Health and Safety Code 50079.5.

(a) "Lower income households" means persons and families whose income does not exceed the qualifying limits for lower income families… In the event the federal standards are discontinued, the department shall, by regulation, establish income limits for lower income households for all geographic areas of the state at 80 percent of area median income, adjusted for family size and revised annually.

The City's water use projections (See Section 7.3) through 2040 include projected water demands for lower income single-family and multi-family households. The total number of lower income households within the City's service area was estimated based on billing records provided by the City, a review of median household income statistics provided by the U.S. Census Bureau's American FactFinder, a review of the City's General Plan, and a review of GIS maps of Disadvantaged Communities[1] (DACs), including block groups, tracts, and places, provided by DWR. The City currently provides service to approximately 57 lower income households, which is approximately 0.4 percent of its total current number of residential meters. Based on a 0.4 percent use factor of total residential water demands, the projected water demand for lower income households is about 75 AFY by the year 2040. The projected water demands for lower

[1] GIS information for DACs is based on data from the US Census showing census block groups, tracts, and places identified as disadvantaged communities (less than 80 percent of the State's median household income) or severely disadvantaged communities (less than 60 percent of the State's median household income)

income households were included in the City's total projected water demands, as indicated in Table 4-5.

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.	Section 4.5
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Table 4-5 Retail Only: Inclusion in Water Use Projection

4.6 CLIMATE CHANGE

DWR had deemed Section 4.6 as optional. The City is not required by DWR to complete this section. However, a discussion on single-dry year and multiple dry years is provided in Section 7.2 and a discussion on potential impacts to basin management practices is provided in Section 6.2. A discussion regarding the regional impacts of climate change on demand and supply are provided in Metropolitan Water District of Southern California's 2015 Plan, which is incorporated by reference.

CHAPTER 5

SB X7-7 BASELINE AND TARGETS

The Water Conservation Act of 2009 (or SB X7-7) required retail urban water suppliers to determine target water use for the years 2015 and 2020 in order to help the State achieve a 20 percent reduction in urban water use by the year 2020. Methodologies for calculating baseline and compliance daily urban per capita water use for the consistent implementation of the Water Conservation Act of 2009 were previously published by DWR's "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use", dated October 1, 2010. DWR provided updated methodologies in its final draft "Methodologies for Calculating Baseline and Compliance Urban per Capita Water Use", dated March 2016. DWR prescribes specific methods and steps to calculate the Baseline and Compliance Urban Per Capita Water Use. In order to verify the calculations were calculated correctly, DWR requires all urban retail water suppliers to fill out the SB X7-7 forms and attach as an appendix in its 2015 Plan. DWR's guidance documents and SB X7-7 forms were used by the City to determine the required water use parameters which are discussed below. The City developed the baselines and targets individually and not regionally. A copy of the Water Conservation Bill of 2009 is provided in Appendix F. A copy of the SB X7-7 forms are provided in Appendix G.

5.1 GUIDANCE FOR WHOLESALE AGENCIES

CWC 10608.12(r).

"Urban wholesale water supplier" means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

CWC 10608.36.

Urban wholesale water suppliers shall include in the urban water management plans… an assessment of their present and proposed future measures, programs, and policies to help achieve the water use reductions required by this part.

The City is not a wholesale agency and is not required by DWR to complete Section 5.1.

5.2 UPDATING CALCULATIONS FROM 2010 UWMP

CWC 10608.20.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

Methodologies DWR 2010, Methodology 2 Service Area Population.

Page 27 - Water suppliers may revise population estimates for baseline years between 2000 and 2010 when 2010 census information becomes available. DWR will examine discrepancy between the actual population estimate and DOF's projections for 2010; if significant discrepancies are discovered, DWR may require some or all suppliers to update their baseline population estimates.

5.2.1 TARGET METHOD

The methodology selected in the City's 2010 Plan to determine the City's 2015 and 2020 urban water use targets was:

- "Method 1" and was based on eighty percent of the urban water supplier's baseline water use over a specific 10-year period.

Because 2010 U.S. Census data was not available during the preparation of the City's 2010 Plan, the City is required to recalculate its "baseline population" as well as its target water use for the 2015 Plan, which is discussed in detail in the following sections of Chapter 5. However, "Target Method 1" is incorporated in this 2015 Plan, as discussed in Section 5.7.1.

5.2.2 REQUIRED USE OF 2010 U.S. CENSUS DATA

The City has incorporated 2010 U.S. Census data into baseline population calculations in this 2015 Plan (See Section 5.4). As a result, the City updated its baseline population as well as its water use targets (See Section 5.7).

5.2.3 SB X7-7 VERIFICATION FORM

DWR prescribes all urban retail water suppliers to complete the SB X7-7 Verification Form. The City has updated its baseline and water use target calculations from 2010 (See Section 5.7). The required SBX7-7 Verification Form is provided in Appendix G.

5.3 BASELINE PERIODS

CWC 10608.20.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010...the baseline daily per capita water use…along with the bases for determining those estimates, including references to supporting data.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

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 were two different baseline periods (including a 10-year baseline period[2] and a 5-year baseline period[3]) for calculating Baseline Daily Per Capita Water Use in the the City's 2010 Plan. The baseline periods applicable for the City's 2015 Plan have been reviewed and are presented below.

5.3.1 DETERMINATION OF THE 10-15 YEAR BASELINE PERIOD (BASELINE GPCD)

CWC 10608.12.

(b) "Base daily per capita water use" means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

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[2] Pursuant to CWC 10608.12(b)(1), the 10-year baseline period is based on "a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010"

[3] Pursuant to CWC 10608.12(b)(3), the 5-year baseline period is based on "a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010"

The California Water Code allows an urban water supplier to calculate up to a 15-year baseline period if at least 10 percent of its 2008 retail water demands were met through recycled water deliveries within its service area, otherwise calculation of a 10-year baseline period is required. The City did not receive any recycled water deliveries during FY 2007-08. Consequently, a 10-year baseline period water use of 298 GPCD for the City was determined and incorporated into this 2015 Plan and is based on a continuous 10-year period between FY 1995-96 through FY 2004-05 (See SB X7-7 Table 1, Appendix G). A further discussion of determining water use targets based on the 10-year baseline period water use is discussed further in Section 5.7.

5.3.2 DETERMINATION OF THE 5-YEAR BASELINE PERIOD (TARGET CONFIRMATION)

CWC 10608.12.

(b)(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

According to Section 10608.22 of the California Water Code, if an urban retail water supplier's 5-year baseline period water use is greater than 100 GPCD, the calculated 2020 water use target may need to be reduced. A 5-year baseline period water use of 297 GPCD for the City was determined and incorporated into this 2015 Plan and is based on a continuous 5-year period between FY 2003-04 through FY 2007-08 (See SB X7-7 Table 1, Appendix G). A further discussion of the 2020 water use target confirmation based on the 5-year baseline period water use is discussed further in Section 5.7.2.

5.4 SERVICE AREA POPULATION

CWC 10608.20.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010...the baseline daily per capita water use…along with the bases for determining those estimates, including references to supporting data.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

CWC 10644.

(a)(2) The plan… shall include any standardized forms, tables, or displays specified by the department.

For the purposes of projecting water use targets, agencies must determine the population that they served for each baseline year in both of the baseline period (FY 1995-96 through FY 2004-05) and for the 2015 compliance year (FY 2014-15). The City has incorporated U.S. Census data through 2010 into baseline population calculations in this 2015 Plan, which is discussed in detail in Section 5.4.1. According to DWR, the full 2010 U.S. Census data was not available until 2012. As a result, the City updated its baseline population as well as its water use targets, previously calculated in its 2010 Plan.

5.4.1 POPULATION METHODOLOGY

The annual populations within the City's service area for each year during the baseline period (FY 1995-96 through FY 2004-05) and for the 2015 compliance year (FY 2014-15) were estimated by DWR's online Population Tool (See SB X7-7 Table 2, Appendix G). As discussed in Section 3.2.1, the City's service area boundary was submitted to the Population Tool in a "KML" file format (i.e. Google Earth format). The

submitted KML file represents the City's service area boundary from 1990 to present (2015). The Population Tool utilized U.S. Census data from 1990, 2000, and 2010, along with the City's service area boundary, to estimate the population served by the City in 1990, 2000, and 2010. The annual amounts of residential service connections[4] within the City's service area for each year from 1990 through 2015 were also entered into the Population Tool. Based on the actual population data (1990, 2000, and 2010) as well as the annual residential service connections (from 1990 through 2015), DWR's Population Tool estimated the annual population within the City's service area for each year from FY 1989-90 to FY 2014-15. The City's estimated populations during the baseline periods are provided in SB X7-7 Table 3, Appendix G.

5.5 GROSS WATER USE

CWC 10608.12.

(g) "Gross water use" means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

California Code of Regulations Title 23 Division 2 Chapter 5.1 Article 1, Section 596.

(a) An urban retail water supplier that has a substantial percentage of industrial water use in its service area is eligible to exclude the process water use of existing industrial water customers from the calculation of its gross water use to avoid a disproportionate burden on another customer sector.

[4] The annual number of residential service connections was based on and estimated from information provided by the City. The total number of residential service connections includes both single family and multi-family connections.

Annual gross water use amounts within the City for each year of the 10-year baseline year (FY 1995-96 to FY 2004-05), for each year of the 5-year baseline year (FY 2003-04 to FY 2007-08) 2, and for calendar year 2015, are provided in SB X7-7 Table 4 (Appendix G) and are based on the total amount of water entering the City's distribution system from its water supply sources (groundwater production wells and imported water connections).

5.5.1 GROSS WATER TABLES

Annual gross water use amounts within the City for each year of the 10-year baseline year (FY 1995-96 to 2004-05), identified in Section 5.3, and for calendar year 2015, are provided in SB X7-7 Table 4 (Appendix G).

The City currently does not use indirect recycled water within its service area. The City is not required by DWR to complete SB X7-7 Table 4-B.

Industrial process water is not included in the City's gross water use provided in SB X7-7 Table 4 (Appendix G). The City is not required by DWR to complete SB X7-7 Table 4-C.1, SB X7-7 Table 4-C.2, SB X7-7 Table 4-C.3, SB X7-7 Table 4-C.4, and SB X7-7 Table 4-D.

5.6 BASELINE DAILY PER CAPITA WATER USE

The "daily per capita water use" is based on the water used per person per day (GPCD) within the City. The daily per capita water use is estimated by dividing gross water use by the service area population. The City's baseline daily per capita water uses were determined for each baseline year over a ten year period (FY 1995-96 to FY

2004-05). Over that ten year period, the average 10-year baseline daily per capita water use is **298 GPCD**, as shown in SB X7-7 Table 5 (Appendix G).

5.7 2015 AND 2020 TARGETS

CWC 10608.20.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010… urban water use target, interim urban water use target,… along with the bases for determining those estimates, including references to supporting data.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan….

As discussed in Section 5.2.1, "Target Method 1" has been incorporated in the City's 2015 Plan to determine the City's 2015 and 2020 urban water use targets. A further discussion regarding the selected target method is provided below.

5.7.1 SELECT AND APPLY A TARGET METHOD

Calculation of the 2020 Urban Water Use Target includes adoption of one of four available methods (pursuant to California Water Code Section 10608.20(b). The City reviewed the following available methods.

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

Using this target method, the Urban Water Use Target for the City was calculated as **238 GPCD**, based on 80 percent of the City's Baseline Per Capita Daily Water Use of 298 GPCD (See SB X7-7 Table 7-A, Appendix G).

Target Method 2: *Estimate using the sum of the specified three performance standards specified in California Water Code Section 10608.20(b)(2).*

Due to insufficient data, this target method was not considered.

Target Method 3: *Ninety-five percent of the applicable state hydrologic region target, as set forth in the state's 20x2020 Water Conservation Plan.*[5]

The City's service area lies entirely within the "South Coast" Hydrologic Region. According to SB X7-7 Table 7-E (Appendix G), the 2020 regional water use target for the South Coast Hydrologic Region is 149 GPCD. The Target Method 3 regional use target for the South Coast Hydrologic Region (or 95 percent of the 2020 regional water use target) is 142 GPCD.

Target Method 4: *Water Savings (DWR Provisional Method 4)*

Due to insufficient data, this target method was not considered.

The City's Urban Water Use Target was initially determined to be **238 GPCD** for 2020 and is based on Target Method 1 above, as indicated in SBX7-7 Table 7 (Appendix G).

[5] 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.

5.7.2 5-YEAR BASELINE – 2020 TARGET CONFIRMATION

CWC 10608.22.

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.

As discussed in Section 5.3.2, if an urban retail water supplier's 5-year baseline period water use is greater than 100 GPCD, the calculated 2020 Urban Water Use Target must be reduced to 95 percent of the 5-year baseline period water use (unless it is already below 95 percent of the 5-year baseline period). The City's calculated 5-year baseline period water use was 297 GPCD. The value calculated for 95 percent of the 5-year baseline period water use is **282 GPCD**. The City's 2020 Urban Water Use Target was initially determined using Target Method 1 above to be 238 GPCD, which is less than the value calculated in this step (282 GPCD). Therefore, no adjustment is needed to the City's 2020 Urban Water Use Target of **238 GPCD** (See SB X7-7 Table 7-F, Appendix G).

5.7.3 CALCULATE THE 2015 INTERIM URBAN WATER USE TARGET

The City's 2015 Interim Target is based on the value mid-point between the 10-year baseline period water (298 GPCD, See Section 5.3.1) and the confirmed 2020 Urban Water Use Target (238 GPCD, See Section 5.7.2). The City's 2015 Interim Target is **268 GPCD** as indicated in SB X7-7 Table 8 (Appendix G).

5.7.4 BASELINE AND TARGETS SUMMARY

A summary of the City's baseline water use and targets is provided in Table 5-1.

Table 5-1 Baselines and Targets Summary *Retail Agency or Regional Alliance Only*					
Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	*1996*	*2005*	*298*	*268*	*238*
5 Year	*2004*	*2008*	*297*		
*All values are in Gallons per Capita per Day (GPCD)					
NOTES: Years provided are on a fiscal year basis (e.g. "1995" is equivalent to fiscal year 1994-95)					

Table 5-1 Baselines and Target Summary

5.8 2015 COMPLIANCE DAILY PER CAPITA WATER USE (GPCD)

CWC 10608.12.

(e) "Compliance daily per capita water use" means the gross water use during the final year of the reporting period…

CWC 10608.24.

(a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

CWC 10608.20.

(e) An urban retail water supplier shall include in its urban water management plan due in 2010 … compliance daily per capita water use, along with the bases for determining those estimates, including references to supporting data.

5.8.1 MEETING THE 2015 TARGET

As discussed in Section 5.7.3, the City's 2015 Interim Target is **268 GPCD**. The City's actual water use during FY 2014-15 was **247 GPCD**, which is in compliance with the 2015 Interim Target, as show in SB X7-7 Table 9 (Appendix G).

5.8.2 2015 ADJUSTMENTS TO 2015 GROSS WATER USE

CWC 10608.24(d).

(1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use, Methodology 4.

This section discusses adjustments to compliance-year GPCD because of changes in distribution area caused by mergers, annexation, and other scenarios that occur between the baseline and compliance years.

As discussed in Section 5.8.1, the City is currently in compliance with its 2015 Interim Target. As a result, adjustments to the City's 2015 gross water use were not incorporated into the City's 2015 Plan (See Table 5-2).

Table 5-2: 2015 Compliance *Retail Agency or Regional Alliance Only*								
Actual 2015 GPCD*	2015 Interim Target GPCD*	**Optional Adjustments to 2015 GPCD** *From Methodology 8*					2015 GPCD* *(Adjusted if applicable)*	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events*	Economic Adjustment*	Weather Normalization*	TOTAL Adjustments*	Adjusted 2015 GPCD*		
247	268				0	247	247	Yes
**All values are in Gallons per Capita per Day (GPCD)*								
NOTES:								

Table 5-2 2015 Compliance

5.9 REGIONAL ALLIANCE

As discussed in Section 2.3.2, the City's 2015 Plan was not developed as part of a Regional Alliance. Information from the City's 2015 Plan is not required to be reported in a Regional Alliance report.

CHAPTER 6

SYSTEM SUPPLIES

The City's water supply sources include water pumped from local groundwater basins (Main San Gabriel Basin and Raymond Basin) and treated imported water. A tabulation of historical groundwater and imported water supplies from FY 1994-95 to FY 2014-15 is provided below.

Fiscal Year	Groundwater Supplies (AF)			Imported Water Supplies (1)	Less: Water Deliveries (2)	Total
	Main Basin	Raymond Basin	Sub Total Groundwater			
1994-95	7,863	7,437	15,300	0	0	15,300
1995-96	11,215	5,512	16,727	0	0	16,727
1996-97	10,176	7,103	17,279	0	0	17,279
1997-98	9,328	5,751	15,079	0	0	15,079
1998-99	8,737	7,315	16,053	0	0	16,053
1999-00	11,696	6,183	17,879	0	0	17,879
2000-01	11,161	6,022	17,183	0	0	17,183
2001-02	11,418	5,596	17,014	0	0	17,014
2002-03	12,153	4,548	16,701	0	0	16,701
2003-04	12,439	5,078	17,516	541	0	18,057
2004-05	10,002	6,176	16,177	0	(247)	15,930
2005-06	9,230	7,609	16,839	0	(54)	16,785
2006-07	12,286	6,382	18,668	0	0	18,668
2007-08	12,686	4,811	17,497	95	(68)	17,524
2008-09	10,780	4,584	15,364	1,399	0	16,763
2009-10	11,478	4,034	15,512	286	0	15,798
2010-11	9,841	5,214	15,055	0	0	15,055
2011-12	11,721	4,692	16,413	0	0	16,413
2012-13	13,278	3,913	17,190	0	0	17,190
2013-14	14,104	3,348	17,452	0	0	17,452
2014-15	12,010	3,316	15,326	0	0	15,326

(1) Some treated water deliveries from USG-6 were made in response to a request from the Main Basin Watermaster to reduce untreated imported water deliveries, although groundwater supplies and capacity were available. The City does not typically use imported water supplies because the City's collective groundwater supplies are sufficient to meet total water demands.

(2) Water delivered to the City of Sierra Madre for Raymond Basin management purposes.

6.1 PURCHASED OR IMPORTED WATER

The City can purchase imported water supplies from Metropolitan Water District of Southern California (MWD) through Upper District. The City can receive direct deliveries of treated imported water through its MWD connection, USG-6, which has a capacity of 20 cubic feet per second (about 14,500 acre-feet per year if used continuously). The City typically does not use service connection USG-6 because the City's collective groundwater supplies are sufficient to meet water demands. The City typically uses treated imported water only as an emergency water supply source. The City's 2015 and projected volumes of purchased water are provided in Tables 6-8 and 6-9 (See Section 6.9).

6.2 GROUNDWATER

The City currently owns and operates seven active groundwater wells in the Main Basin. These wells include Camino Real 3, Live Oak 1, Longden 1, Longden 2, Longley 3, Peck 1 and St. Joseph 2. The collective capacity of the City's Main Basin wells is approximately 15,200 gallons per minute (gpm). The City also has seven wells located within the Raymond Basin, which include Orange Grove 1A, Orange Grove 2A, Orange Grove 5, Orange Grove 6, Chapman 7, Colorado 1 and Anoakia 1 (although Chapman 7 and Anoakia 1 were inactive during FY 2014-15). The collective capacity of the City's Raymond Basin wells is approximately 4,300 gpm.

6.2.1 BASIN DESCRIPTION

CWC 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:

(2) A description of any groundwater basin or basins from which the urban water supplier pumps groundwater.

Main Basin - Description

The Main San Gabriel Basin (Main Basin) is located within the San Gabriel Valley, which is located in southeastern Los Angeles County and is bounded on the north by the San Gabriel Mountains; on the west by the San Rafael and Merced Hills, on the south by the Puente Hills and the San Jose Hills, and on the east by a low divide between the San Gabriel River system and the Upper Santa Ana River system, as shown on Figure 3.

The San Gabriel River and its distributary, the Rio Hondo, drain an area of about 490 square miles upstream of Whittier Narrows. Whittier Narrows is a low gap between the Merced and Puente Hills, just northwest of the City of Whittier, through which the San Gabriel River and the Rio Hondo flow to the coastal plain of Los Angeles County. Whittier Narrows is a natural topographic divide and a subsurface restriction to the movement of groundwater between the Main Basin and the Coastal Plain. The approximately 490 square miles of drainage area upstream of Whittier Narrows consists of about 167 square miles of valley lands and about 323 square miles of mountains and foothills.

The Main Basin includes essentially the entire valley floor of the San Gabriel Valley with the exception of the Raymond Basin and Puente Basin. The boundaries of the Main Basin are the Raymond Basin on the northwest, the base of the San Gabriel Mountains on the north, the groundwater divide between San Dimas and La Verne and the lower boundary of the Puente Basin on the east, and the common boundaries between Upper District and Central Basin Municipal Water District (Central District) through Whittier Narrows on the southwest. The common water supply of the Main

Basin does not include the Raymond Basin, the area northerly of Raymond Hill Fault, which was adjudicated in the Pasadena v. Alhambra case (Superior Court of the County of Los Angeles, 1944). The Puente Basin, although tributary to the Main Basin, is not included in the Main Basin administered by the Main Basin Watermaster.

The Main Basin (administered by the Main Basin Watermaster) is a large groundwater basin replenished by stream runoff from the adjacent mountains and hills, by rainfall directly on the surface of the valley floor, subsurface inflow from Raymond Basin and Puente Basin, and by return flow from water applied for overlying uses. Additionally, the Main Basin is replenished with imported water. The Main Basin serves as a natural storage reservoir, transmission system and filtering medium for wells constructed therein.

There are three municipal wholesale water districts overlying and/or partially overlying the Main Basin. The three districts are Upper District, San Gabriel Valley Municipal Water District (San Gabriel District), and Three Valleys Municipal Water District (Three Valleys District). The boundaries of these water districts are shown on Figure 4.

Urbanization of the San Gabriel Valley began in the early part of the twentieth century, but until the 1940s, agricultural land use occupied more area than residential and commercial land use. After World War II, agricultural areas reduced rapidly and are now less than two thousand acres. The agricultural areas tend to be located in the easterly portion of the Main Basin and along power transmission rights of way adjacent to the San Gabriel River. Agricultural plots are discontinuous and relatively small. There are several major industrial areas adjacent to the San Gabriel River and within other portions of the valley. The greatest area of land use in the valley is for residential and commercial purposes. DWR Bulletin 118 does not identify the Main Basin as being in overdraft.

Main Basin - Geology

The Main Basin consists of a roughly bowl-shaped depression of bedrock, filled over millions of years with alluvial deposits. This bowl-shaped depression is relatively deep; the elevation at the base of the groundwater reservoir declines from about 800 feet above mean sea level (MSL) in the vicinity of San Dimas, at the northeast corner of the Main Basin, to about 2,200 feet below MSL in the vicinity of South El Monte (DWR, 1966, Plate II).

Most of the alluvium deposited within this depression is debris from the San Gabriel Mountains, washed and blown down from the side of the mountains over time. This process has also resulted in the materials of the Main Basin varying in size from relatively coarse gravel nearer the mountains to fine and medium-grained sand containing silt and clay as the distance from the mountains increases. The principal water-bearing formations of the Main Basin are unconsolidated and semi-consolidated sediments, which vary in size from coarse gravel to fine-grained sands. The interstices between these alluvial particles throughout the Main Basin fill with water and transmit water readily to wells. The thickness of the water-bearing materials in the Main Basin ranges from 200 to 300 feet in the northeastern portion of the Main Basin near the mountains (Los Angeles County Department Public Works [DPW], 1934, page 141) to nearly 4,000 feet in the South El Monte area (DWR, 1966, page 31).

The soils overlying the Main Basin average about six feet in depth. Soil depths are generally greater at the perimeter of the valley and decrease toward the center along the San Gabriel River. These soils are residual, formed in place through chemical, mechanical and plant weathering processes. The infiltration rates of these soils are greater along the natural channels and their adjacent flood plains. Lower infiltration rates are found in the perimeter areas of the valley. Since the valley is mostly urbanized, a significant portion of the area has been paved and many miles of stream channel have been lined for flood control purposes, thus decreasing infiltration of water

through streambeds. Detailed basin geology is discussed in the report entitled "Planned Utilization of Ground Water Basins, San Gabriel Valley, Appendix A: Geo-hydrology" (DWR, 1966).

Main Basin - Hydrology

The total fresh water storage capacity of the Main Basin is estimated to be about 8.7 million acre-feet. Of that, about 1,000,000 acre-feet have been used historically in Main Basin operations. The change in groundwater elevation at the Key Well is representative of changes in groundwater in the Main Basin. One foot of elevation change at the Key Well is roughly the equivalent of about 8,000 acre-feet of water storage. The location of the Key Well is shown on Figure 5 and the hydrograph of the Key Well is shown on Figure 6. The historical high groundwater elevation was recorded at over 329.1 feet in April 1916, at which time Main Basin storage was estimated to be about 8,700,000 acre-feet. The historical low was recorded in November 2015 at 174.0 feet, at which time Main Basin storage was estimated to be about 7,400,000 acre-feet. The Key Well hydrograph shown on Figure 6 illustrates the cyclic nature of basin recharge and depletion. The hydrograph also illustrates the dramatic recharge capability of the Main Basin during wet periods.

Generally, water movement in the Main Basin is from the San Gabriel Mountains on the north to Whittier Narrows to the southwest, as shown on Figure 7. Groundwater movement in the northern and northeastern regions of the Main Basin is affected by faulting. For example, the Raymond Fault located in the northwesterly portion of the Main Basin separates the Raymond Basin from the Main Basin.

The Main Basin is an unconfined aquifer. Although clay deposits appear mixed with the soils in several locations in the Main Basin and there are various clay lenses throughout the Main Basin, they do not coalesce to form a single impermeable barrier for the movement of subsurface water. The Main Basin therefore operates as a single,

unconfined aquifer. As previously mentioned, a thorough discussion of basin hydrogeology is contained in the report "Planned Utilization of Ground Water Basins, San Gabriel Valley, Appendix A: Geo-hydrology" (DWR, 1966).

Within the Main Basin there are a number of identified sub-basins. These include the Upper San Gabriel Canyon Basin, Lower San Gabriel Canyon Basin, Glendora Basin, Foothill Basin, Way Hill Basin and San Dimas Basin. In addition, the Puente Basin is tributary to the Main Basin from the southeast, between the San Jose and Puente Hills, but is not included in the Main Basin adjudication. Figure 5 shows the location of the sub-basins within the Main Basin.

Main Basin – Groundwater Replenishment

The major sources of recharge to the Main Basin are direct penetration of rainfall on the valley floor, percolation of runoff from the mountains, percolation of imported water and return flow from applied water. Rainfall occurs predominantly in the winter months and is more intense at higher elevations and closer to the San Gabriel Mountains.

The magnitude of annual recharge from direct penetration of local rainfall and return flow from applied water is not easily quantifiable. Percolation of runoff from the mountains and valley floor along with percolation of imported water has only been estimated. The DPW maintains records on the amount of local and imported water conserved in water spreading facilities and stream channels.

The San Gabriel River bisects the Main Basin. The San Gabriel River originates at the confluence of its west and east forks in the San Gabriel Mountains. It flows through the San Gabriel Canyon and enters the Main Basin at the mouth of the canyon north of the City of Azusa. The San Gabriel River flows southwesterly across the valley to Whittier Narrows, a distance of about 15 miles. It exits San Gabriel Valley at Whittier

Narrows, and transverses the Coastal Plain in a southerly direction to reach the Pacific Ocean at Alamitos Bay near the City of Long Beach.

The San Gabriel River is joined and fed by tributary creeks and washes. In the Main Basin these include: Big Dalton Wash, which originates in the San Gabriel Mountains; Walnut Creek, which originates at the northeast end of the San Jose Hills; and San Jose Creek, which originates in the San Gabriel Mountains, but which travels around the southerly side of the San Jose Hills through the Puente Narrows before joining the San Gabriel River just above Whittier Narrows.

The channel of the San Gabriel River bifurcates in the upper middle portion of the Main Basin, forming a channel to the west of and parallel to the San Gabriel River, known as the Rio Hondo. Tributaries draining the westerly portion of the Main Basin, including Sawpit Wash, Santa Anita Wash, Eaton Canyon Wash, Rubio Wash and Alhambra Wash, all of which originate in the San Gabriel Mountains or the foothills, feed the Rio Hondo. The Santa Anita Wash, Eaton Canyon Wash, Rubio Wash and Alhambra Wash all cross the Raymond Basin area before entering the Main Basin. The channel of the Rio Hondo passes through Whittier Narrows westerly of the San Gabriel River, and then flows southwesterly to join the Los Angeles River on the Coastal Plain.

To protect residents of the San Gabriel Valley from flooding that can result during periods of intensive rainfall, the DPW and the U.S. Army Corps of Engineers (Corps of Engineers) have constructed an extensive system of dams, debris basins, reservoirs and flood control channels, which are shown on Figure 5. The dams and reservoirs also operate as water conservation facilities. The dams and reservoirs that control the flow of the San Gabriel River and the Rio Hondo include: Cogswell Reservoir on the west fork of the San Gabriel River, San Gabriel Reservoir at the confluence of the west and east forks of the San Gabriel River, Morris Reservoir near the mouth of the San Gabriel Canyon, Santa Fe Reservoir in the northerly portion of the Main Basin and Whittier Narrows Reservoir at the southwestern end of the San Gabriel Valley.

Many of the stream channels tributary to the San Gabriel River have been improved with concrete banks (walls) and concrete-lined bottoms. These stream channel improvements have significantly reduced the area of previous stream channels and reduce Main Basin recharge. A number of off-stream groundwater replenishment facilities have been established along these stream channels to offset such reductions in recharge. The locations of these water spreading facilities are shown on Figure 5. Some of these facilities are accessible to imported water supplies, while some facilities receive only local runoff.

The paths of the surface streams are mirrored in the soils and in the direction of groundwater movement in the Main Basin. The tributary creeks and washes, carrying smaller amounts of water, generally flow toward the center of the San Gabriel Valley, while the direction of flow of the major streams, the San Gabriel River and the Rio Hondo, is from the mountains in the north to Whittier Narrows in the southwest. In similar fashion, the primary direction of groundwater movement in the Main Basin is from the north to the southwest, with contributing movement generally from the east and west toward the center of the Main Basin as shown on Figure 7. The greatest infiltration and transmissivity rates of soils in the Main Basin are from north to south, with the maximum rates found in the center of the valley along the stream channels. Generally, the Main Basin directs groundwater to the southwest through Whittier Narrows.

As previously discussed, the Main San Gabriel Basin has a fresh water storage capacity of about 8.7 million acre-feet when the Key Well groundwater elevation is at 329.1 feet, of which about 125 feet of elevation change, or about 1,000,000 acre-feet, has been used for historical Basin operations. Local runoff is stored in a series of reservoirs operated by the Los Angeles County Department of Public Works and diverted into spreading grounds to replenish the groundwater supply. Figure 6 indicates that groundwater recharge occurs every year and is exhibited as increasing

water levels. High rainfall years can be identified on Figure 6 as increases in the groundwater level of 30 feet or more in one year.

In addition to groundwater replenishment with local storm runoff, the Watermaster maintains records of each producer's water rights and annual production. Although there is no limit on the quantity of water that may be produced, production in excess of a water right is subject to a Replacement Water assessment. Watermaster uses funds collected from producers' overproduction to purchase imported water from municipal water districts. Upper District and Three Valleys District obtain their water from MWD. San Gabriel District has its own contract for SWP water. Watermaster coordinates purchase and delivery of imported water to replenish the ground water basin, thus offsetting the producers' overproduction and making the Basin whole.

Raymond Basin Description

The Raymond Basin is located in Los Angeles County about 10 miles north-easterly of downtown Los Angeles. Raymond Basin is a wedge in the northwesterly portion of the San Gabriel Valley and is bounded on the north by the San Gabriel Mountains, on the west by the San Rafael Hills, and is separated from the Main Basin on the southeast by the Raymond Fault. The Raymond Basin is divided into the Eastern Unit, which is the Santa Anita Subarea, and the Western Unit which is the Pasadena Subarea and the Monk Hill Subarea. The location of the Raymond Basin and the subareas is shown on Figure 8. The surface area of Raymond Basin is about 40.9 square miles.

The principal streams in the Raymond Basin are the Arroyo Seco, Eaton Wash, and Santa Anita Wash. The Arroyo Seco drains to the Los Angeles River, while Eaton Wash and Santa Anita Wash drain to the Rio Hondo, a distributary of the San Gabriel River.

Adjudication of water rights in the Raymond Basin is discussed in Chapter 6.2.2 below, including a description of the amount of groundwater the City has the legal right to pump.

Raymond Basin – Geology

The geology of the Raymond Basin is described in details in the "Report of Referee" prepared in 1943 by the DWR and is summarized below.

The Raymond Basin is roughly triangular in shape. Its northern boundary, about 12 miles in length, is formed by a portion of the southerly front of the San Gabriel Mountains. The western boundary of the Raymond Basin is about 8 miles long and is also composed chiefly of the same Basement Complex rocks which form the mountains and which are continuous at depth, together with a small area of marine Tertiary sediment at the southern end. The Raymond Fault, which is the southern boundary of the triangle, crosses the Valley floor for a distance of about 9 miles, connecting a granitic spur from the mountains at the eastern end of the Raymond Basin with Tertiary sediments outcropping in its southwestern corner.

The Raymond Fault separates Raymond Basin from the Main Basin. The fault zone is not impervious and groundwater can flow across this boundary into the Main Basin. The source of natural groundwater supply to the Raymond Basin is direct rainfall, percolation from surface runoff from the northern and western sides, and presumably some underground percolation of water from the mountain mass to the alluvium.

Raymond Basin – Hydrogeology

DWR describes the hydrogeology of the Raymond Basin in its Bulletin 118. According to the report, the water-bearing materials of the Raymond Basin are

dominated by unconsolidated Quaternary alluvial gravel, sand, and silt deposited by streams flowing out of the San Gabriel Mountains. Younger alluvium typically follows active streambeds and reaches a maximum thickness of about 150 feet. Older alluvium generally thickens southward from the mountain front, reaching a maximum of about 1,140 feet near Pasadena, then thins to about 200 feet near the Raymond Fault. However, confined groundwater conditions have existed locally in the Raymond Basin, particularly along the Raymond Fault near Raymond Hill where layers of finer grained sediments become more abundant.

The Raymond Fault trends east-northeast and acts as a groundwater barrier along the southern boundary of the Raymond Basin. This fault acts as a complete barrier along its western end and becomes a less effective barrier eastward. East of Santa Anita Wash, this fault ceases to be an effective barrier and the flow of groundwater southward into the Main Basin becomes essentially unrestricted. A north-trending divide paralleling the Eaton Wash separates both surface and subsurface water flow in the eastern portion of the Raymond Basin. The water level is higher on the eastern side of this divide, ranging from 300 feet higher in the north to about 50 feet higher in the south. Groundwater contour maps for the Raymond Basin are provided in Figures 6 and 7 of the Raymond Basin Annual Report, July 1, 2014 – June 30, 2015.

Natural recharge to the Raymond Basin is mainly from direct percolation of precipitation and percolation of ephemeral stream flow from the San Gabriel Mountains in the north. The principal streams bringing surface inflow are the Arroyo Seco, Eaton Creek, Little Santa Anita Creek (Sierra Madre Wash), and Santa Anita Creek. Some stream runoff is diverted into spreading grounds and some is impounded behind small dams allowing the water to infiltrate and contribute to groundwater recharge of the Raymond Basin. An unknown amount of underflow enters the Raymond Basin from the San Gabriel Mountains through fracture systems.

The Santa Anita Subarea historically is replenished by local storm runoff that is percolated in the Santa Anita and Sierra Madre Spreading Grounds. During calendar year 2015, the City of Sierra Madre began delivering untreated imported water into the Santa Anita Subarea. Water levels in the Santa Anita Subarea of Raymond Basin had declined by over 100 feet from 2006 to 2012, as shown in a hydrograph provided in Figure 11 of the Raymond Basin "Annual Report, July 1, 2014 - June 30, 2015" (See Appendix H). Consequently, in January 2013, the Raymond Basin Management Board implemented the 500 foot pumping limitation, as described in Section VI(3) of the Raymond Basin Judgment. As a result of the restricted pumping, recent increases in groundwater levels have occurred in the Santa Anita Subarea. Furthermore, the groundwater levels have increased due to the imported water replenishment program which began in calendar year 2015.

Water levels in the Pasadena Subarea of Raymond Basin have generally fluctuated during the past 15 years, as shown in Figures 10a and 10b of the Raymond Basin "Annual Report, July 1, 2014 - June 30, 2015" (See Appendix H). Due to multiple dry year conditions beginning in FY 2009-10, the Raymond Basin Management Board phased in a 30 percent reduction requirement over five years for all Decreed Rights to the Pasadena Subarea.

According to the Raymond Basin Annual Report of 2014-15, in general groundwater in the Raymond Basin continues to be of good quality. However, the City has a blend program to reduce nitrate and VOC concentrations to below 80 percent of SWRCB-DDW standards. As a result of the City's blending activities, the City's wells are expected to provide a reliable water source from the Raymond Basin to City customers for the next 20 years. Although unanticipated changes in blending activities could result in a loss of Raymond Basin well capacity, the City can reliably produce groundwater from the Main Basin and can obtain treated imported water from USG-6 to meet demands.

6.2.2 GROUNDWATER MANAGEMENT

CWC 10631(b).

(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 … or any other specific authorization for groundwater management.

(2) …For basins that 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.

Main Basin – Groundwater Management Plan

The Main Basin has been adjudicated and management of the local water resources within the Main Basin is based on its adjudication. Management of the water resources in the San Gabriel Valley is based upon Watermaster services under two Court Judgments: San Gabriel River Watermaster (River Watermaster)[6] and Main San Gabriel Basin Watermaster (Basin Watermaster)[7]. The City is a defendant in the Main Basin Judgment and as such had participation. The City also participates in the Main Basin management described in the Main Basin Watermaster document entitled "Five-Year Water Quality and Supply Plan." The City is a defendant in the Long Beach Judgment and as such has significant participation.

The following sections provide a description of the two Judgments and the Five Year Water Quality and Supply Plan that make up the groundwater management plan

6 Board of Water Commissioners of the City of Long Beach, et al., v. San Gabriel Valley Water Company, et al., Los Angeles County Case No. 722647, Judgment entered September 24, 1965.
7 Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., Los Angeles County Case No. 924128, Judgment entered January 4, 1973.

for the Main Basin. In addition, this section describes Upper District's and San Gabriel Basin Water Quality Authority's (WQA) policies to promote groundwater basin clean-up.

Main Basin – Long Beach Judgment

On May 12, 1959, the Board of Water Commissioners of the City of Long Beach, the Central District, and the City of Compton, as plaintiffs, filed an action against San Gabriel and 24 other producers of groundwater from the San Gabriel Valley as defendants. This action sought a determination of the rights of the defendants in and to the waters of the San Gabriel River system and to restrain the defendants from an alleged interference with the rights of plaintiffs and persons represented by the Central District in such waters. After six years of study and negotiation a Stipulation for Judgment was filed on February 10, 1965, and the Judgment (Long Beach Judgment) was entered on September 24, 1965. Under the terms of the Long Beach Judgment, the water supply of the San Gabriel River system was divided at Whittier Narrows between San Gabriel Valley upstream and the coastal plain of Los Angeles County downstream. A copy of the Long Beach Judgment can be found in Appendix I.

Under the terms of the Long Beach Judgment, the area downstream from Whittier Narrows (Lower Area), the plaintiffs and those they represent, are to receive a quantity of usable water annually from the San Gabriel River system comprised of usable surface flow, subsurface flow at Whittier Narrows and water exported to the Lower Area. This annual entitlement is guaranteed by the area upstream of Whittier Narrows (Upper Area), the defendants, and provision is made for the supply of Make-up Water by the Upper Area for years in which the guaranteed entitlement is not received by the Lower Area.

Make-up Water is imported water purchased by the Main Basin Watermaster and delivered to agencies in Central District to satisfy obligations under the Long Beach

Judgment. The entitlement of the Lower Area varies annually, dependent upon the 10-year average annual rainfall in the San Gabriel Valley for the 10 years ending with the year for which entitlement is calculated.

The detailed operations described in the Long Beach Judgment are complex and requires continuous compilation of data so that annual determinations can be made to assure compliance with the Long Beach Judgment. In order to do this, a three-member Watermaster was appointed by the Court, one representing the Upper Area parties nominated by and through Upper District, one representing the Lower Area parties nominated by and through the Central District, and one jointly nominated by Upper District and Central District. This three-member board is known as the River Watermaster.

The River Watermaster meets periodically during the year to adopt a budget, to review activities affecting water supply in the San Gabriel River system area, to compile and review data, to make determinations of usable water received by the Lower Area, and to prepare its annual report to the Court. The River Watermaster has rendered annual reports for the water years 1963-64 through 2014-15 and operations of the river system under that Court Judgment and through the administration by the River Watermaster have been satisfactory since its inception.

One major result of the Long Beach Judgment was to leave the Main Basin free to manage its water resources so long as it meets its downstream obligation to the Lower Area under the terms of the Long Beach Judgment. Upper District intervened in the Long Beach case as a defendant to enforce the provisions of a Reimbursement Contract, which was incorporated into the Long Beach Judgment to assure that any Make-up Water obligations under the terms of the Long Beach Judgment would be satisfied.

Main Basin – Main Basin Judgment

The Upper Area then turned to the task of developing a water resources management plan to optimize the conservation of the natural water supplies of the area. Studies were made of various methods of management of the Main Basin as an adjudicated area and a report thereon was prepared for the Upper San Gabriel Valley Water Association, an association of water producers in the Main Basin. After due consideration by the Association, Upper District was requested to file as plaintiff, and did file, an action on January 2, 1968, seeking an adjudication of the water rights of the Main Basin and its Relevant Watershed. After several years of study (including verification of annual water production) and negotiations, a stipulation for entry of Judgment was approved by a majority of the parties, by both the number of parties and the quantity of rights to be adjudicated. Trial was held in late 1972 and the Judgment (Main Basin Judgment) was entered on January 4, 1973. The Main Basin Judgment was most recently amended on June 21, 2012. A copy of the Main Basin Amended Judgment can be found in Appendix J.

Under the terms of the Main Basin Judgment all rights to the diversion of surface water and production of groundwater within the Main Basin and its Relevant Watershed were adjudicated. The Main Basin Judgment provides for the administration of the provisions of the Main Basin Judgment by a nine-member Main Basin Watermaster. Six of those members are nominated by water producers (producer members) and three members (public members) are nominated by the Upper District and the San Gabriel District, which overlie most of the Basin. The nine-member board employs a staff, an attorney and a consulting engineer. The Main Basin Watermaster holds public meetings on a regular monthly basis throughout the year. A copy of the Main Basin Watermaster's Rules and Regulations, updated as of June 2012, is located in Appendix K.

The Main Basin Judgment does not restrict the quantity of water, which parties may extract from the Main Basin. Rather, it provides a means for replacing all annual extractions in excess of a Party's annual right to extract water with Supplemental Water. The Main Basin Watermaster annually establishes an Operating Safe Yield for the Main Basin which is then used to allocate to each Party its portion of the Operating Safe Yield which can be produced free of a Replacement Water Assessment. If a producer extracts water in excess of its right under the annual Operating Safe Yield, it must pay an assessment for Replacement Water, which is sufficient to purchase one acre-foot of Supplemental Water to be spread in the Main Basin for each acre-foot of excess production. All water production is metered and is reported quarterly to the Main Basin Watermaster.

In addition to Replacement Water Assessments, the Main Basin Watermaster levies an Administration Assessment to fund the administration of the Basin management program under the Court Judgment and a Make-up Obligation Assessment in order to fulfill the requirements for any make-up Obligation under the Long Beach Judgment and to supply fifty percent of the administration costs of the River Watermaster service. The Main Basin Watermaster levies an In-lieu Assessment and may levy special Administration Assessments.

Water rights under the Main Basin Judgment are transferable by lease or purchase so long as such transfers meet the requirements of the Judgment. There is also provision for Cyclic Storage Agreements by which Parties and non-parties may store imported supplemental water in the Main Basin under such agreements with the Main Basin Watermaster pursuant to uniform rules and conditions and Court approval.

The Main Basin Judgment provides that the Main Basin Watermaster will, insofar as practicable, spread imported water in the Main Basin to maintain the groundwater

elevation at the Baldwin Park Key Well[8] (Key Well) above 200 feet. Under the terms of the Long Beach Judgment, any excess surface flows that pass through the Main Basin at Whittier Narrows to the Lower Area (which is then conserved in the Lower Area through percolation to groundwater storage) is credited to the Upper Area as Usable Surface Flow.

Main Basin – Operations of the Groundwater Basin

Through the Long Beach Judgment and the Main Basin Judgment, operations of the Main Basin are optimized to conserve local water to meet the needs of the parties of the Main Basin Judgment.

Typically, water producers within Upper District rely upon groundwater from Main Basin for their water supply. The City of Alhambra has agreed to receive treated, imported water as part of the Cooperative Water Exchange Agreement (CWEA) to reduce the groundwater extractions from the western portion of the Main Basin and the associated drawdown concerns.

Imported water for groundwater replenishment is delivered through the flood control channels and diverted and spread at spreading grounds through Main Basin Watermaster's agreement with the DPW. Groundwater replenishment utilizes imported water and is considered Replacement Water under the terms of the Main Basin Judgment. In addition, it can be stored in the Main Basin through Cyclic Storage agreements, authorized by terms of the Main Basin Judgment, but such stored water may be used only to supply Supplemental Water to the Main Basin Watermaster. As of the end of fiscal year 2014-15, the City has a cyclic storage account balance of 4,012 acre-feet.

8 The Baldwin Key Well is a monitoring well located in the City of Baldwin Park used to determine the trends in the groundwater levels throughout the Main Basin.

The Main Basin Watermaster has entered into a Cyclic Storage Agreement with each of the three municipal water districts. One is with Upper District, which permits Upper District to deliver and store imported water in the Main Basin in an amount not to exceed 100,000 acre-feet for future Replacement Water use. The second Cyclic Storage Agreement is with Three Valleys District and permits Three Valleys District to deliver and store up to 40,000 acre-feet for future Replacement Water use. The third is with San Gabriel District and permits San Gabriel District to deliver and store up to 50,000 acre-feet for future Replacement Water use.

Imported Make-up Water has been delivered to lined stream channels and conveyed to the Lower Area. Make-up Water is required to be delivered to the Lower Area by the Upper Area when the Lower Area entitlement under the Long Beach Judgment exceeds the usable water received by the Lower Area. Imported water is used to fulfill the Make-up Water Obligation when the amount of Make-up Water cannot be fulfilled by reimbursing the Lower Area interests for their purchase of recycled water. The amount of recycled water for which reimbursement may be made as a delivery of Make-up Water is limited by the terms of the Long Beach Judgment to the annual deficiency in Lower Area Entitlement water or to 14,735 acre-feet, whichever is the lesser quantity.

Main Basin – Five-Year Water Quality and Supply Plan

The Main Basin Watermaster was created in 1973 to resolve water issues that had arisen among water users in the San Gabriel Valley. Main Basin Watermaster's mission was to generally manage the water supply of the Main Basin. During the late1970s and early 1980s, significant groundwater contamination was discovered in the Main Basin. The contamination was caused in part by past practices of local industries that had carelessly disposed of industrial solvents referred to as VOCs as well as by agricultural operations that infiltrated nitrates into the groundwater. Cleanup efforts were undertaken at the local, state, and federal level.

Local water agencies adopted a joint resolution in 1989 regarding water quality issues that stated Main Basin Watermaster should coordinate local activities aimed at preserving and restoring the quality of groundwater in the Main Basin. The joint resolution also called for a cleanup plan. In 1991, the Court granted Main Basin Watermaster the authority to control pumping for water quality purposes. Accordingly, Main Basin Watermaster added Section 28 to its Rules and Regulations regarding water quality management. The new responsibilities included development of a Five-Year Water Quality and Supply Plan, updating it annually, submitting it to the California Regional Water Quality Control Board, Los Angeles Region, and making it available for public review by November 1 of each year. A copy of the most recent Five-Year Water Quality and Supply Plan (excluding its appendices) is located in Appendix L.

Main Basin Watermaster prepares and annually updates the Five-Year Water Quality and Supply Plan in accordance with the requirements of Section 28 of its Rules and Regulations. The objective is to coordinate groundwater-related activities so that both water supply and water quality in the Main Basin are protected and improved. Many important issues are detailed in the Five-Year Plan, including how Main Basin Watermaster plans to:

1. Monitor groundwater supply and quality;
2. Develop projections of future groundwater supply and quality;
3. Review and cooperate on cleanup projects, and provide technical assistance to other agencies;
4. Assure that pumping does not lead to further degradation of water quality in the Basin;
5. Address perchlorate, N-nitrosodimethylamine (NDMA), and other emerging contaminants in the Basin;

6. Develop a cleanup and water supply program consistent with the U.S. Environmental Protection Agency (USEPA) plans for its San Gabriel Basin Superfund sites; and
7. Coordinate and manage the design, permitting, construction, and performance evaluation of the Baldwin Park Operable Unit (BPOU) cleanup and water supply plan.

The Main Basin Watermaster, in coordination with Upper District, has worked with state and federal regulators, along with local water companies to clean up water supplies. Section 28 of the Main Basin Watermaster's Rules and Regulations require all producers (including the City) to submit an application to 1) construct a new well, 2) modify an existing well, 3) destroy a well, or 4) construct a treatment facility. The Main Basin Watermaster prepares a report on the implications of the proposed activity. As a party to the Main Basin Judgment, the City reviews a copy of these reports and is provided the opportunity to submit comments on the proposed activity before the Main Basin Watermaster Board takes final action.

Main Basin – Water Quality Authority 406 Plan

The WQA was established by the State Legislature on February 11, 1993 to develop, finance and implement groundwater treatment programs in the Main Basin. Section 406 of the WQA Act requires the WQA "to develop and adopt a basinwide groundwater quality management and remediation plan" that is required to be consistent with the EPA's National Contingency Plan ("NCP") and Records of Decision ("ROD") and all requirement of the Los Angeles Regional Water Quality Control Board ("LARWQCB"). According to the WQA Act, the Section 406 Plan, which is incorporated in this Plan by reference, must include:

1) Characterization of Basin contamination;
2) A comprehensive cleanup plan;

3) Strategies for financing the design, construction, operation and maintenance of groundwater cleanup facilities;
4) Provision for a public information program; and
5) Coordination of activities with federal, state, and local entities.

WQA reviews and adopts the Section 406 Plan on an annual basis and as necessary, makes revisions according to changing regulatory, political and/or funding environments.

In support of the Section 406 Plan, WQA also adopts an annual fiscal year budget (July 1 through June 30) which includes all projects (actual or planned) WQA is facilitating through its participation during that time period. The budget identifies the various funding sources, and combinations thereof, to ensure full funding for each project (capital and/or O&M) can be achieved.

Raymond Basin Groundwater Management

Management of the water resources of the Raymond Basin is based on the Raymond Basin Judgment.[9] The City is a party to the Raymond Basin Judgment, which is discussed below.

Raymond Basin Judgment

In 1937, the City of Pasadena filed suit to adjudicate water rights of the Raymond Basin. A copy of the Raymond Basin adjudication is located in Appendix M. The DWR was retained to prepare a Report of Referee which described the geology and hydrogeology of the Raymond Basin and identified the Safe Yield of the Raymond Basin

[9] City of Pasadena vs. City of Alhambra, et al, Los Angeles County Case No. Pasadena C-1323, Judgment entered December 23, 1944, modified April 29, 1955.

as 21,900 acre-feet. In 1950, the City of Pasadena requested the Safe Yield of the Raymond Basin to be re-determined. Subsequently, the Court issued a Modification of Judgment on April 29, 1955 increasing the Safe Yield of the Raymond Basin to 30,622 acre-feet. This is referred to as the "Decreed Right of 1955" and water rights for all parties are shown in Appendix M. On January 17, 1974, the second modification of the Raymond Basin Judgment was signed allowing Parties credit for spreading of canyon diversions in spreading grounds in the vicinity of the Arroyo Seco, Eaton Wash and Santa Anita Creek Canyon. On March 26, 1984, the third modification of the Raymond Basin Judgment was signed establishing the Raymond Basin Management Board as the Watermaster for the Raymond Basin.

The Raymond Basin Judgment adjudicated groundwater rights based on a long-term average yield of the Raymond Basin. The Decreed Right of 1955 provided the City of Arcadia with water rights to 2,118.0 AFY from the Pasadena Subarea and with water rights to 3,526.0 AFY from the Santa Anita Subarea. Due to recent multiple dry year conditions, the Raymond Basin Management Board has phased in a 30 percent reduction requirement over five years for all Decreed Rights to the Pasadena Subarea, beginning fiscal year 2009-10. As a result, the City's current adjusted right to the Pasadena Subarea is 1,482.6 AFY (0.7 x 2,118.0 AFY). The Raymond Basin Management Board also implemented the 500-foot level limitation for all Decreed Rights to the Santa Anita Subarea in 2013. As a result, the City's adjusted right to the Santa Anita Subarea is 2,321.0 AFY. The City's total adjusted water right in the Raymond Basin is 3,803.6 AFY (1,482.6 AFY + 2,321.0 AFY). The Raymond Basin Judgment allows a party to exceed its Decreed Right by no more than 10 percent, which will be deducted from the following year's total allowable extraction. Conversely, a party is not allowed to carryover more than 10 percent of its Decreed Right to a subsequent year.

Sustainable Groundwater Management Act (SGMA)

The 2014 Sustainable Groundwater Management Act (SGMA) directed DWR to

establish initial groundwater basin priorities for the basins identified and defined in DWR's Bulletin 118. DWR finalized the basin prioritization in June 2014 through the California Statewide Groundwater Elevation Monitoring (CASGEM)[10] program. The CASGEM basin prioritization program is being used by DWR to focus resources towards implementing legislation to require all groundwater basins be monitored for seasonal and long-term groundwater elevation trends. DWR plans to evaluate the status of groundwater level monitoring in "High" or "Medium" priority groundwater basins. If DWR determines that groundwater levels in all or part of a High or Medium Priority basin are not being monitored, DWR will work cooperatively with local entities to establish a monitoring program. Compliance with DWR requirements allows the basin monitoring entities to be eligible to receive State water grants or loans. The Main Basin (Basin 4-13) and the Raymond Basin (Basin 4-23) have both been identified through CASGEM as "high" priority basins and will be required to comply with specific SGMA regulations when finalized by DWR.

6.2.3 OVERDRAFT CONDITIONS

CWC 10631(b).

(2) 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.

The City produces groundwater from the Main Basin, which is an adjudicated basin as discussed in Section 6.2.2. In addition, the City produces groundwater from

[10] http://www.water.ca.gov/groundwater/casgem/basin_prioritization.cfm

the Raymond Basin, which is an adjudicated basin as discussed in Section 6.2.2. The City is not required by DWR to complete Section 6.2.3.

6.2.4 HISTORICAL GROUNDWATER PUMPING

CWC 10631(b).

(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:

(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.

Main Basin – Historical Pumping

As discussed in Section 6.2, the City pumps groundwater from its Main Basin wells, including Camino Real 3, Live Oak 1, Longden 1, Longden 2, Longley 3, Peck 1 and St. Joseph 2. The collective capacity of the City's Main Basin wells is approximately 15,200 gpm. The City's historical groundwater production in the Main Basin over the past five years is shown on Table 6-1. The groundwater supply from the Main Basin is pumped to the City's storage reservoirs and then delivered to the City's customers. The City's groundwater production from the Main Basin from FY 2010-11 to FY 2014-15 has averaged approximately 12,200 AFY.

As noted in Section 6.2.2, the Main Basin is managed by the Main Basin Watermaster. Amendments to the Main Basin Judgment were made in June 2012. Figure 6 shows the historical fluctuation of the Key Well elevation and illustrates that since the Main Basin was adjudicated in 1973, it generally operated between an

elevation 250 feet and 200 feet above MSL. Furthermore, at an elevation of 174 feet above MSL at the Key Well, which represents the historical low, the Main Basin has about 7,400,000 acre-feet of available storage. During the period of management under the Judgment, significant drought events have occurred from 1969 to 1977, 1983 to 1991, 1998 to 2004, 2006 to 2009, and 2011 to 2015 (See Appendix D). In each drought cycle the Main Basin has been managed to maintain water levels. A supply and demand assessment of the City's Main Basin supplies is provided in Section 7.3.

Raymond Basin – Historical Pumping

The City historically pumped groundwater from its Raymond Basin wells, including Orange Grove 1A, Orange Grove 2A, Orange Grove 5, Orange Grove 6, Chapman 7, Colorado 1, and Anoakia 1, as discussed in Section 6.2. The collective capacity of the City's Raymond Basin wells is approximately 4,300 gpm. The City's historical groundwater production in the Raymond Basin over the past five years is shown on Table 6-1. The groundwater supply from the Raymond Basin is pumped to the City's storage reservoirs and then delivered to the City's customers. The City's groundwater production from the Raymond Basin from FY 2010-11 to FY 2014-15 has averaged approximately 4,100 AFY.

As noted in Section 6.2.2, the Raymond Basin has been adjudicated and is managed. During the period of management under the Raymond Basin Judgment, significant drought events have occurred from 1969 to 1977, 1983 to 1991, 1998 to 2004, 2006 to 2009, and 2011 to 2015 (See Appendix D). In general, in each drought cycle, the City was able to obtain sufficient supplies from the Raymond Basin to meet its demands. A supply and demand assessment of the City's Raymond Basin supplies is provided in Section 7.3.

Table 6-1 Retail: Groundwater Volume Pumped						
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type *Drop Down List* *May use each category multiple times*	Location or Basin Name	2011	2012	2013	2014	2015
Add additional rows as needed						
Alluvial Basin	Main San Gabriel Basin	9,841	11,721	13,278	14,104	12,010
Alluvial Basin	Raymond Basin	5,214	4,692	3,913	3,348	3,316
	TOTAL	15,055	16,413	17,191	17,452	15,326
NOTES: Years provided are on a fiscal year basis (e.g. "2011" is equivalent to fiscal year 2010-11)						

Table 6-1 Retail: Groundwater Volume Pumped

6.3 SURFACE WATER

The City does not use surface water supplies to meet its water demands.

6.4 STORMWATER

The City does not use stormwater to meet its water demands.

6.5 WASTEWATER AND RECYCLED WATER

The City currently does not have access to recycled water supplies due to the lack of infrastructure to convey recycled water to the City. Subject to the availability of recycled water, the City would construct transmission and distribution facilities to deliver recycled water to customers within its service area.

6.5.1 RECYCLED WATER COORDINATION

CWC 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…

The City does not have access to recycled water due to the lack of infrastructure to convey recycled water supplies to the City. However, the City is a member agency, and is located within the service area, of Upper District, which provides recycled water service.

Upper District has developed a recycled water program to provide direct delivery of recycled water to serve non-potable demands in the southerly-most portion of its service area, thereby offsetting reliance on imported water supplies. Upper District's recycled water program is in various stages ranging from completed projects to planned and conceptual options. Recycled water supply is obtained from the two water reclamation plants described in the following section.

6.5.2 WASTEWATER COLLECTION, TREATMENT, AND DISPOSAL

CWC 10633(a).

(Describe) 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.

CWC 10633(b).

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

Wastewater generated by the City is treated by the Sanitation Districts of Los Angeles County (LACSD). Wastewater is collected within the City's local sewer collection system. The City's local sewers tie into one of LACSD's regional trunk sewers crossing through the City. The regional trunk sewer lines deliver wastewater to one or more water reclamation plants owned by LACSD for treatment. The water reclamation plants are not located within the City's service area. The water reclamation plants serving the City include the Whittier Narrows Water Reclamation Plant (WNWRP) and the Joint Water Pollution Control Plant (JWPCP), however, the percentage breakdown between these two plants in treating the City's wastewater in unknown. LACSD estimates approximately 80 gallons of wastewater is generated per person per day within LACSD's service area. Based on a 2015 population of 55,342 within the City, the estimated amount of wastewater collected within the City's service area is approximately 4.4 million gallons (MG) per day (or approximately 4,900 AFY), as shown in Table 6-2. As indicated previously and in Table 6-3, wastewater is not treated or disposed within the City's service area. The total amounts of wastewater collected by the WNWRP and the JWPCP during calendar year 2015 are approximately 2,525 MG and 94,330 MG, respectively.

The WNWRP began operations in 1962 and has a treatment capacity of about 15 MGD. The WNWRP provides coagulated, filtered and disinfected tertiary effluent. All wastewater treated at the WNWRP meets recycled water standards. Approximately 99 percent of treated water at the WNWRP is reused in a recycled water project. The WNWRP serves a population of approximately 150,000 people. The method of disposal when treated recycled water is not used (non-recycled) is discharge to the San Gabriel River/Rio Hondo and eventually flows to the ocean.

LACSD's JWPCP, which began operation in 1928, currently has a treatment capacity of about 300 MGD. The treatment level is primary and secondary treatment with disinfection. The JWPCP plant serves a population of approximately 3.5 million people. Solids collected in primary and secondary treatment are processed in anaerobic digestion tanks where bacteria break down organic material and produce methane gas. Treated wastewater is ultimately disinfected prior to being discharged to the Pacific Ocean. Though highly treated, effluent from the JWPCP does not meet recycled water standards and is therefore not re-used for such purposes. However, all water discharged to the ocean is monitored to ensure compliance with applicable local, state, and federal standards for discharge water.

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2015 service area covered by wastewater collection system *(optional)*					
	Percentage of 2015 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			Recipient of Collected Wastewater			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Add additional rows as needed						
City of Arcadia	Estimated	4,900	LA County Sanitation Districts	WNWRP and JWPCP	No	No
Total Wastewater Collected from Service Area in 2015:		4,900				
NOTES: Units are in acre-feet per year (AFY)						

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015										
☑	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.									
							2015 volumes			
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
						Total	0	0	0	0
NOTES:										

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area 2015

6.5.3 RECYCLED WATER SYSTEM

Section 10633

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

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The City currently does not have access to recycled water supplies due to the lack of infrastructure to convey recycled water to the City. Subject to the availability of recycled water, the City would consider transmission and distribution facilities to deliver recycled water to customers within its service area. However, the City prepared the "Draft Recycled Water Feasibility Study" in November 2006 (See Appendix N), which identified potential recycled water customers within the City.

6.5.4 RECYCLED WATER BENEFICIAL USES

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.

(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

Section 10633

(e) (Provide) a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

The City's "Draft Recycled Water Feasibility Study", November 2006, identified potential recycled water customers within the City based on recycled water use for large-volume irrigation purposes (e.g. municipal parks, fields, golf courses, etc.). Recycled water use factors were applied to overall water demands for these customers to determine the potential recycled water demands. A proposed recycled distribution water pipeline route was based on maximizing recycled water demands and minimizing pipeline and infrastructure costs (See Appendix N).

Although the City has identified potential uses for recycled water, the City does not anticipate it will have access to recycled water supplies over the next 20 years due to the lack of infrastructure to convey recycled water to the City. Table 6-5 indicates the City did not use recycled water in 2010 and did not project recycled water would be used in its 2010 Plan.

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

☑ Recycled water is not used and is not planned for use within the service area of the supplier.
The supplier will not complete the table below.

Name of Agency Producing (Treating) the Recycled Water:	LA County Sanitation Districts
Name of Agency Operating the Recycled Water Distribution System:	Upper San Gabriel Valley Municipal Water District
Supplemental Water Added in 2015	0
Source of 2015 Supplemental Water	No supplemental water provided in 2015

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation	Calco Farms	Tertiary	0	0	0	0	0	
Landscape irrigation (excludes golf courses)	City (Arcadia) and County Parks, Roadway Medians, School Campuses, LA County Arboretum	Tertiary	0	0	0	0	0	
Golf course irrigation	Santa Anita Golf Course	Tertiary	0	0	0	0	0	
Commercial use	Santa Anita Racetrack, Car Wash	Tertiary	0	0	0	0	0	
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other *(Provide General Description)*	Caltrans	Tertiary	0	0	0	0	0	
		Total:	0	0	0	0	0	0

**IPR - Indirect Potable Reuse*

NOTES: The City is not projected to have access to recycled water supplies due to the lack of infrastructure to convey recycled water to the City. However, the City has prepared the "Draft Recycled Water Feasibility Study" in November 2006, which identified potential recycled water customers within the City.

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual			
☑	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.		
Use Type		2010 Projection for 2015	2015 Actual Use
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	*Type of Use*		
	Total	0	0
NOTES:			

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual

6.5.5 ACTIONS TO ENCOURAGE AND OPTIMIZE FUTURE RECYCLED WATER USE

Section 10633

(f) (Describe the) 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.

(g) (Provide 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.

Due to the lack of infrastructure to convey recycled water to the City, the City is not planning or expanding recycled water use in the future within a specified timeframe,

as indicated in Table 6-6. Methods by the City to encourage and optimize future recycled water use are provided below.

The City's "Draft Recycled Water Feasibility Study" identified potential funding sources. Funding for construction, operation, maintenance, and replacement of facilities for the proposed City's recycled water distribution system would be obtained from federal, state, and local sources, including City revenues.

The City's "Draft Recycled Water Feasibility Study" also identified potential recycled water customers within the City (e.g. municipal parks, fields, golf courses, etc.) and a proposed recycled distribution water pipeline route was based on maximizing recycled water demands and minimizing pipeline and infrastructure costs. The Study also identified recycled water facilities, including recycled water distribution pipelines, booster pumps, reservoirs, and backflow prevention assemblies, and identified potential funding sources for these facilities. Although the proposed recycled water project is not projected to change any land use or planning designations of the proposed recycled customers, implementation of the proposed facilities may cause temporary and/or permanent changes to the physical environment during construction. However, the Study indicates mitigation measures are available for any potential air quality, water quality, hydrology, soils, traffic, land use, and aesthetics impacts from implementation of the proposed facilities.

The City's "Draft Recycled Water Feasibility Study" identified LACSD's WNWRP as the preferred source of recycled water (although all WNWRP recycled water is currently used). The WNWRP supplies recycled water to Upper District's Phase IIA recycled water system (Whittier Narrows and Rosemead Extension). Upper District is constructing the South El Monte Recycled Water Expansion Project, which will also be supplied by the WNWRP.

Upper District provides wholesale deliveries of recycled water to member agencies. Upper District supplies treated recycled water through Upper District's Phase I (Rose Hills), Phase IIA (Whittier Narrows and Rosemead), and Phase IIB (City of Industry) recycled water projects. Upper District will continue to study future recycled water expansion projects, including recycled water deliveries to the City of Arcadia.

Upper District is also developing the Indirect Reuse Replenishment Project (IRRP), which would replenish the Main Basin groundwater with up to 10,000 AFY of treated recycled water. The IRRP would pump treated recycled water from SJCWRP to the Santa Fe Spreading Grounds through a proposed 9-mile pipeline adjacent to the San Gabriel River. It is estimated the IRRP will be completed by late 2018.

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☑	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
6-35	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
		Total	0
NOTES: The City is not projected to have access to recycled water supplies due to the lack of infrastructure to convey recycled water to the City. However, the City has prepared the "Draft Recycled Water Feasibility Study" in November 2006, which identified potential recycled water customers within the City.			

Table 6-6 Retail: Methods to Expand Future Recycled Water Use

6.6 DESALINATED WATER OPPORTUNITIES

Section 10631(h)

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

Main Basin

Groundwater produced from the Main Basin is low in total dissolved solids (TDS) and does not require desalination. Based on recent water quality data, the average TDS value for the City's Main Basin Wells is about 290 mg/L and ranges from 200 mg/l to 440 mg/l. The SWRCB-DDW recommended level is 500 mg/l and water can be provided for long-term domestic use with TDS concentrations of up to 1,000 mg/l. Due to the high quality (low TDS concentration) of the groundwater, the City does not need to investigate the use of desalination to develop or reestablish a new long-term groundwater supply. However, there may be opportunities for use of desalinated ocean water as a potential water supply source in the future, if needed, through coordination with other agencies that have ocean desalination programs.

Raymond Basin

The City pumps groundwater from the Raymond Basin which is low in TDS and does not require desalination. Based on recent water quality data, the average TDS value for the City's groundwater sources is about 280 mg/l and ranges from 160 mg/l to 400 mg/l. Due to the low TDS concentration of the groundwater from the Raymond Basin, the City does not need to investigate the use of desalination as a long-term supply. However, there may be opportunities for use of desalinated ocean water as a

potential water supply source in the future, through coordination with other agencies that have ocean desalination programs.

6.7 TRANSFER OPPORTUNITIES

Section 10631(d)

Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.

6.7.1 EXCHANGES

The City does not have any current or planned water exchange opportunities.

6.7.2 TRANSFERS

As a Party to the Main Basin Judgment, the City can pump from the Main Basin. The Main Basin Judgment does not restrict the quantity of groundwater that can be produced, but provides for a Replacement Water assessment for production in excess of water rights. In addition, the City has entered into a Cyclic Storage agreement, described in Chapter 6.2.2, with the Main Basin Watermaster to store imported water in the Main Basin for a period of up to five years to be used to offset a future Replacement Water requirement. As of the end of fiscal year 2014-15, the City has a cyclic storage account with an ending balance of approximately 4,012 acre-feet within cyclic storage.

6.7.3 EMERGENCY INTERTIES

The City 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. The City has the ability to receive water from interconnections with the following water agencies:

- Golden State Water Company (two way)
- Sunny Slope Water Company (two way)
- MWD – USG-6 Connection (one way- in)

6.8 FUTURE WATER PROJECTS

Section 10631

(g) …The urban water supplier shall include a detailed description of expected future projects and programs… that the urban water supplier may implement to increase the amount of the 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.

As discussed in Section 6.2, the City's current groundwater pumping capacity in the Main Basin is approximately 15,200 gpm. The City plans to construct the following additional wells:

- Zone 2 Well (Rancho 6 site) located in Raymond Basin (Pasadena Subarea), planned for fiscal year 2017-18, with a pumping capacity of 1,000 gpm
- Zone 3 well (Library well) located in Main Basin, planned for fiscal year 2019-20, with a pumping capacity of 2,000 gpm

The 2008 City of Arcadia Water Master Plan Update report also identified potential reservoir, pipeline, and booster station projects, for at least 10 years into the future.

In addition to Decreed Rights in the Raymond Basin and groundwater extraction from the Main Basin, the City has the ability to obtain supplemental water supplies from the following sources:

- Up to 891.0 AF of water stored in the Pasadena Subarea of the Raymond Basin (as of June 30, 2015)
- Cyclic storage provisions allow producers, including the City, to store supplemental water within the Main Basin for the purpose of supplying replacement water.
- The City can receive direct deliveries of treated imported water through its MWD connection, USG-6, which has a capacity of 20 cubic feet per second (about 14,500 acre-feet per year if used continuously). The City does not typically use service connection USG-6 because the City's current collective groundwater supplies are sufficient to meet water demands.

The City's expected or future water supply projects are summarized in Table 6-7.

Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
6-38	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Agency
	Drop Down List (y/n)	If Yes, Agency Name			Drop Down List	This may be a range
Add additional rows as needed						
Zone 2 Well	No		Proposed Well	FY 2017-18	Average Year	1,000 gpm
Zone 2 Well	No		Proposed Well	FY 2017-18	Single-Dry Year	1,000 gpm
Zone 2 Well	No		Proposed Well	FY 2017-18	Multi-Dry Year	1,000 gpm
Zone 3 (Library) Well	No		Proposed Well	FY 2019-20	Average Year	2,000 gpm
Zone 3 (Library) Well	No		Proposed Well	FY 2019-20	Single-Dry Year	2,000 gpm
Zone 3 (Library) Well	No		Proposed Well	FY 2019-20	Multi-Dry Year	2,000 gpm
NOTES:						

Table 6-7 Retail: Expected Future Water Supply Projects or Programs

6.9 SUMMARY OF EXISTING AND PLANNED SOURCES OF WATER

Section 10631

(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 10631(a).

(4) (Provide 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.

As discussed in Chapter 6, the City's water supply sources include local groundwater and imported surface water supplies. The actual quantities of the water supply sources available to the City during calendar year 2015 are summarized in Table 6-8. The reliable quantities of projected water supply

sources available to the City in five-year increments through 2040 during average years are summarized in Table 6-9.

Table 6-8 Retail: Water Supplies — Actual				
Water Supply		2015		
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*	Additional Detail on Water Supply	Actual Volume	Water Quality *Drop Down List*	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Groundwater	Main San Gabriel Basin	12,010	Drinking Water	
Groundwater	Raymond Basin	3,316	Drinking Water	
	Total	15,326		0
NOTES:				

Table 6-8 Retail: Water Supplies – Actual

Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply *Report To the Extent Practicable*									
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		2020		2025		2030		2035		2040 *(opt)*	
		Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*
Add additional rows as needed											
Groundwater	Main San Gabriel Basin	11,316		11,704		12,101		12,509		12,927	
Groundwater	Raymond Basin	3,803		3,803		3,803		3,803		3,803	
Purchased or Imported Water		0		0		0		0		0	
	Total	15,119	0	15,507	0	15,904	0	16,312	0	16,730	0
NOTES: The City may use treated imported water as an emergency supply source or in the event should the City pump in excess of its allotted water rights in the Main Basin and Raymond Basin.											

Table 6-9 Retail: Water Supplies - Projected

6.10 CLIMATE CHANGE IMPACTS TO SUPPLY

The California Water Code does not require the City to address climate change. However, a discussion on single-dry year and multiple dry years is provided in Section 7.2 and a discussion on potential impacts to basin management practices is provided in Section 6.2. A discussion regarding the regional impacts of climate change on demand and supply are provided in MWD's 2015 Plan, which is incorporated by reference.

CHAPTER 7

WATER SUPPLY RELIABILITY ASSESSMENT

7.1 CONSTRAINTS ON WATER SOURCES

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.

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.

As a result of the Main Basin and Raymond Basin management, and demonstrated ability for the groundwater basin water level to recover, the City does not experience water supply constraints or deficiencies to its collective portfolio of water supplies. Management of the City's primary groundwater supplies is based on adjudications in the Main Basin and Raymond Basin, and production limitations previously implemented in the Raymond Basin, which are described in Section 6.2.2.

Water from Main Basin which is supplied to the City's water system meets all drinking water regulations. Groundwater from the City's Longden 1 and Longden 2 wells historically contained concentrations of VOCs at levels exceeding SWRCB-DDW standards. The City installed VOC treatment equipment in the 1980s to remove VOCs from the groundwater produced from the Longden 1 and Longden 2 wells. Groundwater

from the Longden 2 and St Joseph 2 wells contains concentrations of Nitrate at levels exceeding SWRCB-DDW standards. Consequently, the City has instituted SWRCB-DDW approved blend plans to reduce Nitrate and VOC concentrations to below 80 percent of SWRCB-DDW standards. As a result of the City's SWRCB-DDW approved treatment and blending activities, the City's wells will provide a reliable water source from the Main Basin to City customers for the next 25 years.

Water from the Raymond Basin which is supplied to the City's water system meets all drinking water regulations. Groundwater from the City's Orange Grove 1A and Orange Grove 5 wells contains concentrations of VOCs at levels exceeding SWRCB-DDW standards. Groundwater from the Orange Grove 5 well contains concentrations of Nitrate at levels exceeding SWRCB-DDW standards. Consequently, the City has a blend program to reduce Nitrate and VOC concentrations to below 80 percent of SWRCB-DDW standards. As a result of the City's SWRCB-DDW approved blending activities, the City's wells are expected to provide a reliable water source from the Raymond Basin to City customers for the next 25 years. Although unanticipated changes in blending activities may result in a loss of Raymond Basin well capacity, the City can reliably produce groundwater from the Main Basin and can obtain treated imported water from USG-6 to meet demands.

7.2 RELIABILITY BY TYPE OF YEAR

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.

As a result of the Main Basin and the Raymond Basin management, the City has not experienced water supply deficiencies. The management of both basins is based on their adjudications, which are described in Section 6.2.2. Based on current management practices in the Main Basin and Raymond Basin, 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 the City's water demand.

Information regarding the reliability of the groundwater supplies from Main Basin and Raymond Basin is based on historical rainfall data in the vicinity of the City's service area (See Appendix D), which results in stormwater which is used to replenish the groundwater basins, and past data on the availability of water supply to meet demands during seasonal or climatic shortage. According to the historical rainfall data, the annual average rainfall in the vicinity of the City's service area is about 20 inches. Therefore, water year 2007-08 (or FY 2007-08) represents an average water year for the City in which the total amount of rainfall was about 23.7 inches. A single dry year for the City was represented in water year 2011-12 (or FY 2011-12) in which the total amount of rainfall was about 13.0 inches. A multiple dry year sequence for the City is represented from water year 2011-12 to water year 2013-14 (or from FY 2011-12 to 2013-14), where the total amount of rainfall was about 13.0 inches, 6.2 inches, and 14.1 inches, respectively. The tabulation in the beginning of Chapter 6 shows that during the average year, single dry year and multiple dry years, groundwater production for the City has remained stable. A dry year or multiple dry years did not compromise the City's ability to provide a reliable supply of water to its customers.

Based on current management practices, including reduced pumping in the Raymond Basin, the City will be able to rely on the Main Basin, the Raymond Basin and imported water for adequate supply over the next 20 years under single year and multiple year droughts.

Table 7-1 Retail: Basis of Water Year Data			
Year Type	Base Year *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	Available Supplies if Year Type Repeats	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	% of Average Supply
Average Year	2008	17,524	100%
Single-Dry Year	2012	16,413	94%
Multiple-Dry Years 1st Year	2012	16,413	94%
Multiple-Dry Years 2nd Year	2013	17,190	98%
Multiple-Dry Years 3rd Year	2014	17,452	100%
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			
Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
NOTES:			

Table 7-1 Retail: Bases of Water Year Data

7.2.1 TYPES OF YEARS

The City's base years for average, single dry, and multiple dry years are provided in Section 7.2 and are summarized in Table 7-1. As indicated in Section 6.2.4, the City's groundwater supplies were sufficient in meeting the City's historical water demands during normal, single, and multiple dry years. A normal or average year was based on a year during the past 20 years with a total precipitation similar to the historical average precipitation in the vicinity of the City's service area. Because a single dry year or a multiple dry year period will not compromise the City's ability to provide a reliable supply of water to its customers, a single dry year in this Plan was selected based on the first

year of a multiple dry year period during the past 20 years. The multiple dry year period was based on a period of three consecutive dry years during the past 20 years.

7.2.2 AGENCIES WITH MULTIPLE WATER SOURCES

The City primarily obtains its water supply from groundwater wells located in the Main Basin and Raymond Basin. As discussed in Section 7.3 and shown in Table 7-2, Table 7-3, and Table 7-4, a single dry year or a multiple dry year period will not compromise the City's ability to provide a reliable supply of water to its customers.

7.3 SUPPLY AND DEMAND ASSESSMENT

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 water 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 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, the City's projected normal year water demands over the next 20 years in five-year increments were based on the City's 2020 Urban Water Use Target of 238 GPCD. The ratio of water supplies available to the City during a historical normal water year in FY 2007-08 (17,429 AF) and during a historical single dry year in FY 2011-12 (16,413 AF) was used to estimate the City's projected water demand during single dry years. The ratio of water supplies available to the City during a historical normal water year in FY 2007-08 (or 17,429 AF) and a historical multiple dry year period from FY 2011-12, FY 2012-13, and FY 2013-14 (or 16,413 AF, 17,190 AF, and 17,452 AF, respectively) was used to estimate the City's projected water demands

during a multiple dry year period. The City's projected dry year water supplies over the next 20 years were based on the minimum supplies needed by the City to meet projected single-dry year demands. Table 7-2, Table 7-3, and Table 7-4 summarize the City's projected water demands and supplies over the next 20 years in five-year increments, including during normal, single, and multiple dry years. These tables indicate the City can meet water demands during normal, single dry, and multiple dry years over the next 20 years.

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	15,119	15,507	15,904	16,312	16,730
Demand totals *(autofill from Table 4-3)*	15,119	15,507	15,904	16,312	16,730
Difference	0	0	0	0	0
NOTES:					

Table 7-2 Retail: Normal Year Supply and Demand Comparison

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	14,160	14,524	14,896	15,278	15,669
Demand totals	14,160	14,524	14,896	15,278	15,669
Difference	0	0	0	0	0
NOTES:					

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	14,160	14,524	14,896	15,278	15,669
	Demand totals	14,160	14,524	14,896	15,278	15,669
	Difference	0	0	0	0	0
Second year	Supply totals	14,831	15,211	15,601	16,001	16,411
	Demand totals	14,831	15,211	15,601	16,001	16,411
	Difference	0	0	0	0	0
Third year	Supply totals	15,057	15,443	15,839	16,245	16,661
	Demand totals	15,057	15,443	15,839	16,245	16,661
	Difference	0	0	0	0	0
Fourth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
NOTES: Normal year water supplies were projected and multiplied by multiple dry year factors as follows: First Year: 94% of average year demand, Second year: 98% of average year demand and Third Year: 100% of average year demand.						

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison

7.4 REGIONAL SUPPLY RELIABILITY

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.

Chapter 6 provides a description of the management of groundwater resources in the Main Basin and Raymond Basin, as well as information on basin management. Chapter 6 also demonstrates the management structure of the Main Basin and Raymond Basin provides a reliable source of groundwater supply for the City during average, single-dry and multiple-dry water years. Historical data indicates the Main Basin and Raymond Basin have been well managed for the full period of the adjudications, resulting in a stable and reliable water supply. There are no contemplated basin management changes, other than increasing direct use of recycled water (see Section 6.5) and the planned use of recycled water for groundwater replenishment in the Main Basin to reduce the need to import water from other regions. Therefore, the groundwater supplies in the Main Basin and Raymond Basin are deemed reliable.

CHAPTER 8

WATER SHORTAGE CONTINGENCY PLAN

Section 10632

(a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier.

8.1 STAGES OF ACTION

Section 10632(a)

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

The City provides at least the minimum health and safety water needs of the community at all times. A water shortage response is designed to provide a minimum of 50 percent of the normal supply during a severe or extended water shortage. The rationing program triggering levels summarized below were established to ensure that this goal is met.

Water Shortage Stages and Triggering Mechanisms								
Percent Reduction of Supply	Phase I Vol. 10% (36% Goal)	Phase II 10%	Phase III 15%	Phase IV 20%	Phase V 25%	Phase VI 30%	Phase VII 40%	Phase VII 50%
Current Supply	Total supply is below normal for two or more years	Total supply is 90% of normal for two or more years	Total supply is 85% of normal for two or more years	Total supply is 80% of normal for two or more years	Total supply is 75% of normal for two more years	Total supply is 70% of normal for two or more years	Total supply is 60% of normal for two or more years	Total supply is 50% of normal for two or more years
Future Supply	Projected supply insufficient to provide normal deliveries for two or more years	Projected supply insufficient to provide 90% of normal deliveries for two or more years	Projected supply insufficient to provide 85% of normal deliveries for two or more years	Projected supply insufficient to provide 80% of normal deliveries for two or more years	Projected supply insufficient to provide 75% of normal deliveries for two or more years	Projected supply insufficient to provide 70% of normal deliveries for two or more years	Projected supply insufficient to provide 60% of normal deliveries for two or more years	Projected supply insufficient to provide 50% of normal deliveries for two or more years
Ground-water	No excess groundwater pumping undertaken	First year of excess groundwater pumping taken, must be replaced	2nd year of excess groundwater pumping taken, must be replaced	3rd year of excess groundwater pumping taken, must be replaced	4th year of excess groundwater pumping taken, must be replaced	5th year of excess groundwater pumping taken, must be replaced	6th year of excess groundwater pumping taken, must be replaced	7th year of excess groundwater pumping taken, must be replaced
Water Quality	Contamination of 10% of water supply (exceeds primary drinking water standards)	Contamination of 15% of water supply (exceeds primary drinking water standards)	Contamination of 20% of water supply (exceeds primary drinking water standards)	Contamination of 25% of water supply (exceeds primary drinking water standards)	Contamination of 35% of water supply (exceeds primary drinking water standards)	Contamination of 40% of water supply (exceeds primary drinking water standards)	Contamination of 50% of water supply (exceeds primary drinking water standards)	Contamination of 60% or greater of water supply (exceeds primary drinking water standards)
Disaster Loss								Disaster Loss

Note: The City's overall water use reduction goal is 36 percent, which is intended to address SWRCB's 2015 mandated statewide water use reduction goal of 25 percent.

The City's potable water sources are groundwater and imported water (when the City's allotment is over pumped in the Main Basin). Rationing phases may be triggered by a supply shortage or by contamination in one source or a combination of sources.

The City's water shortage stages are provided in Table 8-1 below.

Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction[1] *Numerical value as a percent*	Water Supply Condition *(Narrative description)*
Add additional rows as needed		
1	10%*	Total supply is below normal for two or more years
2	10%	Total supply is 90% of normal for two or more years
3	15%	Total supply is 85% of normal for two or more years
4	20%	Total supply is 80% of normal for two or more years
5	25%	Total supply is 75% of normal for two or more years
6	30%	Total supply is 70% of normal for two or more years
7	40%	Total supply is 60% of normal for two or more years
8	50%	Total supply is 50% of normal for two or more years
[1] One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.		
NOTES: * For Stage (Phase) 1, the City's overall water use reduction goal is 36 percent, which is intended to address SWRCB's 2015 mandated statewide water use reduction goal of 25 percent.		

Table 8-1 Retail: Stages of WSCP

8.2 PROHIBITIONS ON END USES

Section 10632(a)

(4) 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

(5) 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.

In August 2014, the City approved the implementation of Phase I of the City's Water Shortage Contingency Plan (Phase I Prohibitions), which meets State of California emergency regulations requiring water use restrictions (see Resolution 7044, Appendix O). Subsequent to the adoption of the Phase I Prohibitions, the City Council adopted additional regulations listed in Ordinance Number 2327 (Appendix P) and Resolution 7088 in April 2015 (Appendix Q). The Phase I Prohibitions are provided in Table 8-2.

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users *Drop down list* *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? *Drop Down List*
Add additional rows as needed			
1	Landscape - Restrict or prohibit runoff from landscape irrigation		Yes
1	Landscape - Limit landscape irrigation to specific days	Tuesdays and Saturdays	Yes
1	Landscape - Limit landscape irrigation to specific times	No irrigation between 9 am and 6 pm PST	Yes
1	Landscape - Other landscape restriction or prohibition	Irrigation limited to 10 minutes per station	Yes
1	Landscape - Other landscape restriction or prohibition	No irrigation during and within 48 hrs of measurable rainfall	Yes
1	CII - Lodging establishment must offer opt out of linen service		Yes
1	CII - Restaurants may only serve water upon request		Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Water can only be used if water is part of a recirculation system	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner		Yes
1	Other - Prohibit use of potable water for washing hard surfaces		Yes
NOTES:			

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses

8.2.1 LANDSCAPE IRRIGATION

- Lawn, landscape, or other turf areas shall not be watered or irrigated during and within 48 hours after measurable rainfall;
- Lawn, landscape, or other turf areas shall not be watered or irrigated between the hours of 9 a.m. and 6 p.m. Pacific Standard Time;
- Lawn, landscape or other turf area irrigation is restricted to two days per week, prescribed by the City Council (i.e. Tuesdays and Saturdays), 10 minutes per station; and
- Lawn, landscape, or other turf areas shall not be watered in a manner which causes excessive water runoff.

8.2.2 COMMERCIAL, INDUSTRIAL, AND INSTITUTIONAL (CII)

- Restaurants, hotels, cafes, cafeterias, bars, or other public places where food or beverage is served shall serve drinking water only upon request; and
- Hotels and motels shall not launder towels and linens of an occupied guestroom on a daily basis, unless expressly requested by the guest.

8.2.3 WATER FEATURES AND SWIMMING POOLS

Water shall not be used to clean, fill or maintain levels in decorative fountains unless such water is part of a recirculation system.

8.2.4 DEFINING WATER FEATURES

Section 10632

(b) Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

Health and Safety Code Section 115921

As used in this article the following terms have the following meanings: ***(a)*** *"Swimming pool" or "pool" means any structure intended for swimming or recreational bathing that contains water over 18 inches deep. "Swimming pool" includes in-ground and aboveground structures and includes, but is not limited to, hot tubs, spas, portable spas, and non-portable wading pools.*

As indicated in Section 8.2.3, water shall not be used to clean, fill or maintain levels in decorative fountains unless such water is part of a recirculation system.

8.2.5 OTHER

- Hose washing of sidewalks, walkways, driveways, or parking areas is prohibited;
- Hose washing of a motor vehicle is prohibited, unless the hose is fitted with a shut-off nozzle or similar device that causes the hose to cease dispensing water immediately when not in use; and
- Water leaks are not permitted and must be repaired in a timely manner.

City Ordinance No. 2327 also allows for additional restrictions and conservation measures to be adopted from time to time by resolution of the City Council and shall become effective upon their adoption.

8.3 PENALTIES, CHARGES, OTHER ENFORCEMENT OF PROHIBITIONS

Section 10632(a)

(6) Penalties or charges for excessive use, where applicable.

It is unlawful and a misdemeanor for any customer to fail to comply with any provisions of the regulations and restrictions on water use set forth in the City's Ordinance. The City has implemented a three-step enforcement plan for the Phase I Prohibitions, adopted in August 2014.

Step 1: First Notice – Five (5) days to correct violation
Step 2: Notice of Violation – Three (3) days to correct the violation
Step 3: Refer to Code Enforcement – Issue of citation and/or fines up to $500

Additional penalties or charges will be enforced with the adoption and implementation of Phase II Prohibitions.

8.4 CONSUMPTION REDUCTION METHODS

Section 10632(a)

(5) 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.

The eight-phase rationing plan developed by the City includes the following mandatory rationing, depending on the causes, severity, and anticipated duration of the water supply shortage:

Shortage Condition	Phase	Customer Reduction Goal	Type of Rationing Program
Imminent Drought	I	10% (36%, see note below)	Mandatory
Up to 10%	II	10%	Mandatory
11 – 15%	III	15%	Mandatory
16 – 20%	IV	20%	Mandatory
21 – 25%	V	25%	Mandatory
26 – 30%	VI	30%	Mandatory
31 – 40%	VII	40%	Mandatory
41 – 50%	VIII	50%	Mandatory

Note: The City's overall water use reduction goal is 36 percent, which is intended to address SWRCB's 2015 mandated statewide water use reduction goal of 25 percent.

Water allocations are established for all customers according to the following ranking system:

1. Average of past usage for a "base" period.
2. Health and safety allocations (includes hospitals, convalescent facilities, fire fighting and public safety).
3. Health and safety allocations (includes single family, multi-family, and retirement communities).
4. Commercial, industrial, institutional/governmental operations (where water is used for manufacturing and to maintain jobs and economic base of the community (not for landscape uses).

The City has established a "base" period as the allocation method for each of the phases of reduction. All customer types fall within this allocation method. Customers may appeal their allotments by completing a form, which asks specific questions as to

why the added allotment is necessary, and what that customer has done to conserve water before granting the allotment. The "base" period is a recent consecutive three-year period. This gives the City a more accurate view of the usual water need of each customer, allows for fluctuations in temperature and rainfall, and provides additional flexibility in determining allotments and reviewing appeals. The rationing percentage is then deducted from the customer's allotment. The allotment is specific for each of the six billing cycles to provide for more water use in warmer months and less use in cooler months, thereby reflecting seasonal patterns. These consumption reduction methods are provided in Table 8-3.

8.4.1 CATEGORIES OF CONSUMPTION REDUCTION METHODS

The City's consumption reduction methods are provided in Table 8-3.

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier *Drop down list* *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*
Add additional rows as needed		
1	Expand Public Information Campaign	
1	Improve Customer Billing	
1	Offer Water Use Surveys	
1	Provide Rebates on Plumbing Fixtures and Devices	
1	Provide Rebates for Landscape Irrigation Efficiency	
1	Provide Rebates for Turf Replacement	
1	Increase Water Waste Patrols	
1	Implement or Modify Drought Rate Structure or Surcharge	
NOTES:		

Table 8-3 Retail Only: Stages of WSCP – Consumption Reduction Methods

8.5 DETERMINING WATER SHORTAGE REDUCTIONS

Section 10632(a)

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

Under normal water supply conditions, potable water production figures are recorded daily during business hours and on the first day of the month. Totals are quantified on a monthly basis. Before returning to any phase of the Mandatory Water Conservation Plan, the City Council would have to be advised of a water shortage well in advance of approving any phase of the Mandatory Water Conservation Plan. The Director of Public Works Services would keep the City Manager advised on a weekly basis if there was a water shortage and he in turn would brief the City Council. Reports would have to be made at public meetings of the City Council.

8.6 REVENUE AND EXPENDITURE REPORTS

Section 10632(a)

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), 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.

The City's primary source of revenue is user service charges, which consists of bimonthly fixed charges per meter and a volumetric charge per unit of water consumed. A Final Draft Cost of Service Study report conducted in 2015 (Appendix R) recommended the City increase user service charges and implement a four-tiered rate structure to meet current service costs.

8.6.1 DROUGHT RATE STRUCTURE AND SURCHARGES

A four-tiered rate structure has been implemented to meet service costs. The four-tiered rate structure was implemented in January 2016.

8.6.2 USES OF FINANCIAL RESERVES

The City's Water Fund, commonly referred to as "financial reserves", is comprised of an Operating Fund and Equipment Fund. The Water Fund is available to be used for water system expenditures to make up for shortfalls in water revenue. Based on the Cost of Service Study, the City targets an Operating Fund equivalent to 90 days of operating expenses and has historically maintained an Equipment Fund (Facilities Reserve).

8.6.3 OTHER MEASURES

Capital expenditures are funded using the Equipment Fund, and some projects could be delayed in order to reduce the drawdown of the Equipment Fund. Based on the Cost Service Study, capital projects are to be funded directly through water service fees by fiscal year 2019-20. In addition, the City water utility does not have any outstanding debt obligations, and no future debt is expected as the City intends to cash fund future capital projects.

8.7 RESOLUTION OR ORDINANCE

Section 10632(a)

(8) A draft water shortage contingency resolution or ordinance.

The City of Arcadia's City Council has acted upon several water conservation ordinances and resolutions to prepare for water shortages. Copies of these ordinances and resolutions are available for review in the City Clerk's office located at City Hall and are briefly described below.

1. Ordinance No. 1598 adopted by the Arcadia City Council on June 21, 1977, established City policy for water conservation including power to issue a declaration of a state of urgency, prohibited uses, percentage curtailment of use, implementation of phases, penalties, adjustments, etc.

2. Resolution No. 5435 passed by the City Council on August 16, 1988, adopted a program of voluntary water conservation to reduce consumption by 10 percent.

3. Ordinance No. 1930 adopted by the City Council on February 5, 1991. Mandatory Water Conservation Plan passed as an emergency measure due to drought. Provided for a progressive surcharge schedule for multiple violations of excessive water use, and restricted certain uses of water.

4. Resolution No. 5568 passed on February 5, 1991, enacting Phase I mandatory measures and Phase 2 measures (10 percent mandatory reduction) pursuant to Ordinance No. 1930.

5. Resolution No. 5638 passed by the City Council on March 21, 1995, rescinded Phase 1 measures and restored 10 percent voluntary reduction goal pursuant to Resolution No. 5435.

6. Resolution No. 5481 passed by the City Council on March 21, 1995, rescinded Phase 1 measures pursuant to Ordinance 1930; continued 10 percent reduction goal per Resolution No. 5435.

7. Ordinance No. 2036 adopted by the City Council April 4, 1995, amended Article VII, Division 3 Part 5, chapter 5 of Arcadia Municipal Code. Phases 6, 7 and 8 were added to the original Ordinance 1930 to provide for emergency water use reductions of up to 50 percent as required by mandatory Urban Water Shortage Contingency Plan (June 1992). Also enacted City "Water Banking" program, which allows residents to carry over water conservation credits from one billing cycle to another.

8. Resolution No. 6637 passed by the City Council on August 5, 2008, authorized the Assistant City Manager / Public Works Services Director to implement a voluntary water conservation program in order to reduce water use by ten percent. In addition, the resolution determined a public campaign was to be launched regarding water shortages and voluntary water use reductions.

9. Resolution 7044 adopted by the City Council on August 8, 2014, enacts and implements Phase I of the City's Water Conservation Plan to preserve existing water supplies in the event that the City may be unable to meet future water demands should drought conditions continue.

10. Ordinance 2327 adopted by the City Council on April 21, 2015, amended Article VII, Division 3 Part 5, Chapter 5 of the City's Municipal Code with additional water use prohibitions and outdoor irrigation restrictions. The Ordinance also allows for additional restrictions and conservation measures to be adopted by the City Council.

11. Resolution 7088 adopted by the City Council on September 15, 2015, amended Ordinance 2327 by reducing lawn, landscape, or other turf irrigation from three days to two days per week, 10 minutes per station on each day.

8.8 CATASTROPHIC SUPPLY INTERRUPTION

Section 10632(a)

(3) 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.

To further prepare for a catastrophic interruption of water supplies, the City has a targeted emergency capital reserve based on the direction of the City Council and City Manager for the purpose of maintaining adequate funds for the replacement, repair or operation of critical water facilities in the event of a major catastrophe, such as a major power outage, earthquake or similar natural disaster. The City also maintains the Water Fund balance, commonly referred to as reserves, discussed above (Section 8.6.2). The City's Water Fund is comprised of an Operating Fund and Equipment Fund.

In 1991, in accordance with the requirements of Assembly Bill 11X, the City of Arcadia developed a comprehensive Water Shortage Contingency Plan. The City also created an Emergency Response Plan consistent with guidelines prepared by the California State Office of Emergency Services.

The City recognizes the importance of Demand Management Measures (DMM) in reducing water demand and continues to implement DMM programs whether or not a shortage exists. The City realizes that media attention of the City's water supply is a good way of informing the public of any water supply shortages and will increase media attention and public water education programs should a water supply shortage occur. Additional information regarding the City's DMM programs is provided in Chapter 9.

The City also participated in a seismic reliability program and has obtained federal funding for the study that examined damage to water infrastructures resulting

from a major earthquake. Funding has also become available for the design and retrofitting of various City facilities. These retrofits help "disaster proof" the City's water system and help prevent water outages because of infrastructure failure.

As mentioned earlier, the City adopted Ordinance No. 2036 in April 1995 to provide for emergency water use reductions of up to 50 percent as required by mandatory Urban Water Shortage Contingency Plan. In addition, the City Council would adopt a resolution to declare a water shortage emergency if necessary.

8.9 MINIMUM SUPPLY NEXT THREE YEARS

Section 10632(a)

(2) 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.

As discussed in Section 7.3, the City experienced multiple dry years during FY 2011-12, 2012-13, and 2013-14. The ratio between the normal year in FY 2007-08 and multiple dry years (or FY 2011-12, 2012-13, and 2013-14) was estimated for the City's supply. The minimum water supply available during each of the next three water years based on the driest three-year historical sequence for the City's water supply is provided in Table 8-4.

Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	15,727	16,542	16,876
NOTES: Normal year water supplies were projected and multiplied by multiple dry year factors as follows: First Year: 94% of average year demand, Second year: 99% of average year demand and Third Year: 100% of average year demand.			

Table 8-4 Retail: Minimum Supply Next Three Years

CHAPTER 9

DEMAND MANAGEMENT MEASURES

The City is committed to implementing water conservation programs. The City also works collaboratively with Upper District to provide water conservation programs for the City's residents. As a member of Upper District, the City's residents have the benefit of participating in Upper District's conservation efforts. Upper District offers an extensive program throughout the San Gabriel Valley and is a signatory to the Memorandum of Understanding regarding Urban Water Conservation in California (MOU) and is therefore a member of the California Urban Water Conservation Council (CUWCC). Although the City did not sign the MOU regarding Urban Water Conservation in California and is not a member of the CUWCC, the City takes advantage of its relationship with Upper District as a member agency. The following sections describe the City's implementation of the Demand Management Measures (DMMs) required in the UWMP Act.

9.1 DEMAND MANAGEMENT MEASURES FOR WHOLESALE AGENCIES

Section 10632(a)

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

(1)(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(ii) Metering.
(iv) Public education and outreach.
(vi) Water conservation program coordination and staffing support.
(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

(2) For an urban wholesale water supplier, as defined in Section 10608.12, (provide) a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph

(B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.

The City is not a wholesale agency and is not required by DWR to complete Section 9.1.

9.2 DEMAND MANAGEMENT MEASURES FOR RETAIL AGENCIES

Section 10631(f)

(A) The narrative shall describe the water demand management measure that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:
(i) Water waste prevention ordinances.
(ii) Metering.
(iii) Conservation pricing.
(iv) Public education and outreach.
(v) Programs to assess and manage distribution system real loss.
(vi) Water conservation program coordination and staffing support.
(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

9.2.1 WATER WASTE PREVENTION ORDINANCES

[SECTION 10631 (f)(1)(b)(i)]

The City has adopted and implemented several Ordinances and Resolutions that address the issue of water waste, and conservation measures (by percent reduction) during times of drought by action of the City Council. These ordinances are listed in Section 8.7 of this report and are available for review at the City Clerk's Office. In

addition, the City's service crews and meter readers report wasteful uses of water, and residents are contacted regarding leaks and significant sprinkler run-off.

9.2.2 METERING

[SECTION 10631 (f)(1)(b)(ii)]

CWC 526

(a) Notwithstanding any other provisions of law, an urban water supplier that, on or after January 1, 2004, receives water from the federal Central Valley Project under a water service contract or subcontract... shall do both of the following:
(1) On or before January 1, 2013, install water meters on all service connections to residential and nonagricultural commercial buildings... located within its service area.

CWC 527

(a) An urban water supplier that is not subject to Section 526 shall do both the following:
(1) Install water meters on all municipal and industrial service connections located within its service area on or before January 1, 2025.

The City is fully metered for all customer sectors, including separate meters for single-family residential, multifamily residential, commercial, institutional and governmental facilities. Furthermore, within the City if there is new development, each facility is individuality metered. Service charges for the City are based on the customer's connection size. Section 9.2.3 provides greater detail about the City's service fees and conservation pricing. The City's system effectively promotes water conservation by being completely metered. The City is continuing to install radio frequency read meters.

9.2.3 CONSERVATION PRICING

[SECTION 10631 (f)(1)(b)(iii)]

The City's Mandatory Water Conservation Program, as outlined in its Municipal Code, contains penalties for overuse of water during drought times that are based on the various stages enacted upon by resolutions passed by the Arcadia City Council.

In 2010 the City prepared a Tiered Water Rate Study intended to analyze the current water use and billing practices and to provide recommendations for a tiered water rate structure that would provide a conservation incentive, ensure financial stability and meet the regulatory requirements of SB X7-7. Furthermore, as discussed in Section 8.1, the City prepared a Final Cost of Service Study (study) in October 2015. The study included the development of a five-year financial plan and comprehensive cost of service rate analayis, including budget based water rate structures. To develop water rates, an in-depth study of the City's revenue needs, customer usage characteristics, capital improvement program, and additional future drivers of service costs and revenue were conducted. The study proposed a revised four-tiered rate structure which included seasonal adjustments to water rates. The four-tiered rate structure was implemented in January 2016.

In addition, Upper District implements conservation pricing to encourage sub-agencies to conserve water. Additional information regarding Upper District's conservation pricing can be found in its 2015 Plan and is incorporated by reference.

9.2.4 PUBLIC EDUCATION AND OUTREACH

[SECTION 10631 (f)(1)(b)(iv)]

The City informs its customers about water conservation through its public information programs. The City has a quarterly newsletter that is sent to the City's customers, which provides information about water conservation on a seasonal basis.

The City also prints water conservation messages periodically on its customer's water bills. In addition, the City's "Hot Sheet", which is mailed with the City's water bills (a two-sided, one-page leaflet), is also used to remind residents of useful water conservation tips, purposely focused on a bimonthly basis either on indoor or outdoor conservation practices. Lastly, the City is active on social media websites and the City's website located at http://www.ci.arcadia.ca.us/home/index.asp contains additional useful information.

The City customers can also receive public information about water conservation through Upper District's various public information programs. Upper District offers conservation brochures, posters, activity booklets, public outreach display and workshops. Upper District also raises awareness about water conservation through paid advertising, press releases, news ads and media events.

Furthermore, the City along with the Los Angeles County Office of Education and Los Angeles County of Public Works participate in the annual Los Angeles County Environmental Education Fair (LAEEF), held at the Arboretum which is located in the City of Arcadia. City staff is able to continue its dissemination of water conservation information and related take home items by manning booths and speaking with area residents, school-age children and educators.

In 2013, MWD created the Bewaterwise.com website to assist in educating the public, focusing on the drought, and providing information on rebate and incentive programs. The rebate and incentive programs are summarized in Section 9.2.7.

The City's customers receive educational tools regarding water conservation through Upper District's school educational programs. Upper District partners with the Discovery Science Center and THINK Together to provide a free water conservation and sustainable watershed curriculum program for fourth through sixth graders at schools within Upper District.

Upper District directly offers school education programs in an effort to raise awareness of water issues. Upper District started its school education programs in September 1992 and the materials and presentations meet state education framework requirements. The following is a list of Upper District's school educational programs:

- "Water is Life" Art Contest
- Solar Cup Competition
- Water Educational Posters
- Water Resource Library

The City's customers may participate in educational school programs through MWD, which has extensive educational programs that includes schools within the City's boundaries. MWD's educational programs meet state education framework requirements. A list of MWD's school education programs and water conservation savings is included in MWD's draft 2015 RUWMP, which is incorporated by reference.

9.2.5 PROGRAMS TO ASSESS AND MANAGE DISTRIBUTION SYSTEM REAL LOSS

[SECTION 10631 (f)(1)(b)(v)]

The City continues installing radio frequency read meters to provide secure and accurate meter data collection. The City repairs leaks within its distribution system on an as-needed basis. The City closely monitors its water production and consumption use tabulating the amount of "unaccounted for water". The City has replaced many of its water meters with newer models, significantly reducing the water loss compared to previous years. The City's current estimated "unaccounted for water" is less than one percent of the water demand. The City calculates the amount of "unaccounted for

water" by finding the difference between the amount of water the City pumped and the amount of water sold to its customers. This program is effective in maintaining distribution systems that deliver water effectively and efficiently with the least amount of water loss. The amount of water conserved through the City's system water audits, leak detection and repair program can be estimated by evaluating the average amount of "unaccounted for water".

The City monitors customer's water use through its computerized billing system. The City's billing system automatically audits customer's water bills and flags those bills that show unusual or high consumption. The City's billing system alerts the City when a customer's bill is flagged for high consumption and a customer can make a request to have a service representative inspect their system to make necessary repairs. In addition, City staff can review water usage bills to determine if "excessive water use" occurred and can help customers individually determine the reason for the "excessive water use.

9.2.6 WATER CONSERVATION PROGRAM COORDINATION AND STAFFING SUPPORT

[SECTION 10631 (f)(1)(b)(vi)]

The City's Mangement Aide is responsible for all aspects of environmental issues including water conservation measures for residents and business owners. The City's Mangement Aide coordinates public water awareness materials, public outreach events, speaks with residents/business owners who contact the City for water conservation information and participates in the active dissemination of Upper District efforts such as the High Efficiency Clothes Washer Rebate Program.

The City has staff whose primary function is water conservation. Duties include outreach to various customer classes, response to customer inquiries, complaints, and

provide assistance to business customers in achieving water use reduction. Staff will also work with field crews to enforce water conservation regulations.

As a member of Upper District, the City can utilize Upper District's water conservation coordinator to promote water conservation issues and programs within the City. The water conservation coordinator does research on water management practices and advises retail water purveyors on water conservation matters. Upper District's water conservation coordinator is effective at informing the public on water awareness and is involved in public information programs and school education programs.

The water conservation coordinator employed by Upper District promotes water conservation issues and programs. The position was created in 1992 as a full-time position. The water conservation coordinator does research on water managements practices and advises the Upper District Board Members and its subagencies, including the City, on water conservation matters. More information about Upper District's conservation coordinator can be found in its 2015 Plan, which is incorporated by reference.

9.2.7 OTHER DEMAND MANAGEMENT MEASURES

[SECTION 10631 (f)(1)(b)(vii)]

<u>Large Landscape Conservation Programs and Incentives</u>

The City installs state-of-the-art irrigation systems in all new public projects constructed within the City and encourages the use of irrigation systems for private projects. The City uses "cal-sense" controllers that are computer based with automatic shut off in case of an excessive flow of water. The Santa Anita Golf Course utilizes an irrigation system that allows more efficient use of water on the course. In addition, the

City of Arcadia's Code of Ordinances include landscaping regulations intended to conserve water. To further promote water conservation and more efficient use of water on large landscape areas, the City considered the use of synthetic turf and has installed synthetic turf at the City's Civic Center Athletic Field. The City's large landscape conservation and incentives program is effective at conserving water because the irrigation systems installed by the City only use water as needed; therefore, the irrigation systems eliminate water waste.

The City participates in the Home Energy Renovation Opportunity (HERO) Program to assist residents in reducing water and energy use by allowing homeowners to pay off water efficiency improvements through their property tax bill. The City has also implemented the Water Efficient Landscaping Ordinance, in which projects with new or renovated landscaping require a City permit, smart irrigation controllers, and the use of drought tolerant plants.

The City, in conjunction with the Upper District and MWD, participated in a turf removal program, which provided residential and commercial customers with financial incentives to replace turf lawns with California Friendly® landscapes. The program was launched in January 2014, and closed in November 2015.

High-Efficiency Washing Machine Rebate Programs

The City does not currently implement its own high-efficiency washing machine rebate program because it is not economically viable. However, the City does participate in a high-efficiency washing machine program through its relationship with Upper District. Upper District in partnership with MWD, DWR, CalFed Bay Delta Program and the U.S. Bureau of Reclamation, offers a residential high-efficiency clothes washer rebate program. Residential customers within Upper District's service area (including the City) can install a high-efficiency washing machine in place of standard-efficiency washing machine for a rebate. This program allows the City's customers to

benefit from a high-efficiency washing program and contributes to the conservation of water.

Conservation Programs for Commercial, Industrial, and Institutional (CII) Accounts

The City currently has approximately 820 commercial meter accounts, most of which are office buildings and small shops. The City participates in a commercial and industrial water conservation program through Upper District's Commercial, Industrial and Institutional (CII) Program. Upper District in conjunction with MWD offers rebates for retrofitting certain high water-use fixtures/equipment with more water efficient models, including efficiency toilets and urinals, irrigation controllers, irrigation rotating and rotary nozzles, flow regulators, soil moisture sensor systems, food steamers, ice machines, cooling tower controllers, and medical dry vacuum pumps.

Residential Premium High Efficiency Toilet Replacement Programs

The Upper District, in partnership with MWD, conducts a Premium High Efficiency Toilet (PHET) Retrofit Program on behalf of the City. Residents are encouraged to replace existing high flow volume toilets with Premium High Efficiency toilets (PHETs) by receiving a rebate for their retrofit. MWD offers a rebate of $40. Older toilet models use approximately 3.5 gallons of water per flush, with the new PHET models using 1.1 gallons or less per flush.

9.3 IMPLEMENTATION OVER THE PAST FIVE YEARS

CWC 10631

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

(1)(A)… a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years.

The City is committed to implementing water conservation programs and works collaboratively with Upper District to provide water conservation programs for its residents. As a member of Upper District, the City's residents have the benefit of participating in Upper District's conservation efforts. In addition, the MWD has prepared a Regional Progress Report in February 2015, which is an annual report on achievements in conservation, recycling, and groundwater recharge. The nature and extent of each DMM implemented over the past five years is described below.

Water Waste Prevention Ordinances – As discussed in Section 9.2.1, the City adopted and implemented Ordinance 2327, and Resolutions 7044 and 7088, which enacted mandatory emergency water conservation regulations in response to the State's Executive Order B-29-15.

Metering – As discussed in Section 9.2.2, the City has all customer connections metered. The City continues to maintain and replace older water meters with new automatic meters. The City has also implemented a revised meter charge rate in January 2016, as shown below, which would maintain revenue during periods of long-term water conservation.

Bi-monthly Meter Charge - All Customer Classes ($/Meter Size)

	Meter Size (in inches)									
	5/8"	3/4"	1"	1.5"	2"	3"	4"	6"	8"	10"
Meter Charge	$15.61	$17.27	$20.58	$28.87	$38.80	$62.00	$95.13	$194.52	$310.49	$476.15

Conservation Pricing - As discussed in Section 9.2.3, a four-tiered water rate structure with seasonal adjustments was prepared and implemented in January 2016. The new

rate structure is intended to encourage water conservation by charging a lower water rate for decreased water usage. The new rate structure is shown below.

Single-Family Residential Water Rates & Bi-monthly Tier Allotments

Water rates and bi-monthly tier break points in hundred cubic feet (HCF).

Water Rates ($/HCF)	
Tier 1	$1.36
Tier 2	$1.65
Tier 3	$1.87
Tier 4	$2.01

WINTER Months' Water Usage (November through April) Meter Size (in inches)					
	5/8"	3/4"	1"	1.5"	2"
Tier 1	0-22 HCF	0-22 HCF	0-22 HCF	0-22 HCF	0-22 HCF
Tier 2	23-28 HCF	23-36 HCF	23-42 HCF	23-46 HCF	23-60 HCF
Tier 3	29-34 HCF	37-46 HCF	43-58 HCF	47-62 HCF	61-86 HCF
Tier 4	35+ HCF	47+ HCF	59+ HCF	63+ HCF	87+ HCF

SUMMER Months' Water Usage (May through October) Meter Size (in inches)					
	5/8"	3/4"	1"	1.5"	2"
Tier 1	0-22 HCF	0-22 HCF	0-22 HCF	0-22 HCF	0-22 HCF
Tier 2	23-34 HCF	23-48 HCF	23-62 HCF	23-66 HCF	23-94 HCF
Tier 3	35-44 HCF	49-66 HCF	63-92 HCF	67-96 HCF	95-140 HCF
Tier 4	45+ HCF	67+ HCF	93+ HCF	97+ HCF	141+ HCF

Public Education and Outreach – As discussed in Section 9.2.4, the City has a public information program to educate its customers the benefits of water conservation. Notable City public education and outreach from 2010 to 2015 included the following:

- City's "Hot Sheet" – mailed with the City's bimonthly water bills and included water conservation tips and information
- City quarterly newsletter – mailed to the City's customers and included water conservation information on a seasonal basis
- Los Angeles County Environmental Education Fair, held annually in the month of March

- MWD's website Bewaterwise.com attracted 726,371 unique visitors in FY 2013-14. The website provides information on water conservation rebates and incentive programs. Upper District has also held the school education programs, "Art is Life" Art Contest, Solar Cup Competition, Water Educational Posters, and Water Resource Library on an annual basis.

Programs to Assess and Manage Distribution System Real Loss – As discussed in Section 9.2.5, the City has replaced older water meters with new automatic meters and closely monitors its water production and consumption use. The City's replacement of older meters with newer meters, water losses have decreased from about 13 percent (in FY 2009-10) to about 4.1 percent (in FY 2014-15) of the City's water demands.

Water Conservation Program Coordination and Staffing Support – As described in Section 9.2.6, the City has a Management Aide, whose duties include coordination of the City's water conservation activities, including the DMMs discussed above, and response to customer inquiries.

Other Demand Management Measures – As discussed in Section 9.2.7, other DMMs implemented include water survey and rebate programs, which are summarized below.

- Water Survey Programs – The City's savings are estimated to be 3 to 150 gallons per day per customer service call
- Turf Removal Program – The City participated in MWD's turf removal program. MWD estimates a savings of about 530 AF of water annually from four million square feet of turf removed in FY 2013-14. Overall, about 170 million square feet of turf has been removed under this program.
- High Efficiency Clothes Washing Machine Rebate Program – A high efficiency washing machine saves over 10,000 gallons of water per machine per year over

a conventional top loading washer. In FY 2013-14, the MWD estimates about 870 AF of water savings annually from this rebate program.

- Premium High Efficiency Toilet Rebate Program – MWD estimates savings of about 3,150 AF of water annually from rebates issued for residential and commercial customers in FY 2013-14.
- Commercial Rebate Programs – MWD estimates a savings of about 2,280 AF from 6,440 new rebates issued in FY 2013-14. Eligible fixtures included in Upper District's CII Program include the following:

Fixture	Rebate
Plumbing - Premium High-Efficiency Toilets (PHETS)	$40
Plumbing - Ultra Low and Zero Water Urinals	$200
Plumbing Control Valves	$5 per Valve (20 minimum)
Landscaping - Irrigation Controllers	$35 per Station
Landscaping - Rotating Nozzles for Pop-up Spray Heads	$2 per Nozzle
Landscaping - Large Rotary Nozzles	$13 per Set
Landscaping - In-stem Flow Regulators	$1 per Regulator
Landscaping - Soil Moisture Sensor Systems	$35 per Irrigation Controller Station
Food - Connectionless Food Steamers	$485 per Compartment
Food - Air-Cooled Ice Machines	$1,000
HVAC – Cooling Tower Conductivity Controllers	$625
HVAC - Cooling Tower ph Controllers	$1,750
Medical/Dental – Dry Vacuum Pumps	$125 per 0.5 HP
Medical/Dental – Laminar Flow Restrictors	$10 per Restrictor (10 minimum)

9.4 PLANNED IMPLEMENTATION TO ACHIEVE WATER USE TARGETS

CWC 10631

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

(1)(A) …The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

The City will continue to implement water conservation programs and work collaboratively with Upper District to provide water conservation programs for its residents. Implementation of the DMMs will assist the City in meeting the 2020 water use targets projected in Section 5.7. In addition, the City is planning the following measures:

- Ongoing evaluation for Water Conservation Plan Phase II implementation.

Upon availability of funding, MWD will review reinstating the turf removal rebate program. MWD, through its Innovative Conservation Program, also researches the water savings and reliability of new water-saving devices, technologies, and strategies.

9.5 MEMBERS OF THE CALIFORNIA URBAN WATER CONSERVATION COUNCIL

CWC 10631

(i) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivision (f) by complying with all the provisions of the

"Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

The City is not a member of the CUWCC, and is not required by DWR to complete Section 9.5.

CHAPTER 10

PLAN ADOPTION, SUBMITTAL, AND IMPLEMENTATION

10.1 INCLUSION OF ALL 2015 DATA

The data provided in the City's 2015 Plan is provided on a fiscal year basis through June 30, 2015 (as discussed in Section 2.4.2).

10.2 NOTICE OF PUBLIC HEARING

10.2.1 NOTICE TO CITIES AND COUNTIES

CWC 10621.

(b) Every urban water supplier required to prepare a plan shall… at least 60 days prior to the public hearing on the plan … notify any city or county within which the supplier provides waters supplies that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

CWC 10642.

…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…

As discussed in Section 2.5.2. the City coordinated the preparation of the Urban Water Management Plan with the Raymond Basin Management Board, County of Los Angeles, Main Basin Watermaster, Upper District, San Gabriel Valley Water Company, City of Sierra Madre, City of Pasadena Water and Power, Golden State Water

Company, East Pasadena Water Company, Sunny Slope Water Company, and City of Monrovia. The City notified these agencies at least sixty (60) days prior to the public hearing of the preparation of the 2015 Plan and invited them to participate in the development of the Plan. A copy of the notification letters sent to these agencies is provided in Appendix S.

A notice of public hearing was sent to the Raymond Basin Management Board, County of Los Angeles, Main Basin Watermaster, Upper District, San Gabriel Valley Water Company, City of Sierra Madre, City of Pasadena Water and Power, Golden State Water Company, East Pasadena Water Company, Sunny Slope Water Company, City of Monrovia, and residents of Arcadia. Copies of the notice of the public hearing are provided in Appendix T.

Table 10-1 summarizes the agencies which were provided notifications by the City.

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Arcadia	☑	☑
Sierra Madre	☑	☑
East Pasadena	☑	☑
Monrovia	☑	☑
Pasadena	☑	☑
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Los Angeles County	☑	☑
	☐	☐

Table 10-1 Retail: Notification to Cities and Counties

10.2.2 NOTICE TO THE PUBLIC

CWC 10642.

…Prior to adopting a plan, the urban water supplier shall make the plan available for public inspection…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…

Government Code 6066.

Publication of notice pursuant to this section shall be once a week for two successive weeks. Two publications in a newspaper published once a week or oftener, with at least five days intervening between the respective publication dates not counting such publication dates, are sufficient. The period of notice commences upon the first day of publication and terminates at the end of the fourteenth day, including therein the first day.

The City of Arcadia encouraged the active involvement of the population within its service area prior to and during the preparation of the Plan. Pursuant to Section 6066 of the Government Code, the City published the notice of public hearing in the Arcadia Weekly (see Appendix T). The City also provided a notice of public hearing to the City Clerk's office and posted the notice of public hearing throughout the City of Arcadia and on the City's website. To ensure that the plan was available for review, the City placed a copy of the 2015 draft Plan at the City Clerk's Office located at City Hall, the Arcadia Public Library, the Public Works Services Department, the Arcadia Chamber of Commerce, and made a copy available for review on its website.

10.3 PUBLIC HEARING AND ADOPTION

CWC 10642.

…Prior to adopting a plan, the urban water supplier shall hold a public hearing thereon.

CWC 10608.26.

(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20 for determining its urban water use target.

Prior to adopting the 2015 Plan, the City held a public hearing on June 21, 2016 which included input from the community regarding the City's draft 2015 Plan. As part of the public hearing, the City provided information on determination of its water use targets through selection of Target Method 1 (see Section 5.7.1). In addition, the City provided information regarding the economic impacts of meeting these water use targets, including measures described in Section 8.6.

The City of Arcadia is committed to the implementation of the 2015 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). The City continues to be committed to the concept of good water management practice and intends to expand its water conservation program as budgets and staffing allow. The City's water conservation program will periodically be re-evaluated and modified to institute additional methods or techniques as the need arises.

The City reviewed implementation of its 2010 Plan and incorporated changes to create the 2015 Plan.

10.3.1 ADOPTION

CWC 10642.

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

Following the public hearing, the City adopted the draft Plan as its 2015 Plan. A copy of the resolution adopting the 2015 Plan is provided in Appendix U.

10.4 PLAN SUBMITTAL

CWC 10621.

(d) An urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

CWC 10644.

(a)(1) 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.

CWC 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 the submission of its urban water management plan.

10.4.1 SUBMITTING A UWMP TO DWR

Within 30 days of adoption of the 2015 Plan by the City Council and by July 1, 2016, the City of Arcadia will submit the adopted 2015 Plan to DWR. The 2015 Plan will be submitted through DWR's "Water Use Efficiency (WUE) Data Online Submittal Tool" website.

DWR previously provided a checklist to make determine if an Urban Water Management Plan has addressed the requirements of the California Water Code. The City has completed the DWR checklist by indicating where the required CWC elements can be found within the City's 2015 Plan (See Appendix C).

10.4.2 ELECTRONIC DATA SUBMITTAL

Within 30 days of adoption of the 2015 Plan, the City will also submit all data tables associated with the 2015 Plan through DWR's "Water Use Efficiency (WUE) Data Online Submittal Tool" website.

10.4.3 SUBMITTING A UWMP TO THE CALIFORNIA STATE LIBRARY

Within 30 days of adoption of the 2015 Plan by the City Council, a copy (CD or hardcopy) of the 2015 Plan will be submitted to the State of California Library. A copy of the letter to the State Library will be maintained in the City's file. The 2015 Plan will be mailed to the following address if sent by regular mail:

California State Library
Government Publications Section
P.O. Box 942837
Sacramento, CA 94237-0001
Attention: Coordinator, Urban Water Management Plans

The 2015 Plan will be mailed to the following address if sent by courier or overnight carrier:

California State Library
Government Publications Section
914 Capitol Mall
Sacramento, CA 95814

10.4.4 SUBMITTING A UWMP TO CITIES AND COUNTIES

Within 30 days of adoption of the 2015 Plan by the City Council, a copy of the 2015 Plan will be submitted to the County of Los Angeles Registrar / Recorders office and the City Clerk's Office. A copy of the letter to the County of Los Angeles will be maintained in the City's file.

10.5 PUBLIC AVAILABILITY

CWC 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 the 2015 Plan to DWR, the City will make the 2015 Plan available at the City Clerk's Office located at City Hall during normal business hours and on the City's website.

10.6 AMENDING AN ADOPTED UWMP

CWC 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).

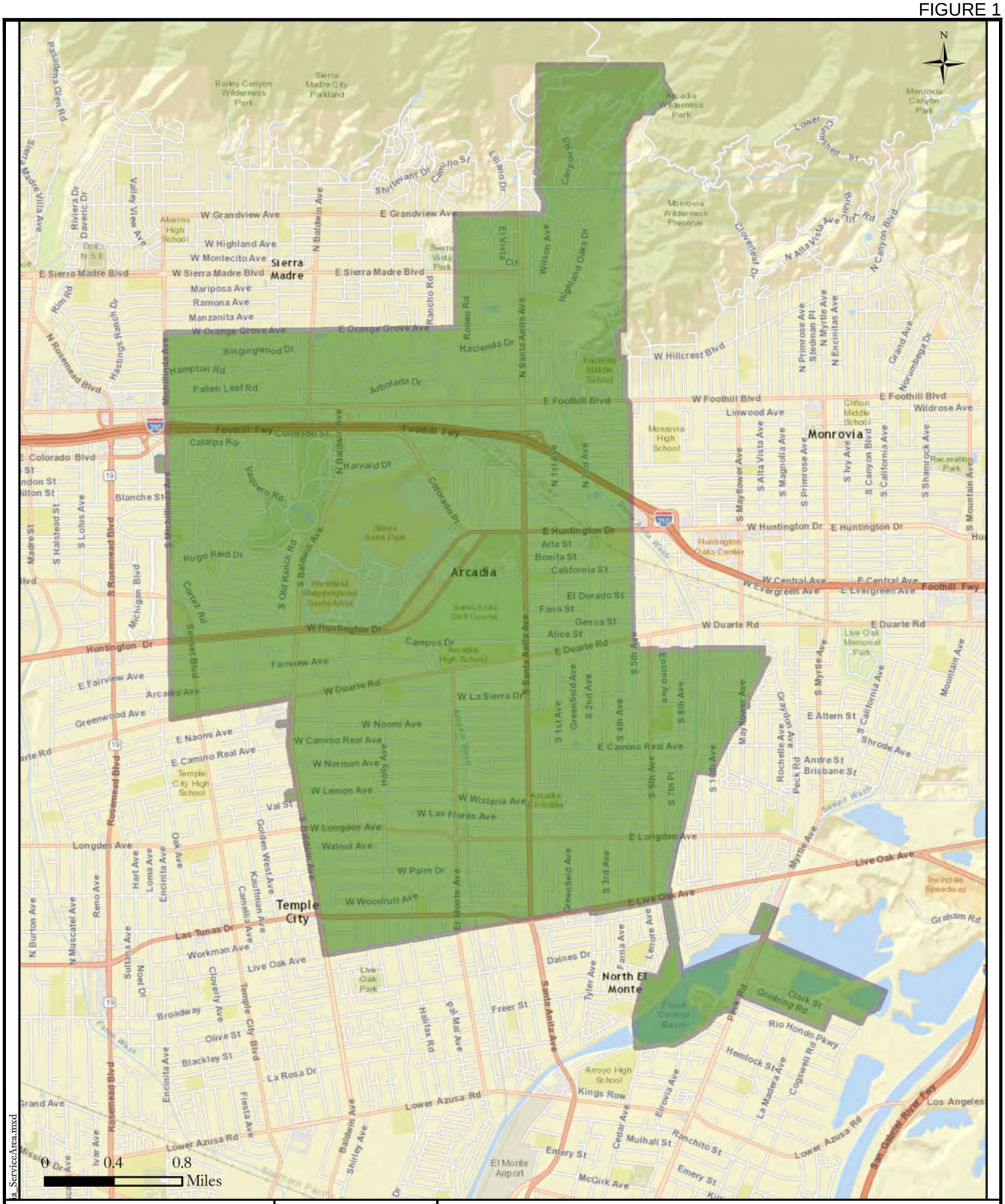
CWC 10644.

(a)(1) 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.

If the City amends the adopted 2015 Plan, the amended Plan will undergo adoption by the City's governing board. Within 30 days of adoption, the amended Plan will then be submitted to DWR, the State of California Library, the County of Los Angeles Registrar / Recorders office, and the City Clerk's Office.

FIGURES

FIGURE 1



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CITY OF ARCADIA

WATER SERVICE AREA BOUNDARY

J:\2570\2570-04-2015 (Arcadia)\03 Plates and Figures\FIGURE 1.dwg
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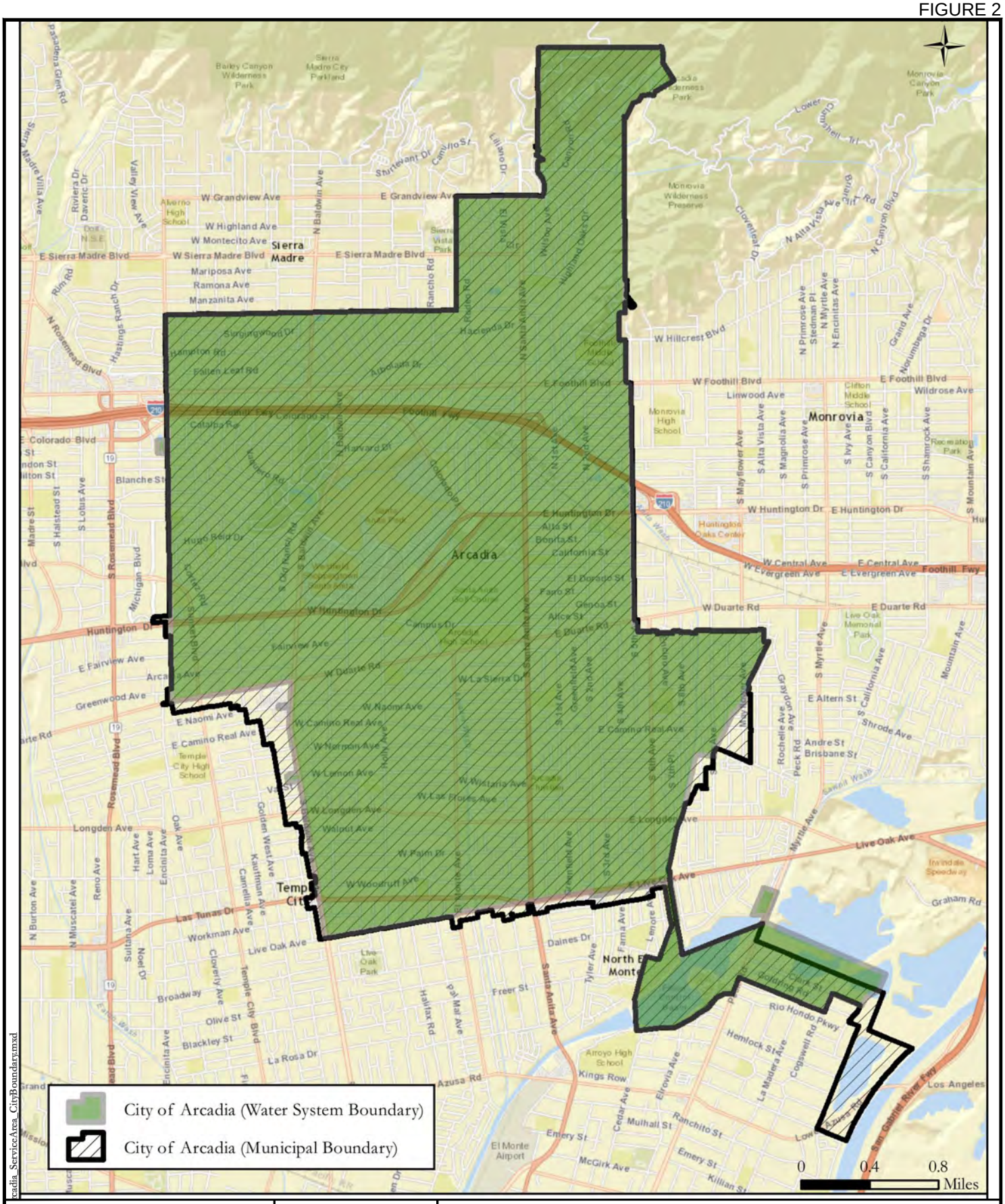
FIGURE 2



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CITY OF ARCADIA

WATER SERVICE AREA AND MUNICIPAL BOUNDARIES

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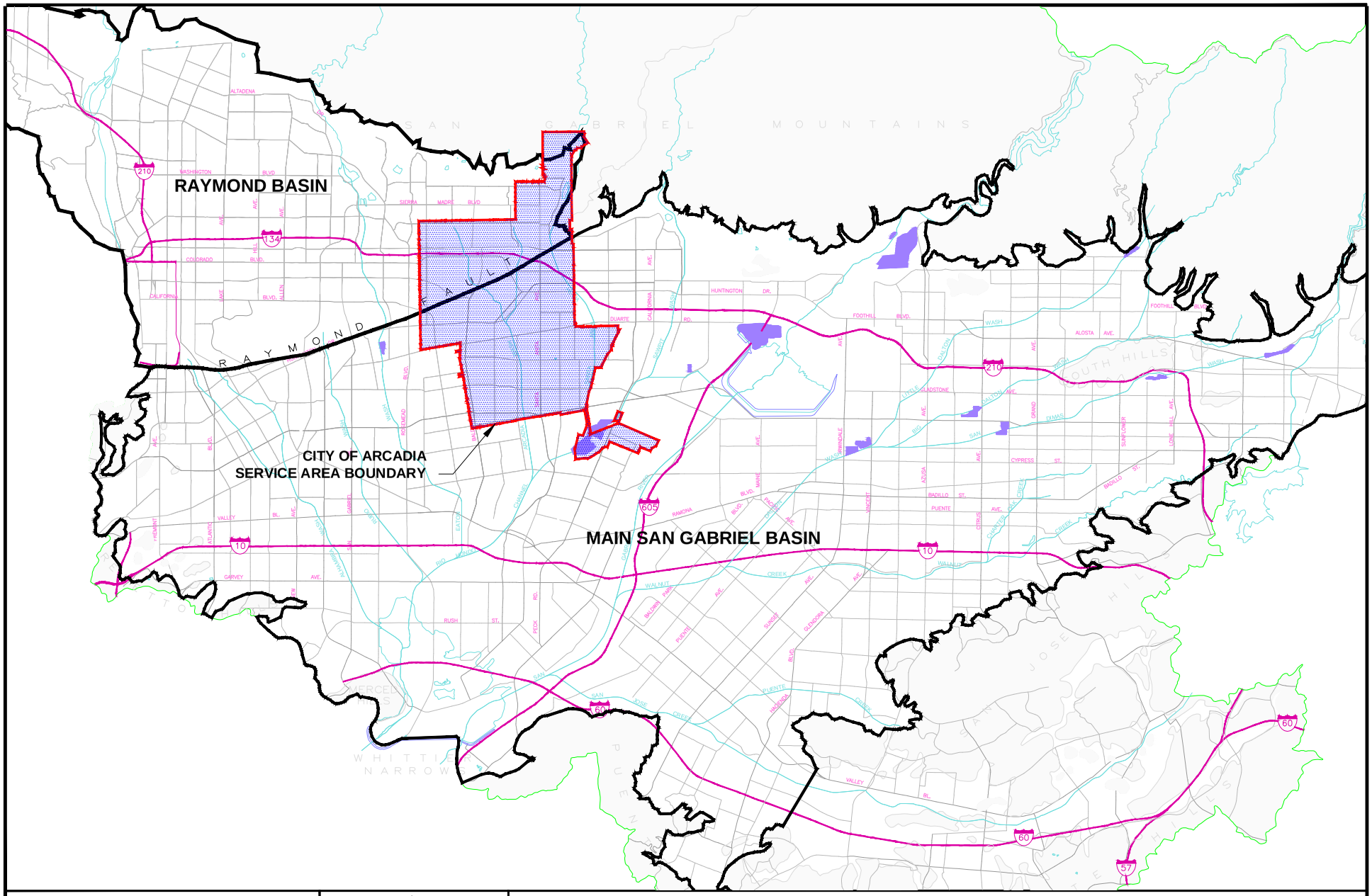

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N.T.S.

CITY OF ARCADIA

VICINITY MAP - MAIN SAN GABRIEL BASIN AND RAYMOND BASIN

FIGURE 3

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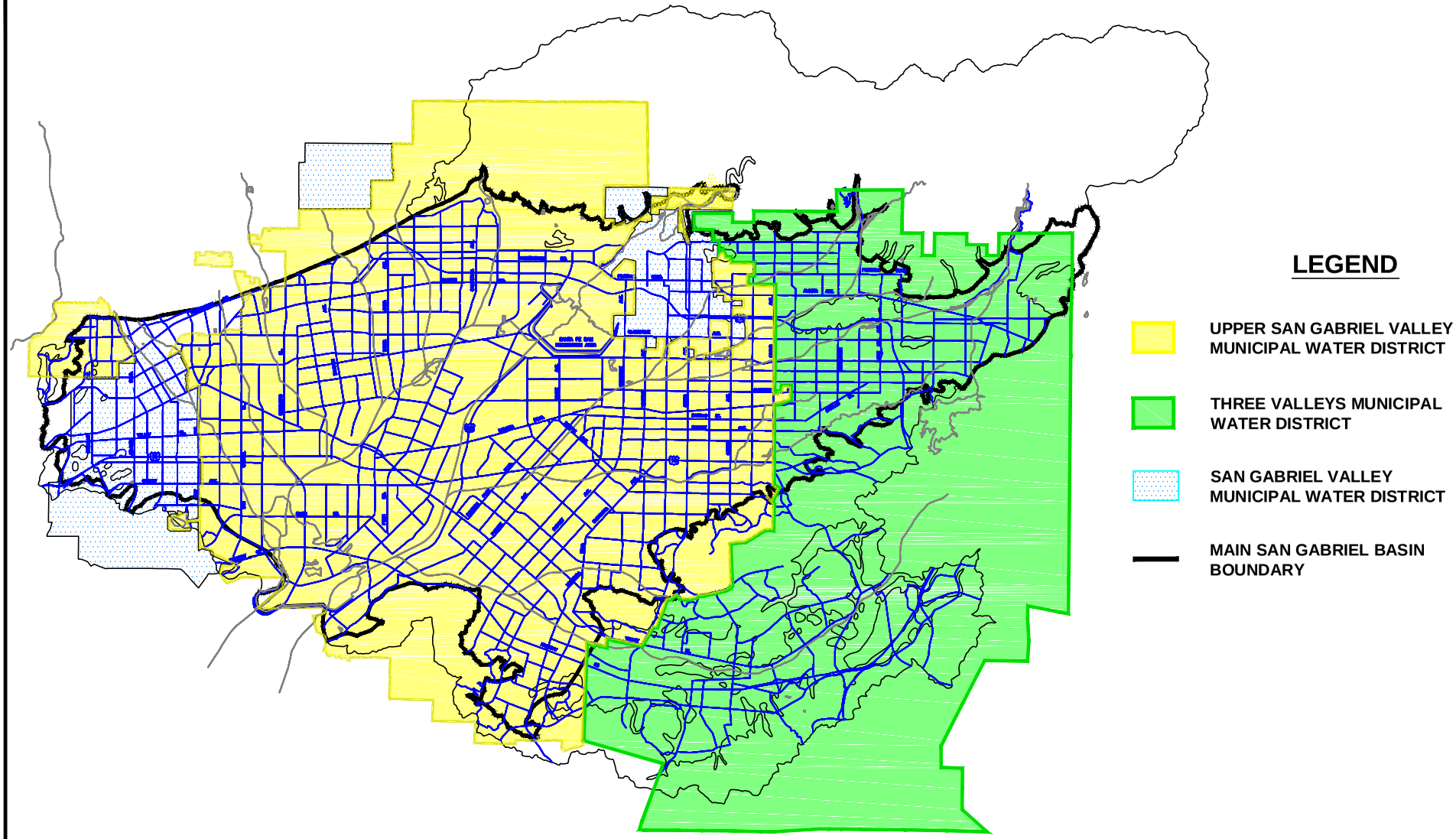

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N.T.S.

CITY OF ARCADIA

MUNICIPAL WATER DISTRICT BOUNDARIES

FIGURE 4

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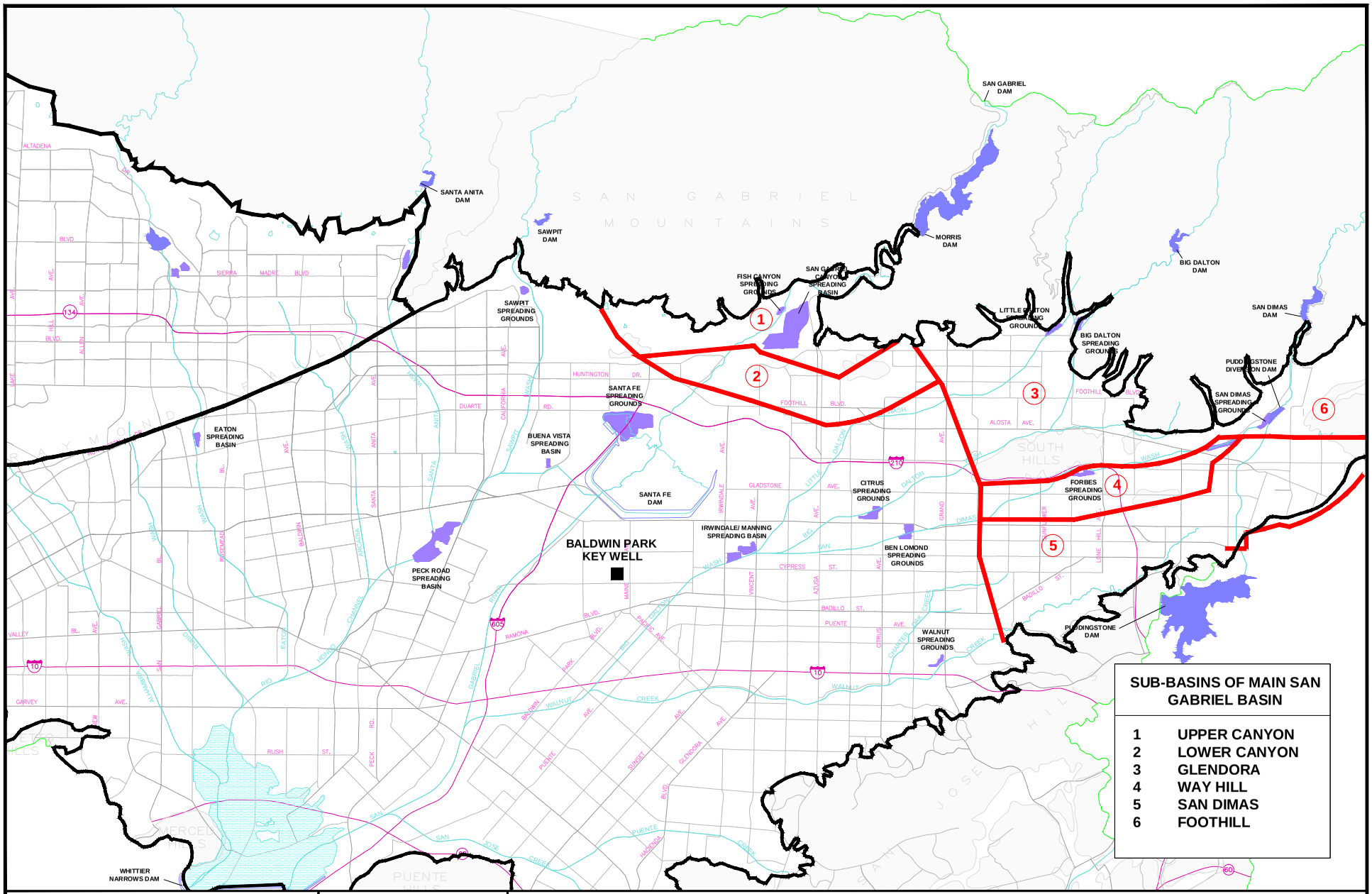

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N.T.S.

CITY OF ARCADIA

LOCATION OF SUB-BASINS, SPREADING GROUNDS AND WATER CHANNELS MAIN SAN GABRIEL BASIN

FIGURE 5

J:\2570\2570-04-2015 (Arcadia)\03 Plates and Figures\FIGURE 5.dwg
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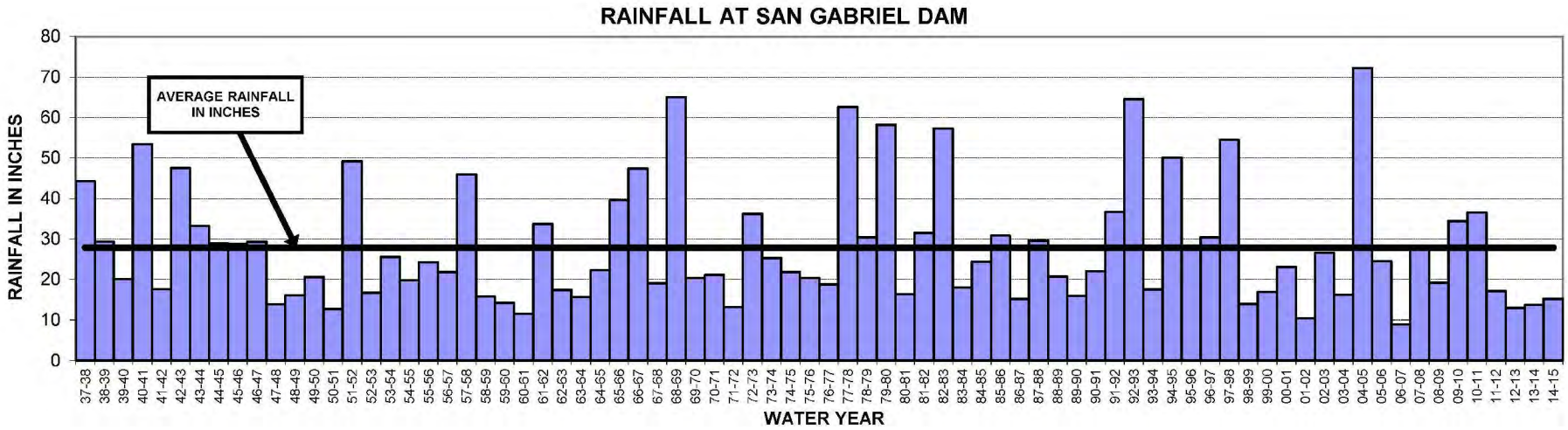

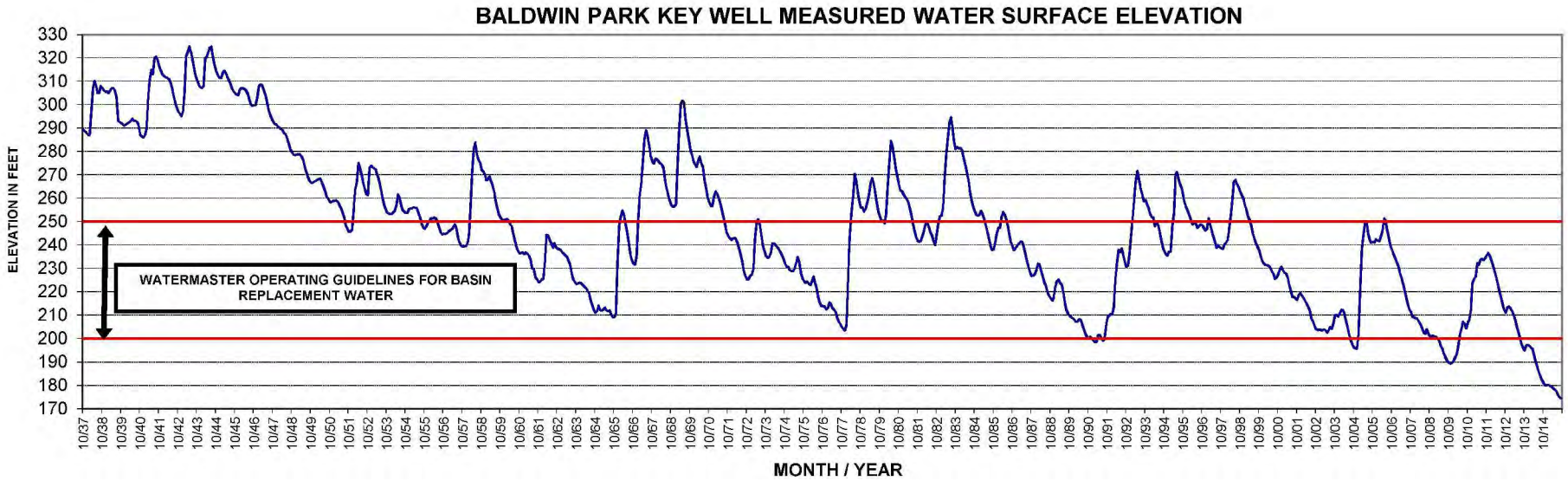

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CITY OF ARCADIA

HISTORICAL BALDWIN PARK KEY WELL ELEVATIONS

FIGURE 6

J:\2570\2570-04-2015 (Arcadia)\03 Plates and Figures\FIGURE 6.dwg
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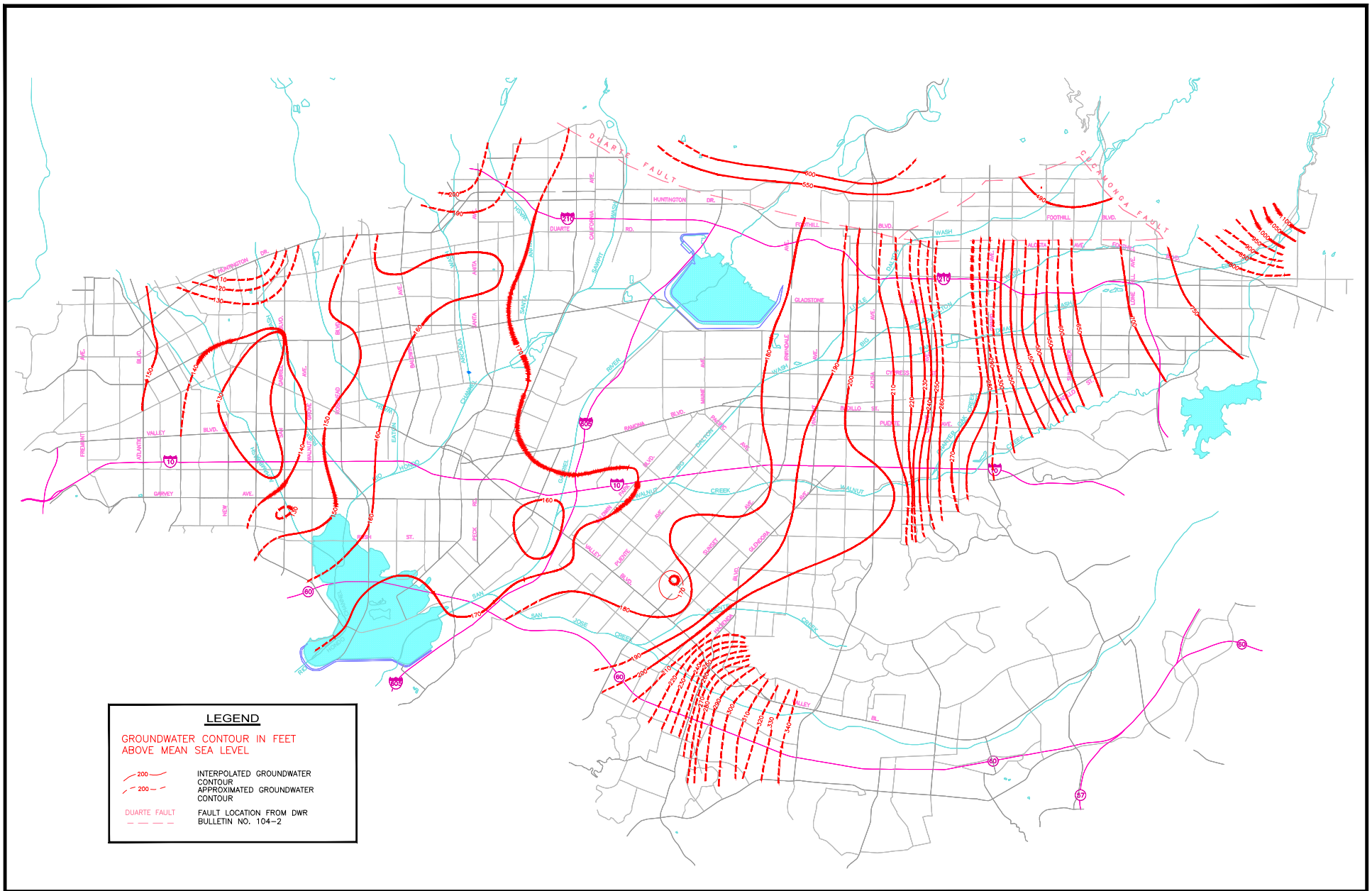

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N.T.S.

CITY OF ARCADIA

GROUNDWATER CONTOURS MAP
MAIN SAN GABRIEL BASIN - JULY 2015

FIGURE 7

J:\2570\2570-04-2015 (Arcadia)\03 Plates and Figures\FIGURE 7.dwg
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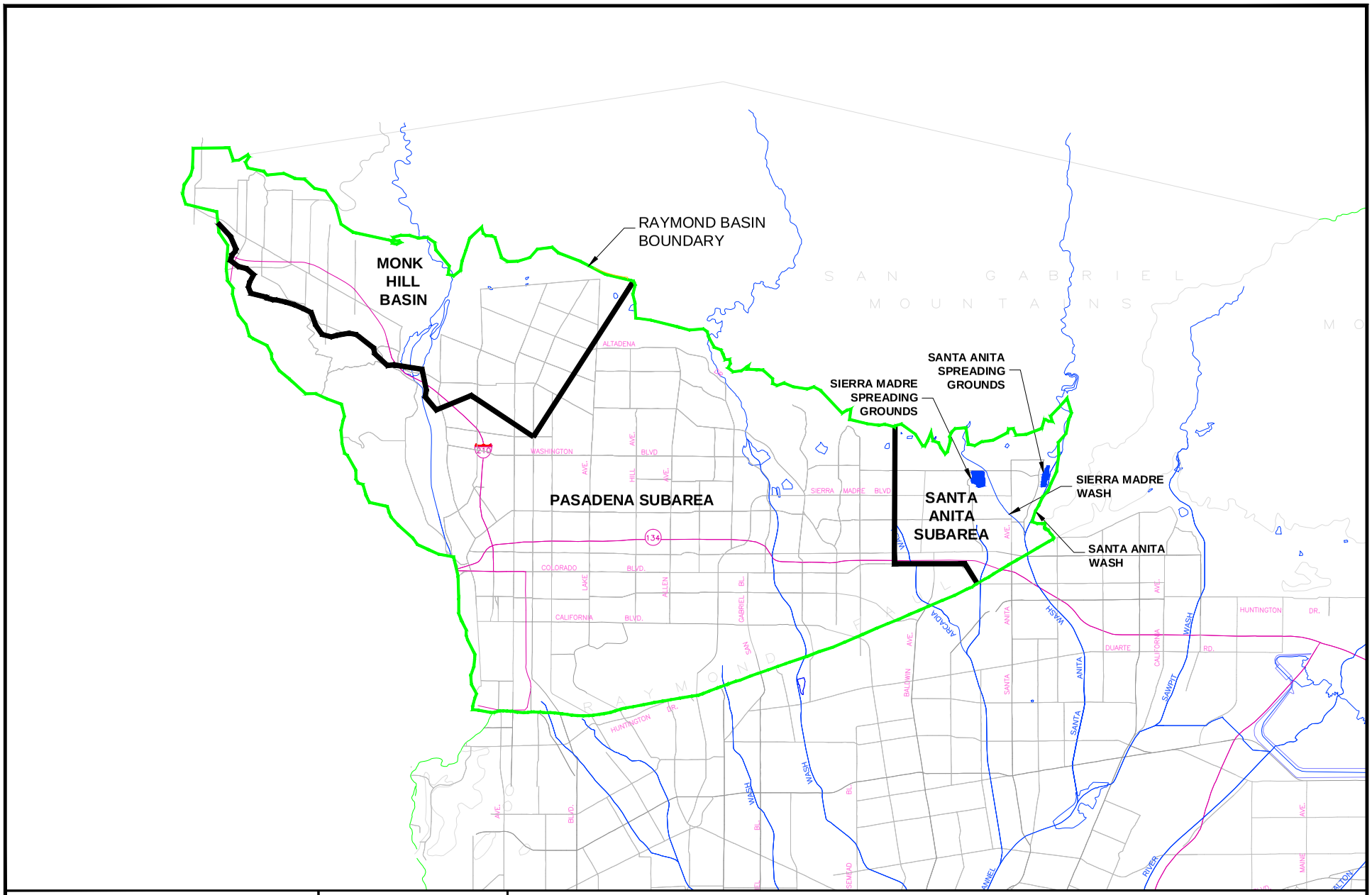

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CITY OF ARCADIA

RAYMOND BASIN SUBAREAS

FIGURE 8

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NONE

APPENDIX A

URBAN WATER MANAGEMENT PLANNING ACT

California Water Code Division 6, Part 2.6.
Chapter 1. General Declaration and Policy §10610-10610.4
Chapter 2. Definitions §10611-10617
Chapter 3. Urban Water Management Plans
Article 1. General Provisions §10620-10621
Article 2. Contents of Plans §10630-10634
Article 2.5. Water Service Reliability §10635
Article 3. Adoption And Implementation of Plans §10640-10645
Chapter 4. Miscellaneous Provisions §10650-10656

Chapter 1. General Declaration and Policy

SECTION 10610-10610.4

10610. This part shall be known and may be cited as the "Urban Water Management Planning Act."

10610.2. (a) The Legislature finds and declares all of the following:

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

(b) This part is intended to provide assistance to water agencies in carrying out their long-term resource planning responsibilities to ensure adequate water supplies to meet existing and future demands for water.

10610.4. The Legislature finds and declares that it is the policy of the state as follows:

(a) The management of urban water demands and efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

(b) The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.

(c) Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

Chapter 2. Definitions

SECTION 10611-10617

10611. Unless the context otherwise requires, the definitions of this chapter govern the construction of this part.

10611.5. “Demand management" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

10612. "Customer" means a purchaser of water from a water supplier who uses the water for municipal purposes, including residential, commercial, governmental, and industrial uses.

10613. "Efficient use" means those management measures that result in the most effective use of water so as to prevent its waste or unreasonable use or unreasonable method of use.

10614. "Person" means any individual, firm, association, organization, partnership, business, trust, corporation, company, public agency, or any agency of such an entity.

10615. "Plan" means an urban water management plan prepared pursuant to this part. A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses,

reclamation and demand management activities. The components of the plan may vary according to an individual community or area's characteristics and its capabilities to efficiently use and conserve water. The plan shall address measures for residential, commercial, governmental, and industrial water demand management as set forth in Article 2 (commencing with Section 10630) of Chapter 3. In addition, a strategy and time schedule for implementation shall be included in the plan.

10616. "Public agency" means any board, commission, county, city and county, city, regional agency, district, or other public entity.

10616.5. "Recycled water" means the reclamation and reuse of wastewater for beneficial use.

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. This part applies only to water supplied from public water systems subject to Chapter 4 (commencing with Section 116275) of Part 12 of Division 104 of the Health and Safety Code.

Chapter 3. Urban Water Management Plans

Article 1. General Provisions

SECTION 10620-10621

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.

(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.

10621. (a) Each urban water supplier shall update its plan at least once every five years on or before December 31, in years ending in five and zero, except as provided in subdivision (d).

(b) Every urban water supplier required to prepare a plan pursuant to this part shall, at least 60 days before 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 notice pursuant to this subdivision.

(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).

(d) Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.

Article 2. Contents of Plan

SECTION 10630-10634

10630. It is the intention of the Legislature, in enacting this part, to permit levels of water management planning commensurate with the numbers of customers served and the volume of water supplied.

10631. A plan shall be adopted in accordance with this chapter that shall do all of 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.

(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). 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 basins that 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.

(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) 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.

(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.

(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.

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

(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.

(J) Distribution system water loss.

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

(3) (A) For the 2015 urban water management plan update, the distribution system water loss shall be quantified for the most recent 12-month period available. For all subsequent updates, the distribution system water loss shall be quantified for each of the five years preceding the plan update.

(B) The distribution system water loss quantification shall be reported in accordance with a worksheet approved or developed by the department through a public process. The water loss quantification worksheet shall be based on the water system balance methodology developed by the American Water Works Association.

(4) (A) If available and applicable to an urban water supplier, water use projections may display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

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

(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.

(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:

(i) Water waste prevention ordinances.

(ii) Metering.

(iii) Conservation pricing.

(iv) Public education and outreach.

(v) Programs to assess and manage distribution system real loss.

(vi) Water conservation program coordination and staffing support.

(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.

(2) For an urban wholesale water supplier, as defined in Section 10608.12, a narrative description of the items in clauses (ii), (iv), (vi), and (vii) of subparagraph (B) of paragraph (1), and a narrative description of its distribution system asset management and wholesale supplier assistance programs.

(g) 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

use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the 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.

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

(i) For purposes of this part, urban water suppliers that are members of the California Urban Water Conservation Council shall be deemed in compliance with the requirements of subdivision (f) by complying with all the provisions of the "Memorandum of Understanding Regarding Urban Water Conservation in California," dated December 10, 2008, as it may be amended, and by submitting the annual reports required by Section 6.2 of that memorandum.

(j) An urban water supplier that relies 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 or 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).

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.

(b) It is the intent of the Legislature that the identification of projected water use for single-family and multifamily residential housing for lower income households will assist a supplier in complying with the requirement under Section 65589.7 of the Government Code to grant a priority for the provision of service to housing units affordable to lower income households.

10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan may, but is not required to, include any of the following information:

(1) An estimate of the amount of energy used to extract or divert water supplies.

(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.

(3) An estimate of the amount of energy used to treat water supplies.

(4) An estimate of the amount of energy used to distribute water supplies through its distribution systems.

(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.

(6) An estimate of the amount of energy used to place water into or withdraw from storage.

(7) Any other energy-related information the urban water supplier deems appropriate.

(b) The department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems. The department may consider studies and calculations conducted by the Public Utilities Commission in developing the methodology.

10631.5. (a) (1) Beginning January 1, 2009, the terms of, and eligibility for, a water management grant or loan made to an urban water supplier and awarded or administered by the department, state board, or California Bay-Delta Authority or its successor agency shall be conditioned on the implementation of the water demand management measures described in Section 10631, as determined by the department pursuant to subdivision (b).

(2) For the purposes of this section, water management grants and loans include funding for programs and projects for surface water or groundwater storage, recycling, desalination, water conservation, water supply reliability, and water supply augmentation. This section does not apply to water management projects funded by the federal American Recovery and Reinvestment Act of 2009 (Public Law 111-5).

(3) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if the urban water supplier has

submitted to the department for approval a schedule, financing plan, and budget, to be included in the grant or loan agreement, for implementation of the water demand management measures. The supplier may request grant or loan funds to implement the water demand management measures to the extent the request is consistent with the eligibility requirements applicable to the water management funds.

(4) (A) Notwithstanding paragraph (1), the department shall determine that an urban water supplier is eligible for a water management grant or loan even though the supplier is not implementing all of the water demand management measures described in Section 10631, if an urban water supplier submits to the department for approval documentation demonstrating that a water demand management measure is not locally cost effective. If the department determines that the documentation submitted by the urban water supplier fails to demonstrate that a water demand management measure is not locally cost effective, the department shall notify the urban water supplier and the agency administering the grant or loan program within 120 days that the documentation does not satisfy the requirements for an exemption, and include in that notification a detailed statement to support the determination.

(B) For purposes of this paragraph, "not locally cost effective" means that the present value of the local benefits of implementing a water demand management measure is less than the present value of the local costs of implementing that measure.

(b) (1) The department, in consultation with the state board and the California Bay-Delta Authority or its successor agency, and after soliciting public comment regarding eligibility requirements, shall develop eligibility requirements to implement the requirement of paragraph (1) of subdivision (a). In establishing these eligibility requirements, the department shall do both of the following:

(A) Consider the conservation measures described in the Memorandum of Understanding Regarding Urban Water Conservation in California, and alternative conservation approaches that provide equal or greater water savings.

(B) Recognize the different legal, technical, fiscal, and practical roles and responsibilities of wholesale water suppliers and retail water suppliers.

(2) (A) For the purposes of this section, the department shall determine whether an urban water supplier is implementing all of the water demand management measures described in Section 10631 based on either, or a combination, of the following:

(i) Compliance on an individual basis.

(ii) Compliance on a regional basis. Regional compliance shall require participation in a regional conservation program consisting of two or more urban water suppliers that achieves the level of conservation or water efficiency savings equivalent to the amount of conservation or savings achieved if each of the participating urban water suppliers implemented the water demand management measures. The urban water supplier administering the regional program shall provide participating urban water suppliers and the department with data to demonstrate that the regional program is consistent with this clause. The department shall review the data to determine whether the urban water suppliers in the regional program are meeting the eligibility requirements.

(B) The department may require additional information for any determination pursuant to this section.

(3) The department shall not deny eligibility to an urban water supplier in compliance with the requirements of this section that is participating in a multiagency water project, or an integrated regional water management plan, developed pursuant to Section 75026 of the Public Resources Code, solely on the basis that one or more of the agencies participating in the project or plan is not implementing all of the water demand management measures described in Section 10631.

(c) In establishing guidelines pursuant to the specific funding authorization for any water management grant or loan program subject to this section, the agency administering the grant or loan program shall include in the guidelines the eligibility requirements developed by the department pursuant to subdivision (b).

(d) Upon receipt of a water management grant or loan application by an agency administering a grant and loan program subject to this section, the agency shall request an eligibility determination from the department with respect to the requirements of this section. The department shall respond to the request within 60 days of the request.

(e) The urban water supplier may submit to the department copies of its annual reports and other relevant documents to assist the department in determining whether the urban water supplier is implementing or scheduling the implementation of water demand management activities. In addition, for urban water suppliers that are signatories to the Memorandum of Understanding Regarding Urban Water Conservation in California and submit biennial reports to the California Urban Water Conservation Council in accordance with the memorandum, the department may use these reports to assist in tracking the implementation of water demand management measures.

(f) This section shall remain in effect only until July 1, 2016, and as of that date is repealed, unless a later enacted statute, that is enacted before July 1, 2016, deletes or extends that date.

10631.7. The department, in consultation with the California Urban Water Conservation Council, shall convene an independent technical panel to provide information and recommendations to the department and the Legislature on new demand management measures, technologies, and approaches. The panel shall consist of no more than seven members, who shall be selected by the department to reflect a balanced representation of experts. The panel shall have at least one, but no more than two, representatives from each of the following: retail water suppliers, environmental organizations, the business community, wholesale water suppliers, and academia. The panel shall be convened by January 1, 2009, and shall report to the Legislature no later than January 1, 2010, and every five years thereafter. The department shall review the panel report and include in the final report to the Legislature the department's recommendations and comments regarding the panel process and the panel's recommendations.

10632. (a) The plan shall provide an urban water shortage contingency analysis that includes each of the following elements that are within the authority of the urban water supplier:

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

(2) 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.

(3) 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.

(4) 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.

(5) 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.

(6) Penalties or charges for excessive use, where applicable.

(7) An analysis of the impacts of each of the actions and conditions described in paragraphs (1) to (6), 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.

(8) A draft water shortage contingency resolution or ordinance.

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

(b) Commencing with the urban water management plan update due July 1, 2016, for purposes of developing the water shortage contingency analysis pursuant to subdivision (a), the urban water supplier shall analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas, as defined in subdivision (a) of Section 115921 of the Health and Safety Code.

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 shall include all of the following:

(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.

(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.

(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.

(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.

(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.

(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.

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.

Article 2.5. Water Service Reliability

SECTION 10635

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 water 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 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.

(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 the submission of its urban water management plan.

(c) Nothing in this article is intended to create a right or entitlement to water service or any specific level of water service.

(d) Nothing in this article is intended to change existing law concerning an urban water supplier's obligation to provide water service to its existing customers or to any potential future customers.

Article 3. Adoption and Implementation of Plans

SECTION 10640-10645

10640. Every urban water supplier required to prepare a plan pursuant to this part shall prepare its plan pursuant to Article 2 (commencing with Section 10630). The supplier shall likewise periodically review the plan as required by Section 10621, and any amendments or changes required as a result of that review shall be adopted pursuant to this article.

10641. An urban water supplier required to prepare a plan may consult with, and obtain comments from, any public agency or state agency or any person who has special expertise with respect to water demand management methods and techniques.

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.

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

10644. (a) (1) 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.

(2) The plan, or amendments to the plan, submitted to the department pursuant to paragraph (1) shall be submitted electronically and shall include any standardized forms, tables, or displays specified by the department.

(b) (1) Notwithstanding Section 10231.5 of the Government Code, the department shall prepare and submit to the Legislature, on or before December 31, in the years ending in six and one, a report summarizing the status of the plans adopted pursuant to this part.

The report prepared by the department shall identify the exemplary elements of the individual plans. The department shall provide a copy of the report to each urban water supplier that has submitted its plan to the department. The department shall also prepare reports and provide data for any legislative hearings designed to consider the effectiveness of plans submitted pursuant to this part.

(2) A report to be submitted pursuant to paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.

(c) (1) For the purpose of identifying the exemplary elements of the individual plans, the department shall identify in the report water demand management measures adopted and implemented by specific urban water suppliers, and identified pursuant to Section 10631, that achieve water savings significantly above the levels established by the department to meet the requirements of Section 10631.5.

(2) The department shall distribute to the panel convened pursuant to Section 10631.7 the results achieved by the implementation of those water demand management measures described in paragraph (1).

(3) The department shall make available to the public the standard the department will use to identify exemplary water demand management measures.

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.

Chapter 4. Miscellaneous Provisions

SECTION 10650-10656

10650. Any actions or proceedings to attack, review, set aside, void, or annul the acts or decisions of an urban water supplier on the grounds of noncompliance with this part shall be commenced as follows:

(a) An action or proceeding alleging failure to adopt a plan shall be commenced within 18 months after that adoption is required by this part.

(b) Any action or proceeding alleging that a plan, or action taken pursuant to the plan, does not comply with this part shall be commenced within 90 days after filing of the plan or amendment thereto pursuant to Section 10644 or the taking of that action.

10651. In any action or proceeding to attack, review, set aside, void, or annul a plan, or an action taken pursuant to the plan by an urban water supplier on the grounds of noncompliance with this part, the inquiry shall extend only to whether there was a prejudicial abuse of discretion. Abuse of discretion is established if the supplier has not proceeded in a manner required by law or if the action by the water supplier is not supported by substantial evidence.

10652. The California Environmental Quality Act (Division 13 (commencing with Section 21000) of the Public Resources Code) does not apply to the preparation and adoption of plans pursuant to this part or to the implementation of actions taken pursuant to Section 10632. Nothing in this part shall be interpreted as exempting from the California Environmental Quality Act any project that would significantly affect water supplies for fish and wildlife, or any project for implementation of the plan, other than projects implementing Section 10632, or any project for expanded or additional water supplies.

10653. The adoption of a plan shall satisfy any requirements of state law, regulation, or order, including those of the State Water Resources Control Board and the Public Utilities Commission, for the preparation of water management plans or conservation plans; provided, that if the State Water Resources Control Board or the Public Utilities Commission requires additional information concerning water conservation to implement its existing authority, nothing in this part shall be deemed to limit the board or the commission in obtaining that information. The requirements of this part shall be satisfied by any urban water demand management plan prepared to meet federal laws or regulations after the effective date of this part, and which substantially meets the requirements of this part, or by any existing urban water management plan which includes the contents of a plan required under this part.

10654. An urban water supplier may recover in its rates the costs incurred in preparing its plan and implementing the reasonable water conservation measures included in the plan. Any best water management practice that is included in the plan that is identified in the "Memorandum of Understanding Regarding Urban Water Conservation in California" is deemed to be reasonable for the purposes of this section.

10655. If any provision of this part or the application thereof to any person or circumstances is held invalid, that invalidity shall not affect other provisions or applications of this part which can be given effect without the invalid provision or application thereof, and to this end the provisions of this part are severable.

10656. An urban water supplier that does not prepare, adopt, and submit its urban water management plan to the department in accordance with this part, is ineligible to receive funding pursuant to Division 24 (commencing with Section 78500) or Division 26

(commencing with Section 79000), or receive drought assistance from the state until the urban water management plan is submitted pursuant to this article.

APPENDIX B

DWR STANDARDIZED TABLES

Table 2-1 Retail Only: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
CA1910003	City of Arcadia	14,264	14,692
	TOTAL	14,264	14,692
NOTES:			

Table 2-2: Plan Identification			
Select Only One	**Type of Plan**		**Name of RUWMP or Regional Alliance** *if applicable* *drop down list*
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		
NOTES:			

Table 2-3: Agency Identification	
Type of Agency (select one or both)	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year (select one)	
☐	UWMP Tables Are in Calendar Years
☑	UWMP Tables Are in Fiscal Years
If Using Fiscal Years Provide Month and Date that the Fiscal Year Begins (mm/dd)	
07/01	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

Table 2-4 Retail: Water Supplier Information Exchange
The retail supplier has informed the following wholesale supplier(s) of projected water use in accordance with CWC 10631.
Wholesale Water Supplier Name *(Add additional rows as needed)*
Upper San Gabriel Valley Municipal Water District (Upper District)
NOTES:

Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040*(opt)*
	55,342	56,713	58,166	59,657	61,186	62,753
NOTES: Based on 2015 population using the DWR Population Tool (see Section 5.4.1) and projected populations from the Southern California Association of Governments (SCAG) for the City						

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type *(Add additional rows as needed)*	2015 Actual		
Drop down list *May select each use multiple times* *These are the only Use Types that will be recognized by the WUEdata online submittal tool*	Additional Description *(as needed)*	Level of Treatment When Delivered *Drop down list*	Volume
Single Family		Drinking Water	9,098
Multi-Family		Drinking Water	1,944
Commercial		Drinking Water	2,093
Institutional/Governmental		Drinking Water	780
Landscape		Drinking Water	776
Losses		Drinking Water	635
		TOTAL	15,326
NOTES: Losses include distribution system water losses (443 AF) and unbilled water (192 AF).			

Table 4-2 Retail: Demands for Potable and Raw Water - Projected						
Use Type *(Add additional rows as needed)*	Additional Description *(as needed)*	Projected Water Use *Report To the Extent that Records are Available*				
Drop down list *May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool*		2020	2025	2030	2035	2040-opt
Single Family		8,976	9,206	9,441	9,684	9,932
Multi-Family		1,918	1,968	2,018	2,070	2,122
Commercial		2,065	2,118	2,172	2,227	2,285
Institutional/Governmental		766	785	805	826	847
Landscape		770	788	809	830	852
Losses		626	642	658	675	692
	TOTAL	15,119	15,507	15,904	16,312	16,730
NOTES:						

Table 4-3 Retail: Total Water Demands						
	2015	2020	2025	2030	2035	2040 *(opt)*
Potable and Raw Water *From Tables 4-1 and 4-2*	15,326	15,119	15,507	15,904	16,312	16,730
Recycled Water Demand* *From Table 6-4*	0	0	0	0	0	0
TOTAL WATER DEMAND	15,326	15,119	15,507	15,904	16,312	16,730
**Recycled water demand fields will be blank until Table 6-4 is complete.*						
NOTES:						

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
07/2014	443
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: AWWA Audit Worksheet provided in Appendix E.	

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook) *Drop down list (y/n)*	Yes
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc… utilized in demand projections are found.	Section 4.5
Are Lower Income Residential Demands Included In Projections? *Drop down list (y/n)*	Yes
NOTES:	

Table 5-1 Baselines and Targets Summary *Retail Agency or Regional Alliance Only*					
Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	*1996*	*2005*	*298*	*268*	*238*
5 Year	*2004*	*2008*	*297*		
*All values are in Gallons per Capita per Day (GPCD)					
NOTES: Years provided are on a fiscal year basis (e.g. "1995" is equivalent to fiscal year 1994-95)					

Table 5-2: 2015 Compliance *Retail Agency or Regional Alliance Only*								
Actual 2015 GPCD*	2015 Interim Target GPCD*	**Optional Adjustments to 2015 GPCD** *From Methodology 8*					2015 GPCD* *(Adjusted if applicable)*	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events*	Economic Adjustment*	Weather Normalization*	TOTAL Adjustments*	Adjusted 2015 GPCD*		
247	268				0	247	247	Yes
**All values are in Gallons per Capita per Day (GPCD)*								
NOTES:								

Table 6-1 Retail: Groundwater Volume Pumped						
☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type ***Drop Down List*** *May use each category multiple times*	Location or Basin Name	2011	2012	2013	2014	2015
Add additional rows as needed						
Alluvial Basin	Main San Gabriel Basin	9,841	11,721	13,278	14,104	12,010
Alluvial Basin	Raymond Basin	5,214	4,692	3,913	3,348	3,316
	TOTAL	15,055	16,413	17,191	17,452	15,326
NOTES: Years provided are on a fiscal year basis (e.g. "2011" is equivalent to fiscal year 2010-11)						

Table 6-2 Retail: Wastewater Collected Within Service Area in 2015						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
	Percentage of 2015 service area covered by wastewater collection system *(optional)*					
	Percentage of 2015 service area population covered by wastewater collection system *(optional)*					
Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? *Drop Down List*	Volume of Wastewater Collected from UWMP Service Area 2015	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area? *Drop Down List*	Is WWTP Operation Contracted to a Third Party? *(optional)* *Drop Down List*
Add additional rows as needed						
City of Arcadia	Estimated	4,900	LA County Sanitation Districts	WNWRP and JWPCP	No	No
Total Wastewater Collected from Service Area in 2015:		4,900				
NOTES: Units are in acre-feet per year (AFY)						

Table 6-3 Retail: Wastewater Treatment and Discharge Within Service Area in 2015										
☑	No wastewater is treated or disposed of within the UWMP service area. The supplier will not complete the table below.									
							2015 volumes			
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal *Drop down list*	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level *Drop down list*	Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
						Total	0	0	0	0
NOTES:										

Table 6-4 Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area

☑	Recycled water is not used and is not planned for use within the service area of the supplier. The supplier will not complete the table below.
Name of Agency Producing (Treating) the Recycled Water:	LA County Sanitation Districts
Name of Agency Operating the Recycled Water Distribution System:	Upper San Gabriel Valley Municipal Water District
Supplemental Water Added in 2015	0
Source of 2015 Supplemental Water	No supplemental water provided in 2015

Beneficial Use Type	General Description of 2015 Uses	Level of Treatment *Drop down list*	2015	2020	2025	2030	2035	2040 (opt)
Agricultural irrigation	Calco Farms	Tertiary	0	0	0	0	0	
Landscape irrigation (excludes golf courses)	City (Arcadia) and County Parks, Roadway Medians, School Campuses, LA County Arboretum	Tertiary	0	0	0	0	0	
Golf course irrigation	Santa Anita Golf Course	Tertiary	0	0	0	0	0	
Commercial use	Santa Anita Racetrack, Car Wash	Tertiary	0	0	0	0	0	
Industrial use								
Geothermal and other energy production								
Seawater intrusion barrier								
Recreational impoundment								
Wetlands or wildlife habitat								
Groundwater recharge (IPR)*								
Surface water augmentation (IPR)*								
Direct potable reuse								
Other *(Provide General Description)*	Caltrans	Tertiary	0	0	0	0	0	
		Total:	0	0	0	0	0	0

**IPR - Indirect Potable Reuse*

NOTES: The City is not projected to have access to recycled water supplies due to the lack of infrastructure to convey recycled water to the City. However, the City has prepared the "Draft Recycled Water Feasibility Study" in November 2006, which identified potential recycled water customers within the City.

Table 6-5 Retail: 2010 UWMP Recycled Water Use Projection Compared to 2015 Actual			
☑	Recycled water was not used in 2010 nor projected for use in 2015. The supplier will not complete the table below.		
Use Type		**2010 Projection for 2015**	**2015 Actual Use**
Agricultural irrigation			
Landscape irrigation (excludes golf courses)			
Golf course irrigation			
Commercial use			
Industrial use			
Geothermal and other energy production			
Seawater intrusion barrier			
Recreational impoundment			
Wetlands or wildlife habitat			
Groundwater recharge (IPR)			
Surface water augmentation (IPR)			
Direct potable reuse			
Other	*Type of Use*		
	Total	0	0
NOTES:			

Table 6-6 Retail: Methods to Expand Future Recycled Water Use			
☑	Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
6-35	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use
Add additional rows as needed			
		Total	0

NOTES: The City is not projected to have access to recycled water supplies due to the lack of infrastructure to convey recycled water to the City. However, the City has prepared the "Draft Recycled Water Feasibility Study" in November 2006, which identified potential recycled water customers within the City.

Table 6-7 Retail: Expected Future Water Supply Projects or Programs						
☐	No expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Supplier will not complete the table below.					
☐	Some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.					
6-38	Provide page location of narrative in the UWMP					
Name of Future Projects or Programs	Joint Project with other agencies?		Description (if needed)	Planned Implementation Year	Planned for Use in Year Type *Drop Down List*	Expected Increase in Water Supply to Agency *This may be a range*
	Drop Down List (y/n)	*If Yes, Agency Name*				
Add additional rows as needed						
Zone 2 Well	No		Proposed Well	FY 2017-18	Average Year	1,000 gpm
Zone 2 Well	No		Proposed Well	FY 2017-18	Single-Dry Year	1,000 gpm
Zone 2 Well	No		Proposed Well	FY 2017-18	Multi-Dry Year	1,000 gpm
Zone 3 (Library) Well	No		Proposed Well	FY 2019-20	Average Year	2,000 gpm
Zone 3 (Library) Well	No		Proposed Well	FY 2019-20	Single-Dry Year	2,000 gpm
Zone 3 (Library) Well	No		Proposed Well	FY 2019-20	Multi-Dry Year	2,000 gpm
NOTES:						

Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		Actual Volume	Water Quality *Drop Down List*	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Groundwater	Main San Gabriel Basin	12,010	Drinking Water	
Groundwater	Raymond Basin	3,316	Drinking Water	
	Total	15,326		0
NOTES:				

Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	Projected Water Supply *Report To the Extent Practicable*									
Drop down list *May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool*		**2020**		**2025**		**2030**		**2035**		**2040** *(opt)*	
		Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*
Add additional rows as needed											
Groundwater	Main San Gabriel Basin	11,316		11,704		12,101		12,509		12,927	
Groundwater	Raymond Basin	3,803		3,803		3,803		3,803		3,803	
Purchased or Imported Water		0		0		0		0		0	
	Total	15,119	0	15,507	0	15,904	0	16,312	0	16,730	0
NOTES: The City may use treated imported water as an emergency supply source or in the event should the City pump in excess of its allotted water rights in the Main Basin and Raymond Basin.											

Table 7-1 Retail: Basis of Water Year Data			
Year Type	**Base Year** *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	**Available Supplies if Year Type Repeats**	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year	2008	17,524	100%
Single-Dry Year	2012	16,413	94%
Multiple-Dry Years 1st Year	2012	16,413	94%
Multiple-Dry Years 2nd Year	2013	17,190	98%
Multiple-Dry Years 3rd Year	2014	17,452	100%
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			
Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
NOTES:			

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	15,119	15,507	15,904	16,312	16,730
Demand totals *(autofill from Table 4-3)*	15,119	15,507	15,904	16,312	16,730
Difference	0	0	0	0	0
NOTES:					

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	14,160	14,524	14,896	15,278	15,669
Demand totals	14,160	14,524	14,896	15,278	15,669
Difference	0	0	0	0	0
NOTES:					

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	14,160	14,524	14,896	15,278	15,669
	Demand totals	14,160	14,524	14,896	15,278	15,669
	Difference	0	0	0	0	0
Second year	Supply totals	14,831	15,211	15,601	16,001	16,411
	Demand totals	14,831	15,211	15,601	16,001	16,411
	Difference	0	0	0	0	0
Third year	Supply totals	15,057	15,443	15,839	16,245	16,661
	Demand totals	15,057	15,443	15,839	16,245	16,661
	Difference	0	0	0	0	0
Fourth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0

NOTES: Normal year water supplies were projected and multiplied by multiple dry year factors as follows: First Year: 94% of average year demand, Second year: 98% of average year demand and Third Year: 100% of average year demand.

Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction[1] *Numerical value as a percent*	Water Supply Condition (*Narrative description)*
Add additional rows as needed		
1	10%*	Total supply is below normal for two or more years
2	10%	Total supply is 90% of normal for two or more years
3	15%	Total supply is 85% of normal for two or more years
4	20%	Total supply is 80% of normal for two or more years
5	25%	Total supply is 75% of normal for two or more years
6	30%	Total supply is 70% of normal for two or more years
7	40%	Total supply is 60% of normal for two or more years
8	50%	Total supply is 50% of normal for two or more years
[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*		
NOTES: * For Stage (Phase) 1, the City's overall water use reduction goal is 36 percent, which is intended to address SWRCB's 2015 mandated statewide water use reduction goal of 25 percent.		

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement? *Drop Down List*
Add additional rows as needed			
1	Landscape - Restrict or prohibit runoff from landscape irrigation		Yes
1	Landscape - Limit landscape irrigation to specific days	Tuesdays and Saturdays	Yes
1	Landscape - Limit landscape irrigation to specific times	No irrigation between 9 am and 6 pm PST	Yes
1	Landscape - Other landscape restriction or prohibition	Irrigation limited to 10 minutes per station	Yes
1	Landscape - Other landscape restriction or prohibition	No irrigation during and within 48 hrs of measurable rainfall	Yes
1	CII - Lodging establishment must offer opt out of linen service		Yes
1	CII - Restaurants may only serve water upon request		Yes
1	Water Features - Restrict water use for decorative water features, such as fountains	Water can only be used if water is part of a recirculation system	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner		Yes
1	Other - Prohibit use of potable water for washing hard surfaces		Yes
NOTES:			

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier ***Drop down list*** *These are the only categories that will be accepted by the WUEdata online submittal tool*	Additional Explanation or Reference *(optional)*
Add additional rows as needed		
1	Expand Public Information Campaign	
1	Improve Customer Billing	
1	Offer Water Use Surveys	
1	Provide Rebates on Plumbing Fixtures and Devices	
1	Provide Rebates for Landscape Irrigation Efficiency	
1	Provide Rebates for Turf Replacement	
1	Increase Water Waste Patrols	
1	Implement or Modify Drought Rate Structure or Surcharge	
NOTES:		

Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	15,727	16,542	16,876
NOTES: Normal year water supplies were projected and multiplied by multiple dry year factors as follows: First Year: 94% of average year demand, Second year: 99% of average year demand and Third Year: 100% of average year demand.			

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Arcadia	☑	☑
Sierra Madre	☑	☑
East Pasadena	☑	☑
Monrovia	☑	☑
Pasadena	☑	☑
County Name *Drop Down List*	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
Los Angeles County	☑	☑
	☐	☐

APPENDIX C

COMPLETED PLAN CHECKLIST

Checklist Arranged by Water Code Section

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Section 5.7**
10608.20(e)	Retail suppliers shall provide 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.	Baselines and Targets	Chapter 5 and App E	**Chapter 5 Appendix G**
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 5.7.2**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 5.8**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 5.8.2**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 10.3**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**Not Applicable**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 5.8**
10620(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.	Plan Preparation	Section 2.1	**Section 2.1**
10620(d)(2)	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.	Plan Preparation	Section 2.5.2	**Section 2.5.2**

10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 7.4**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 10.2.1**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Sections 10.3.1 and 10.4**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 3.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 3.3**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Sections 3.4 and 5.4**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 3.4**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 3.4**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Chapter 6**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 6.2**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 6.2.2**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 6.2.1**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 6.2.2**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**Section 6.2.3**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of	System Supplies	Section 6.2.4	**Section 6.2.4**

	groundwater pumped by the urban water supplier for the past five years			
10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Sections 6.2 and 6.9**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 7.1**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 7.2**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**Section 7.1**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 6.7**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 4.2**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 4.3**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Sections 9.2 and 9.3**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**Not Applicable**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 6.8**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Section 6.6**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**Section 9.5**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use	System Supplies	Section 2.5.1	**Section 2.5.1**

	projections from that source.			
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**Not Applicable**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 4.5**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 8.1**
10632(a)(2)	Provide 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.	Water Shortage Contingency Planning	Section 8.9	**Section 8.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 8.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 8.2**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 8.4**
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 8.3**
10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 8.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 8.7**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 8.5**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 6.5.1**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of	System Supplies (Recycled Water)	Section 6.5.2	**Section 6.5.2**

	wastewater collected and treated and the methods of wastewater disposal.			
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 6.5.2.2**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 6.5.3 and 6.5.4**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 6.5.4**
10633(e)	Describe 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.	System Supplies (Recycled Water)	Section 6.5.4	**Section 6.5.4**
10633(f)	Describe the actions 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.	System Supplies (Recycled Water)	Section 6.5.5	**Section 6.5.5**
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 6.5.5**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 7.1**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 7.3**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 10.4.4**
10642	Provide supporting documentation that the water supplier has encouraged 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.	Plan Preparation	Section 2.5.2	**Section 2.5.2**
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Sections 10.2.2, 10.3, and 10.5**

	about the plan.			
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Sections 10.2.1**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 10.3.1**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 10.4.3**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 10.4.4**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Sections 10.4.1 and 10.4.2**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 10.5**

Checklist Arranged by Subject

CWC Section	UWMP Requirement	Subject	Guidebook Location	UWMP Location *(Optional Column for Agency Use)*
10620(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.	Plan Preparation	Section 2.1	**Section 2.1**
10620(d)(2)	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.	Plan Preparation	Section 2.5.2	**Section 2.5.2**
10642	Provide supporting documentation that the water supplier has encouraged 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.	Plan Preparation	Section 2.5.2	**Section 2.5.2**
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	**Section 3.1**
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	**Section 3.3**
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	**Section 3.4**
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	**Section 3.4**
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	**Sections 3.4 and 5.4**
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	**Section 4.2**
10631(e)(3)(A)	Report the distribution system water loss for the most recent 12-month period available.	System Water Use	Section 4.3	**Section 4.3**
10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	Section 4.5	**Section 4.5**
10608.20(b)	Retail suppliers shall adopt a 2020 water use target using one of four methods.	Baselines and Targets	Section 5.7 and App E	**Section 5.7**
10608.20(e)	Retail suppliers shall provide baseline daily per capita water use, urban water use target, interim urban water use target, and compliance daily per capita water use, along	Baselines and Targets	Chapter 5 and App E	**Chapter 5**

	with the bases for determining those estimates, including references to supporting data.			
10608.22	Retail suppliers' per capita daily water use reduction shall be no less than 5 percent of base daily per capita water use of the 5 year baseline. This does not apply if the suppliers base GPCD is at or below 100.	Baselines and Targets	Section 5.7.2	**Section 5.7.2**
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	**Section 5.8**
10608.24(d)(2)	If the retail supplier adjusts its compliance GPCD using weather normalization, economic adjustment, or extraordinary events, it shall provide the basis for, and data supporting the adjustment.	Baselines and Targets	Section 5.8.2	**Section 5.8.2**
10608.36	Wholesale suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their retail water suppliers achieve targeted water use reductions.	Baselines and Targets	Section 5.1	**Not Applicable**
10608.40	Retail suppliers shall report on their progress in meeting their water use targets. The data shall be reported using a standardized form.	Baselines and Targets	Section 5.8 and App E	**Section 5.8**
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	**Chapter 6**
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	**Section 6.2**
10631(b)(1)	Indicate whether a groundwater management plan has been adopted by the water supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System Supplies	Section 6.2.2	**Section 6.2.2**
10631(b)(2)	Describe the groundwater basin.	System Supplies	Section 6.2.1	**Section 6.2.1**
10631(b)(2)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the supplier has the legal right to pump.	System Supplies	Section 6.2.2	**Section 6.2.2**
10631(b)(2)	For unadjudicated basins, indicate whether or not the department has identified the basin as overdrafted, or projected to become overdrafted. Describe efforts by the supplier to eliminate the long-term overdraft condition.	System Supplies	Section 6.2.3	**Section 6.2.3**
10631(b)(3)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years	System Supplies	Section 6.2.4	**Section 6.2.4**

10631(b)(4)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Sections 6.2 and 6.9	**Sections 6.2 and 6.9**
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	**Section 6.7**
10631(g)	Describe the expected future water supply projects and programs that may be undertaken by the water supplier to address water supply reliability in average, single-dry, and multiple-dry years.	System Supplies	Section 6.8	**Section 6.8**
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	**Section 6.6**
10631(j)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) – if any - with water use projections from that source.	System Supplies	Section 2.5.1	**Section 2.5.1**
10631(j)	Wholesale suppliers will include documentation that they have provided their urban water suppliers with identification and quantification of the existing and planned sources of water available from the wholesale to the urban supplier during various water year types.	System Supplies	Section 2.5.1	**Not Applicable**
10633	For wastewater and recycled water, coordinate with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.1	**Section 6.5.1**
10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area. Include quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.	System Supplies (Recycled Water)	Section 6.5.2	**Section 6.5.2**
10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System Supplies (Recycled Water)	Section 6.5.2.2	**Section 6.5.2.2**
10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.3 and 6.5.4	**Section 6.5.3 and 6.5.4**
10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System Supplies (Recycled Water)	Section 6.5.4	**Section 6.5.4**
10633(e)	Describe 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.	System Supplies (Recycled Water)	Section 6.5.4	**Section 6.5.4**
10633(f)	Describe the actions which may be taken to	System Supplies	Section 6.5.5	**Section 6.5.5**

	encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	(Recycled Water)		
10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	Section 6.5.5	**Section 6.5.5**
10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water Supply Reliability Assessment	Section 7.4	**Section 7.4**
10631(c)(1)	Describe the reliability of the water supply and vulnerability to seasonal or climatic shortage.	Water Supply Reliability Assessment	Section 7.1	**Section 7.1**
10631(c)(1)	Provide data for an average water year, a single dry water year, and multiple dry water years	Water Supply Reliability Assessment	Section 7.2	**Section 7.2**
10631(c)(2)	For any water source that may not be available at a consistent level of use, describe plans to supplement or replace that source.	Water Supply Reliability Assessment	Section 7.1	**Section 7.1**
10634	Provide information on the quality of existing sources of water available to the supplier and the manner in which water quality affects water management strategies and supply reliability	Water Supply Reliability Assessment	Section 7.1	**Section 7.1**
10635(a)	Assess the water supply reliability during normal, dry, and multiple dry water years by comparing the total water supply sources available to the water supplier with the total projected water use over the next 20 years.	Water Supply Reliability Assessment	Section 7.3	**Section 7.3**
10632(a) and 10632(a)(1)	Provide an urban water shortage contingency analysis that specifies stages of action and an outline of specific water supply conditions at each stage.	Water Shortage Contingency Planning	Section 8.1	**Section 8.1**
10632(a)(2)	Provide 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.	Water Shortage Contingency Planning	Section 8.9	**Section 8.9**
10632(a)(3)	Identify actions to be undertaken by the urban water supplier in case of a catastrophic interruption of water supplies.	Water Shortage Contingency Planning	Section 8.8	**Section 8.8**
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	**Section 8.2**
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	**Section 8.4**
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	**Section 8.3**

10632(a)(7)	Provide an analysis of the impacts of each of the actions and conditions in the water shortage contingency analysis on the revenues and expenditures of the urban water supplier, and proposed measures to overcome those impacts.	Water Shortage Contingency Planning	Section 8.6	**Section 8.6**
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	**Section 8.7**
10632(a)(9)	Indicate a mechanism for determining actual reductions in water use pursuant to the water shortage contingency analysis.	Water Shortage Contingency Planning	Section 8.5	**Section 8.5**
10631(f)(1)	Retail suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand Management Measures	Sections 9.2 and 9.3	**Sections 9.2 and 9.3**
10631(f)(2)	Wholesale suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and supplier assistance program.	Demand Management Measures	Sections 9.1 and 9.3	**Not Applicable**
10631(i)	CUWCC members may submit their 2013-2014 CUWCC BMP annual reports in lieu of, or in addition to, describing the DMM implementation in their UWMPs. This option is only allowable if the supplier has been found to be in full compliance with the CUWCC MOU.	Demand Management Measures	Section 9.5	**Section 9.5**
10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets.	Plan Adoption, Submittal, and Implementation	Section 10.3	**Section 10.3**
10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.	Plan Adoption, Submittal, and Implementation	Section 10.2.1	**Section 10.2.1**
10621(d)	Each urban water supplier shall update and submit its 2015 plan to the department by July 1, 2016.	Plan Adoption, Submittal, and Implementation	Sections 10.3.1 and 10.4	**Sections 10.3.1 and 10.4**
10635(b)	Provide supporting documentation that Water Shortage Contingency Plan has been, or will be, provided to any city or county within which it provides water, no later than 60 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 10.4.4**
10642	Provide supporting documentation that the urban water supplier made the plan available for public inspection, published notice of the public hearing, and held a public hearing	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	**Sections 10.2.2, 10.3, and 10.5**

	about the plan.			
10642	The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.	Plan Adoption, Submittal, and Implementation	Sections 10.2.1	**Sections 10.2.1**
10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	**Section 10.3.1**
10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	Section 10.4.3	**Section 10.4.3**
10644(a)(1)	Provide supporting documentation that the urban water supplier has submitted this UWMP to any city or county within which the supplier provides water no later than 30 days after adoption.	Plan Adoption, Submittal, and Implementation	Section 10.4.4	**Section 10.4.4**
10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	Sections 10.4.1 and 10.4.2	**Sections 10.4.1 and 10.4.2**
10645	Provide supporting documentation that, not later than 30 days after filing a copy of its plan with the department, the supplier has or will make the plan available for public review during normal business hours.	Plan Adoption, Submittal, and Implementation	Section 10.5	**Section 10.5**

APPENDIX D

HISTORICAL ANNUAL RAINFALL

PASADENA, CA

Monthly Sum of Precipitation (Inches)

(046719)

File last updated on Dec 10, 2015
a = 1 day missing, b = 2 days missing, c = 3 days, ..etc..,
z = 26 or more days missing, A = Accumulations present
Long-term means based on columns; thus, the monthly row may not
sum (or average) to the long-term annual value.
MAXIMUM ALLOWABLE NUMBER OF MISSING DAYS : 5
Individual Months not used for annual or monthly statistics if more than 5 days are missing.
Individual Years not used for annual statistics if any month in that year has more than 5 days missing.

YEAR(S)	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANN
1893	7.53	3.03	10.46	0.66	0.20	0.06	0.01	0.00	0.04	0.71	0.18	4.08	26.96
1894	1.45	0.74	-----z	-----z	-----z	-----z	0.05	0.05	0.73	0.02	0.01	5.89	8.94d
1895	7.56	-----z	4.27	0.61	-----z	-----z	0.00	0.00	0.00	-----z	-----z	-----z	12.44f
1896	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.001
1897	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.001
1898	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.001
1899	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.001
1900	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.001
1901	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.001
1902	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.001
1903	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.001
1904	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.001
1905	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.001
1906	-----z	-----z	-----z	1.92	1.94	-----z	-----z	-----z	-----z	-----z	-----z	9.57y	3.86j
1907	11.18y	-----z	-----z	0.30	-----z	-----z	-----z	-----z	-----z	-----z	-----z	-----z	0.30k
1908	6.68	5.26	-----z	-----z	0.00e	0.00	0.00	0.02	1.94	0.26	1.18	1.58	16.92b
1909	10.45	6.60	4.99	0.07	0.00	0.20	0.12	0.06	0.08	0.65	2.25	8.66	34.13
1910	2.96	0.31	2.56	0.32	0.00	0.02	0.02	0.00	0.05	0.75	0.28	0.15	7.42
1911	9.82	4.70	7.59	0.71	0.02	0.06	0.00	0.00	1.81	0.11	0.08	0.95	25.85
1912	0.18	0.00	11.83	2.62	0.22	0.00	0.00	0.00	0.00	0.69	0.56	0.30	16.40
1913	3.13	11.20	0.35	0.92	0.13	0.76	0.01	0.06	0.14	0.01	3.20	1.84	21.75
1914	15.07	11.44	0.82	0.92	0.46	0.15	0.04	0.00	0.04	0.70	0.25	4.34	34.23
1915	6.87	5.86	0.87	1.61	1.44	0.00	0.00	0.00	0.00	0.00	2.03	2.99	21.67
1916	16.45	1.96	1.36	0.13	0.10	0.00	0.00	0.00	0.47	3.98	0.29	4.46a	29.20
1917	3.09	4.67	0.49	1.08	0.89	-----z	0.00	-----z	0.00	0.00	0.33	0.05	10.60b
1918	0.36	8.34	9.43	0.25	1.07	0.00	0.45	0.06	1.20	0.00	2.19	1.77	25.12
1919	1.34	2.53	2.91	0.62	0.36	0.00	-----z	-----z	2.70	0.62	1.22	2.94	15.24b
1920	0.51	3.59	6.25	1.37	0.19	0.00	0.00	0.00	0.08	1.02	1.15	1.46	15.62
1921	4.96	1.10	3.72	0.56	5.36	0.00	-----z	0.00	0.25	1.51	0.08	12.46	30.00a
1922	6.49	5.21	2.31	0.32	0.91	0.06	0.01	0.00	0.00	0.54	1.82	4.97	22.64
1923	2.08	0.92	0.58	2.52	0.00	0.04	0.00	0.00	0.54	0.63	0.11	0.65	8.07
1924	1.30	0.11	4.74	1.51	0.00	0.00	0.00	0.00	0.00	1.00	1.74	1.84	12.24
1925	0.31	0.97	2.13	3.78	0.70	0.38	0.00	0.00	0.00	0.65	0.92	-----z	9.84a
1926	2.59	3.43u	0.60	10.04q	0.33	-----z	0.03	0.01	0.00	0.09	5.09	2.70	11.44c

1927	0.97	11.74	3.03	1.30	0.21	0.00	0.00	0.00	0.00	-----z	0.70	3.52	21.47a
1928	0.09	3.35	2.22	0.74	0.53	0.24	0.00	0.00	0.00	0.68	1.93	3.01	12.79
1929	1.53	1.93	2.99	3.62	0.00	0.19	0.00	0.00	0.54	0.02	0.00a	0.00	10.82
1930	6.25	0.59	5.85	0.64	2.42	0.02	0.00	0.00	0.00	0.16	2.37	0.00	18.30
1931	4.37	5.47	0.02	3.98	0.87	0.11	0.00	0.10	0.18	0.54	3.22	6.63	25.49
1932	2.36	8.23	0.24	0.55	0.05	0.25	0.00	0.00	0.30	0.10	0.00	1.77	13.85
1933	12.54	0.05	0.12d	0.82	0.33	0.32	0.00	0.01	0.01	0.48b	0.20	10.34	25.22
1934	6.42	3.18	0.03	0.08	0.00	0.39	0.00	0.01	0.25	4.03	2.29	5.94	22.62
1935	4.39	2.64	3.01	4.37	0.05	0.00	0.17	0.09	0.00	0.31	0.93	0.78	16.74
1936	0.39	9.84	2.45	0.91	0.00	0.10	0.00	0.00	0.02	2.28	0.06	9.60	25.65
1937	2.97	8.04	5.22	0.33	0.29	0.00	0.00	0.00	0.00	0.00	0.00	4.75	21.60
1938	1.89	11.23	12.61	0.75	0.09	0.06	0.00	0.00	0.01	0.05	0.01	9.95	36.65
1939	4.48	1.33	1.38	0.39	0.24	0.00	0.00	0.00	5.88	0.45	0.15a	0.69	14.99
1940	5.76	6.05h	1.50	2.12	0.01	0.00	0.00	0.00	0.00	1.96	0.62	7.72	19.69a
1941	2.66	16.77	11.43	5.08	0.06	0.02	0.02	0.07	0.00	1.73	0.16	6.42	44.42
1942	0.45	1.12	1.69a	3.03	0.02	0.00	0.00	0.51	0.00	1.14	0.41	1.26	9.63
1943	16.43	5.51	6.76	1.23	0.03	0.05	0.00	0.00	0.01	0.40	0.05	7.90	38.37
1944	0.90	10.85	3.72	1.31	0.00j	0.30	0.00	0.00	0.03	0.03	5.47	1.18	23.79a
1945	0.06	5.09	4.04	0.35	0.00	0.15	0.00	0.50	0.00	0.69	0.24	7.02	18.14
1946	0.24	2.27	5.28	0.65	0.10	0.00	0.00	0.00i	0.01	1.51	10.25	5.79f	20.31b
1947	0.46	0.63	0.96d	0.29	0.48	0.06	0.00	0.10	0.16	0.15	0.27	1.81	5.37
1948	0.01	2.08	3.63	2.06	0.02	0.50	0.00	0.00	0.00	0.60	0.00	3.04	11.94
1949	3.52b	1.68c	1.71	0.08	1.19	0.00	0.00	0.00f	0.00	0.07	2.55	4.27	15.07a
1950	3.18	2.42	1.29	0.69	0.14	0.12	0.13	0.00	0.82	0.48	1.72	0.03	11.02
1951	3.74	1.32	1.02	2.35	0.19	0.00	0.00	0.21	0.00	0.67	1.93	6.74	18.17
1952	14.96	0.66	8.53	3.13	0.00	0.00	0.00	0.00	0.13	0.00	5.15	4.57	37.13
1953	1.53	0.30	0.99	1.22	0.02	0.07	0.00	0.00	0.00	0.00	1.36	0.34	5.83
1954	6.67	3.17	4.40	0.28	0.07	0.18	0.00	0.00	0.00	0.00	2.16	1.17	18.10
1955	5.75	1.29	1.51	1.63	2.42	0.07	0.00	0.05	0.00	0.00	1.81	1.65	16.18
1956	9.05	1.21	0.00	4.03	0.90	0.00	0.00	0.01	0.00	0.62	0.00	0.31	16.13
1957	6.00	3.12	1.89	2.08	1.43	0.18	0.00	0.00	0.00	1.97	0.69	3.76	21.12
1958	2.56	10.05	5.93	5.62	0.00	0.00	0.00	0.20c	0.10	1.02	0.12	0.00	25.60
1959	2.84b	5.30a	0.00f	0.65	0.00	0.03	0.00	0.00	0.00	0.00	0.05	1.63	10.50a
1960	3.03g	2.25	0.56	1.76	0.04	0.01f	0.00	0.00	0.00	0.11	4.07	0.16	8.95b
1961	1.51	0.00	0.88	0.45	0.00	0.00	0.00	0.06	0.04	0.00	1.12d	2.66	6.72
1962	3.42	13.14	1.69	0.00	0.73	0.03	0.00	0.00	0.00	0.19	0.00	0.05	19.25
1963	0.48	4.84	2.35	1.91	0.00	0.36	0.00	0.00	1.51	0.99	2.44	0.02	14.90
1964	2.70	0.04	2.43	1.56	0.03	0.30	0.00	0.00	0.00	0.47	2.75	1.82	12.10
1965	0.86	0.48	1.47	6.83	0.15	0.09	0.07	0.07	1.24	0.00	13.74	6.75	31.75
1966	0.92	1.42	0.65	0.03	0.25	0.00	0.00	0.00	0.42	0.05	3.76	6.25	13.75
1967	6.59	0.12	3.66	5.04	0.18	0.13	0.00	0.00	0.27	0.00	8.43	1.51	25.93
1968	1.01	0.97	3.33	0.63	0.11	0.07	0.01	0.00	0.00	0.35	0.43	0.91	7.82
1969	16.74	11.30	1.82	0.84	0.14	0.22	0.01	0.00	0.00	0.00	1.41	0.11	32.59
1970	1.77	4.52	3.51	0.05	0.00	0.05	0.00	0.00	0.00	0.03	6.54	5.48	21.95
1971	1.39	1.10	0.78	0.46	0.50	0.05	0.00	0.00	0.00	0.23	0.35	7.05	11.91
1972	0.01	0.05	0.00	0.19	0.02	0.44	0.00	0.39	0.03	0.25	3.53	2.25	7.16
1973	4.09	11.15	4.34	0.03	0.07	0.06	0.00	0.03	0.00	0.26	-----z	0.66	20.69a
1974	10.49	0.10	4.61	0.40	0.09	0.01	0.01	0.00	0.00	0.92	0.02	3.99	20.64
1975	0.10	2.62	5.97	1.68	0.15	0.03	0.00	0.00	0.01	0.38	0.11	0.53	11.58
1976	0.00	4.80	2.33	1.15	0.12	0.15	0.03	0.24	3.93	1.44	0.83	0.75	15.77
1977	4.46	0.24	1.96	0.00	3.68	0.01	0.00	2.27	0.00	0.02	0.13	5.85	18.62
1978	8.99	9.37	12.86	-----z	0.09	0.00	0.00	0.00	0.77	0.19	2.19	1.99	36.45a

1979	7.74	4.26	-----z	0.02	0.03	0.09	0.00	0.00	0.00	0.92	0.30	0.88	14.24 a
1980	11.10	19.70	5.62	0.60	0.47	0.00	0.04	0.00	0.00	0.01	0.00	1.00	38.54
1981	3.23	1.42	5.26	0.71	0.03	0.02	0.00	0.00	0.08	0.66	2.49	0.77	14.67
1982	3.40	0.77	6.73	3.00	0.42	0.21	0.00	0.00	1.99	0.45	3.80	1.59	22.36
1983	8.86	6.19	12.60	7.77	0.29	0.08	0.00	1.92	2.18	1.27	2.89	4.42	48.47
1984	0.20	0.00	0.49	0.49	0.00	0.16	0.00	0.64	0.72	0.09	3.14	7.74	13.67
1985	0.96	1.89	1.43	0.00	0.31	0.00	0.00	0.00	0.15	0.75	4.28	0.22	9.99
1986	3.59	5.77	6.91	0.65	0.00	0.00	0.11	0.00	1.98	1.61	1.33	0.48	22.43
1987	2.22	1.91	1.54	0.35	0.08	0.11	0.19	0.10	0.17	3.34	2.50	2.79	15.30
1988	2.61	2.17	0.95	3.19	0.06	0.00	0.00	0.06	0.07	0.00	1.76	4.91 u	10.87 a
1989	1.05	2.45	1.19	0.06	0.17	0.06	0.00	0.00	0.96	0.55	0.44	0.00	6.93
1990	2.83	4.35	0.34	1.19	1.47	0.00	0.00	0.15 a	0.08	0.00	0.74	0.09	11.24
1991	2.02	5.30	10.01	0.05	0.04	0.00 a	0.21	0.08	0.15	1.17	0.05	3.68	22.76
1992	2.73	12.47	9.14	0.32	0.14	0.04	0.82	0.00	0.00	1.67	0.00	6.45	33.78
1993	15.99	9.19	4.11	0.00	0.02	1.25	0.00	0.00	0.00	0.19	1.17	1.35	33.27
1994	0.40	4.25	2.19	0.96	0.39	0.05	0.00	0.00	0.00	0.72	0.63	1.00	10.59
1995	18.46	2.18	9.89	1.50	0.18	1.93	0.01	0.00	0.01	0.00	0.07	2.48	36.71
1996	3.20	8.38	2.97	0.68 a	0.03	0.00	0.00	0.00	0.00	1.18	2.42	5.86	24.72
1997	6.99	0.25	0.00	0.00	0.00	0.12	0.00	0.00	0.70	0.04	2.84	3.74	14.68
1998	4.07	16.87	4.06	2.06 a	4.41	0.38	0.00	0.48	0.04	0.00	1.52	0.53	34.42
1999	2.26	1.02	1.48	2.88	0.17	1.18	0.02	0.00	0.00	0.00	0.43	0.35	9.79
2000	1.08	9.70 a	3.42	2.71	0.17	0.00	0.00 a	0.04	0.38	1.29 a	0.00	0.00	18.79
2001	5.06	8.43	1.31	2.13 a	0.00	0.00	0.08 a	0.00	0.00	0.06	2.60 a	1.26	20.93
2002	1.88	0.41	0.43	0.15	0.25	0.12	0.00	0.03	0.63	0.00	2.50 d	2.92	9.32
2003	0.00	7.04	4.03	1.26	1.04	0.53	0.04	0.00	0.00	0.60	1.14	2.15	17.83
2004	0.26	8.21	1.27	0.52	0.00	0.01	0.00	0.00	0.00	8.77	1.60	9.54	30.18
2005	15.89	15.62 b	3.21 b	1.43	0.04 i	0.00	0.00	0.02	0.35	0.77	0.17	0.75	38.21 a
2006	3.67	4.01	2.22 g	4.45	0.98 p	0.04	0.00	0.01 a	0.00	0.03	0.10	0.74 e	13.05 b
2007	0.55	2.40	0.12	0.59	0.05	0.00	0.05	0.03	1.58	0.57	0.82	3.03	9.79
2008	13.79	1.66	0.11	0.03	0.73	0.00	0.00	0.00	0.03	0.07	3.55	3.77	23.74
2009	0.82	6.91	0.73	0.09	0.00	0.15	0.00	0.00	0.00	1.32	0.00	5.50	15.52
2010	8.19	6.40	1.24	2.42	0.04	0.00	0.00	0.00	0.00	1.85	0.86	15.10	36.10
2011	0.99	4.35	4.49	0.00	0.53	0.18	0.00	0.01	0.00	1.68	2.55	1.17	15.95
2012	1.27	0.74	2.64	3.14	0.18	0.00	0.01	0.02	0.00	0.47	1.11	3.38	12.96
2013	1.86	0.71	1.36	0.00	0.08	0.01	0.00	0.00	0.03	0.17	1.08	0.94	6.24
2014	0.01	3.65	1.75	0.39	0.00	0.01	0.00	0.03	0.54	0.00	0.10	7.66	14.14
2015	1.51	1.53	1.67	0.03	1.19	0.06	0.64	0.00	1.90	1.03	0.21	0.00 u	9.77 a
Period of Record Statistics													
MEAN	4.30	4.46	3.34	1.36	0.43	0.13	0.03	0.08	0.37	0.69	1.60	3.15	19.90
S.D.	4.53	4.33	3.17	1.53	0.85	0.27	0.11	0.30	0.85	1.10	2.13	3.08	9.70
SKEW	1.46	1.26	1.39	1.79	3.65	4.22	5.31	5.87	3.76	4.38	2.86	1.29	0.72
MAX	18.46	19.70	12.86	7.77	5.36	1.93	0.82	2.27	5.88	8.77	13.74	15.10	48.47
MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.37
YRS	110.00	108.00	106.00	109.00	107.00	106.00	109.00	107.00	111.00	109.00	109.00	106.00	89.00

APPENDIX E

AWWA AUDIT WORKSHEET

AWWA Free Water Audit Software v5.0

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This spreadsheet-based water audit tool is designed to help quantify and track water losses associated with water distribution systems and identify areas for improved efficiency and cost recovery. It provides a "top-down" summary water audit format, and is not meant to take the place of a full-scale, comprehensive water audit format.

Auditors are strongly encouraged to refer to the most current edition of AWWA M36 Manual for Water Audits for detailed guidance on the water auditing process and targetting loss reduction levels

The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons below.

Please begin by providing the following information

Name of Contact Person:	Craig Clark	
Email Address:	cclark@ArcadiaCA.gov	
Telephone | Ext.:	626-256-6554	
Name of City / Utility:	City of Arcadia	
City/Town/Municipality:	Arcadia	
State / Province:	California (CA)	
Country:	USA	
Year:	2014-15	Financial Year
Start Date:	07/2014	Enter MM/YYYY numeric format
End Date:	06/2015	Enter MM/YYYY numeric format
Audit Preparation Date:	2/18/2016	
Volume Reporting Units:	Acre-feet	
PWSID / Other ID:	1910003	

The following guidance will help you complete the Audit

All audit data are entered on the ***Reporting Worksheet***

- Value can be entered by user
- Value calculated based on input data
- These cells contain recommended default values

Use of Option (Radio) Buttons: Pcnt: 0.25% Value:

Select the default percentage by choosing the option button on the left

To enter a value, choose this button and enter a value in the cell to the right

The following worksheets are available by clicking the buttons below or selecting the tabs along the bottom of the page

Instructions
The current sheet. Enter contact information and basic audit details (year, units etc)

Reporting Worksheet
Enter the required data on this worksheet to calculate the water balance and data grading

Comments
Enter comments to explain how values were calculated or to document data sources

Performance Indicators
Review the performance indicators to evaluate the results of the audit

Water Balance
The values entered in the Reporting Worksheet are used to populate the Water Balance

Dashboard
A graphical summary of the water balance and Non-Revenue Water components

Grading Matrix
Presents the possible grading options for each input component of the audit

Service Connection Diagram
Diagrams depicting possible customer service connection line configurations

Definitions
Use this sheet to understand the terms used in the audit process

Loss Control Planning
Use this sheet to interpret the results of the audit validity score and performance indicators

Example Audits
Reporting Worksheet and Performance Indicators examples are shown for two validated audits

Acknowledgements
Acknowledgements for the AWWA Free Water Audit Software v5.0

If you have questions or comments regarding the software please contact us via email at: wlc@awwa.org

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

American Water Works Association.
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? Click to access definition
+ Click to add a comment

Water Audit Report for: City of Arcadia (1910003)
Reporting Year: 2014-15 | 7/2014 - 6/2015

Please enter data in the white cells below. Where available, metered values should be used; if metered values are unavailable please estimate a value. Indicate your confidence in the accuracy of the input data by grading each component (n/a or 1-10) using the drop-down list to the left of the input cell. Hover the mouse over the cell to obtain a description of the grades

All volumes to be entered as: ACRE-FEET PER YEAR

To select the correct data grading for each input, determine the highest grade where the utility meets or exceeds all criteria for that grade and all grades below it.

<---------- Enter grading in column 'E' and 'J' ---------->

Master Meter and Supply Error Adjustments

WATER SUPPLIED

Volume from own sources:	10	15,326.000	acre-ft/yr	4	0.00%			acre-ft/yr
Water imported:	10	0.000	acre-ft/yr					acre-ft/yr
Water exported:	10	0.000	acre-ft/yr					acre-ft/yr

Enter negative % or value for under-registration
Enter positive % or value for over-registration

WATER SUPPLIED: 15,326.000 acre-ft/yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	10	14,691.500	acre-ft/yr			
Billed unmetered:	10	0.000	acre-ft/yr			
Unbilled metered:	10	0.000	acre-ft/yr			
Unbilled unmetered:		191.575	acre-ft/yr	1.25%		acre-ft/yr

Default option selected for Unbilled unmetered - a grading of 5 is applied but not displayed

Use buttons to select percentage of water supplied **OR** value

AUTHORIZED CONSUMPTION: 14,883.075 acre-ft/yr

WATER LOSSES (Water Supplied - Authorized Consumption) 442.925 acre-ft/yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		38.315	acre-ft/yr	0.25%		acre-ft/yr
Customer metering inaccuracies:	10	148.399	acre-ft/yr	1.00%		acre-ft/yr
Systematic data handling errors:		36.729	acre-ft/yr	0.25%		acre-ft/yr

Default option selected for unauthorized consumption - a grading of 5 is applied but not displayed

Default option selected for Systematic data handling errors - a grading of 5 is applied but not displayed

Apparent Losses: 223.443 acre-ft/yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 219.482 acre-ft/yr

WATER LOSSES: 442.925 acre-ft/yr

NON-REVENUE WATER

NON-REVENUE WATER: 634.500 acre-ft/yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	10	161.0	miles
Number of active AND inactive service connections:	10	14,264	
Service connection density:		89	conn./mile main

Are customer meters typically located at the curbstop or property line? Yes

Average length of customer service line: (length of service line, beyond the property boundary, that is the responsibility of the utility)

Average length of customer service line has been set to zero and a data grading score of 10 has been applied

Average operating pressure:	10	65.0	psi

COST DATA

Total annual cost of operating water system:	10	$11,000,000	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$1.40	$/100 cubic feet (ccf)
Variable production cost (applied to Real Losses):	1		$/acre-ft

☑ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 86 out of 100 *****

A weighted scale for the components of consumption and water loss is included in the calculation of the Water Audit Data Validity Score

PRIORITY AREAS FOR ATTENTION:

Based on the information provided, audit accuracy can be improved by addressing the following components:

1: Variable production cost (applied to Real Losses)
2: Unauthorized consumption
3: Systematic data handling errors

APPENDIX F

WATER CONSERVATION ACT OF 2009

Section L: California Water Code, Division 6, Part 2.55: Water Conservation

The following sections of California Water Code Division 6, Part 2.55, are available online at http://www.leginfo.ca.gov/calaw.html.

Chapter 1. General Declarations and Policy	§10608-10608.8
Chapter 2. Definitions	§10608.12
Chapter 3. Urban Retail Water Suppliers	§10608.16-10608.44

Legislative Counsel's Digest

Senate Bill No. 7
Chapter 4

An act to amend and repeal Section 10631.5 of, to add Part 2.55 (commencing with Section 10608) to Division 6 of, and to repeal and add Part 2.8 (commencing with Section 10800) of Division 6 of, the Water Code, relating to water.

[Approved by Governor November 10, 2009. Filed with Secretary of State November 10, 2009.]

Legislative Counsel's Digest

SB 7, Steinberg. Water conservation.

(1) Existing law requires the Department of Water Resources to convene an independent technical panel to provide information to the department and the Legislature on new demand management measures, technologies, and approaches. "Demand management measures" means those water conservation measures, programs, and incentives that prevent the waste of water and promote the reasonable and efficient use and reuse of available supplies.

This bill would require the state to achieve a 20% reduction in urban per capita water use in California by December 31, 2020. The state would be required to make incremental progress towards this goal by reducing per capita water use by at least 10% on or before December 31, 2015. The bill would require each urban retail water supplier to develop urban water use targets and an interim urban water use target, in accordance with specified requirements. The bill would require agricultural water suppliers to implement efficient water management practices. The bill would require the department, in consultation with other state agencies, to develop a single standardized water use reporting form. The bill, with certain exceptions, would provide that urban retail water suppliers, on and after July 1, 2016, and agricultural water suppliers, on and after July 1, 2013, are not eligible for state water grants or loans unless they comply with the water conservation requirements established by the bill. The bill would repeal, on July 1, 2016, an existing requirement that conditions

eligibility for certain water management grants or loans to an urban water supplier on the implementation of certain water demand management measures.

(2) Existing law, until January 1, 1993, and thereafter only as specified, requires certain agricultural water suppliers to prepare and adopt water management plans.

This bill would revise existing law relating to agricultural water management planning to require agricultural water suppliers to prepare and adopt agricultural water management plans with specified components on or before December 31, 2012, and update those plans on or before December 31, 2015, and on or before December 31 every 5 years thereafter. An agricultural water supplier that becomes an agricultural water supplier after December 31, 2012, would be required to prepare and adopt an agricultural water management plan within one year after becoming an agricultural water supplier. The agricultural water supplier would be required to notify each city or county within which the supplier provides water supplies with regard to the preparation or review of the plan. The bill would require the agricultural water supplier to submit copies of the plan to the department and other specified entities. The bill would provide that an agricultural water supplier is not eligible for state water grants or loans unless the supplier complies with the water management planning requirements established by the bill.

(3) The bill would take effect only if SB 1 and SB 6 of the 2009–10 7th Extraordinary Session of the Legislature are enacted and become effective.

The people of the State of California do enact as follows:

SECTION 1. Part 2.55 (commencing with Section 10608) is added to Division 6 of the Water Code, to read:

Part 2.55. Sustainable Water Use and Demand Reduction

Chapter 1. General Declarations and Policy

10608. The Legislature finds and declares all of the following:

(a) Water is a public resource that the California Constitution protects against waste and unreasonable use.

(b) Growing population, climate change, and the need to protect and grow California's economy while protecting and restoring our fish and wildlife habitats make it essential that the state manage its water resources as efficiently as possible.

(c) Diverse regional water supply portfolios will increase water supply reliability and reduce dependence on the Delta.

(d) Reduced water use through conservation provides significant energy and environmental benefits, and can help protect water quality, improve streamflows, and reduce greenhouse gas emissions.

(e) The success of state and local water conservation programs to increase efficiency of water use is best determined on the basis of measurable outcomes related to water use or efficiency.

(f) Improvements in technology and management practices offer the potential for increasing water efficiency in California over time, providing an essential water management tool to meet the need for water for urban, agricultural, and environmental uses.

(g) The Governor has called for a 20 percent per capita reduction in urban water use statewide by 2020.

(h) The factors used to formulate water use efficiency targets can vary significantly from location to location based on factors including weather, patterns of urban and suburban development, and past efforts to enhance water use efficiency.

(i) Per capita water use is a valid measure of a water provider's efforts to reduce urban water use within its service area. However, per capita water use is less useful for measuring relative water use efficiency between different water providers. Differences in weather, historical patterns of urban and suburban development, and density of housing in a particular location need to be considered when assessing per capita water use as a measure of efficiency.

10608.4. It is the intent of the Legislature, by the enactment of this part, to do all of the following:

(a) Require all water suppliers to increase the efficiency of use of this essential resource.

(b) Establish a framework to meet the state targets for urban water conservation identified in this part and called for by the Governor.

(c) Measure increased efficiency of urban water use on a per capita basis.

(d) Establish a method or methods for urban retail water suppliers to determine targets for achieving increased water use efficiency by the year 2020, in accordance with the Governor's goal of a 20-percent reduction.

(e) Establish consistent water use efficiency planning and implementation standards for urban water suppliers and agricultural water suppliers.

(f) Promote urban water conservation standards that are consistent with the California Urban Water Conservation Council's adopted best management practices and the requirements for demand management in Section 10631.

(g) Establish standards that recognize and provide credit to water suppliers that made substantial capital investments in urban water conservation since the drought of the early 1990s.

(h) Recognize and account for the investment of urban retail water suppliers in providing recycled water for beneficial uses.

(i) Require implementation of specified efficient water management practices for agricultural water suppliers.

(j) Support the economic productivity of California's agricultural, commercial, and industrial sectors.

(k) Advance regional water resources management.

10608.8.

(a) (1) Water use efficiency measures adopted and implemented pursuant to this part or Part 2.8 (commencing with Section 10800) are water conservation measures subject to the protections provided under Section 1011.

(2) Because an urban agency is not required to meet its urban water use target until 2020 pursuant to subdivision (b) of Section 10608.24, an urban retail water supplier's failure to meet those targets shall not establish a violation of law for purposes of any state administrative or judicial proceeding prior to January 1, 2021. Nothing in this paragraph limits the use of data reported to the department or the board in litigation or an administrative proceeding. This paragraph shall become inoperative on January 1, 2021.

(3) To the extent feasible, the department and the board shall provide for the use of water conservation reports required under this part to meet the requirements of Section 1011 for water conservation reporting.

(b) This part does not limit or otherwise affect the application of Chapter 3.5 (commencing with Section 11340), Chapter 4 (commencing with Section 11370), Chapter 4.5 (commencing with Section 11400), and Chapter 5 (commencing with Section 11500) of Part 1 of Division 3 of Title 2 of the Government Code.

(c) This part does not require a reduction in the total water used in the agricultural or urban sectors, because other factors, including, but not limited to, changes in agricultural economics or population growth may have greater effects on water

use. This part does not limit the economic productivity of California's agricultural, commercial, or industrial sectors.

(d) The requirements of this part do not apply to an agricultural water supplier that is a party to the Quantification Settlement Agreement, as defined in subdivision (a) of Section 1 of Chapter 617 of the Statutes of 2002, during the period within which the Quantification Settlement Agreement remains in effect. After the expiration of the Quantification Settlement Agreement, to the extent conservation water projects implemented as part of the Quantification Settlement Agreement remain in effect, the conserved water created as part of those projects shall be credited against the obligations of the agricultural water supplier pursuant to this part.

Chapter 2. Definitions

10608.12. Unless the context otherwise requires, the following definitions govern the construction of this part:

(a) “Agricultural water supplier” means a water supplier, either publicly or privately owned, providing water to 10,000 or more irrigated acres, excluding recycled water. “Agricultural water supplier” includes a supplier or contractor for water, regardless of the basis of right, that distributes or sells water for ultimate resale to customers. “Agricultural water supplier” does not include the department.

(b) “Base daily per capita water use” means any of the following:

(1) The urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(2) For an urban retail water supplier that meets at least 10 percent of its 2008 measured retail water demand through recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier, the urban retail water supplier may extend the calculation described in paragraph (1) up to an additional five years to a maximum of a continuous 15-year period ending no earlier than December 31, 2004, and no later than December 31, 2010.

(3) For the purposes of Section 10608.22, the urban retail water supplier's estimate of its average gross water use, reported in gallons per capita per day and calculated over a continuous five-year period ending no earlier than December 31, 2007, and no later than December 31, 2010.

(c) “Baseline commercial, industrial, and institutional water use” means an urban retail water supplier's base daily per capita water use for commercial, industrial, and institutional users.

(d) “Commercial water user” means a water user that provides or distributes a product or service.

(e) “Compliance daily per capita water use” means the gross water use during the final year of the reporting period, reported in gallons per capita per day.

(f) “Disadvantaged community” means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

(g) “Gross water use” means the total volume of water, whether treated or untreated, entering the distribution system of an urban retail water supplier, excluding all of the following:

(1) Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier.

(2) The net volume of water that the urban retail water supplier places into long-term storage.

(3) The volume of water the urban retail water supplier conveys for use by another urban water supplier.

(4) The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24.

(h) “Industrial water user” means a water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development.

(i) “Institutional water user” means a water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.

(j) “Interim urban water use target” means the midpoint between the urban retail water supplier's base daily per capita water use and the urban retail water supplier's urban water use target for 2020.

(k) "Locally cost effective" means that the present value of the local benefits of implementing an agricultural efficiency water management practice is greater than or equal to the present value of the local cost of implementing that measure.

(l) "Process water" means water used for producing a product or product content or water used for research and development, including, but not limited to, continuous manufacturing processes, water used for testing and maintaining equipment used in producing a product or product content, and water used in combined heat and power facilities used in producing a product or product content. Process water does not mean incidental water uses not related to the production of a product or product content, including, but not limited to, water used for restrooms, landscaping, air conditioning, heating, kitchens, and laundry.

(m) "Recycled water" means recycled water, as defined in subdivision (n) of Section 13050, that is used to offset potable demand, including recycled water supplied for direct use and indirect potable reuse, that meets the following requirements, where applicable:

(1) For groundwater recharge, including recharge through spreading basins, water supplies that are all of the following:

(A) Metered.

(B) Developed through planned investment by the urban water supplier or a wastewater treatment agency.

(C) Treated to a minimum tertiary level.

(D) Delivered within the service area of an urban retail water supplier or its urban wholesale water supplier that helps an urban retail water supplier meet its urban water use target.

(2) For reservoir augmentation, water supplies that meet the criteria of paragraph (1) and are conveyed through a distribution system constructed specifically for recycled water.

(n) "Regional water resources management" means sources of supply resulting from watershed-based planning for sustainable local water reliability or any of the following alternative sources of water:

(1) The capture and reuse of stormwater or rainwater.

(2) The use of recycled water.

(3) The desalination of brackish groundwater.

(4) The conjunctive use of surface water and groundwater in a manner that is consistent with the safe yield of the groundwater basin.

(o) "Reporting period" means the years for which an urban retail water supplier reports compliance with the urban water use targets.

(p) "Urban retail water supplier" means a water supplier, either publicly or privately owned, that directly provides potable municipal water to more than 3,000 end users or that supplies more than 3,000 acre-feet of potable water annually at retail for municipal purposes.

(q) "Urban water use target" means the urban retail water supplier's targeted future daily per capita water use.

(r) "Urban wholesale water supplier," means a water supplier, either publicly or privately owned, that provides more than 3,000 acre-feet of water annually at wholesale for potable municipal purposes.

Chapter 3. Urban Retail Water Suppliers

10608.16.

(a) The state shall achieve a 20-percent reduction in urban per capita water use in California on or before December 31, 2020.

(b) The state shall make incremental progress towards the state target specified in subdivision (a) by reducing urban per capita water use by at least 10 percent on or before December 31, 2015.

10608.20.

(a) (1) Each urban retail water supplier shall develop urban water use targets and an interim urban water use target by July 1, 2011. Urban retail water suppliers may elect to determine and report progress toward achieving these targets on an individual or regional basis, as provided in subdivision (a) of Section 10608.28, and may determine the targets on a fiscal year or calendar year basis.

(2) It is the intent of the Legislature that the urban water use targets described in subdivision (a) cumulatively result in a 20-percent reduction from the baseline daily per capita water use by December 31, 2020.

(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.

(c) If the department adopts a regulation pursuant to paragraph (4) of subdivision (b) that results in a requirement that an urban retail water supplier achieve a reduction in daily per capita water use that is greater than 20 percent by December 31, 2020, an urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may limit its urban water use target to a reduction of not more than 20 percent by December 31, 2020, by adopting the method described in paragraph (1) of subdivision (b).

(d) The department shall update the method described in paragraph (4) of subdivision (b) and report to the Legislature by December 31, 2014. An urban retail water supplier that adopted the method described in paragraph (4) of subdivision (b) may adopt a new urban daily per capita water use target pursuant to this updated method.

(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.

(f) When calculating per capita values for the purposes of this chapter, an urban retail water supplier shall determine population using federal, state, and local population reports and projections.

(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan required pursuant to Part 2.6 (commencing with Section 10610).

(h) (1) The department, through a public process and in consultation with the California Urban Water Conservation Council, shall develop technical methodologies and criteria for the consistent implementation of this part, including, but not limited to, both of the following:

(A) Methodologies for calculating base daily per capita water use, baseline commercial, industrial, and institutional water use, compliance daily per capita water use, gross water use, service area population, indoor residential water use, and landscaped area water use.

(B) Criteria for adjustments pursuant to subdivisions (d) and (e) of Section 10608.24.

(2) The department shall post the methodologies and criteria developed pursuant to this subdivision on its Internet Web site, and make written copies

available, by October 1, 2010. An urban retail water supplier shall use the methods developed by the department in compliance with this part.

(i) (1) The department shall adopt regulations for implementation of the provisions relating to process water in accordance with subdivision (l) of Section 10608.12, subdivision (e) of Section 10608.24, and subdivision (d) of Section 10608.26.

(2) The initial adoption of a regulation authorized by this subdivision is deemed to address an emergency, for purposes of Sections 11346.1 and 11349.6 of the Government Code, and the department is hereby exempted for that purpose from the requirements of subdivision (b) of Section 11346.1 of the Government Code. After the initial adoption of an emergency regulation pursuant to this subdivision, the department shall not request approval from the Office of Administrative Law to readopt the regulation as an emergency regulation pursuant to Section 11346.1 of the Government Code.

(j) An urban retail water supplier shall be granted an extension to July 1, 2011, for adoption of an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) due in 2010 to allow use of technical methodologies developed by the department pursuant to paragraph (4) of subdivision (b) and subdivision (h). An urban retail water supplier that adopts an urban water management plan due in 2010 that does not use the methodologies developed by the department pursuant to subdivision (h) shall amend the plan by July 1, 2011, to comply with this part.

10608.22. 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.

10608.24.

(a) Each urban retail water supplier shall meet its interim urban water use target by December 31, 2015.

(b) Each urban retail water supplier shall meet its urban water use target by December 31, 2020.

(c) An urban retail water supplier's compliance daily per capita water use shall be the measure of progress toward achievement of its urban water use target.

(d) (1) When determining compliance daily per capita water use, an urban retail water supplier may consider the following factors:

(A) Differences in evapotranspiration and rainfall in the baseline period compared to the compliance reporting period.

(B) Substantial changes to commercial or industrial water use resulting from increased business output and economic development that have occurred during the reporting period.

(C) Substantial changes to institutional water use resulting from fire suppression services or other extraordinary events, or from new or expanded operations, that have occurred during the reporting period.

(2) If the urban retail water supplier elects to adjust its estimate of compliance daily per capita water use due to one or more of the factors described in paragraph (1), it shall provide the basis for, and data supporting, the adjustment in the report required by Section 10608.40.

(e) When developing the urban water use target pursuant to Section 10608.20, an urban retail water supplier that has a substantial percentage of industrial water use in its service area, may exclude process water from the calculation of gross water use to avoid a disproportionate burden on another customer sector.

(f) (1) An urban retail water supplier that includes agricultural water use in an urban water management plan pursuant to Part 2.6 (commencing with Section 10610) may include the agricultural water use in determining gross water use. An urban retail water supplier that includes agricultural water use in determining gross water use and develops its urban water use target pursuant to paragraph (2) of subdivision (b) of Section 10608.20 shall use a water efficient standard for agricultural irrigation of 100 percent of reference evapotranspiration multiplied by the crop coefficient for irrigated acres.

(2) An urban retail water supplier, that is also an agricultural water supplier, is not subject to the requirements of Chapter 4 (commencing with Section 10608.48), if the agricultural water use is incorporated into its urban water use target pursuant to paragraph (1).

10608.26.

(a) In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:

(1) Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.

(2) Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.

(3) Adopt a method, pursuant to subdivision (b) of Section 10608.20, for determining its urban water use target.

(b) In complying with this part, an urban retail water supplier may meet its urban water use target through efficiency improvements in any combination among its customer sectors. An urban retail water supplier shall avoid placing a disproportionate burden on any customer sector.

(c) For an urban retail water supplier that supplies water to a United States Department of Defense military installation, the urban retail water supplier's implementation plan for complying with this part shall consider the United States Department of Defense military installation's requirements under federal Executive Order 13423.

(d) (1) Any ordinance or resolution adopted by an urban retail water supplier after the effective date of this section shall not require existing customers as of the effective date of this section, to undertake changes in product formulation, operations, or equipment that would reduce process water use, but may provide technical assistance and financial incentives to those customers to implement efficiency measures for process water. This section shall not limit an ordinance or resolution adopted pursuant to a declaration of drought emergency by an urban retail water supplier.

(2) This part shall not be construed or enforced so as to interfere with the requirements of Chapter 4 (commencing with Section 113980) to Chapter 13 (commencing with Section 114380), inclusive, of Part 7 of Division 104 of the Health and Safety Code, or any requirement or standard for the protection of public health, public safety, or worker safety established by federal, state, or local government or recommended by recognized standard setting organizations or trade associations.

10608.28.

(a) An urban retail water supplier may meet its urban water use target within its retail service area, or through mutual agreement, by any of the following:

(1) Through an urban wholesale water supplier.

(2) Through a regional agency authorized to plan and implement water conservation, including, but not limited to, an agency established under the Bay Area Water Supply and Conservation Agency Act (Division 31 (commencing with Section 81300)).

(3) Through a regional water management group as defined in Section 10537.

(4) By an integrated regional water management funding area.

(5) By hydrologic region.

(6) Through other appropriate geographic scales for which computation methods have been developed by the department.

(b) A regional water management group, with the written consent of its member agencies, may undertake any or all planning, reporting, and implementation functions under this chapter for the member agencies that consent to those activities. Any data or reports shall provide information both for the regional water management group and separately for each consenting urban retail water supplier and urban wholesale water supplier.

10608.32. All costs incurred pursuant to this part by a water utility regulated by the Public Utilities Commission may be recoverable in rates subject to review and approval by the Public Utilities Commission, and may be recorded in a memorandum account and reviewed for reasonableness by the Public Utilities Commission.

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.

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.

10608.42. The department shall review the 2015 urban water management plans and report to the Legislature by December 31, 2016, on progress towards achieving a 20-percent reduction in urban water use by December 31, 2020. The report shall include recommendations on changes to water efficiency standards or urban water use targets in order to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

10608.43. The department, in conjunction with the California Urban Water Conservation Council, by April 1, 2010, shall convene a representative task force consisting of academic experts, urban retail water suppliers, environmental organizations, commercial water users, industrial water users, and institutional water users to develop alternative best management practices for commercial, industrial, and institutional users and an assessment of the potential statewide water use efficiency improvement in the commercial, industrial, and institutional sectors that would result from implementation of these best management practices. The taskforce, in conjunction with the department, shall submit a report to the Legislature by April 1, 2012, that shall include a review of multiple sectors within commercial, industrial, and institutional users and that shall recommend water use efficiency standards for

commercial, industrial, and institutional users among various sectors of water use. The report shall include, but not be limited to, the following:

(a) Appropriate metrics for evaluating commercial, industrial, and institutional water use.

(b) Evaluation of water demands for manufacturing processes, goods, and cooling.

(c) Evaluation of public infrastructure necessary for delivery of recycled water to the commercial, industrial, and institutional sectors.

(d) Evaluation of institutional and economic barriers to increased recycled water use within the commercial, industrial, and institutional sectors.

(e) Identification of technical feasibility and cost of the best management practices to achieve more efficient water use statewide in the commercial, industrial, and institutional sectors that is consistent with the public interest and reflects past investments in water use efficiency.

10608.44. Each state agency shall reduce water use on facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

APPENDIX G

SB X7-7 VERIFICATION FORM

SB X7-7 Table 0: Units of Measure Used in UWMP* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent with Table 2-3*
NOTES:

SB X7-7 Table-1: Baseline Period Ranges			
Baseline	**Parameter**	**Value**	**Units**
10- to 15-year baseline period	2008 total water deliveries	17,524	Acre Feet
	2008 total volume of delivered recycled water	-	Acre Feet
	2008 recycled water as a percent of total deliveries	0.00%	Percent
	Number of years in baseline period[1, 2]	10	Years
	Year beginning baseline period range	1996	
	Year ending baseline period range[3]	2005	
5-year baseline period	Number of years in baseline period	5	Years
	Year beginning baseline period range	2004	
	Year ending baseline period range[4]	2008	

[1] If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a continuous 10-year period. If the amount of recycled water delivered in 2008 is 10 percent or greater, the first baseline period is a continuous 10- to 15-year period. [2] The Water Code requires that the baseline period is between 10 and 15 years. However, DWR recognizes that some water suppliers may not have the minimum 10 years of baseline data.

[3] The ending year must be between December 31, 2004 and December 31, 2010.

[4] The ending year must be between December 31, 2007 and December 31, 2010.

NOTES: Years provided are on a fiscal year basis (e.g. "1995" is equivalent to fiscal year 1994-95)

SB X7-7 Table 2: Method for Population Estimates	
Method Used to Determine Population (may check more than one)	
☐	**1. Department of Finance** (DOF) DOF Table E-8 (1990 - 2000) and (2000-2010) and DOF Table E-5 (2011 - 2015) when available
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: Service Area Population		
Year		**Population**
10 to 15 Year Baseline Population		
Year 1	1996	48,640
Year 2	1997	48,948
Year 3	1998	49,414
Year 4	1999	49,887
Year 5	2000	50,309
Year 6	2001	50,691
Year 7	2002	51,020
Year 8	2003	51,354
Year 9	2004	51,685
Year 10	2005	52,021
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2004	51,685
Year 2	2005	52,021
Year 3	2006	52,353
Year 4	2007	52,690
Year 5	2008	53,024
2015 Compliance Year Population		
2015		55,342
NOTES: Years provided are on a fiscal year basis (e.g. "1996" is equivalent to fiscal year 1995-96)		

SB X7-7 Table 4: Annual Gross Water Use *								
Baseline Year *Fm SB X7-7 Table 3*		**Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**Deductions**					**Annual Gross Water Use**
			Exported Water	**Change in Dist. System Storage** (+/-)	**Indirect Recycled Water** *This column will remain blank until SB X7-7 Table 4-B is completed.*	**Water Delivered for Agricultural Use**	**Process Water** *This column will remain blank until SB X7-7 Table 4-D is completed.*	
10 to 15 Year Baseline - Gross Water Use								
Year 1	1996	16,727			-		-	16,727
Year 2	1997	17,279			-		-	17,279
Year 3	1998	15,079			-		-	15,079
Year 4	1999	16,053			-		-	16,053
Year 5	2000	17,879			-		-	17,879
Year 6	2001	17,183			-		-	17,183
Year 7	2002	17,014			-		-	17,014
Year 8	2003	16,701			-		-	16,701
Year 9	2004	18,057			-		-	18,057
Year 10	2005	15,930			-		-	15,930
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**16,790**
5 Year Baseline - Gross Water Use								
Year 1	2004	18,057			-		-	18,057
Year 2	2005	15,930			-		-	15,930
Year 3	2006	16,785			-		-	16,785
Year 4	2007	18,668			-		-	18,668
Year 5	2008	17,524			-		-	17,524
5 year baseline average gross water use								**17,393**
2015 Compliance Year - Gross Water Use								
2015		15,326	-		-		-	**15,326**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES: Years provided are on a fiscal year basis (e.g. "1995" is equivalent to fiscal year 1994-95)

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source	Main San Gabriel Basin Groundwater
This water source is:	
☑	The supplier's own water source
☐	A purchased or imported source

Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1996	11,215		11,215
Year 2	1997	10,176		10,176
Year 3	1998	9,328		9,328
Year 4	1999	8,737		8,737
Year 5	2000	11,696		11,696
Year 6	2001	11,161		11,161
Year 7	2002	11,418		11,418
Year 8	2003	12,153		12,153
Year 9	2004	12,439		12,439
Year 10	2005	9,755		9,755
Year 11	0			-
Year 12	0			-
Year 13	0			-
Year 14	0			-
Year 15	0			-
5 Year Baseline - Water into Distribution System				
Year 1	2004	12,439		12,439
Year 2	2005	9,755		9,755
Year 3	2006	9,176		9,176
Year 4	2007	12,286		12,286
Year 5	2008	12,618		12,618
2015 Compliance Year - Water into Distribution System				
2015		12,010		12,010

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES: Volume of water is reported during a fiscal year.

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Raymond Basin Groundwater			
This water source is:				
☑	The supplier's own water source			
☐	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1996	5,512		5,512
Year 2	1997	7,103		7,103
Year 3	1998	5,751		5,751
Year 4	1999	7,315		7,315
Year 5	2000	6,183		6,183
Year 6	2001	6,022		6,022
Year 7	2002	5,596		5,596
Year 8	2003	4,548		4,548
Year 9	2004	5,078		5,078
Year 10	2005	6,176		6,176
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2004	5,078		5,078
Year 2	2005	6,176		6,176
Year 3	2006	7,609		7,609
Year 4	2007	6,382		6,382
Year 5	2008	4,811		4,811
2015 Compliance Year - Water into Distribution System				
2015		3,316		3,316
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: Volume of water is reported during a fiscal year.				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Upper San Gabriel Valley Municipal Water District			
This water source is:				
☐	The supplier's own water source			
☑	A purchased or imported source			
Baseline Year *Fm SB X7-7 Table 3*		Volume Entering Distribution System	Meter Error Adjustment* *Optional (+/-)*	Corrected Volume Entering Distribution System
10 to 15 Year Baseline - Water into Distribution System				
Year 1	1996	0		0
Year 2	1997	0		0
Year 3	1998	0		0
Year 4	1999	0		0
Year 5	2000	0		0
Year 6	2001	0		0
Year 7	2002	0		0
Year 8	2003	0		0
Year 9	2004	541		541
Year 10	2005	0		0
Year 11	-			0
Year 12	-			0
Year 13	-			0
Year 14	-			0
Year 15	-			0
5 Year Baseline - Water into Distribution System				
Year 1	2004	541		541
Year 2	2005	0		0
Year 3	2006	0		0
Year 4	2007	0		0
Year 5	2008	95		95
2015 Compliance Year - Water into Distribution System				
2015		0		0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES: Volume of water is reported during a fiscal year.				

SB X7-7 Table 4-D: Process Water Deduction - Volume *Complete a separate table for each industrial customer with a process water exclusion*						
Name of Industrial Customer		*Industrial Customer 1*				
Baseline Year *Fm SB X7-7 Table 3*		Industrial Customer's Total Water Use	Total Volume Supplied by Water Agency	% of Water Supplied by Water Agency	Customer's Total Process Water Use	Volume of Process Water Eligible for Exclusion for this Customer
10 to 15 Year Baseline - Process Water Deduction						
Year 1	1996					-
Year 2	1997					-
Year 3	1998					-
Year 4	1999					-
Year 5	2000					-
Year 6	2001					-
Year 7	2002					-
Year 8	2003					-
Year 9	2004					-
Year 10	2005					-
Year 11	0					-
Year 12	0					-
Year 13	0					-
Year 14	0					-
Year 15	0					-
5 Year Baseline - Process Water Deduction						
Year 1	2004					-
Year 2	2005					-
Year 3	2006					-
Year 4	2007					-
Year 5	2008					-
2015 Compliance Year - Process Water Deduction						
2015						-
NOTES:						

SB X7-7 Table 5: Gallons Per Capita Per Day (GPCD)				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Annual Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use (GPCD)
10 to 15 Year Baseline GPCD				
Year 1	1996	48,640	16,727	307
Year 2	1997	48,948	17,279	315
Year 3	1998	49,414	15,079	272
Year 4	1999	49,887	16,053	287
Year 5	2000	50,309	17,879	317
Year 6	2001	50,691	17,183	303
Year 7	2002	51,020	17,014	298
Year 8	2003	51,354	16,701	290
Year 9	2004	51,685	18,057	312
Year 10	2005	52,021	15,930	273
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**298**
5 Year Baseline GPCD				
Baseline Year *Fm SB X7-7 Table 3*		Service Area Population *Fm SB X7-7 Table 3*	Gross Water Use *Fm SB X7-7 Table 4*	Daily Per Capita Water Use
Year 1	2004	51,685	18,057	312
Year 2	2005	52,021	15,930	273
Year 3	2006	52,353	16,785	286
Year 4	2007	52,690	18,668	316
Year 5	2008	53,024	17,524	295
5 Year Average Baseline GPCD				**297**
2015 Compliance Year GPCD				
2015		55,342	15,326	**247**

NOTES: Years provided are on a fiscal year basis (e.g. "1995" is equivalent to fiscal year 1994-95)

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	298
5 Year Baseline GPCD	297
2015 Compliance Year GPCD	247
NOTES:	

SB X7-7 Table 7: 2020 Target Method *Select Only One*		
Target Method		Supporting Documentation
☑	Method 1	SB X7-7 Table 7A
☐	Method 2	SB X7-7 Tables 7B, 7C, and 7D *Contact DWR for these tables*
☐	Method 3	SB X7-7 Table 7-E
☐	Method 4	Method 4 Calculator
NOTES:		

SB X7-7 Table 7-A: Target Method 1 20% Reduction	
10-15 Year Baseline GPCD	**2020 Target GPCD**
298	**238**
NOTES:	

SB X7-7 Table 7-E: Target Method 3				
Agency May Select More Than One as Applicable	Percentage of Service Area in This Hydrological Region	Hydrologic Region	"2020 Plan" Regional Targets	Method 3 Regional Targets (95%)
☐		North Coast	137	130
☐		North Lahontan	173	164
☐		Sacramento River	176	167
☐		San Francisco Bay	131	124
☐		San Joaquin River	174	165
☐		Central Coast	123	117
☐		Tulare Lake	188	179
☐		South Lahontan	170	162
☑	100%	South Coast	149	142
☐		Colorado River	211	200
Target *(If more than one region is selected, this value is calculated.)*				**142**

NOTES:

SB X7-7 Table 7-F: Confirm Minimum Reduction for 2020 Target			
5 Year Baseline GPCD *From SB X7-7 Table 5*	Maximum 2020 Target[1]	Calculated 2020 Target[2]	**Confirmed 2020 Target**
297	282	238	**238**

[1] Maximum 2020 Target is 95% of the 5 Year Baseline GPCD *[2] 2020 Target is calculated based on the selected Target Method, see SB X7-7 Table 7 and corresponding tables for agency's calculated target.*

NOTES:

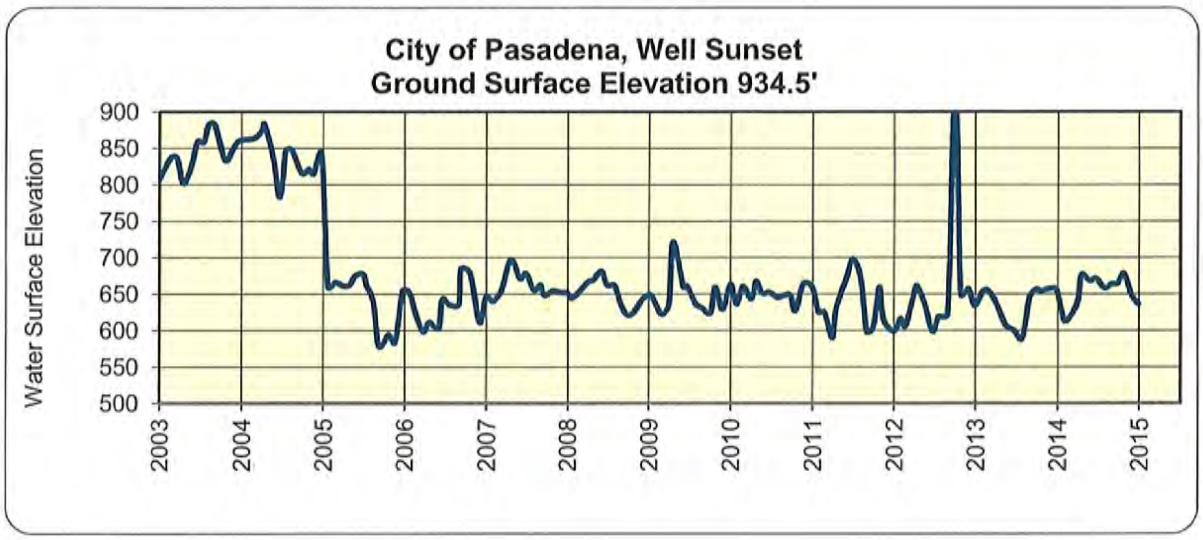
SB X7-7 Table 8: 2015 Interim Target GPCD		
Confirmed 2020 Target *Fm SB X7-7 Table 7-F*	10-15 year Baseline GPCD *Fm SB X7-7 Table 5*	**2015 Interim Target GPCD**
238	298	**268**
NOTES:		

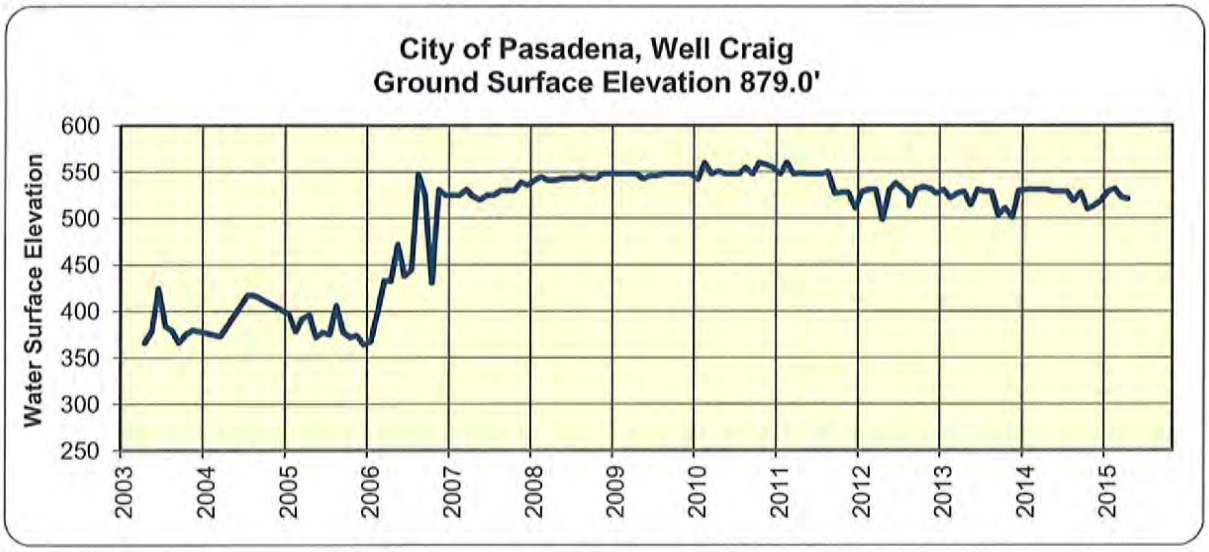
SB X7-7 Table 9: 2015 Compliance								
Actual 2015 GPCD	2015 Interim Target GPCD	Optional Adjustments *(in GPCD)*					2015 GPCD *(Adjusted if applicable)*	**Did Supplier Achieve Targeted Reduction for 2015?**
		Enter "0" if Adjustment Not Used			TOTAL Adjustments	Adjusted 2015 GPCD		
		Extraordinary Events	Weather Normalization	Economic Adjustment				
247	268	*0*	*0*	*0*	-	247	247	**YES**
NOTES:								

APPENDIX H

HISTORICAL RAYMOND BASIN GROUNDWATER LEVELS

FIGURE 10a - FLUCTUATION OF WATER LEVELS AT WELLS IN THE PASADENA SUBAREA





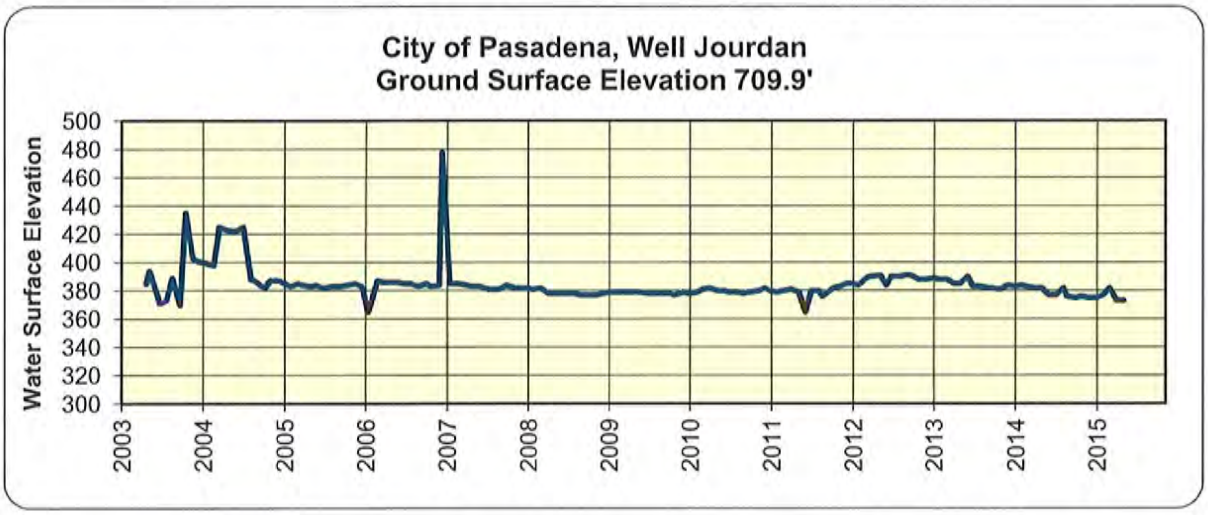
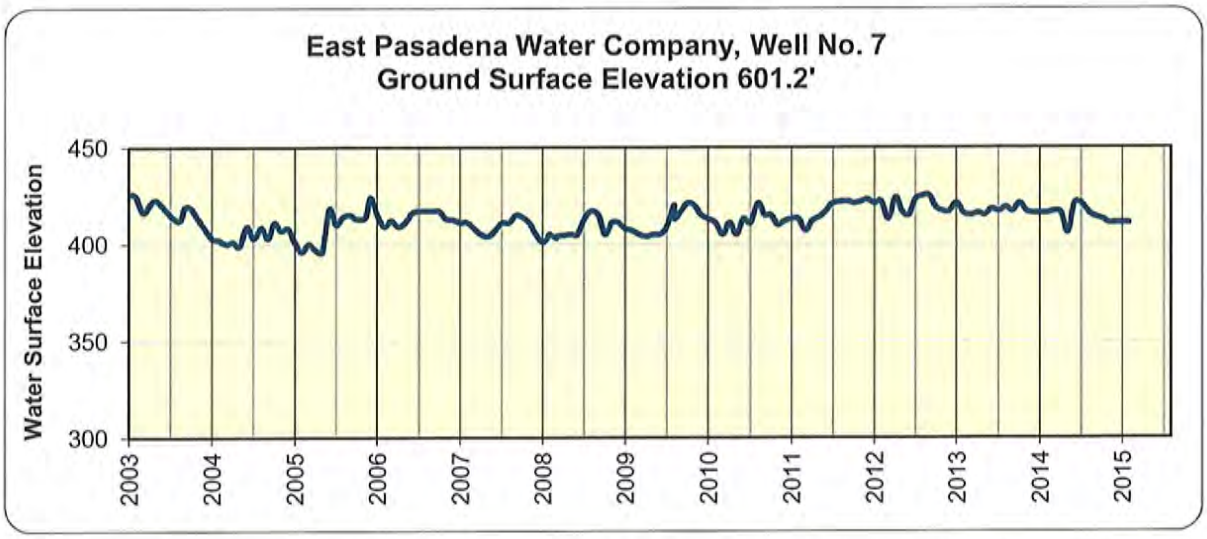
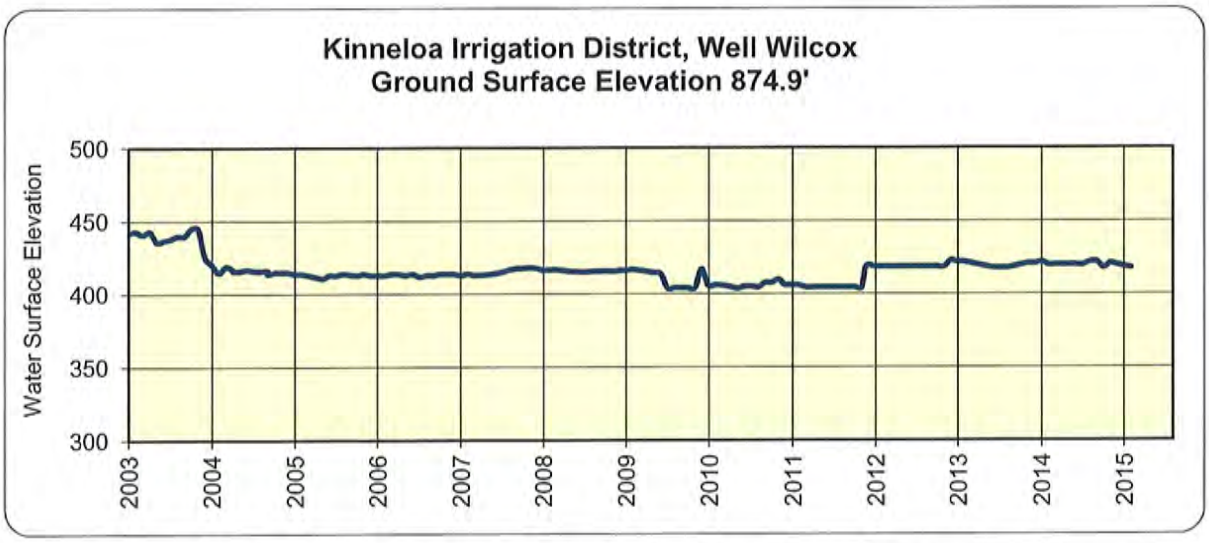


FIGURE 10b - FLUCTUATION OF WATER LEVELS AT WELLS IN THE PASADENA SUBAREA





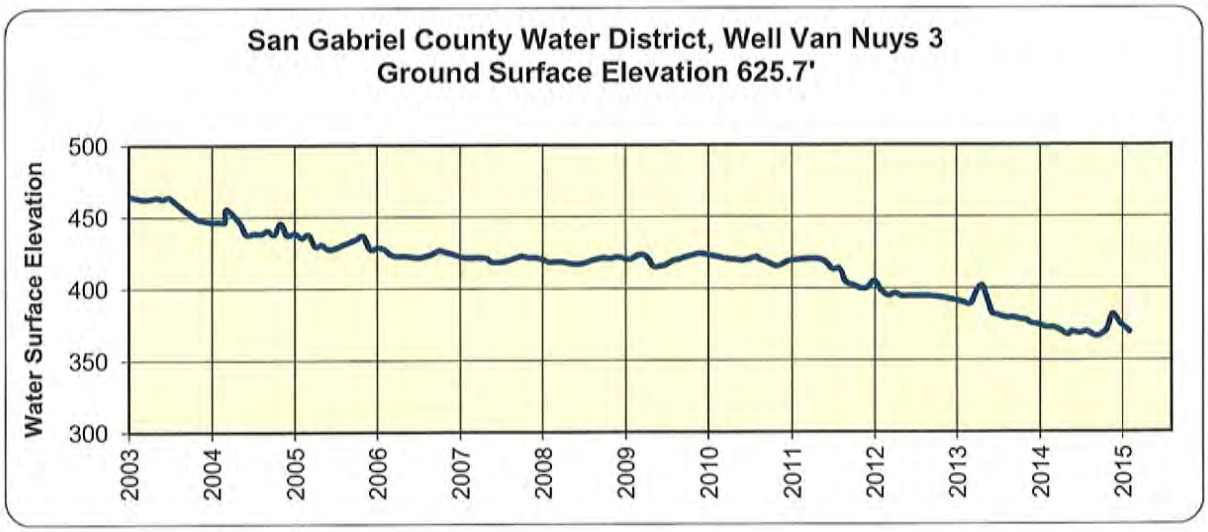
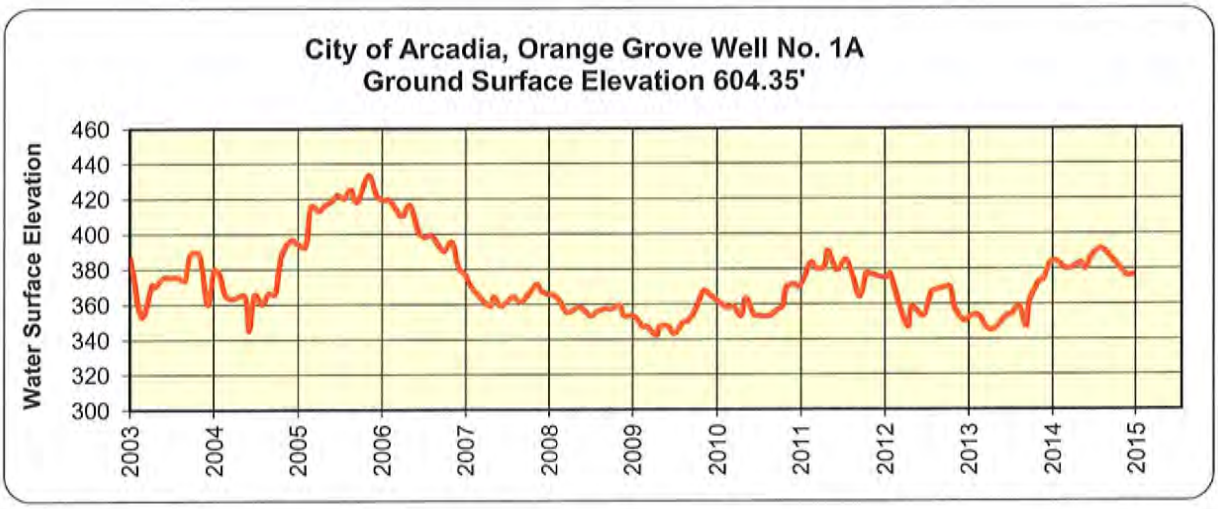


FIGURE 11 - FLUCTUATION OF WATER LEVELS AT WELLS IN THE SANTA ANITA SUBAREA



APPENDIX I

LONG BEACH JUDGMENT

Superior Court of the State of California
For the County of Los Angeles

BOARD OF WATER COMMISSIONERS OF THE CITY OF LONG BEACH, et al., *Plaintiffs* vs. SAN GABRIEL VALLEY WATER COMPANY, et al., *Defendants*	**No. 722647** **SETTLEMENT DOCUMENTS**

STIPULATION FOR JUDGMENT
JUDGMENT
MAP OF WHITTIER NARROWS
ENGINEERING APPENDIX
REIMBURSEMENT CONTRACT

Approved by Joint Negotiating Committees July 6, 1964.

EXHIBIT NO. 7

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

BOARD OF WATER COMMISSIONERS OF THE CITY OF LONG BEACH, a municipal corporation; CENTRAL BASIN MUNICIPAL WATER DISTRICT, a municipal water district; and CITY OF COMPTON, a municipal corporation, Plaintiffs, vs. SAN GABRIEL VALLEY WATER COMPANY, a corporation; AZUSA AGRICULTURAL WATER COMPANY, a corporation; AZUSA VALLEY WATER COMPANY, a corporation; CALIFORNIA WATER & TELEPHONE COMPANY, a corporation; THE COLUMBIA LAND AND WATER COMPANY, a corporation; COVINA IRRIGATING COMPANY, a corporation; CROSS WATER COMPANY, a corporation; DUARTE WATER COMPANY, a corporation; EAST PASADENA WATER CO. LTD., a corporation; GLENDORA IRRIGATING COMPANY, a corporation; SAN DIMAS WATER COMPANY, a corporation; SOUTHERN CALIFORNIA WATER COMPANY, a corporation; SUBURBAN WATER SYSTEMS, a corporation; SUNNY SLOPE WATER CO., a corporation; VALLECITO WATER CO., a corporation; CITY OF ALHAMBRA, a municipal corporation; CITY OF ARCADIA, a municipal corporation; CITY OF AZUSA, a municipal corporation; CITY OF COVINA, a municipal corporation; CITY OF EL MONTE, a municipal corporation; CITY OF GLENDORA, a municipal corporation; CITY OF MONROVIA, a municipal corporation; CITY OF MONTEREY PARK, a municipal corporation; CITY OF SOUTH PASADENA, a municipal corporation; BALDWIN PARK COUNTY WATER DISTRICT, a county water district; and SAN GABRIEL COUNTY WATER DISTRICT, a county water district, Defendants, UPPER SAN GABRIEL VALLEY MUNICIPAL WATER	NO. 722,647 STIPULATION FOR JUDGMENT

DISTRICT, a municipal water district, and CALIFORNIA DOMESTIC WATER COMPANY, a corporation,

Intervenors.

Plaintiffs Central Basin Municipal Water District, a municipal water district (herein sometimes referred to as Central Municipal); City of Long Beach, a municipal corporation, acting by and through the Board of Water Commissioners of the City of Long Beach; and City of Compton, a municipal corporation; and defendants City of Alhambra, a municipal corporation; City of Arcadia, a municipal corporation; City of Azusa, a municipal corporation; Azusa Agricultural Water Company, a corporation, sued herein as DOE 1; Azusa Valley Water Company, a corporation, for itself and as successor by merger to Azusa Irrigating Company, a corporation; Baldwin Park County Water District, a county water district; California Water and Telephone Company, a corporation; Columbia Land and Water Company, a corporation; City of Covina, a municipal corporation; Covina Irrigating Company, a corporation; Cross Water Company, a corporation, sued herein as DOE 2; Duarte Water Company (formerly Duarte Domestic Water Company), a corporation; East Pasadena Water Company, Ltd., a corporation, for itself and as successor by merger to California-Michigan Land and Water Company, a corporation; City of El Monte, a municipal corporation; City of Glendora, a municipal corporation; Glendora Irrigating Company, a corporation; City of Monrovia, a municipal corporation; City of Monterey Park, a municipal corporation; San Dimas Water Company, a corporation, sued herein as DOE 3; San Gabriel County Water District, a county water district; San Gabriel Valley Water Company, a corporation; Southern California Water Company, a corporation; City of South Pasadena, a municipal corporation; Suburban Water Systems, a corporation; Sunny Slope Water Company, a corporation; and Vallecito Water Company, a corporation; and

intervening defendant Upper San Gabriel Valley Municipal Water District, a municipal water district (herein sometimes referred to as Upper District); and intervening defendant California Domestic Water Company, a corporation; stipulate and agree as follows:

1. A Judgment in the form attached hereto as Exhibit I may be made and entered by the Court in the above-entitled action.

2. The following facts, considerations and objectives, among others, provide the basis for this Stipulation for Judgment:

(a) By their complaint plaintiffs seek a determination of the rights of the defendants, other than Upper District, in and to the waters of the San Gabriel River System and further seek to restrain defendants, other than Upper District, from an alleged interference with the rights of plaintiffs and persons represented by Central Municipal in and to said waters.

(b) At the present time, and for some time prior to the commencement of this action, the water supply of the San Gabriel River System has been inadequate to supply the diversions and extractions of both plaintiffs and defendants other than Central Municipal and Upper District but including the persons represented by Central Municipal and by Upper District, and as a result said diversions and extractions have exceeded, and still exceed, the natural replenishment of the water supply of the San Gabriel River System.

(c) The parties recognize and agree that the natural outflow from the San Gabriel Valley

to the Lower Area as defined in the Judgment has varied, and will vary from year to year, depending on the amount of precedent rainfall and other conditions.

(d) The parties recognize and agree that there is a need for a declaration of rights and a physical solution for the problems resulting from the inadequate and varying water supplies of the San Gabriel River System.

(e) The parties agree that the physical solution contained in said Judgment will bring about a fair division of the water of the San Gabriel River System as between plaintiffs and defendants other than Central Municipal and Upper District but including the persons represented by Central Municipal and by Upper District.

(f) The parties recognize that it may be necessary for defendants or some of them to use supplemental water in order to comply with the obligations imposed under said physical solution.

(g) Defendant Upper District is now a member unit of The Metropolitan Water District of Southern California, which will be supplied with water from sources in northern California under an existing contract with the State of California. Certain of the defendants not within the area of defendant Upper District are within the area of San Gabriel Valley Municipal Water District, which district also has contracted with the State of California for delivery of water from sources in northern California. It is anticipated that the

importation of this water will augment the natural supply of ground water within Upper Area as defined in the Judgment. Defendant Upper District intends to replenish the San Gabriel Valley with supplemental supplies.

3. The parties hereto hereby waive any and all Findings of Fact, Conclusions of Law, and any and all notice of the making or entry herein of the attached form of Judgment, and all rights of appeal, if any, from such Judgment.

4. Plaintiffs and defendants agree that during the period prior to entry of the attached form of Judgment, they will cooperate in endeavoring to collect such information as the Watermaster would obtain if the attached form of Judgment had been entered and the Watermaster had been appointed by the Court pursuant to paragraph 6 of the Judgment, which information is herein referred to as "said information." To that end, the parties hereto hereby agree that promptly following the complete execution of this stipulation by all parties, Upper District and Central Municipal shall each notify the other in writing as to the identity of the person who it expects will be nominated as the representative of Upper Area Parties or Lower Area Parties, as the case may be, under paragraph 6 of the Judgment. Upon receiving such notice, Upper District and Central Municipal shall each instruct its designated nominee that until the attached form of Judgment is entered and the Watermaster has been appointed pursuant to paragraph 6 of the Judgment he shall in cooperation with the other designated nominee do all things reasonably necessary to obtain such of said information as is available from the parties hereto or any public agency.

5. Judgment shall not be rendered pursuant hereto unless and until the execution of this stipulation by Central Basin Municipal Water District and by Upper San Gabriel Valley

Municipal Water District shall have been validated by a decree or decrees rendered in a proceeding or proceedings instituted in a court of competent jurisdiction of the State of California, and either such decree or decrees shall have become final or both of said Districts shall have further stipulated that said Judgment shall be rendered.

6. This stipulation may be executed in counterparts (each counterpart being an exact copy or duplicate of the original) and all counterparts collectively shall be considered as constituting one complete Stipulation for Judgment.

DATED: _____, 1964.

Attorneys (for the respective party listed opposite and to the right of the respective attorneys listed below)	Signature of Stipulating Party and Its Designation of Mailing Address
Leonard Putnam City Attorney Clifford E. Hayes Principal Deputy City Attorney City of Long Beach	Board of Water Commissioners of the City of Long Beach
By _____	By _____ Its _____ President
	By _____ Its _____ Secretary
Burris & Lagerlof Stanley C. Lagerlof H. Jess Senecal Jack T. Swafford	1800 East Wardlow Road Long Beach 7, California
By _____	

Burris & Lagerlof
Stanley C. Lagerlof
H. Jess Senecal
Jack T. Swafford

By _____

Central Basin Municipal Water District

By _____

Its President

By _____

Its Secretary

7439 East Florence Avenue
Downey, California

Lloyd A. Bulloch
City Attorney
City of Compton

_____

City of Compton

By _____

Its Mayor

205 South Willowbrook Avenue
Compton, California

Burris & Lagerlof
Stanley C. Lagerlof
H. Jess Senecal
Jack T. Swafford

By _____

Don D. Bercu
City Attorney
City of Alhambra

_____

City of Alhambra

By _____

Its Mayor

City Hall
111 South First Street
Alhambra, California

Taylor & Smith

By _____

James A. Nicklin
City Attorney
City of Arcadia

_____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

City of Arcadia

By _____

Its Mayor

City Hall
Arcadia, California

Harry C. Williams
City Attorney
City of Azusa

_____

Taylor & Smith

By _____

City of Azusa

By _____

Its Mayor

City Hall
213 East Foothill Boulevard
Azusa, California

Taylor & Smith

By _____

Azusa Agricultural Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

18352 East Foothill Boulevard
Azusa, California

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

Azusa Valley Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

P. O. Box "W"
Azusa, California

Surr & Hellyer

By _____

Clayson, Stark, Rothrock & Mann

By _____

Baldwin Park County Water District

By _____

Its ____ President

By _____

Its _____ Secretary

14521 East Ramona Boulevard
Baldwin Park, California

Bacigalupi, Elkus & Salinger

By _____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock & Mann

By _____

California Water & Telephone Company

By _____

Its ____ President

By _____

Its _____ Secretary

300 Montgomery Street
San Francisco, California

Allard, Shelton & O'Connor

By _____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock & Mann

By _____

Columbia Land & Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

P. O. Box 296
San Dimas, California

Allard, Shelton & O'Connor

By _____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

Kerckhoff & Kerckhoff

By _____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

George C. Gillette

_____

Henry W. Shatford
Shatford & Shatford

By _____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

City of Covina

By _____

Its Mayor

City Hall
Covina, California

Covina Irrigating Company

By _____

Its ____ President

By _____

Its _____ Secretary

146 East College Street
Covina, California

Cross Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

15825 East Main Street
La Puente, California

Duarte Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

1101 South Oak Avenue
Duarte, California

Gray & Maddox

By _____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

East Pasadena Water Company, Ltd.

By _____

Its ____ President

By _____

Its _____ Secretary

269 South Rosemead
Pasadena, California

James A. Nicklin
City Attorney
City of El Monte

_____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

City of El Monte

By _____

Its Mayor

City Hall
El Monte, California

Leonard A. Shelton
City Attorney
City of Glendora

_____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

City of Glendora

By _____

Its Mayor

City Hall
Glendora, California

Allard, Shelton & O'Connor

By _____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

Glendora Irrigating Company

By _____

Its ____ President

By _____

Its _____ Secretary

224 North Michigan Avenue
Glendora, California

Homer H. Bell
City Attorney
City of Monrovia

_____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

City of Monrovia

By _____

Its Mayor

City Hall
Monrovia, California

Charles R. Martin
City Attorney
City of Monterey Park

_____

Taylor & Smith

By _____

City of Monterey Park

By _____

Its Mayor

City Hall
320 West Newmark Avenue
Monterey Park, California

Allard, Shelton & O'Connor

By _____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

San Dimas Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

P. O. Box 181
San Dimas, California

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

San Gabriel County Water District

By _____

Its ____ President

By _____

Its _____ Secretary

8229 East Las Tunas Drive
San Gabriel, California

J. E. Skelton

_____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

San Gabriel Valley Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

11142 Garvey Avenue
El Monte, California

O'Melveny & Myers

By _____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

Charles R. Martin
City Attorney
City of South Pasadena

_____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

Frank E. Gray

_____

Surr & Hellyer

By _____

Clayson, Stark, Rothrock
& Mann

By _____

Hahn & Hahn

By _____

Southern California Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

11911 South Vermont Avenue
Los Angeles 44, California

City of South Pasadena

By _____

Its Mayor

825 Mission Street
South Pasadena, California

Suburban Water Systems

By _____

Its ____ President

By _____

Its _____ Secretary

16340 East Maplegrove Street
La Puente, California

Sunny Slope Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

1040 El Campo Drive
Pasadena, California

Surr & Hellyer

By _____

Clayson, Stark, Rothrock & Mann

By _____

Vallecito Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

749 South Ninth Avenue
City of Industry, California

Stearns, Gross and Moore

By _____

California Domestic Water Company

By _____

Its ____ President

By _____

Its _____ Secretary

P. O. Box 1026, Perry Annex
Whittier, California

Ralph B. Helm

_____

Upper San Gabriel Valley Municipal Water District

By _____

Its ____ President

By _____

Its _____ Secretary

11229 East Valley Boulevard
El Monte, California

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

BOARD OF WATER COMMISSIONERS OF THE CITY OF LONG BEACH, a municipal corporation; CENTRAL BASIN MUNICIPAL WATER DISTRICT, a municipal water district; and CITY OF COMPTON, a municipal corporation, Plaintiffs, vs. SAN GABRIEL VALLEY WATER COMPANY, a corporation; AZUSA AGRICULTURAL WATER COMPANY, a corporation; AZUSA VALLEY WATER COMPANY, a corporation; CALIFORNIA WATER & TELEPHONE COMPANY, a corporation; THE COLUMBIA LAND AND WATER COMPANY, a corporation; COVINA IRRIGATING COMPANY, a corporation; CROSS WATER COMPANY, a corporation; DUARTE WATER COMPANY, a corporation; EAST PASADENA WATER CO. LTD., a corporation; GLENDORA IRRIGATING COMPANY, a corporation; SAN DIMAS WATER COMPANY, a corporation; SOUTHERN CALIFORNIA WATER COMPANY, a corporation; SUBURBAN WATER SYSTEMS, a corporation; SUNNY SLOPE WATER CO., a corporation; VALLECITO WATER CO., a corporation; CITY OF ALHAMBRA, a municipal corporation; CITY OF ARCADIA, a municipal corporation; CITY OF AZUSA, a municipal corporation; CITY OF COVINA, a municipal corporation; CITY OF EL MONTE, a municipal corporation; CITY OF GLENDORA, a municipal corporation; CITY OF MONROVIA, a municipal corporation; CITY OF MONTEREY PARK, a municipal corporation; CITY OF SOUTH PASADENA, a municipal corporation; BALDWIN PARK COUNTY WATER DISTRICT, a county water district; and SAN GABRIEL COUNTY WATER DISTRICT, a county water district, Defendants, UPPER SAN GABRIEL VALLEY MUNICIPAL WATER	NO. 722,647 JUDGMENT

Exhibit I

DISTRICT, a municipal water district, and CALIFORNIA DOMESTIC WATER COMPANY, a corporation,

Intervenors.

The original complaint herein was filed by Plaintiffs on May 12, 1959, and an amended complaint was filed herein on June 8, 1961. Each Defendant in this action filed an answer to the amended complaint denying the material allegations therein. On _____, 1964, and _____, 1964, respectively, Upper San Gabriel Valley Municipal Water District, a municipal water district, and California Domestic Water Company, a corporation, intervened in the action as Defendants. On _____, 1964, there was filed herein a Stipulation for Judgment signed by all of the parties to this action.

After due examination and consideration of the pleadings, said Stipulation for Judgment and other documents and papers on file herein, it appears to the Court that:

(a) In bringing and maintaining this action, plaintiff Central Basin Municipal Water District, a municipal water district, has done so as a representative of and for the benefit of all owners of water rights within, all owners of land within, and all inhabitants of, the district, except to the extent that defendant California Domestic Water Company is representing itself.

(b) In intervening in this action, defendant Upper San Gabriel Valley Municipal Water District, a municipal water district, has done so as representative of and for the benefit of all owners of water rights within, all owners of land within, and all inhabitants of, the district, except to the extent that other Defendants who are within the district are representing themselves.

(c) There is a need for a physical solution to the complex water problems which have given rise to this action.

(d) The physical solution embodied in this Judgment is a feasible, equitable and just resolution of the issues presented by the amended complaint and answers thereto on file herein, and it will bring about a fair division of the water supply of the San Gabriel River System between Upper Area and Lower Area, as those terms are hereinafter defined.

(e) On the basis of the Stipulation for Judgment filed herein and the consent of all Plaintiffs and Defendants it is in the interests of justice and in furtherance of the water policy of the State of California to proceed without trial and to make and enter this Judgment.

Now, therefore, it is hereby ORDERED, ADJUDGED AND DECREED:

JURISDICTION 1. The Court has jurisdiction of the subject matter of this action and of the Upper Area Parties and Lower Area Parties, as those terms are hereinafter defined.

EXHIBITS 2. The following Exhibits marked A and B, are attached to this Judgment and made a part hereof:

(a) Exhibit A -- Map entitled "Rio Hondo and San Gabriel River in Vicinity of Whittier Narrows Dam".

(b) Exhibit B -- Engineering Appendix.

DEFINITIONS 3. As used in this Judgment, the following terms shall have the meanings assigned to them:

(a) Central Municipal -- Central Basin Municipal Water District.

(b) Upper District -- Upper San Gabriel Valley Municipal Water District.

(c) Lower Area Parties -- the Plaintiffs, and

all persons, firms and corporations, public or private, who are represented by Central Municipal.

(d) Upper Area Parties -- the Defendants, and all persons, firms and corporations, public or private, who are represented by Upper District.

(e) Upper Area -- the area (exclusive of the Raymond Basin and the portion of San Gabriel Mountains tributary thereto) wherein surface and subsurface waters are tributary to Whittier Narrows upstream from the common boundary of Upper District and Central Municipal through Whittier Narrows.

(f) Lower Area -- the area which lies downstream from the common boundary of Central Municipal and Upper District through Whittier Narrows and which is included within the incorporated limits of the Plaintiffs.

(g) Whittier Narrows -- a gap between Merced Hills and Puente Hills shown on Exhibit A.

(h) Montebello Forebay -- the area designated as such on Exhibit A.

(i) Export to Lower Area -- water diverted from surface streams in Upper Area or pumped or developed from underground sources in Upper Area, and in either case conveyed by conduit through Whittier Narrows.

(j) Subsurface Flow -- all water which passes as ground water through Whittier Narrows at the "narrowest section" as shown on Exhibit A.

(k) Surface Flow -- all water other than Export to Lower Area and Subsurface Flow, which passes from Upper Area to Lower Area through Whittier Narrows.

(l) Usable Water -- all Surface Flow, Subsurface Flow and Export to Lower Area, but excluding:

(1) that portion of Surface Flow, if any, which crosses the southerly boundary of Montebello Forebay as surface runoff less the amount of Surface Flow which has been caused to flow out of Montebello Forebay as surface runoff by any spreading of water in Montebello Forebay by or on behalf of Lower Area Parties, or any of them;

(2) water imported by or on behalf of Lower Area Parties from outside of the watershed of the San Gabriel River System;

(3) Reclaimed Water, as defined in subparagraph (o) herein, provided, however, that Reclaimed Water (other than that reclaimed by or on behalf of Lower Area Parties) which is percolated and commingled with ground water in Upper Area shall be deemed Subsurface Flow, Surface Flow, or Export to Lower Area as the case may be, when and if it passes through Whittier Narrows;

(4) that portion, if any, of Export to Lower Area which in any Water Year after September 30, 1966, exceeds 23,395 acre-feet;

(5) Make-up Water, as defined in subpara-

graph (m) herein; and

(6) any water whether flowing on the surface or beneath the surface of the ground which has passed any of the points of surface measurement in Whittier Narrows shown on Exhibit B and prior to its passing from Upper Area to Lower Area is intercepted and returned upstream by conduit or otherwise so that it could again pass any such points of measurement.

(m) Make-up Water -- water of usable quality for ground water recharge required to be delivered to Lower Area under terms of paragraph 5 of this Judgment.

(n) Water Year -- October 1 through the following September 30.

(o) Reclaimed Water -- water reclaimed from sewage generated in the watershed of the San Gabriel River System above Whittier Narrows.

DECLARATION OF RIGHT

4. Lower Area Parties have rights in the water supply of the San Gabriel River System. The nature and extent of such rights is not known; however, Lower Area Parties and all other persons downstream from Whittier Narrows who receive water from the San Gabriel River System or have rights in and to such water, shall have, as against Upper Area Parties and all other pumpers of water in the San Gabriel Valley, a right to receive from Upper Area an average annual usable supply of ninety-eight thousand four hundred fifteen (98,415) acre-feet of water over a long-term period of normal rainfall derived as set forth in Exhibit B, consisting

of Surface Flow, Subsurface Flow, Export to Lower Area and Make-up Water. If in the future a court of competent jurisdiction shall decree that any person downstream from Whittier Narrows within Central and West Basin Water Replenishment District who is not bound by this Judgment, shall have, as against Upper Area Parties and substantially all other pumpers in the San Gabriel Valley, a right to receive from Upper Area a stated amount of usable supply consisting of Surface Flow, Subsurface Flow, Export to Lower Area or Make-up Water, which right arose out of and is based upon the ownership of land or the production of water downstream from Whittier Narrows and within Central and West Basin Water Replenishment District, then and in that event the stated amount of such right so decreed shall not increase the declared rights as set forth in this paragraph 4.

PHYSICAL SOLUTION

5. In recognition of the complexities of annual supply and demand and variations in the components thereof, the Court hereby declares the following physical solution to be a fair and equitable basis for satisfaction of the declared right set forth in paragraph 4 hereof. Compliance with this paragraph 5 shall constitute full and complete satisfaction of said declared right.

AVERAGE ANNUAL ENTITLEMENT

(a) It is determined that the amount of Lower Area average annual entitlement to Usable Water is ninety-eight thousand four hundred fifteen (98,415) acre-feet.

BASIS OF ANNUAL ENTITLEMENT

(b) The outflow of water from Upper Area through Whittier Narrows to Lower Area has

varied from year to year and will vary from year to year in the future depending on changing conditions of supply and demand; and as to any Water Year, the average annual rainfall for the San Gabriel Valley during the ten (10) consecutive Water Years ending with that Water Year, is a reasonable basis for determining the entitlement of Lower Area to Usable Water for such Water Year.

DETERMINATION OF RAINFALL

(c) The rainfall in each Water Year for the San Gabriel Valley shall be determined by application of the procedures described in Exhibit B.

RAINFALL ADJUSTMENT TABLE

(d) The quantity of water which Lower Area is entitled to receive in any Water Year (hereinafter called Lower Area Annual Entitlement) shall be determined in accordance with the following table, except that no determination of Lower Area Annual Entitlement shall be made for the last year of any Long-term Accounting Period as hereinafter defined.

TABLE A

LOWER AREA ANNUAL ENTITLEMENT
BASED ON 10-YEAR AVERAGE RAINFALL
FOR SAN GABRIEL VALLEY

(In Acre-feet)

Inches of Rain-fall	0	.1	.2	.3	.4	.5	.6	.7	.8	.9
14	64,200	64,900	65,700	66,500	67,200	68,000	68,700	69,500	70,300	71,100
15	71,800	72,600	73,400	74,100	74,900	75,600	76,400	77,200	77,900	78,700
16	79,500	80,200	81,000	81,800	82,600	83,300	84,000	84,800	85,600	86,400
17	87,100	87,900	88,700	89,400	90,200	91,000	91,500	92,500	93,200	94,000
18	94,800	95,300	96,200	96,900	97,600	98,300	98,800	99,500	100,100	100,800
19	101,400	102,000	102,700	103,300	103,900	104,500	105,100	105,700	106,300	107,000
20	107,600	108,200	108,800	109,400	110,100	110,700	111,300	111,900	112,500	113,100
21	113,700	114,300	115,000	115,600	116,200	116,800	117,400	118,100	118,600	119,300
22	119,900	120,400	121,000	121,600	122,200	122,700	123,300	123,900	124,400	125,000
23	125,500	126,100	126,700	127,200	127,800	128,400	128,900	129,500	130,100	130,600
24	131,200	131,700	132,200	132,700	133,100	133,700	134,100	134,700	135,100	135,600

DETERMINATION OF ACCRUED DEBIT OR CREDIT

(e) The difference between the aggregate of water entitlements determined as provided in this Judgment and the aggregate of Usable Water and delivered Make-up Water shall be computed as of the end of each Water Year. Any excess of water entitlements over the quantity of Usable Water and Make-up Water received by Lower Area after September 30, 1963, is hereinafter referred to as Accrued Debit of Upper Area. Any excess of Usable Water and Make-up Water received by Lower Area after September 30, 1963, over water entitlements, is hereinafter referred to as Accrued Credit of Upper Area.

ACCRUED DEBIT

(f) If at the end of any Water Year it is determined pursuant to subparagraph (e) of this paragraph 5 that there is an Accrued Debit of Upper Area, then Upper District shall cause Make-up Water to be delivered to Lower Area during the following Water Year in an amount not less than the sum of (1) one-third of such Accrued Debit of Upper Area, and (2) that portion, if any, of such Accrued Debit of Upper Area over 25,000 acre-feet which remains after deducting said one-third. If Upper District shall fail to deliver Make-up Water as next above provided and Plaintiffs shall have diligently pursued their legal and equitable remedies to cause Upper District to so deliver, and either: (1) it shall be finally determined that Upper District is not obligated to so deliver, or (2) it shall appear that Upper District will not thereafter deliver Make-up Water, then Defendants and any successor or successors in interest by title to a Defendant's water right in Upper Area shall be obligated to so deliver Make-up Water. The provisions of this paragraph are subject to the provisions of paragraph 5(h) below.

ACCRUED CREDIT

(g) If at the end of any Water Year it is determined pursuant to subparagraph (e) of this paragraph 5 that there is an Accrued Credit of Upper Area, then there shall be no obligation to deliver Make-up Water to Lower Area during the following Water Year.

LONG-TERM ACCOUNTING

(h) Following September 30, 1963, a Long-term Accounting shall be made from time to time but not sooner than at the end of 15 Water Years, nor later than 25 Water Years after September 30, 1963, or after the last such accounting, whichever is later. A Long-term Accounting shall be made sooner than said 25-year period whenever the average annual rainfall in the San Gabriel Valley for a period of 15 Water Years or more after September 30, 1963, or after the last such accounting, whichever is later, is at least 18 inches but not more than 19 inches.

In making such Long-term Accounting for any such period (herein called Long-term Accounting Period), the aggregate of all Usable Water and Make-up Water received by Lower Area during such period shall be determined and (a) there shall be deducted from said aggregate the amount of Make-up Water, if any, delivered during such period by reason of the existence of an Accrued Debit of Upper Area at the end of the immediately preceding Long-term Accounting Period, or (b) there shall be added to said aggregate the amount of any Accrued Credit of Upper Area determined to exist at the end of the immediately preceding Long-term Accounting Period. The net aggregate amount of Usable Water and Make-up Water so computed shall be compared to the result to be obtained by (1) multiplying the 98,415 acre-feet of water to be received by

Lower Area as its average annual usable supply by the number of Water Years in the Long-term Accounting Period, and (2) adjusting the product by the percentage by which the average annual rainfall (to the nearest one hundredth of an inch) for the Long-term Accounting Period involved exceeds or is less than 18.52 inches. (i.e.:

$$98{,}415 \times (\text{number of Water Years in Period}) \times \frac{(\text{average rainfall for the Period})}{18.52}.)$$

If as a result of such comparison it is determined that there is a deficiency in the net aggregate amount of Usable Water and Make-up Water received during the Long-term Accounting Period, then such deficiency shall be compensated in the following Water Year by delivery of Make-up Water to Lower Area in the manner and by the means provided herein. If it is determined as a result of such comparison that there is an excess of net aggregate Usable Water and Make-up Water received, then the amount of such excess shall be carried forward as an Accrued Credit of Upper Area.

MAKE-UP WATER DELIVERY

(i) Make-up Water which Defendants are obligated to deliver through Upper District may be delivered by any one or more of the following means:

SURFACE FLOW DELIVERY

(1) By causing water other than Reclaimed Water to flow on the surface into Montebello Forebay by any means and from any source, provided that such deliveries shall

be at such rates or flows and at such times as may be scheduled by the Watermaster.

RECLAIMED WATER CREDIT

(2) By paying to Central Municipal for the benefit of all Lower Area Parties the total amount or any portion of the total amount which Central and West Basin Water Replenishment District or any Plaintiff shall have expended in reclaiming water or for the purchase of Reclaimed Water in the preceding Water Year, and which water when so reclaimed or purchased shall have been passed through Whittier Narrows to Lower Area. Upon written request made by Upper District not later than three months after the end of a Water Year, Central Municipal shall give a written notice to Upper Distric and the Watermaster of the total number of acre-feet of such Reclaimed Water so reclaimed or purchased during the preceding Water Year and of the cost per acre-foot therefor at the existing Whittier Narrows Water Reclamation Plant for reclamation of waste water, and at any future additions thereto, and payment therefor at said cost, or costs, may be made not later than one year after receipt of such written notice. Such payment shall be made for the total production of Reclaimed Water from the existing plant in the preceding Water Year before Upper District shall be entitled to make payment for all, or any portion of,

Reclaimed Water produced in that year by any future addition to that plant. Such payment by Upper District on behalf of Defendants shall be deemed a delivery of Make-up Water equal to the quantity of Reclaimed Water for which the expenditure of a like sum would have paid at the cost, or costs, per acre-foot so paid for such Reclaimed Water. In no event, however, shall any payment by Upper District under this subparagraph (i)(2) be deemed a delivery of Make-up Water in excess of 14,735 acre-feet in any Water Year during which the amount of Make-up Water required to be furnished by Upper Area is available to it at ground water replenishment rates for delivery to Lower Area, except with the prior written consent of Plaintiffs.

DIRECT DELIVERY

(3) By delivering, or causing to be delivered, water to any of Lower Area Parties with consent of Plaintiffs for use in Lower Area.

WATER RIGHTS BOUND

(j) It is further determined and adjudicated that the obligations provided above in subparagraphs (f) and (h) of this paragraph 5 for each Defendant shall constitute and be a servitude upon the existing water rights of each Defendant in and to the water supply of the San Gabriel River System upstream from Lower Area and shall run with and forever bind said water rights for the benefit of the water

rights of Lower Area Parties.

TRANSFER OF WATER RIGHTS

(k) If any Defendant, other than Upper District, shall desire to transfer all or any of its said water rights to a person, firm or corporation, public or private, who or which is not then bound by this Judgment as a Defendant, such Defendant shall as a condition to being discharged as hereinafter provided cause such transferee to appear in this action and file a valid and effective express assumption of the obligations imposed upon such Defendant under this Judgment as to such transferred water rights. Such appearance and assumption of obligations shall include the filing of a designation of the address to which shall be mailed all notices, requests, objections, reports and other papers permitted or required by the terms of this Judgment.

If any Defendant shall have transferred all of its said water rights and each transferee not theretofore bound by this Judgment as a Defendant shall have appeared in this action and filed a valid and effective express assumption of the obligations imposed upon such Defendant under this Judgment as to such transferred water rights, such transferring Defendant shall thereupon be discharged from all obligations hereunder. If any Defendant other than Upper District shall cease to own any rights in and to the water supply of the San Gabriel River System upstream from Lower Area, and shall have caused the appearance

and assumption provided for in the third preceding sentence with respect to each voluntary transfer, then upon application to this Court and after notice and hearing such Defendant shall thereupon be relieved and discharged from all further obligations hereunder. Any such discharge of any Defendant hereunder shall not impair the aggregate rights of Lower Area Parties or the responsibility hereunder of the remaining Defendants or any of the successors.

WATERMASTER PROVISIONS

WATERMASTER APPOINTMENT

6. A Watermaster comprised of three persons to be nominated as hereinafter provided shall be appointed by and serve at the pleasure of and until further order of this Court. One shall be a representative of Upper Area Parties nominated by and through Upper District, one shall be a representative of Lower Area Parties nominated by and through Central Municipal, and one shall be jointly nominated by Upper District and Central Municipal. If a dispute arises in choosing the joint appointee, the Court shall make the appointment. If Central Municipal or Upper District shall at any time or times nominate a substitute appointee in place of the appointee last appointed to represent Lower Area Parties, in the case of Central Municipal, or to represent Upper Area Parties, in the case of Upper District, or if Central Municipal and Upper District shall at any time or times jointly nominate a substitute appointee in place of the joint appointee last appointed,

such substitute appointee shall be appointed by the Court in lieu of such last appointee or joint appointee. Each such nomination shall be made in writing, served upon the other parties to this action and filed with the Court. The Watermaster when so appointed shall administer and enforce the provisions of this Judgment and the instructions and subsequent orders of this Court.

POWERS AND DUTIES

7. The Watermaster shall have the following powers and duties and shall take all steps necessary to make the following determinations for each Water Year promptly after the end of such Water Year:

(a) the amount of Surface Flow,

(b) the amount of Subsurface Flow,

(c) the amount of Export to Lower Area,

(d) the amount of water which passed as Surface Flow or Subsurface Flow across the boundary between Upper Area and Lower Area through Whittier Narrows and which was imported by or on behalf of Lower Area Parties from outside of the watershed of the San Gabriel River System above Whittier Narrows,

(e) the amount and quality of Reclaimed Water reclaimed by or on behalf of Lower Area,

(f) the total amount of Make-up Water delivered to Lower Area, together with the respective amounts delivered by each method specified in paragraph 5 of this Judgment,

(g) the amount of Usable Water received by Lower Area,

(h) the amount of local storm inflow, originating in Lower Area, to the channel of

each of Rio Hondo and San Gabriel River within Montebello Forebay,

(i) the surface outflow from Montebello Forebay in the channel of each of the Rio Hondo and San Gabriel River,

(j) the number of inches of depth of average rainfall in the San Gabriel Valley,

(k) the average annual rainfall in the San Gabriel Valley for the ten consecutive Water Years just ended,

(l) Lower Area Annual Entitlement or the entitlement for the Long-term Accounting Period, determined pursuant to subparagraph (d) or (h), respectively, of paragraph 5 of this Judgment,

(m) Accrued Debit of Upper Area, if any, or Accrued Credit of Upper Area, if any, as it exists at the end of such Water Year, and

(n) the amount, if any, of Make-up Water which Upper District is obligated to deliver during the following Water Year.

DETERMINATIONS TO BE BASED ON EXHIBIT B

8. Each of the above required determinations shall be based on and conform to the procedures specified in this Judgment and in Exhibit B insofar as said exhibit provides a procedure.

REPORTS MEASUREMENTS AND DATA

9. The Watermaster shall report to the Court and to each party in writing at the same time and not more than five months after the end of each Water Year the determinations required by paragraph 7 above.

The Watermaster shall cause to be installed and maintained in good working order such measuring

devices in Whittier Narrows and elsewhere as are necessary or required and not otherwise available for the making of the determinations required by paragraph 7 above.

The Watermaster shall collect and assemble from each of the parties, and the parties shall make available to the Watermaster, such records, reports and other data as may reasonably be required in the making of the determinations required of the Watermaster under paragraph 7 above. All records, reports and data received, maintained or compiled by the Watermaster shall be open to inspection by any party or its representative.

OBJECTIONS

10. Any party who objects to any determination made by the Watermaster pursuant to paragraph 7 above, may make such objection in writing to the Watermaster within thirty (30) days after the Watermaster gives the required written notice of such determination. Within thirty (30) days after expiration of the time within which objection may be made to such determination, the Watermaster shall consider all objections thereto and shall amend, modify or affirm the determination and give notice thereof at the same time to all parties and shall file a copy of such final determination with the Court. If the Watermaster denies any objection in whole or in part, the party whose objection was so denied may within thirty (30) days after service of the final determination upon it, make written objection to such denial by filing its objections with the Court after first mailing a copy of such objections to the

Watermaster and to each party, and such party shall bring its objections on for hearing before the Court upon notice and motion and at such time as the Court may direct. If the Watermaster shall change or modify any determination, then any party may within fifteen (15) days after service of such final determination upon it object to such change or modification by following the procedure prescribed above in the case of a denial of an objection to the first determination. If objection to a final determination is filed with the Court as herein provided and brought on for hearing, then such final determination may be confirmed or modified in whole or in part as the Court may deem proper.

CHANGE IN METHOD OF MEASUREMENT

11. If the Watermaster shall deem it advisable to make a change in the method of making any measurement required under the terms of this Judgment, the Watermaster shall notify all parties of such proposed change, and if within sixty (60) days of such notification no party shall file written objections to such change with the Watermaster, the Watermaster may put such proposed change into effect. If, however, any party files its written objection to the proposed change, it shall by notice of motion filed not later than fifteen (15) days after the expiration of said 60-day period and served on the Watermaster and all parties bring its objection on for hearing before the Court at such time as the Court may direct, and the Court shall rule on whether the Watermaster may make such proposed change.

BUDGET

12. In addition to the above-specified administrative powers and duties, the Watermaster shall prepare a tentative budget for each Water Year, stating the estimated expense for discharging the duties of the Watermaster set forth in this Judgment. The Watermaster shall mail a copy of the tentative budget to each of the parties at the same time at least sixty (60) days before the beginning of each Water Year. However, with respect to the first Water Year following the entry of this Judgment, the tentative budget shall be mailed not later than one hundred and twenty (120) days from the entry of this Judgment. If any party has an objection to a tentative budget, or any suggestions with respect thereto, that party shall present the same in writing to the Watermaster within fifteen (15) days after service of the tentative budget upon it. If no objections are received, the tentative budget shall become the final budget. If objections to the tentative budget are received, the Watermaster shall, within fifteen (15) days after the expiration of the time for presenting objections, consider all such objections, prepare a final budget, and mail a copy thereof to each party, together with a statement of the amount assessed, if any, to each party, computed as provided in paragraph 13. If the Watermaster denies any objection in whole or in part, the party whose objection was so denied may, within fifteen (15) days after service of the final budget upon it, make written objection to such denial by filing

its objections with the Court after first mailing a copy of such objections to each party, and such party shall bring its objections on for hearing before the Court upon notice and motion and at such time as the Court may direct. If the Watermaster makes a change in the tentative budget, then any party may within fifteen (15) days after service of the final budget upon it object to any such change by following the procedure prescribed above in the case of a denial of an objection to the tentative budget. If objection to the final budget is filed with the Court as herein provided and brought on for hearing, then such final budget may be confirmed or adjusted in whole or part as the Court may deem proper.

FEES AND EXPENSES

13. The fees, compensation and expenses of the Watermaster hereunder shall be borne by the parties in the following proportions: 50% by Upper District, 41.2% by Central Municipal, 7.125% by the City of Long Beach, and 1.675% by the City of Compton, or such other division among the Plaintiffs as they may agree upon in writing and file with the Watermaster.

Payment of the amount assessed to a party, whether or not subject to adjustment by the Court as provided in paragraph 12, shall be paid on or prior to the beginning of the Water Year to which the final budget and statement of assessed costs is applicable. If such payment by any party is not made on or before said date, the Watermaster shall add a penalty of 5% thereof to such party's

statement. Payment required of any party hereunder may be enforced by execution issued out of this Court, or as may be provided by order hereinafter made by this Court. All such payments and penalties received by the Watermaster shall be expended by him for the administration of this Judgment. Any money remaining at the end of any Water Year shall be available for use in the following Water Year.

SUCCESSOR OF UPPER DISTRICT

14. If a public agency or district shall be formed hereafter which shall include the present area of Upper District and shall have ability equal to or greater than that which Upper District now has to perform the obligations under this Judgment, and shall appear in this action and file a valid and effective assumption of such obligations, then Upper District upon application to this Court, and after notice and hearing, shall thereupon be relieved and discharged from all further obligations hereunder.

CONTINUING JURISDICTION OF THE COURT

15. Full jurisdiction, power and authority is retained and reserved by the Court for the purpose of enabling the Court upon application of any party by motion and upon at least thirty (30) days notice thereof, and after hearing thereon (i) to make such further or supplemental orders or directions as may be necessary or appropriate for the construction, enforcement or carrying out of this Judgment, and (ii) to modify, amend or amplify any of the provisions of this Judgment whenever substantial developments affecting the physical, hydrological or other conditions dealt

with herein may, in the Court's opinion, justify or require such modification, amendment or amplification.

If at any time Plaintiffs and at least two-thirds of the Defendants including any two of the cities of Alhambra, Azusa and Monterey Park, shall file with the Court a written stipulation (i) that henceforth in determining any one or more of the component parts of Usable Water received by Lower Area in any Water Year, the Watermaster shall not use the method specified in this Judgment but shall use instead a new, different or altered method as specified and described in such stipulation, and (ii) that such new, different or altered method or methods shall be applied to redetermine the average annual amount of Usable Surface Flow, Subsurface Flow and Export to Lower Area which Lower Area received each Water Year during the period October 1, 1934 to September 30, 1959, referred to as the base period, and that on the basis of such redetermination the Court may modify paragraphs 4 and 5 of this Judgment to establish a new and different water entitlement and yearly adjustment thereto which shall thereafter control, then and in that event, after hearing pursuant to motion and notice to all parties, held at such time as the Court may direct, the Court may deny the motion or it may grant it and (a) approve the future use of the stipulated new, different or altered method or methods, by the Watermaster, and (b) by use of the stipulated new, different or altered method or

methods, redetermine the average annual amount of Usable Surface Flow, Subsurface Flow and Export to Lower Area received each Water Year during the base period, and on the basis thereof modify paragraphs 4 and 5 of this Judgment to provide for a new and different water entitlement and yearly adjustment thereto, which modifications shall be effective and control commencing with the Water Year following the entry of the order so modifying paragraphs 4 and 5.

REPORT OF TRANSFER OF WATER RIGHTS

16. Every transfer of any of those water rights of Defendants which are the subject of Paragraph 5(j) of this Judgment, whether such transfer is voluntary or involuntary, shall be reported promptly in writing by the transferor to the Watermaster; and the Watermaster shall give prompt written notice of such transfer to each party and to each transferee involved in every other transfer of any of those water rights. Such report by the transferor and notice by the Watermaster shall contain the following information as to each such transfer:

(a) The identity of the transferor;

(b) The identity of the transferee;

(c) The effective date of the transfer;

(d) A brief description of the document by which such transfer is made, and the recording data, if any;

(e) A statement as to whether the transfer was voluntary or involuntary;

(f) A statement whether or not after such transfer the transferor still has or

claims to have any of the water rights which are the subject of Paragraph 5(j) of this Judgment.

NOTICES

17. All notices, requests, objections, reports and other papers permitted or required by the terms of this Judgment shall be given or made by written document and shall be served by mail on each party and on each transferee of water rights who has appeared and filed the assumption of obligations required by paragraph 5(k) of this Judgment, and where required or appropriate, on the Watermaster. For all purposes of this paragraph the mailing address of each party shall be that set forth below its signature to the Stipulation for Judgment, and the mailing address of each transferee of water rights shall be that set forth in the appearance and assumption of obligations required by paragraph 5(k) of this Judgment, until changed as provided below. No further notice of any kind as to any matter arising hereunder, including notice to attorneys of record for any party or such transferee, need be given, made or served.

If any party or any such transferee of water rights shall desire to change its designation of mailing address, it shall file a written notice of such change with the clerk of this court and shall serve a copy thereof by mail on the Watermaster. Upon the receipt of any such notice the Watermaster shall promptly give written notice thereof to each party and to each transferee of water rights.

EFFECTIVE DATE

18. The rights decreed and the obligations imposed by this Judgment shall be effective October 1, 1963, and shall accrue from that date.

COSTS

19. None of the parties shall recover any costs from any other party.

Dated: _____, 1964.

_____
Judge

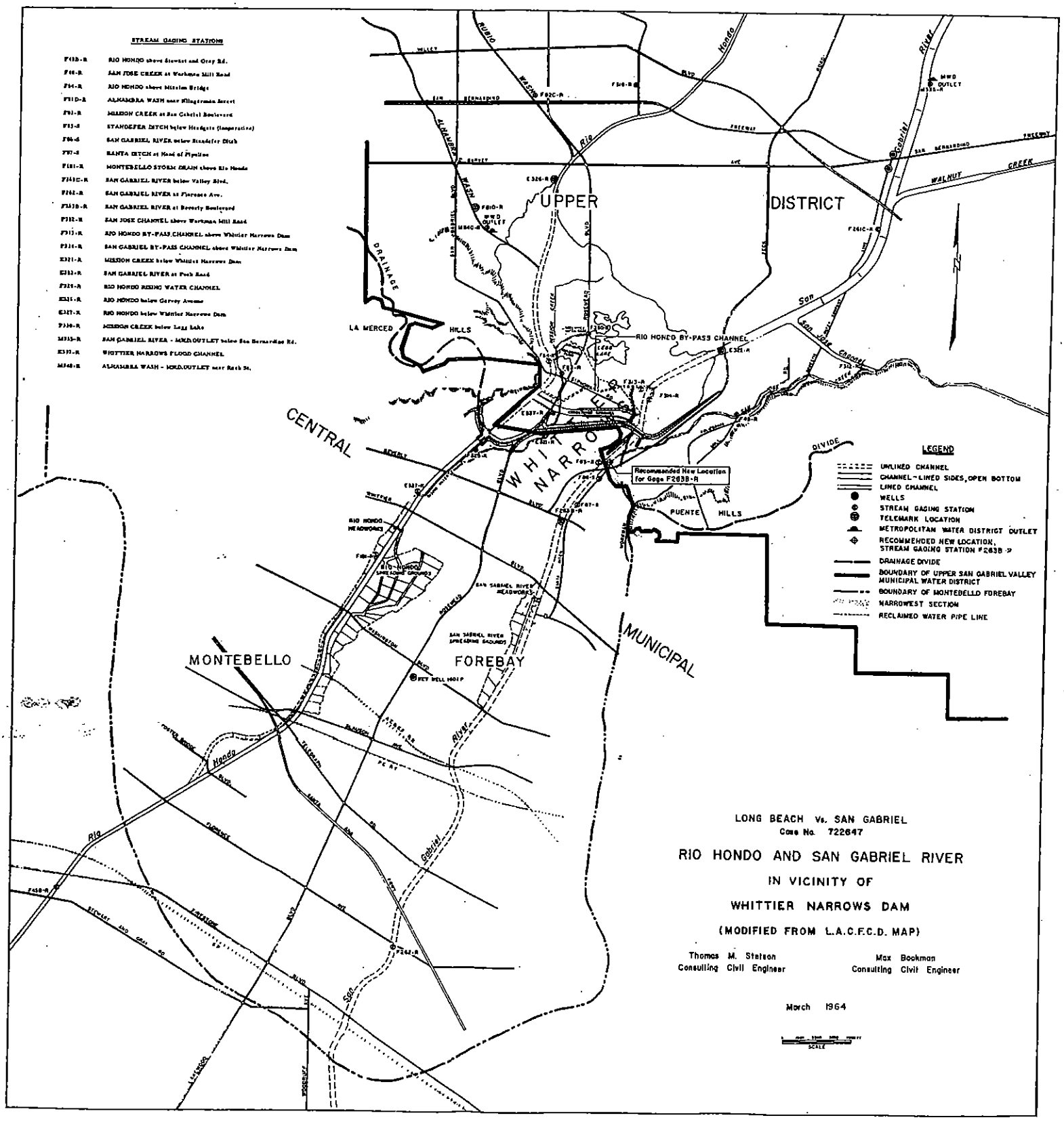

STREAM GAGING STATIONS
F418-R RIO HONDO above Stewart and Gray Rd.
F16-R SAN JOSE CREEK at Workman Mill Road
F34-R RIO HONDO above Mission Bridge
F310-R ALHAMBRA WASH near Klingerman Street
F93-R MISSION CREEK at San Gabriel Boulevard
F15-S STANDEFER DITCH below Headgate (Inoperative)
F86-S SAN GABRIEL RIVER below Standefer Ditch
F97-S SANTA DITCH at Head of Pipeline
F181-R MONTEBELLO STORM DRAIN above Rio Hondo
F241C-R SAN GABRIEL RIVER below Valley Blvd.
F262-R SAN GABRIEL RIVER at Florence Ave.
F263B-R SAN GABRIEL RIVER at Beverly Boulevard
F312-R SAN JOSE CHANNEL above Workman Mill Road
F313-R RIO HONDO BY-PASS CHANNEL above Whittier Narrows Dam
F314-R SAN GABRIEL BY-PASS CHANNEL above Whittier Narrows Dam
E321-R MISSION CREEK below Whittier Narrows Dam
E352-R SAN GABRIEL RIVER at Peck Road
F325-R RIO HONDO RECING WATER CHANNEL
E331-R RIO HONDO below Garvey Avenue
E327-R RIO HONDO below Whittier Narrows Dam
F330-R MISSION CREEK below Legg Lake
M335-R SAN GABRIEL RIVER - MWD OUTLET below San Bernardino Rd.
E337-R WHITTIER NARROWS FLOOD CHANNEL
M340-R ALHAMBRA WASH - MWD OUTLET near Rosemead Blvd.
UPPER
DISTRICT
CENTRAL
MUNICIPAL
MONTEBELLO
FOREBAY
WHITTIER NARROWS
LA MERCED HILLS
PUENTE HILLS
RIO HONDO BY-PASS CHANNEL
Recommended New Location for Gage F263B-R
RIO HONDO HEADWORKS
SAN GABRIEL RIVER HEADWORKS
SAN GABRIEL RIVER SPREADING GROUNDS
WELL HOLE
DIVIDE
WALNUT CREEK
LEGEND
UNLINED CHANNEL
CHANNEL-LINED SIDES, OPEN BOTTOM
LINED CHANNEL
WELLS
STREAM GAGING STATION
TELEMARK LOCATION
METROPOLITAN WATER DISTRICT OUTLET
RECOMMENDED NEW LOCATION, STREAM GAGING STATION F263B-R
DRAINAGE DIVIDE
BOUNDARY OF UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
BOUNDARY OF MONTEBELLO FOREBAY
NARROWEST SECTION
RECLAIMED WATER PIPE LINE
LONG BEACH Vs. SAN GABRIEL
Case No. 722647
RIO HONDO AND SAN GABRIEL RIVER
IN VICINITY OF
WHITTIER NARROWS DAM
(MODIFIED FROM L.A.C.F.C.D. MAP)
Thomas M. Stetson
Consulting Civil Engineer
Max Bookman
Consulting Civil Engineer
March 1964
SCALE

EXHIBIT A

LONG BEACH v. SAN GABRIEL

ENGINEERING APPENDIX

EXHIBIT B

ENGINEERING APPENDIX

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ENGINEERING APPENDIX

INTRODUCTION

Pursuant to the declaration of rights contained in paragraph 4 of the Judgment and the physical solution contained in paragraph 5 of the Judgment, the purpose of this exhibit is to establish the basis for calculations and measurements to provide for operation of the Judgment in the future.

Unless otherwise provided in this exhibit, all terms used herein are used in the same sense as defined or used in the Judgment.

The derivation of the Lower Area average annual entitlement is based upon the data presented herein covering the base period. However, if a more accurate method of determining Subsurface Flow is developed at some future time, it will be acceptable for use in carrying out the terms of this Judgment so long as it can also apply to the base period and to the years over which the Judgment shall have operated to that time.

I. DERIVATION OF LOWER AREA AVERAGE ANNUAL ENTITLEMENT

The Lower Area average annual entitlement is stipulated in paragraph 5 (a) of the Judgment to be 98,415 acre-feet. It was derived from three components of water supply over the base period, October 1, 1934, through September 30, 1959. Said components were: (1) Usable Surface Flow, (2) Subsurface Flow, and (3) Export to Lower Area.

A. Usable Surface Flow

For the base period, Usable Surface Flow was calculated as that portion of Surface Flow which percolated

in Montebello Forebay, less the calculated amounts of Lower Area Replenishment Water (hereby defined as water imported from outside of the watershed of the San Gabriel River system by or on behalf of Lower Area Parties for replenishment of Montebello Forebay and passing from Upper Area to Lower Area), and less one-half of the Raymond Basin sewage discharged in Upper Area from the Tri-City Sewage Treatment Plant.

Table 1 presents the calculation of Usable Surface Flow during the base period. The average annual quantity was calculated to be 51,620 acre-feet. Its derivation is summarized in the following tabulation.

		Average annual quantity in acre-feet
1. Surface Flow		108,560
2. Montebello Forebay surface outflow	45,000	
3. Local storm inflow within Montebello Forebay	1,660	
4. Portion of Surface Flow leaving Montebello Forebay (2 minus 3)		43,340
5. Surface Flow percolated in Montebello Forebay (1 minus 4)		65,220
6. Lower Area Replenishment Water (Colorado River water) passing through Whittier Narrows	11,870	
7. One-half of Raymond Basin sewage discharged in Upper Area	1,730	
8. Usable Surface Flow (5 minus 6 minus 7)		51,620

TABLE 1

CALCULATION OF USABLE SURFACE FLOW

DURING BASE PERIOD

(Acre-Feet)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
	Surface Flow						Montebello Forebay surface outflow								
Water Year	Rio Hondo F-64	Mission Creek F-83	Rio Hondo Bypass F-313	Sycamore Canyon	San Gabriel River at maximum rising water	Total (2+3+4+5+6)	Rio Hondo F-45	San Gabriel River F-262	Subtotal (8+9)	Montebello Storm Drain F-181	Outflow of Surface Flow (10-11)	Surface Flow percolated in Montebello Forebay (7-12)	Colorado River water passing Whittier Narrows	One-half of Raymond Basin sewage discharged in Upper Area	Usable Surface Flow (13-14-15)
1934-35	29,230	9,140	0	390	22,410	61,170	6,000	4,700	10,700	1,650	9,050	52,120		2,650	49,470
36	20,700	9,810	0	70	16,140	46,720	4,220	1,750	5,970	890	5,080	41,640		2,735	38,905
37	50,900	10,840	0	260	47,750	109,750	26,870	21,000	47,870	2,170	45,700	64,050		2,865	61,185
38	209,330	14,700	0	510	109,120	333,660	172,100	60,000	232,100	2,050	230,050	103,610		2,960	100,650
39	30,650	16,330	0	200	38,380	85,560	9,540	2,540	12,080	980	11,100	74,460		2,970	71,490
1939-40	27,660	16,210	0	110	29,510	73,490	4,850	1,900	6,750	890	5,860	67,630		2,985	64,645
41	130,650	18,120	0	1,070	112,440	262,280	93,260	75,780	169,040	4,090	164,950	97,330		3,205	94,125
42	28,810	18,740	0	80	43,770	91,400	6,730	13,570	20,300	960	19,340	72,060		3,140	68,920
43	59,470	17,410	0	150	222,670	299,700	41,910	186,420	228,330	2,580	225,750	73,950		3,235	70,715
44	51,390	18,850	0	220	121,420	191,880	26,820	79,930	106,750	2,390	104,360	87,520		3,545	83,975
1944-45	32,300	18,020	0	70	57,130	107,520	8,460	26,110	34,570	770	33,800	73,720		3,490	70,230
46	43,160	15,630	0	70	51,580	110,440	11,280	16,480	27,760	870	26,890	83,550		3,635	79,915
47	48,410	14,230	0	110	56,790	119,540	16,030	27,650	43,680	1,350	42,330	77,210		3,785	73,425
48	25,370	12,670	0	20	20,970	59,030	3,510	0	3,510	910	2,600	56,430		2,065	54,365
49	11,100	10,640	0	40	13,590	35,370	1,490	0	1,490	860	630	34,740		0	34,740
1949-50	12,280	8,780	0	110	11,780	32,950	2,840	0	2,840	1,240	1,600	31,350		0	31,350
51	7,880	6,700	0	0	8,420	23,000	780	0	780	890	-110	23,110		0	23,110
52	34,570	6,090	0	530	56,800	97,990	26,040	24,250	50,290	3,330	46,960	51,030		0	51,030
53	16,120	6,210	0	50	22,350	44,730	3,450	980	4,430	1,430	3,000	41,730		0	41,730
54	23,390	3,580	7,230	100	18,130	52,430	10,760	3,790	14,550	2,190	12,360	40,070	15,690	0	24,380
1954-55	11,350	3,100	9,730	70	14,630	38,880	8,000	1,000	9,000	1,210	7,790	31,090	23,130	0	7,960
56	16,180	2,310	14,990	150	28,930	62,560	14,540	10,360	24,900	2,110	22,790	39,770	42,870	0	-3,100
57	16,840	1,840	20,400	50	22,220	61,350	4,640	1,390	6,030	1,120	4,910	56,440	51,870	0	4,570
58	119,320	2,660	15,300	540	91,320	229,140	30,260	23,960	54,220	3,250	50,970	178,170	103,900	0	74,270
1958-59	39,800	3,920	0	10	39,790	83,520	3,900	3,130	7,030	1,230	5,800	77,720	59,390	0	18,330
TOTALS	1,096,860	266,530	67,650	4,980	1,278,040	2,714,060	538,280	586,690	1,124,970	41,410	1,083,560	1,630,500	296,850	43,265	1,290,385
Averages	43,870	10,660	2,710	200	51,120	108,560	21,530	23,470	45,000	1,660	43,340	65,220	11,870	1,730	51,620

B. Subsurface Flow

The State of California, Department of Water Resources, published in April 1962, Appendix B, "Safe Yield Determinations", of Bulletin No. 104, a report entitled "Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County". That report included estimates of the seasonal Subsurface Flow through Whittier Narrows for each Water Year during the period 1934-35 through 1956-57. By applying the same methods of computation, the estimates have been extended through the Water Year 1958-59 and a 25-year average of 28,400 acre-feet derived.

Table 2 sets out the Subsurface Flow for each Water Year in the base period and the average annual Subsurface Flow during the base period.

TABLE 2

SUBSURFACE FLOW
DURING BASE PERIOD

Water Year	Acre-Feet
1934-35	33,500
36	33,500
37	31,100
38	25,600
39	25,000
1939-40	23,900
41	23,300
42	21,800
43	21,900
44	23,700
1944-45	23,500
46	23,100
47	22,400
48	25,700
49	30,300
1949-50	34,000
51	32,800
52	32,100
53	32,800
54	33,200
1954-55	33,600
56	32,200
57	32,600
58	30,500
1958-59	27,800
TOTAL	709,900
Average	28,400

C. Export to Lower Area

During the base period there were a number of water producers or water service agencies which produced water by surface diversions or wells in Upper Area and exported it to Lower Area. At the present time, and for the past several years, all such water has been pumped from wells in Upper Area.

There are four water service agencies which currently so export water. They are the Rincon Ditch Company, California Domestic Water Company, Suburban Water Systems, and the City of Whittier.

Table 3 sets forth Export to Lower Area for each Water Year during the base period and the average annual Export to Lower Area during the base period.

TABLE 3

EXPORT TO LOWER AREA
DURING BASE PERIOD

Water Year	Acre-Feet
1934-35	15,049
35-36	21,644
36-37	22,668
37-38	25,151
38-39	27,532
1939-40	22,566
40-41	24,191
41-42	27,514
42-43	30,484
43-44	31,182
1944-45	25,953
45-46	27,456
46-47	29,877
47-48	30,165
48-49	25,515
1949-50	18,363
50-51	21,651
51-52	16,302
52-53	18,141
53-54	18,360
1954-55	18,796
55-56	20,728
56-57	19,686
57-58	22,031
58-59	23,881
TOTAL	584,886
Average	23,395

D. Derivation of Lower Area Average Annual Entitlement

Table 4 presents the derivation of the Lower Area average annual entitlement.

TABLE 4

LOWER AREA AVERAGE ANNUAL ENTITLEMENT

(In acre-feet for base period)

Usable Surface Flow (Table 1)	51,620
Subsurface Flow (Table 2)	28,400
Export to Lower Area (Table 3)	23,395
Sub-total	103,415
Stipulated deduction	5,000
Lower Area average annual entitlement	98,415

II. DETERMINATION OF FUTURE LOWER AREA ANNUAL ENTITLEMENT

In determining a future Lower Area Annual Entitlement, as set forth in paragraph 5 (d) of the Judgment, the annual rainfall for San Gabriel Valley shall be determined in accordance with procedures set forth below, which are those presently utilized by the Los Angeles County Flood Control District. The 90-year (1872-73 through 1961-62) average rainfall for San Gabriel Valley has been calculated by said District to be eighteen and fifty-two one-hundredths (18.52) inches. For purposes of this Judgment, this quantity shall be the long-term average annual rainfall for San Gabriel Valley and shall not be subject to change.

The arithmetic average of the annual rainfall recorded at the four precipitation stations listed below shall constitute the rainfall for San Gabriel Valley for the respective Water Year.

Station No.	Location
95	114 East First Street, San Dimas
102C	19711 East Valley Blvd., Walnut
108C	119 South Hoyt Avenue, El Monte
610B	City Hall, Pasadena

Table 5 presents the annual rainfall for San Gabriel Valley for the Water Years 1954-55 through 1962-63.

TABLE 5

ANNUAL RAINFALL FOR SAN GABRIEL VALLEY

Water Year	Rainfall, Inches
1954-55	13.9
56	16.7
57	13.7
58	30.2
59	8.5
1959-60	10.6
61	5.9
62	22.4
63	12.3

The average rainfall in inches for the ten (10) consecutive Water Years ending with the year for which entitlement is being calculated shall be used as the basis for determining Lower Area Annual Entitlement.

Lower Area Annual Entitlements have been computed for 10-year average rainfall in increments of one-tenth (0.1) inch between fourteen (14) and twenty-five (25) inches and are set forth in Table A in paragraph 5 (d) of the Judgment. The following outlines the procedure for determining Lower Area Annual Entitlement from Table A:

(1) Derive the 10-year average rainfall for San Gabriel Valley to the nearest one-tenth (0.1) inch;

(2) Enter Table A in left-hand column at whole number of inches of rainfall; and

(3) Read horizontally to the vertical column representing the appropriate tenth of an inch of rainfall to obtain the quantity of Lower Area Annual Entitlement in acre-feet.

III. FUTURE MEASUREMENTS

It will be necessary to maintain records of measurement of stream flow, flow in pipelines, rainfall and depth to ground water at a number of locations. The purpose of this Part III is to locate and identify those measurement stations and to specify the manner in which the measurements are to be used in the future operation of the Judgment. The line through Whittier Narrows shown on Exhibit A as "narrowest section" is the line at which accounting shall be made of the water to be received in the future by Lower Area Parties. The Watermaster shall, insofar as practicable, utilize measurement data available from existing sources. When such data are not available the Watermaster may make such measurements as may be necessary or reasonably required for the purposes of this Judgment. The Watermaster is hereby authorized to re-establish, rebuild or replace measuring stations whenever necessary for the operation of this Judgment.

A. Surface Water Measurements and Calculations.

There may be several categories of water flowing on the surface through Whittier Narrows. Among them may be local stream flow, Lower Area Replenishment Water, Reclaimed Water and Make-up Water. The Watermaster shall have the responsibility of determining the quantities of each category of water flowing through Whittier Narrows in the future.

The approximate locations of stream measuring stations in and near Whittier Narrows are shown on Exhibit A. The surface

water measurements and calculations shall include the following:

1. Measurements of Surface Flow.

   a. Rio Hondo above Mission Bridge, Station F64-R.

   b. Mission Creek at San Gabriel Boulevard, Station F83-R.

   c. Rio Hondo By-pass Channel, Station F313-R.

   d. Whittier Narrows Flood Channel, Station E337-R.

   e. Calculation of Sycamore Canyon runoff based on annual rainfall to nearest inch at Station 170-C as shown on Table 6.

   f. San Gabriel River near Parkway Bridge. This is to be a new station to replace the existing station on San Gabriel River at Beverly Boulevard, Station F263B-R.

   g. The portion of Reclaimed Water from Whittier Narrows Reclamation Plant diverted to Rio Hondo.

2. Measurement of local storm inflow to the channel of each of the Rio Hondo and San Gabriel River within Montebello Forebay.

   a. Montebello storm drain, Station F181-R.

   b. Calculation of unmeasured local storm inflow.

3. Measurements of diversions to spreading grounds Montebello Forebay.

4. Measurement of surface outflow from Montebello Forebay in the channel of each of Rio Hondo and

San Gabriel River.

a. Rio Hondo above Stewart and Gray Road, Station F45B-R.

b. San Gabriel River at Florence Avenue, Station F262-R.

5. Measurement of Lower Area Replenishment Water imported to Upper Area from outside the watershed of the San Gabriel River system.

a. Rio Hondo By-pass Channel, Station F313-R.

b. San Gabriel By-pass Channel, Station F314-R.

c. San Gabriel River MWD Outlet, Station M335-R.

d. Alhambra Wash MWD Outlet, Station M340-R.

e. Any other measuring point or points in Upper Area at which such replenishment water is released.

6. Measurement of total Reclaimed Water from Whittier Narrows Reclamation Plant reclaimed by or on behalf of Lower Area Parties.

In the event that any of the aforementioned gaging stations are inoperative for any reason and for any period of time the Watermaster shall estimate the quantity that would have been measured at the station had it been operative. The estimate shall be based on correlation to nearby operative measuring stations or on other reasonable engineering methods.

TABLE 6

RAINFALL - RUNOFF RELATIONSHIP OF SYCAMORE CANYON*

Annual rainfall, in inches at Precipitation Station No. 170-C	Estimated runoff in acre-feet
6	5
7	10
8	15
9	25
10	35
11	45
12	60
13	75
14	90
15	105
16	125
17	145
18	170
19	200
20	240
21	275
22	315
23	355
24	400
25	445
26	490
27	535
28	580
29	630
30	685

Extrapolate for rainfall values in excess of 30 inches.

* Located on Westerly side of Whittier Narrows, upstream from dam and downstream from stream gaging Station F64-R. Approximate drainage area is 2.77 square miles.

B. Subsurface Flow

The determination of Subsurface Flow involves certain measurements and procedures which are set forth in this section. In connection with a recent comprehensive study made by the State of California, Department of Water Resources, for Bulletin No. 104, "Planned Utilization of the Ground Water Basins of the Coastal Plain of Los Angeles County", estimates were made of Subsurface Flow through Whittier Narrows. The State concluded that a reasonable method of determining Subsurface Flow was by the transmissibility method, which is based on Darcy's Law applied

at the location shown on Exhibit A as "narrowest section". Darcy's Law states that Q = PIA, in which

Q = Subsurface Flow

P = Permeability, in gallons per day per square foot under unit hydraulic gradient

I = Slope of water table

A = Cross-sectional area

Under this Judgment calculations shall be made by the Watermaster for the spring and fall of each year and because of slight variations due to the nature of the data available, Subsurface Flow for any one year will be equal to the tri-annual average of the quantities calculated for the three years ending with the year of calculation. In this manner, annual Subsurface Flow shall be based on the average of six calculations, the first of which shall be the spring of 1962.

The elevation of the ground surface at the "narrowest section" of Whittier Narrows is deemed to be 208 feet above sea level, and the width of the section is deemed to be 7,900 feet. Water levels fluctuate at Whittier Narrows and the cross-sectional area of the ground water at Whittier Narrows will vary with fluctuations in ground water elevation.

It should be noted that T = PD, where T = transmissibility in gallons per day per foot of width under unit hydraulic gradient and D = saturated depth in feet. Therefore PA = TW and Q = PAI = TWI. The product TW (or PA) for the entire cross-sectional area was determined to be 4,739.5 x 1,000,000 gallons per day, or 7,333.6 cfs. The actual slope of the water table, I, would then be applied to the calculated quantity of TW (or PA).

The average permeability of the material to a depth of 100 feet below the ground surface has been determined to be equal to 2,000 gallons per day per square foot, which is

equal to .003095 cubic feet per second per square foot. This represents the average permeability in the zone of water level fluctuation.

In order to correct for the unsaturated depth, the equation $Q = TWI$ is modified to $Q = (TW - C)I$ where

$C = P_1Wd$,

C = The flow which would occur in the unsaturated section if it were saturated, in cubic feet per second under unit hydraulic gradient.

P_1 = Average permeability for a distance of 100 feet below the ground surface.

W = The cross-sectional width, or 7,900 feet.

d = The distance from the water surface to the top of the ground, or 208 feet minus ground water elevation.

Utilizing the values of permeability shown above, then

$C = 24.45\ d$, in cubic feet per second, for values of "d" to a depth of 100 feet below the ground surface.

The "effective transmissibility" is equal to the total transmissibility times the width at the narrowest section minus C, or,

$$Tw_e = TW - C$$

$$Tw_e = 7{,}334 - C, \text{ in cubic feet per second.}$$

Subsurface Flow is equal to the effective transmissibility times the average slope of the water table. The formula derived from the foregoing, may be stated as follows:

$$Q = 724\ I\ [7{,}334 - 24.45\ (208 - E)]$$

Where: Q = Subsurface Flow in acre-feet per year,

I = Average adjusted slope of ground water surface at narrowest section, and

E = Ground water elevation of the water surface in feet above sea level at the narrowest cross-section.

The detailed steps to be carried out by the Watermaster are as follows:

(1) Ground water level contour maps in the vicinity of Whittier Narrows are drawn on the basis of water level measurements.

(2) A line representing the narrowest cross-section is drawn on the ground water contour maps.

(3) This line is subdivided into four equal lengths.

(4) The average slope of the water table at each of the three points within the narrowest section is determined along a line perpendicular to the ground water contours in the manner heretofore used by the State of California, Department of Water Resources.

(5) Adjustment is made to the ground water slope at each of the three points so that it is perpendicular to the narrowest section by:

(a) measuring the angle, in degrees, between the line representing the narrowest cross-section and the tangent to the flow line at the narrowest cross-section,

(b) applying the sine of that angle to the previously determined slope to determine the adjusted slope, and

(c) obtaining an average of the three adjusted slopes to represent the average slope through the narrowest cross-section.

(6) The elevation of the water surface at the narrowest cross-section is determined by interpolating between the ground water contours.

(7) The distance to the ground water surface is computed from the top of the ground by the formula: $d = 208 - E$, where E represents the average water level elevation of the narrowest cross-section, in feet.

(8) The correction factors for the transmissibility for the area from the top of ground to the water surface is computed by the formula $C = 24.45\ d$, in cubic feet per second.

(9) The effective transmissibility is computed by the formula $Tw_e = 7,334 - C$, in cubic feet per second.

(10) Subsurface Flow is computed by multiplying the effective transmissibility by the average adjusted slope.

(11) The computed Subsurface Flow, in cubic feet per second, is converted to acre-feet per year by multiplying it by 724.

The selected wells within the vicinity of Whittier Narrows which have been used for drawing the ground water contours are as follows:

Location No.	State No.
2927B	2S 11W 06M01S
2927D	06K01S
2928	07B01S
2936	06A01S
2936A	1S 11W 31J03S
2938A	2S 11W 07H1S
2938D	05N05S
2939	08N01S
2939B	18B01S
2939G	07R01S
2947C	-
2947F	05L01S
2947N	05P01S
2948	05N04S
2948E	08B02S
2948F	08L03S
2957H	-

The Watermaster shall obtain measurements of ground water elevations in the spring and fall of each year when they are at their approximate high and low levels, respectively. Such measurements may be made at, but need not be limited to, all of the above listed wells.

C. Export to Lower Area

If present measuring devices on existing conduits are inadequate, the Watermaster shall install or cause to be installed adequate measuring devices to determine the amount of Export to Lower Area.

IV. ACCOUNTING

Utilizing the appropriate measurements described in the previous portion of this Exhibit B, the Watermaster shall maintain accounts for the determination of Lower Area Annual Entitlement, the annual amount of Usable Water, Make-up Water to be delivered, Make-up Water received, the annual total amount of Usable Water and Make-up Water, the accumulated Lower Area Annual Entitlements, the accumulated amounts of Usable Water and Make-up Water received subsequent to September 30, 1963, Accrued Debit of Upper Area or Accrued Credit of Upper Area, and records necessary for accomplishing the Long-term Accounting.

In maintaining the accounting records listed above, the Watermaster shall establish the necessary accounting procedures to accomplish the recordation of data and required calculations for accomplishment of the provisions set forth in paragraph 5 of the Judgment.

A. Components of Usable Water

1. Surface Flow. Surface Flow shall be measured as set forth in Part III.A. of this exhibit to include all water other than Export to Lower Area and Subsurface Flow which passes from Upper Area to Lower Area through Whittier Narrows. When the new station to be constructed on the San Gabriel River near Parkway Bridge is completed, it shall replace the gaging station on the San Gabriel River at Beverly Boulevard, Station F263B-R. Until such new station is in operation, Surface Flow as measured at Station F263B-R shall be increased by the amount of Surface Flow which has percolated or been diverted between Station F263B-R and the point of maximum rising water. The Watermaster shall determine the quantity so percolated or diverted based upon available measurements by the Los Angeles County Flood Control District.

2. Subsurface Flow. Subsurface Flow shall be calculated in accordance with the procedures heretofore set forth.

3. Export to Lower Area. The Watermaster shall reduce to acre-feet the meter readings on each of the conduits transporting through Whittier Narrows water diverted from surface streams in Upper Area or pumped or developed from underground sources in Upper Area. These quantities shall be used to determine Export to Lower Area except that after September 30, 1966, Export to Lower Area used for determination of Usable Water shall not exceed 23,395 acre-feet per year. (Paragraph 3(1) of this Judgment.)

B. Calculation of Usable Water

After determining the amounts of Surface Flow, Subsurface Flow and Export to Lower Area during a Water Year, as provided above, the Watermaster, in order to determine the extent to which such water constitutes the receipt of Usable Water by Lower Area during such Water Year, shall deduct from the total of such amounts, the following:

1. Lower Area Replenishment Water. An amount equal to the total quantity of Lower Area Replenishment Water released in Upper Area in each Water Year subsequent to September 30, 1963, less such amount, if any, as the Watermaster determines to be lost due to evaporation or transpiration prior to the receipt of such water in Lower Area;

2. Reclaimed Water. An amount equal to the total quantity of Reclaimed Water which is reclaimed by or on behalf of Lower Area Parties;

3. Make-up Water. An amount equal to the quantity of Make-up Water delivered to Lower Area during such Water Year, calculated as hereafter provided, to the extent included in

Surface Flow or Export to Lower Area;

4. Paragraph 3(1)(6) Water. An amount equal to the quantity of any water which falls within the scope of paragraph 3(1)(6) of the Judgment; and

5. Unusable Surface Flow. An amount equal to the quantity of Unusable Surface Flow, which is determined by deducting from the total outflow as measured at Stations F45B-R and F262-R: (1) Local Storm Outflow and (2) the portion of Surface Flow which has been caused to pass said stations by reason of any spreading of water in Montebello Forebay by or on behalf of Lower Area Parties.

Local Storm Outflow is a portion of local storm inflow originating in Montebello Forebay upstream from said measuring stations, the amount of which outflow is to be determined as hereinafter provided. When actual measurements of local storm inflow are not available, the amount thereof discharging to the channels of Rio Hondo or San Gabriel River within Montebello Forebay upstream from stations F45B-R and F262-R shall be estimated by correlation with the local storm inflow measured at Montebello Storm Drain, Station F181-R. Such quantities shall be estimated on the basis of the individual drainage areas of storm drain projects and the runoff per unit area determined from the Montebello Storm Drain, Station F181-R, during the particular time interval under consideration. When water is flowing out of Montebello Forebay on the surface in the Rio Hondo or San Gabriel River channels, the Watermaster shall determine Local Storm Outflow as follows:

a. Local Storm Outflow from Rio Hondo. When outflow occurs at Station F45B-R, all local storm inflow, both measured and estimated, which enters the Rio Hondo channel between that station and Upper Area shall constitute Local Storm Outflow from Rio Hondo, but the amount thereof shall not exceed the amount of

outflow at Station F45B-R for such periods.

b. Local Storm Outflow from San Gabriel River. At such times as local storm inflow does not join Surface Flow in San Gabriel River, the portion of such local storm inflow passing Station F262-R shall constitute Local Storm Outflow. In addition, at such times as Surface Flow in the San Gabriel River commingles with the local storm inflow, then the Watermaster shall determine Local Storm Outflow as follows:

(1) Calculate the total amount of local storm inflow to the San Gabriel River during such times, but such amount to be used in the determination of Local Storm Outflow shall not exceed the amount of San Gabriel River outflow passing Station F262-R during such periods.

(2) Calculate the Local Storm Outflow passing Station F262-R during such times, which calculation shall be based on the Surface Flow and local storm inflow to the San Gabriel River channel, giving appropriate weight to the quantities involved and the distance the respective quantities of water traverse Montebello Forebay in said channel.

(3) These two calculations shall then be averaged arithmetically and the resulting amount shall be Local Storm Outflow from San Gabriel River.

C. Determination and Delivery of Make-up Water

1. By Additions to Surface Flow (paragraph 5(i)(1) of Judgment). The determination of the amount of Make-up Water which is delivered to Lower Area as an addition to Surface Flow shall be based upon (a) measurements of Make-up Water at the

delivery outlet of such water upstream from Whittier Narrows, (b) measurements of water consisting in whole or in part of Make-up Water passing the applicable stations listed in Part III.A.1. of this Exhibit B, and (c) such deductions from the measurements of Make-up Water at said stations so listed as are necessary to take into account (i) the amount of any water other than Make-up Water included in the measurements at said stations so listed, (ii) any losses due to evaporation or transpiration of Make-up Water after such measurement and prior to its receipt in Lower Area, and (iii) any percolation of Make-up Water after such measurement and prior to the time it reaches the "narrowest section" in Whittier Narrows.

As changing conditions may require, the Watermaster shall change the points of measurement of Make-up Water in order to obtain those measurements necessary to determine the amount of Make-up Water delivered to Lower Area Parties by means of increasing Surface Flow.

2. By Payment for Reclaimed Water (paragraph 5(i)(2) of the Judgment). The Watermaster shall determine (a) the quantity of Reclaimed Water reclaimed at the Whittier Narrows Water Reclamation Plant as it existed October 1, 1963, and which when so reclaimed shall have been passed through Whittier Narrows, and (b) the quantity, if any, of Reclaimed Water reclaimed at any future additions to said plant after September 30, 1963, and which when so reclaimed shall have been passed through Whittier Narrows. Such quantities shall be ascertained from the records of Los Angeles County Flood Control District.

Upon being advised that a payment has been made by Upper District or Defendants to Central Municipal pursuant to the provisions of paragraph 5(i)(2) of the Judgment, the Watermaster shall credit Upper Area Parties with the delivery of Make-up Water computed according to said paragraph of the

Judgment.

3. By Deliveries to a Lower Area Party (paragraph 5(i)(3) of the Judgment). Any Make-up Water delivered directly to a Lower Area Party with the consent of Plaintiffs shall be metered and the meter records reduced to acre-feet per year. Upon being advised that a Lower Area Party has received a direct delivery of Make-up Water pursuant to the provisions of paragraph 5(i)(3) of the Judgment, the Watermaster shall credit Upper Area Parties with delivery of such Make-up Water in the Water Year in which it was so delivered.

D. Long-term Accounting

The Watermaster shall maintain a record of the annual rainfall in the San Gabriel Valley, including a running average of such rainfall, so that the Watermaster will be informed when a Long-term Accounting shall be carried out as specified in paragraph 5(h) of the Judgment, and shall thereafter perform the necessary calculations for accomplishment of the adjustment, if any, between the aggregate amount of water received compared to the aggregate entitlement for the period.

E. Water Usable for Ground Water Replenishment

With respect to any delivery of Make-up Water the Watermaster shall determine the suitability of such water for ground water replenishment. The Watermaster shall gather, insofar as readily available from public and private agencies, data relating to the quality of all categories of water, Surface Flow, Subsurface Flow, Export to Lower Area, Reclaimed Water, Lower Area Replenishment Water and Make-up Water.

REIMBURSEMENT CONTRACT

LONG BEACH v. SAN GABRIEL

d.

REIMBURSEMENT CONTRACT

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REIMBURSEMENT CONTRACT

THIS CONTRACT is made by and between UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT, herein called "Upper District", and the cities of ALHAMBRA, ARCADIA, AZUSA, COVINA, EL MONTE, GLENDORA, MONTEREY PARK, MONROVIA, SOUTH PASADENA, and WHITTIER; BALDWIN PARK COUNTY WATER DISTRICT, and SAN GABRIEL COUNTY WATER DISTRICT; AZUSA AGRICULTURAL WATER COMPANY, AZUSA VALLEY WATER COMPANY, CALIFORNIA DOMESTIC WATER COMPANY, CALIFORNIA WATER & TELEPHONE COMPANY, COLUMBIA LAND AND WATER COMPANY, COVINA IRRIGATING COMPANY, CROSS WATER COMPANY, DUARTE WATER COMPANY, EAST PASADENA WATER COMPANY, LTD., GLENDORA IRRIGATING COMPANY, SAN DIMAS WATER COMPANY, SAN GABRIEL VALLEY WATER COMPANY, SOUTHERN CALIFORNIA WATER COMPANY, SUBURBAN WATER SYSTEMS, SUNNYSLOPE WATER COMPANY, and VALLECITO WATER COMPANY, corporations, herein collectively called "Pumpers."

ed.

RECITALS

1. The Action. In the matter of Board of Water Commissioners of the City of Long Beach, et al. v. San Gabriel Valley Water Company, et al., (L. A. Superior Court No. 722,647) the water rights of substantially all major water producers in the main San Gabriel Valley are sought to be restricted.

2. Judgment. The parties named above, except City

of Whittier, are concurrently executing a Stipulation that a Judgment substantially in the form annexed hereto shall be rendered and it is anticipated that such Judgment will be rendered in the action.

3. Public Interest in Settlement. It is in the best interests of the Pumpers and in the best interests of the water users and taxpayers within the corporate boundaries of those Pumpers which are public agencies, of the consumers of those Pumpers which are utilities or mutual water companies, and of all residents and taxpayers of Upper District, that said action be settled and disposed of in accordance with the terms of said judgment in order to preserve the water supplies within Upper Area.

DEFINITIONS

1. "Contract Costs" -- All costs hereafter paid by Upper District:

ed.

(a) In providing Make-up Water under the terms of the judgment. In computing such cost of providing Make-up Water, any cost which Upper District shall pay which it would have paid even though it had not provided Make-up Water shall be excluded; and particularly but not exclusively, no amount which shall be paid to The Metropolitan Water District of Southern California as a condition to any past or future annexation shall be

deemed a cost of providing Make-up Water. Such costs may include interest paid by Upper District upon money borrowed for advancements made by it or interest which would have been received by the District, but which it lost by reason of making such advancements.

(b) In complying with the terms of said judgment.

(c) In keeping the records, making the determinations and collecting the moneys required by the later provisions of this contract.

2. "Assessable Pumpage" -- The amount of ground water produced in the applicable calendar year by or on behalf of any Pumper by pumping or extraction thereof from the Upper Area, including ground water produced under rights hereafter acquired from any source.

ed.

3. Common Terms With Judgment -- All terms specially defined in said judgment are used herein in the sense in which they are therein defined, and said special definitions are incorporated herein by this reference.

OPERATIVE PROVISIONS

1. Consideration for Execution. The great majority of the defendants in the action are situated in whole or in part within Upper District and pump water therein. Certain defendants, including the Cities of Alhambra, Azusa and

Monterey Park, as well as the City of Whittier which is not a defendant, lie outside Upper District. Execution of this agreement by all parties to it is essential to induce each party hereto to execute this agreement, and likewise, execution of the Stipulation for Judgment by all defendants in the action is necessary to induce each party hereto to execute this contract. Each party executes this contract in consideration of its execution by the other parties, and in consideration of the execution of the Stipulation by the parties thereto. Moreover, by this contract each party other than City of Whittier waives its right to cross-complain in the action so as to bring City of Whittier into the action as a party.

2. Intervention by Upper District. In consideration of the execution of this contract by Pumpers and to contribute to the physical solution of providing adequate water for its inhabitants, Upper District has intervened as a defendant in the action and agrees to execute the stipulation for said judgment.

3. Administration. Upper District shall administer the provisions of Paragraphs 6 through 9, below, as to all Pumpers, including additional parties hereto mentioned in Paragraph 16.

4. Covenant to Reimburse. Each Pumper hereby agrees to pay to Upper District such Pumper's share of Contract

Costs allocated and determined as provided below.

5. Allocation of Costs Among Pumpers. Pumpers agree among themselves, each for the benefit of all other Pumpers, to share and participate in the payment of any sums due Upper District hereunder in such proportion as the Assessable Pumpage of each Pumper bears to the total Assessable Pumpage of all Pumpers for the applicable period covered by any assessment as hereinafter provided, subject to the provisions of Paragraph 9 below.

6. Reports by Pumpers. Pumpers shall file under penalty of perjury the reports hereinafter specified in the form provided by Upper District, as follows:

(a) Time and Procedure for Filing. Each year, on or before March 1, each Pumper shall file with Upper District a written report of its extractions of water from Upper Area for the preceding calendar year containing the information set forth in subparagraph (b) of this paragraph.

ed.

(b) Contents of the Report. Such annual reports to Upper District shall set forth:

(1) The name and address of the Pumper; and

(2) The number of acre feet of water which was pumped or extracted from Upper Area by or on behalf of the Pumper during

the calendar year covered.

(c) Determination in Lieu of Report. In the event any Pumper fails to so file such report, Upper District may make a determination of the Assessable Pumpage of such Pumper, which determination shall be final and binding.

7. Notice of Assessment. On or before June 1 of each year, Upper District shall serve a Notice of Assessment on each Pumper covering the preceding calendar year which will contain a statement of:

(a) The amount of Assessable Pumpage by each Pumper;

(b) A detailed statement of Contract Costs during the preceding calendar year, if any; and

(c) A statement of the amount of such Contract Costs which are assessable to and payable by the Pumper to whom such notice is sent.

ed.

8. Payment--Delinquency and Default. All assessments herein provided for shall be due and payable on the following July 31. In the event of nonpayment of any assessment, Upper District may bring an action and shall have the right to recover such assessment, together with interest thereon at the rate of 7% per annum from the date of delinquency and costs of suit, including any reasonable attorneys' fees incurred.

If, after due diligence, Upper District is unable to collect a Pumper's allocated cost, such uncollectible amount (including interest, costs and attorneys' fees) shall be prorated among and paid by the other Pumpers in the same proportions as they paid assessments for the year or years in question. Said proration shall be billed and payable with the next succeeding assessment.

9. Redetermination of Assessable Pumpage. Any Pumper may at any time within 90 days after receipt of any Notice of Assessment request a redetermination of the Assessable Pumpage of such Pumper or of any other Pumper or Pumpers reflected in such notice. Such request shall be addressed in writing to Upper District and shall set forth the basis of the requesting Pumper's belief that such data are incorrect. Upon the receipt of any request, the following procedures shall be undertaken by Upper District:

ed.

(a) Notice of Request for Redetermination. Upper District shall forthwith notify in writing any Pumper whose Assessable Pumpage has been questioned, of the fact of such request and the name of the requesting Pumper. Notice shall further be sent to all Pumpers that procedures will be undertaken pursuant to this paragraph, and shall state briefly the issues to be determined.

(b) Availability of Records. Subsequent to such notice, the records of the Pumper whose Assessable Pumpage is subject to a request for redetermination shall be made available at reasonable hours and upon reasonable demand to Upper District, insofar as such records are relevant to a determination of the Assessable Pumpage of the Pumper during the period involved.

(c) Investigation and Notice of Hearing. Upper District shall conduct an investigation and shall by written decision served on all Pumpers redetermine or affirm such Assessable Pumpage. Upper District may at its option set a date for hearing. In such event, at least ten days' notice in writing of said hearing date shall be given to all Pumpers.

ed.

(d) Conduct of Hearing and Decision. If hearing be held, Upper District shall not be bound therein by strict rules of evidence, but may rely on any evidence which it deems of probative value. Any Pumper may present evidence and arguments thereat. The written decision of Upper District, with or without such hearing, shall be served on all Pumpers and shall be conclusive for purposes of this contract, unless said issue is submitted

to a court of competent jurisdiction within 90 days from notice of such decision.

(e) Reallocation of Contract Costs. If Assessable Pumpage is modified by any such decision, Contract Costs shall be reallocated in accordance therewith. Said reallocation shall be billed and payable with the next succeeding assessment.

10. Water Rights Unaffected. This contract relates solely to the equitable allocation of Contract Costs and does not involve or constitute an admission or agreement as to the water rights of any Pumper. Execution of this contract shall not prevent any party hereto from bringing or maintaining any action or proceeding to determine rights to pump, extract or store water, or to limit or curtail any pumping, extraction or storage of water in or from Upper Area or elsewhere, except as limited by Paragraphs 1 and 16 of the Operative Provisions hereof.

ed.

11. Changed Conditions. It is recognized that conditions in Upper Area may hereafter change to such an extent that it may become equitable to modify either the total obligation of Pumpers to Upper District hereunder or the allocation of Contract Costs. While this contract is entered into to assure Upper District of reimbursement of an amount up to its entire Contract Costs, it is not intended hereby, and this contract shall not be deemed, to prevent Upper District

from modifying and reducing such obligation or from applying other relief which may reduce the burden on Pumpers. Without limitation upon the power of Upper District to otherwise reduce the aggregate amount payable under this contract, the following specific instances of changed conditions are contemplated:

(a) Allocation of Portion of Burden to Taxes. It may at some future date appear equitable and fair to allocate all or a portion of Contract Costs to ad valorem taxes or other revenues of Upper District. In such event, Upper District may, in the discretion of its Board of Directors, allocate all or a portion of Contract Costs to such revenue sources and the remainder, if any, thereof, shall be payable under the terms of this contract.

(b) Imposition of Pump Tax. If Upper District should acquire and exercise the right to levy a tax upon the pumping or extraction of ground water, then the aggregate of such tax shall be credited proportionally amongst Pumpers with respect to Assessable Pumpage within Upper District.

(c) Adjudication of Rights. If all or substantially all of the water rights within Upper Area shall be adjudicated (including the rights of all Pumpers), and its natural and safe yield

determined, then this contract shall be deemed modified to the extent that Assessable Pumpage shall include only that amount of water produced over and above the safe yield portion of adjudicated rights owned by any Pumper; provided that this subparagraph (c) shall not apply to any year in which the aggregate of all Assessable Pumpage as so modified is less than 25,000 acre feet.

12. Effective Date. This contract shall be effective ten (10) days after notice in writing of execution thereof by all parties, which notice shall be given to all Pumpers by Upper District, but shall cease and terminate on July 1, 1966, unless by said date (a) this contract shall have been validated as provided below, and (b) the Judgment shall have been rendered.

ed.

13. Validation. Within four months after this contract becomes effective, a proceeding or proceedings shall be instituted by Upper District in a court of competent jurisdiction by an appropriate action or actions for determination of the validity of this contract.

14. Term. The term of this contract shall commence upon its effective date and continue so long as the Judgment, as entered or as modified, shall remain in effect, subject, however, to the provisions of Paragraph 12 above.

15. Notices. Any notice to be served upon any party hereunder may be served either personally or by mail. If served by mail, such notice shall be mailed in the County of Los Angeles, State of California, by certified mail, postage prepaid, return receipt requested, or by registered mail, and shall be addressed to the party to be served at its address as set forth below, or (in the case of Upper District) at such other address as it may have last specified in writing to the Pumper or Pumpers involved for the service of notices hereunder, or (in the case of a Pumper) at such other address as it may have last specified in writing to Upper District for the service of notices hereunder. Any notice so served by mail shall be deemed to have been served upon the first business day (excluding Saturdays, Sundays and holidays) after such mailing.

ed.

16. Additional Parties. In addition to Pumpers and their successors and assigns referred to in Paragraph 17 below, any other person or entity who or which shall pump or extract water in or from Upper Area (herein referred to as an "additional party"), may become a party to this contract, provided (a) Upper District shall give its written consent thereto, and (b) no Pumper or additional party shall serve upon Upper District its written objection thereto. If Upper District shall give its written consent to execution of this contract by an applying additional party, it shall

then give written notice of such application and consent by Upper District to each Pumper and each additional party, and if within thirty (30) days after such notice no Pumper or additional party shall have served upon Upper District its written objection to execution of this contract by the applying additional party, such additional party's application shall be deemed to have been accepted and it may become a party to this contract by delivery to Upper District of a duly executed instrument in writing stating that such person or entity joins in and becomes a party to this contract.

Any additional party so joining shall become bound by all obligations of this contract, becoming due or which should be performed within the terms of this contract on and after the ensuing January 1. Such obligations include the duty to make the report of extractions during the preceding calendar year (i.e., the year in which the contract is executed) required by Paragraph 6, and to make the payment based upon such extractions as required by Paragraph 5, provided, however, that such additional party shall have no liability under Paragraph 8 with respect to any nonpayments of an assessment based upon extractions by a Pumper or other additional party prior to the year in which such additional party joins in this contract.

As to each Pumper who executes this contract after it becomes effective, Upper District agrees that for a

period of 90 days after giving its said written consent, it will bring no action against such additional party to limit or define its rights to pump water in or from Upper Area. Further, if more than one such Pumper shall become a party to this agreement at the same time as any other pumper, each will execute and shall be deemed to have executed this contract and to have joined therein in consideration of the joinder in this contract by the other or others concurrently joining in this contract.

Any such additional party shall be deemed a Pumper for all purposes of this agreement.

17. Successors and Assigns. This contract shall inure to the benefit of and bind the successors in ownership of the water rights of the parties. If any Pumper shall sell or transfer or agree to sell or transfer its water rights in Upper Area or any part of such water rights, such Pumper shall require as a condition of any such sale, transfer or agreement that the purchaser or transferee, if not already a party to this contract, shall execute this contract and become a party thereto. Upon a full transfer of such rights by a Pumper and assumption by the assignee as above provided, the assigning Pumper shall be discharged of obligation hereunder. If such Pumper fails to obtain such assumption (except in cases of a transfer under order of court or by operation of law) the assigning Pumper shall

remain bound by the contract and production of water by said assignee by the exercise of the right assigned shall be treated as production by such Pumper.

18. Execution in Counterparts. This contract may be executed in counterparts (each counterpart being an exact copy or duplicate of the original) and all counterparts collectively shall be considered as constituting one complete contract.

IN WITNESS WHEREOF this contract is executed by the undersigned by its duly authorized officer.

Dated: _____.

_____

By _____

(SEAL)

By _____

ed.

APPENDIX J

AMENDED MAIN SAN GABRIEL BASIN JUDGMENT

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SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

Upper San Gabriel Valley Municipal Water District, Plaintiff, vs. City of Alhambra, et al, Defendants	Case No.: 924128 **AMENDED JUDGMENT** (And Exhibits Thereto)

HONORABLE MAUREEN DUFFY-LEWIS

Assigned Judge Presiding

DEPARTMENT 38

June 21, 2012

(This version includes prior Amendments

and updated Exhibits through June 21, 2012.)

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(Exhibit "K" Includes - Nature of Overlying Right, Description of Overlying Lands To Which Overlying Rights Are Appurtenant, Producers Entitled To Exercise Overlying Rights and Their Respective Consumptive Use Portions, and Map of Overlying Lands.)

"L" – List of Producers and Other Parties and Their Designees (June 2012) (New)

"M" – Watermaster Members, Officers, and Staff, Including Calendar Year 2012 (New)

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SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

Upper San Gabriel Valley Municipal Water District, Plaintiff, vs. City of Alhambra, et al, Defendant	Case No.: 924128 **AMENDED JUDGMENT** Hearing: June 21, 2012 Department 38, 9:30 A.M.

The Petition of the MAIN SAN GABRIEL BASIN WATERMASTER for this AMENDED JUDGMENT herein, came on regularly for hearing in this Court before the **HONORABLE MAUREEN DUFFY-LEWIS**, ASSIGNED JUDGE PRESIDING, on June 21, 2012; Frederic A. Fudacz appeared as attorney for Watermaster - Petitioner; and good cause appearing, the following **ORDER** and **AMENDED JUDGMENT** are, hereby, made:

I. INTRODUCTION

1. Pleadings, Parties, and Jurisdiction. The complaint herein was filed on January 2, 1968, seeking an adjudication of water rights. By amendment of said complaint and dismissals of certain parties, said adjudication was limited to the Main San Gabriel Basin and its Relevant Watershed. Substantially all defendants and the cross-defendant have appeared herein, certain defaults have been entered, and other defendants dismissed. By the pleadings herein and by

Order of this Court, the issues have been made those of a full inter se adjudication of water rights as between each and all of the parties. This Court has jurisdiction of the subject matter of this action and of the parties herein.

2. Stipulation for Entry of Judgment. A substantial majority of the parties, by number and by quantity of rights herein Adjudicated, Stipulated for entry of a Judgment in substantially the form of the original Judgment herein.

3. Lis Pendens. (New) A Lis Pendens was recorded August 20, 1970, as Document 2650, in Official Records of Los Angeles County, California, in Book M 3554, Page 866.

4. Findings and Conclusions. (Prior Judgment Section 3) Trial was had before the Court, sitting without a jury, John Shea, Judge Presiding, commencing on October 30, 1972, and Findings of Fact and Conclusions of Law have been entered herein.

5. Judgment. (New) Judgment (and Exhibits Thereto), Findings of Fact and Conclusions of Law (and Exhibits Thereto), Order Appointing Watermaster, and Initial Watermaster Order were signed and filed December 29, 1972, and Judgment was entered January 4, 1973, in Book 6791, Page 197.

6. Intervention After Judgment. (New) Certain defendants have, pursuant to the Judgment herein and the Court's continuing jurisdiction, intervened and appeared herein after entry of Judgment.

7. Amendments of Judgment. (New) The original Judgment herein was previously amended on March 29 1979, by: (1) adding definition (r [1]) thereto, (2) amending definition (bb) therein, (3) adding Exhibit "K" thereto, (4) adding Sections 14.5 and 16.5 thereto, and (5) amending Sections 37(b), 37(c), 37(d), and Section 47 therein; it was again amended on December 21, 1979, by amending Section 38(c) thereof; again amended on February 21, 1980, by amending Section 24 thereof; again amended on September 12, 1980, by amending Sections 35(a), 37(a), and 38(a); again amended on December 22, 1987, by adding Section 37(e) thereto; amended again on July 22, 1988 by amending Section 37(e) thereof and Ordering an Amended Judgment herein; again amended on January 29, 1991, by amending Sections 10(j), 40, and by adding Sections 40(a), 40(b), 40(c), 40(d), 40(e) and 40(f); again amended on April 2, 1991, by

amending Sections 10(ff), 10(jj), and 34(h); again amended on February 24, 1992, by amending Section 40(b); again amending Appendices in 2000; and again on June 21, 2012 by amending Sections 10(ff), 26, 29(d), 34(b), 34(c), 34(g), 34(h), 34(j), 36, 42, 44, 45, 46(a), 47, 50, 54, Exhibit H Sections 2, 3(d), 4; adding Sections 34(p), 34(q), 34(r); and deleting Section 53 entirely.

8. Transfers. (New) Since the entry of Judgment herein there have been numerous transfers of Adjudicated water rights. To the date hereof, said transfers are reflected in Exhibits "C", "D", and "E".

9. Producers and Their Designees. (New) The current status of Producers and their Designees is shown on Exhibit "L".

10. Definitions. (Prior Judgment Section 4) As used in this Judgment, the following terms shall have the meanings herein set forth:

(a) Base Annual Diversion Right – The average annual quantity of water which a Diverter is herein found to have the right to Divert for Direct Use.

(b) Direct Use – Beneficial use of water other than for spreading or Ground Water recharge.

(c) Divert or Diverting – To take waters of any surface stream within the Relevant Watershed.

(d) Diverter – Any party who Diverts.

(e) Elevation – Feet above mean sea level.

(f) Fiscal Year – A period July 1 through June 30, following.

g) Ground Water – Water beneath the surface of the ground and within the zone of saturation.

(h) Ground Water Basin – An interconnected permeable geologic formation capable of storing a substantial Ground Water supply.

(i) Integrated Producer – Any party that is both a Pumper and a Diverter, and has elected to have its rights adjudicated under the optional formula provided in Section 18 of this Judgment.

(j) In-Lieu Water Cost – The differential between a particular Producer's cost of Watermaster directed produced, treated, blended, substituted, or Supplemental Water delivered or substituted to, for, or taken by, such Producer in-lieu of his cost of otherwise normally Producing a like amount of Ground Water from the Basin. (Amended 1/29/91)

(k) Key Well – Baldwin Park Key Well, being elsewhere designated as State Well No. 1S/10W-7R2, or Los Angeles County Flood Control District Well No. 3030-F. Said well has a ground surface Elevation of 386.7.

(l) Long Beach Case – Los Angeles Superior Court Civil Action No. 722647, entitled, "Long Beach, et al., v. San Gabriel Valley Water Company, et al."

(m) Main San Gabriel Basin or Basin – The Ground Water Basin underlying the area shown as such on Exhibit "A".

(n) Make-Up Obligation – The total cost of meeting the obligation of the Basin to the area at or below Whittier Narrows, pursuant to the Judgment in the Long Beach Case.

(o) Minimal Producer – Any party whose Production in any Fiscal Year does not exceed five (5) acre-feet. (Prior to June 21, 2012)

(p) Natural Safe Yield – The quantity of natural water supply which can be extracted annually from the Basin under conditions of long term average annual supply, net of the requirement to meet downstream rights as determined in the Long Beach Case (exclusive of Pumped export), and under cultural conditions as of a particular year.

(q) Operating Safe Yield – The quantity of water which the Watermaster determines hereunder may be Pumped from the Basin in a particular Fiscal Year, free of the Replacement Water Assessment under the Physical Solution herein.

(r) Overdraft – A condition wherein the total annual Production from the Basin exceeds the Natural Safe Yield thereof.

(s) Overlying Rights – (Prior Judgment Section 4(r)[1]) The right to Produce water from the Basin for use on Overlying Lands, which rights are exercisable only on specifically defined Overlying Lands and which cannot be separately conveyed or

transferred apart therefrom.

(t) Physical Solution – (Prior Judgment Section 4(s)) The Court decreed method of managing the waters of the Basin so as to achieve the maximum utilization of the Basin and its water supply, consistent with the rights herein declared.

(u) Prescriptive Pumping Right – (Prior Judgment Section 4(t)) The highest continuous extractions of water by a Pumper from the Basin for beneficial use in any five (5) consecutive years after commencement of Overdraft and prior to filing of this action, as to which there has been no cessation of use by that Pumper during any subsequent period of five (5) consecutive years, prior to the said filing of this action.

(v) Produce or Producing – (Prior Judgment Section 4(u)) To Pump or Divert Water.

(w) Producer – (Prior Judgment Section 4(v)) A party who Produces water.

(x) Production – (Prior Judgment Section 4(w)) The annual quantity of water Produced, stated in acre feet.

(y) Pump or Pumping – (Prior Judgment Section 4(x)) To extract Ground Water from the Basin by Pumping or any other method.

(z) Pumper – (Prior Judgment Section 4(y)) Any party who Pumps water.

(aa) Pumper's Share – (Prior Judgment Section 4(z)) A Pumper's right to a percentage of the entire Natural Safe Yield, Operating Safe Yield and appurtenant Ground Water storage.

(bb) Relevant Watershed – (Prior Judgment Section 4(aa)) That portion of the San Gabriel River watershed tributary to Whittier Narrows which is shown as such on Exhibit "A", and the exterior boundaries of which are described in Exhibit "B".

(cc) Replacement Water – (Prior Judgment Section 4(bb)) Water purchased by Watermaster to replace: (1) Production in excess of a Pumper's Share of Operating Safe Yield; (2) The consumptive use portion resulting from the exercise of an Overlying Right; and (3) Production in excess of a Diverter's right to Divert for Direct Use.

(dd) Responsible Agency – (Prior Judgment Section 4(cc)) The municipal water

district which is the normal and appropriate source from whom Watermaster shall purchase Supplemental Water for replacement purposes under the Physical Solution, being one of the following:

(1) Upper District – Upper San Gabriel Valley Municipal Water District, a member public agency of the Metropolitan Water District of Southern California (MWD).

(2) San Gabriel District – San Gabriel Valley Municipal Water District, which has a direct contract with the State of California for State Project Water.

(3) Three Valleys District – Three Valleys Municipal Water District, formerly, "Pomona Valley Municipal Water District", a member public agency of MWD.

(ee) Stored Water – (Prior Judgment Section 4(dd)) Supplemental Water stored in the Basin pursuant to a contract with Watermaster as authorized by Section 34(n).

(ff) Supplemental Water – (Prior Judgment Section 4(ee)) Nontributary water imported through a Responsible Agency and reclaimed water or water obtained from other available sources when water is not available in a timely fashion from a Responsible Agency. (Amended 6/21/12)

(gg) Transporting Parties – (Prior Judgment Section 4(ff)) Any party presently transporting water (i.e., during the 12 months immediately preceding the making of the findings herein) from the Relevant Watershed or Basin to an area outside thereof, and any party presently or hereafter having an interest in lands or having a service area outside the Basin or Relevant Watershed contiguous to lands in which it has an interest or a service area within the Basin or Relevant Watershed. Division by a road, highway, or easement shall not interrupt contiguity. Said term shall also include the City of Sierra Madre, or any party supplying water thereto, so long as the corporate limits of said City are included within one of the Responsible Agencies and if said City, in order to supply water to its corporate area from the Basin, becomes a party to this action bound by this Judgment.

(hh) Water Level – (Prior Judgment Section 4(gg)) The measured Elevation of water in the Key Well, corrected for any temporary effects of mounding caused by replenishment or local depressions caused by Pumping.

(ii) Year – (Prior Judgment Section 4(hh)) A calendar year, unless the context clearly indicates a contrary meaning.

(jj) Reclaimed Water – Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur. (Amended 4/2/91)

11. Exhibits. (Prior Judgment Section 5) The following exhibits are attached to this Judgment and incorporated herein by this reference:

Exhibit "A" – Map entitled, "San Gabriel River Watershed Tributary to Whittier Narrows", showing the boundaries and relevant geologic and hydrologic features in the portion of the watershed of the San Gabriel River lying upstream from Whittier Narrows.

Exhibit "B" – Boundaries of Relevant Watershed.

Exhibit "C" – Table Showing Base Annual Diversion Rights of Certain Diverters.

Exhibit "D" – Table Showing Prescriptive Pumping Rights and Pumper's Share of Each Pumper.

Exhibit "E" – Table Showing Production Rights of Each Integrated Producer.

Exhibit "F" – Table Showing Special Category Rights.

Exhibit "G" – Table Showing Non-consumptive Users.

Exhibit "H" – Watermaster Operating Criteria.

Exhibit "J" – Puente Narrows Agreement.

Exhibit "K" – Overlying Rights, Nature of Overlying Right, Description of Overlying Lands to which Overlying Rights are Appurtenant, Producers Entitled to Exercise Overlying Rights and their Respective Consumptive Use Portions, and Map of Overlying Lands.

Exhibit "L" – (New) List of Producers And Their Designees, as of June 2012.

Exhibit "M" – (New) Watermaster Members, Officers and Staff, Including

Calendar Year 2012.

II. DECREE

NOW, THEREFORE, IT IS HEREBY DECLARED, ORDERED, ADJUDGED AND DECREED:

A. DECLARATION OF HYDROLOGIC CONDITIONS

12. Basin as Common Source of Supply. (Prior Judgment Section 6) The area shown on Exhibit "A" as Main San Gabriel Basin overlies a Ground Water basin. The Relevant Watershed is the watershed area within which rights are herein adjudicated. The waters of the Basin and Relevant Watershed constitute a common source of natural water supply to the parties herein.

13. Determination of Natural Safe Yield. (Prior Judgment Section 7) The Natural Safe Yield of the Main San Gabriel Basin is found and declared to be one hundred fifty-two thousand seven-hundred (152,700) acre-feet under Calendar Year 1967 cultural conditions.

14. Existence of Overdraft. (Prior Judgment Section 8) In each and every Calendar year commencing with 1953, the Basin has been and is in Overdraft.

B. DECLARATION OF RIGHTS

15. Prescription. (Prior Judgment Section 9) The use of water by each and all parties and their predecessors in interest has an open, notorious, hostile, adverse, under claim of right, and with notice of said overdraft continuously from January 1, 1953 to January 4, 1973. The rights of each party herein declared are prescriptive in nature. The following aggregate consequences of said prescription within the Basin and Relevant Watershed are hereby declared:

(a) Prior Prescription. Diversions within the Relevant Watershed have created rights for direct consumptive use within the Basin, as declared and determined in Sections 16 and 18 hereof, which are of equal priority inter se, but which are prior and paramount to Pumping Rights in the Basin.

(b) Mutual Prescription. The aggregate Prescriptive Pumping Rights of the parties who are Pumpers now exceed, and for many years prior to filing of this action, have exceeded, the Natural Safe Yield of the Basin. By reason of said condition, all

rights of said Pumpers are declared to be mutually prescriptive and of equal priority, inter se.

(c) Common Ownership of Safe Yield and Incidents Thereto. By reason of said Overdraft and mutual Prescription, the entire Natural Safe Yield of the Basin, the Operating Safe Yield thereof and the appurtenant rights to Ground Water storage capacity of the Basin are owned by Pumpers in undivided Pumpers' Shares as hereinafter individually declared, subject to the control of Watermaster, pursuant to the Physical Solution herein decreed. Nothing herein shall be deemed in derogation of the rights to spread water pursuant to rights set forth in Exhibit "G".

16. Surface Rights. (Prior Judgment Section 10) Certain of the aforesaid prior and paramount prescriptive water rights of Diverters to Divert for Direct Use stream flow within the Relevant Watershed are hereby declared and found in terms of Base Annual Diversion Right as set forth in Exhibit "C". Each Diverter shown on Exhibit "C" shall be entitled to Divert for Direct Use up to two hundred percent (200%) of said Base Annual Diversion Right in any one (1) Fiscal Year; provided that the aggregate quantities of water Diverted in any consecutive ten (10) Fiscal Year period shall not exceed ten (10) times such Diverter's Base Annual Diversion Right.

17. Ground Water Rights. (Prior Judgment Section 11) The Prescriptive Pumping Right of each Pumper, who is not an Integrated Producer, and his Pumper's Share are declared as set forth in Exhibit "D".

18. Optional Integrated Production Rights. (Prior Judgment Section 12) Those parties listed on Exhibit "E" have elected to be treated as Integrated Producers. Integrated Production Rights have two (2) historical components:

(1) a fixed component based upon historic Diversions for Direct Use; and

(2) a mutually prescriptive Pumper's Share component based upon Pumping during the period 1953 through 1967.

Assessment and other Watermaster regulation of the rights of such parties shall relate to and be based upon each such component. So far as future exercise of such rights is concerned,

however, the gross quantity of the aggregate right in any Fiscal Year may be exercised, in the sole discretion of such party, by either Diversion or Pumping or any combination or apportionment thereof; provided, that for Assessment purposes the first water Produced in any Fiscal Year (other than "Carry-over", under Section 49 hereof) shall be deemed an exercise of the Diversion Component, and any Production over said quantity shall be deemed Pumped water, regardless of the actual method of Production.

19. Special Category Rights. (Prior Judgment Section 13) The parties listed on Exhibit "F" have water rights in the Relevant Watershed which are not ordinary Production rights. The nature of each such right is as described in Exhibit "F".

20. Non-consumptive Practices. (Prior Judgment Section 14) Certain Producers have engaged in Water Diversion and spreading practices which have caused such Diversions to have a non-consumptive or beneficial impact upon the aggregate water supply available in the Basin. Said parties, and a statement of the nature of their rights, uses and practices, are set forth in Exhibit "G". The Physical Solution decreed herein, and particularly its provisions for Assessments, shall not apply to such non-consumptive uses. Watermaster may require reports on the operations of said parties.

21. Overlying Rights. (Prior Judgment Section 14.5) Producers listed in Exhibit "K" hereto were not parties herein at the time of the original entry of Judgment herein. They have exercised in good faith Overlying Rights to Produce water from the Basin during the periods subsequent to the entry of Judgment herein and have by self-help initiated or maintained appurtenant Overlying Rights. Such rights are exercisable without quantitative limit only on specifically described Overlying Land and cannot be separately conveyed or transferred apart therefrom. As to such rights and their exercise, the owners thereof shall become parties to this action and be subject to Watermaster Replacement Water assessments under Section 45(b) hereof, sufficient to purchase Replenishment Water to offset the net consumptive use of such Production and practices. In addition, the gross amount of such Production for such overlying use shall be subject to Watermaster Administration Assessments under Section 45(a) hereof and the consumptive use portion of such Production for overlying use shall be subject to

Watermaster's In-Lieu Water Cost Assessments under Section 45(d) hereof. The Producers presently entitled to exercise Overlying Rights, a description of the Overlying Land to which Overlying Rights are appurtenant, the nature of use and the consumptive use portion thereof are set forth in Exhibit "K" hereto. Watermaster may require reports and make inspections of the operations of said parties for purposes of verifying the uses set forth in said Exhibit "K", and, in the event of a material change, to redetermine the net amount of consumptive use by such parties as changed, in the exercise of such Overlying Rights.

Annually, during the first two (2) weeks of June in each calendar year, such Overlying Rights Producers shall submit to Watermaster a verified statement as to the nature of the then current uses of said Overlying Rights on said Overlying Lands for the next ensuing Fiscal Year, whereupon Watermaster shall either affirm the prior determination or redetermine the net amount of the consumptive use portion of the exercise of such Overlying Right by said Overlying Rights Producer.

C. INJUNCTION

22. Injunction Against Unauthorized Production. (Prior Judgment Section 15) Effective July 1, 1973, each and every party, its officers, agents, employees, successors and assigns, to whom rights to waters of the Basin or Relevant Watershed have been declared and decreed herein is **ENJOINED AND RESTRAINED** from Producing water for Direct Use from the Basin or the Relevant Watershed except pursuant to rights and Pumpers' Shares herein decreed or which may hereafter be acquired by transfer pursuant to Section 55, or under the provisions of the Physical Solution in this Judgment and the Court's continuing jurisdiction, provided that no party is enjoined from Producing up to five (5) acre feet per Fiscal Year.

23. Injunction re Non-consumptive Uses. (Prior Judgment Section 16) Each party listed in Exhibit "G", its officers, agents, employees, successors and assigns, is **ENJOINED AND RESTRAINED** from materially changing said non-consumptive method of use.

24. Injunction re Change in Overlying Use Without Notice Thereof to Watermaster. (Prior Judgment Section 16.5) Each party listed in Exhibit "K", its officers, agents, employees, successors and assigns, is **ENJOINED AND RESTRAINED** from materially changing said

overlying uses at any time without first notifying Watermaster of the intended change of use, in which event Watermaster shall promptly redetermine the consumptive use portion thereof to be effective after such change.

25. Injunction Against Unauthorized Recharge. (Prior Judgment Section 17) Each party, its officers, agents, employees, successors and assigns, is **ENJOINED AND RESTRAINED** from spreading, injecting or otherwise recharging water in the Basin except pursuant to: (a) an adjudicated non-consumptive use, or (b) consent and approval of or Cyclic Storage Agreement with Watermaster, or (c) subsequent order of this Court.

26. Injunction Against Transportation from Basin or Relevant Watershed. (Prior Judgment Section 18) Except upon further order of Court and except as provided in section 34(r) herein, all parties, other than Transporting Parties and MWD in its exercise of its Special Category Rights, to the extent authorized therein, are **ENJOINED AND RESTRAINED** from transporting water hereafter Produced from the Relevant Watershed or Basin outside the areas thereof. For purposes of this Section, water supplied through a city water system which lies chiefly within the Basin shall be deemed entirely used within the Basin. Transporting Parties are entitled to continue to transport water to the extent that any Production of water by any such party does not violate the injunctive revisions contained in Section 22 hereof; provided that said water shall be used within the present service areas or corporate or other boundaries and additions thereto so long as such additions are contiguous to the then existing service area or corporate or other boundaries; except that a maximum of ten percent (10%) of use in any Fiscal Year may be outside said then existing service areas or corporate or other boundaries. Notwithstanding the foregoing and without in any way changing or limiting the Transporting Parties' entitlement to transport water as set forth herein, any party may enter into an agreement with Watermaster to store Supplemental Water and export said stored Supplemental Water under specific terms and conditions approved by Watermaster. Such storage and export shall be subject to (1) a determination by Watermaster that no material injury to the Basin or parties will result therefrom; (2) execution of an agreement with Watermaster setting forth the terms and conditions upon which water may be stored in or exported from the Basin; and (3) compliance

with Watermaster Rules and Regulations respecting Basin storage and export. (Amended 6/21/12)

D. CONTINUING JURISDICTION

27. Jurisdiction Reserved. (Prior Judgment Section 19) Full jurisdiction, power and authority are retained by and reserved to the Court for purposes of enabling the Court upon application of any party or of the Watermaster, by motion and upon at least thirty (30) days notice thereof, and after hearing thereon, to make such further or supplemental orders or directions as may be necessary or appropriate for interim operation before the Physical Solution is fully operative, or for interpretation, enforcement or carrying out of this Judgment, and to modify, amend or amplify any of the provisions of this Judgment or to add to the provisions thereof consistent with the rights herein decreed. Provided, that nothing in this paragraph shall authorize:

(1) modification or amendment of the quantities specified in the declared rights of any party;

(2) modification or amendment of the manner of exercise of the Base Annual Diversion Right or Integrated Production Right of any party; or

(3) the imposition of an injunction prohibiting transportation outside the Relevant Watershed or Basin as against any Transporting Party transporting in accordance with the provisions of this Judgment or against MWD as to its Special Category Rights.

E. WATERMASTER

28. Watermaster to Administer Judgment. (Prior Judgment Section 20) A Watermaster comprised of nine (9) persons, to be nominated as hereinafter provided and appointed by the Court, shall administer and enforce the provisions of this Judgment and any subsequent instructions or orders of the Court thereunder.

29. Qualification, Nomination and Appointment. (Prior Judgment Section 21) The nine (9) member Watermaster shall be composed of six (6) Producer representatives and three (3) public representatives qualified, nominated and appointed as follows:

(a) Qualification. Any adult citizen of the State of California shall be eligible to serve as Watermaster; provided, however, that no officer, director, employee or agent of Upper District or San Gabriel District shall be qualified as a Producer member of Watermaster.

(b) Nomination of Producer Representatives. A meeting of all parties shall be held at the regular meeting of Watermaster in November of each year, at the offices of Watermaster. Nomination of the six (6) Producer representatives shall be by cumulative voting, in person or by proxy, with each Producer entitled to one (1) vote for each one hundred (100) acre-feet, or portion thereof, of Base Annual Diversion Right or Prescriptive Pumping Right or Integrated Production Right.

(c) Nomination of Public Representatives. On or before the regular meeting of Watermaster in November of each year, the three (3) public representatives shall be nominated by the boards of directors of Upper District (which shall select two [2]) and San Gabriel District (which shall select one [1]). Said nominees shall be members of the board of directors of said public districts.

(d) Appointment. All Watermaster nominations shall be promptly certified to the Court, which will in ordinary course confirm the same by an appropriate order appointing said Watermaster; provided, however, that the Court at all times reserves the right and power to refuse to appoint, or to remove, any member of Watermaster. Notwithstanding section 27 herein, Watermaster nominations may be promptly certified by the Court upon 10 calendar days' notice thereof, plus the time prescribed by statute for service by mail, e-mail or other electronic means. (Amended 6/21/12)

30. Term and Vacancies. (Prior Judgment Section 22) Each member of Watermaster shall serve for a one (1) year term commencing on January 1, following his appointment, or until his successor is appointed. In the event of a vacancy on Watermaster, a successor shall be nominated at a special meeting to be called by Watermaster within ninety (90) days (in the case of a Producer representative) or by action of the appropriate district board of directors (in the case of a public representative).

31. Quorum. (Prior Judgment Section 23) Five (5) members of the Watermaster shall constitute a quorum for the transaction of affairs of the Watermaster. Action by the affirmative vote of five (5) members shall constitute action by Watermaster, except that the affirmative vote of six (6) members shall be required:

(a) to approve the purchase, spreading or injection of water for Ground Water recharge, or

(b) to enter in any Agreement pursuant to Section 34 (n) hereof.

32. Compensation. (Prior Judgment Section 24) Each Watermaster member shall receive compensation of One Hundred Dollars ($100.00) per day for each day's attendance at meetings of Watermaster or for each day's service rendered as a Watermaster member at the request of Watermaster, together with any expenses incurred in the performance of his duties required or authorized by Watermaster. No member of the Watermaster shall be employed by or compensated for professional services rendered by him to Watermaster, other than the compensation herein provided, and any authorized travel or related expense.

33. Organization. (Prior Judgment Section 25) At its first meeting in each year, Watermaster shall elect a chairman and a vice chairman from its membership. It shall also select a secretary, a treasurer and such assistant secretaries and assistant treasurers as may be appropriate, any of whom may, but need not be, members of Watermaster.

(a) Minutes. Minutes of all Watermaster meetings shall be kept, which shall reflect all actions taken by Watermaster. Draft copies thereof shall be furnished to any party who files a request therefor in writing with Watermaster. Said draft copies of minutes shall constitute notice of any Watermaster action therein reported; failure to request copies thereof shall constitute waiver of notice.

(b) Regular Meetings. Watermaster shall hold regular meetings at places and times to be specified in Watermaster's rules and regulations to be adopted by Watermaster. Notice of the scheduled or regular meetings of Watermaster and of any changes in the time or place thereof shall be mailed to all parties who shall have filed a request therefor in writing with Watermaster.

(c) Special Meetings. Special meetings of Watermaster may be called at any time by the chairman or vice chairman or by any three (3) members of Watermaster by written notice delivered personally or mailed to each member of Watermaster and to each party requesting notice, at least twenty-four (24) hours before the time of each such meeting in the case of personal delivery, and forty-eight (48) hours prior to such meeting in the case of mail. The calling notice shall specify the time and place of the special meeting and the business to be transacted at such meeting. No other business shall be considered at such meeting.

(d) Adjournments. Any meeting of Watermaster may be adjourned to a time and place specified in the order of adjournment. Less than a quorum may so adjourn from time to time. A copy of the order or notice of adjournment shall be conspicuously posted on or near the door of the place where the meeting was held within twenty-four (24) hours after adoption of the order of adjournment.

34. Powers and Duties. (Prior Judgment Section 26) Subject to the continuing supervision and control of the Court, Watermaster shall have and may exercise the following express powers, and shall perform the following duties, together with any specific powers, authority and duties granted or imposed elsewhere in this Judgment or hereafter ordered or authorized by the Court in the exercise of its continuing jurisdiction.

(a) Rules and Regulations. To make and adopt any and all appropriate rules and regulations for conduct of Watermaster affairs. A copy of said rules and regulations and any amendments thereof shall be mailed to all parties.

(b) Acquisition of Facilities. To purchase, own, lease, acquire and hold, as trustee for the benefit of the Parties, all necessary personal property and equipment, and such limited real property such as office quarters, monitoring wells, the key well, and other facilities necessary to fulfill Watermaster's basin management responsibilities under this Judgment. (Amended 6/21/12)

(c) Employment of Experts and Agents. To employ such administrative personnel, engineering, geologic, accounting, legal, public policy education or other

specialized services (but not including registered lobbyists) and consulting assistants as may be deemed appropriate in the carrying out of its powers and to require appropriate bonds from all officers and employees handling Watermaster funds. (Amended 6/21/12)

(d) Measuring Devices, etc. To cause parties, pursuant to uniform rules, to install and maintain in good operating condition, at the cost of each party, such necessary measuring devices or meters as may be appropriate; and to inspect and test any such measuring device as may be necessary.

(e) Assessments. To levy and collect all Assessments specified in the Physical Solution.

(f) Investment of Funds. To hold and invest any and all funds which Watermaster may possess in investments authorized from time to time for public agencies in the State of California.

(g) Borrowing. To borrow in anticipation of receipt of Assessment proceeds an amount not to exceed the annual amount of Assessments levied but uncollected, or in accordance with the provisions of Sections 45 and 46 hereto. Upon approval by the Watermaster at its regularly scheduled public meeting, when necessary to secure Supplemental Water, Watermaster may borrow funds in excess of the annual amount of Assessments levied but uncollected. Prior to borrowing funds, Watermaster shall meet and confer with Responsible Agencies and seek their input. Watermaster shall adopt Rules and Regulations specifying: (i) how debt repayment will be allocated among the Parties; (ii) that Watermaster obtain prior approval of the Court before incurring debt that exceeds the total of one year's levied Assessments; and (iii) such other matters as Watermaster deems appropriate for Rules and Regulations respecting the purchase of Supplemental Water using debt. (Amended 6/21/12)

(h) Purchase of and Recharge with Supplemental Water. To purchase Supplemental Water and to introduce the same into the Basin, including Reclaimed Water, for replenishment, Replacement Water, and cyclic storage purposes in the Basin subject to the affirmative vote of six (6) members of Watermaster, provided, the

California Department of Public Health and the Los Angeles Regional Water Quality Control Board have approved such Reclaimed Water for said uses, Watermaster has given prior notice to all parties of its intention to use said Reclaimed Water for such purposes, held noticed hearings thereon, and approves such uses. Reclaimed Water used by Watermaster as Supplemental Water for said purposes shall not be a violation of Sections 3(b) or 3(c) of Exhibit "H" hereto. (Amended 4/2/91 and 6/21/12)

(i) Contracts. To enter into contracts for the performance of any administrative powers herein granted, subject to approval of the Court.

(j) Cooperation with Existing Agencies. To act jointly or cooperate with agencies of the United States and the State of California or any political subdivision, municipality or district to the end that the purposes of the Physical Solution may be fully and economically carried out. (Amended 6/21/12)

(k) Assumption of Make-Up Obligation. Watermaster shall assume the Make-Up Obligation for and on behalf of the Basin.

(m) Water Quality. Water quality in the Basin shall be a concern of Watermaster, and all reasonable steps shall be taken to assist and encourage appropriate regulatory agencies to enforce reasonable water quality regulations affecting the Basin, including regulation of solid and liquid waste disposal.

(n) Cyclic Storage Agreements. To enter into appropriate contracts, to be approved by the Court, for utilization of Ground Water storage capacity of the Basin for cyclic or regulatory storage of Supplemental Water by parties and non-parties, for subsequent recovery or Watermaster credit by the storing entity, pursuant to uniform rules and conditions, which shall include provision for:

(1) Watermaster control of all spreading or injection and extraction scheduling and procedures for such stored water;

(2) calculation by Watermaster of any special costs, damages or burdens resulting from such operations;

(3) determination by Watermaster of, and accounting for, all losses in

stored water, assuming that such stored water floats on top of the Ground Water supplies, and accounting for all losses of water which otherwise would have replenished the Basin, with priorities being established as between two or more such contractors giving preference to parties over non-parties; and

(4) payment to Watermaster for the benefit of the parties hereto of all special costs, damages or burdens incurred (without any charge, rent, assessment or expense as to parties hereto by reason of the adjudicated proprietary character of said storage rights, nor credit or offset for benefits resulting from such storage); provided, that no party shall have any direct interest in or control over such contracts or the operation thereof by reason of the adjudicated right of such party, the Watermaster having sole custody and control of all Ground Water storage rights in the Basin pursuant to the Physical Solution herein, and subject to review of the Court.

(o) Notice List. Maintain a current list of party designees to receive notice hereunder, in accordance with Section 54 hereof.

(p) Authority to Sue. To prosecute litigation, engage in dispute resolution and file amicus curiae briefs in the furtherance of Watermaster's responsibilities under this Judgment. (Amended 6/21/12)

(q) Public Policy Education. To perform public policy education activities in furtherance of Watermaster's responsibilities under this Judgment. (Amended 6/21/12)

(r) Export Agreements. Watermaster may fix terms and conditions under which parties and non-parties may store Supplemental Water in and export said stored Supplemental Water from the Basin. (Amended 6/21/12)

35. Policy Decisions – Procedure. (Prior Judgment Section 27) It is contemplated that Watermaster will exercise discretion in making policy decisions relating to Basin management under the Physical Solution decreed herein. In order to assure full participation and opportunity to be heard for those affected, no policy decision shall be made by Watermaster until thirty (30) days after the question involved has been raised for discussion at a Watermaster

meeting and noted in the draft of minutes thereof.

36. Reports. (Prior Judgment Section 28) Watermaster shall annually file with the Court and mail to the parties a report of all Watermaster activities during the preceding year, including an audited statement of all accounts and financial activities of Watermaster, summary reports of Diversions and Pumping, and all other pertinent information. To the extent practical, said report shall be mailed to all parties on or before November 1. The tables set forth in Exhibits C, D, E, K, L and M are listed for reference purposes only. Future updates to those exhibits shall be set forth in the Watermaster annual report. In lieu of mailing the annual report, Watermaster in its discretion may post the report on its website, mail or e-mail a notice of availability to the parties, and/or provide a hard copy of the report upon request. If a party does not have a valid e-mail address or internet access, that party shall identify an alternative method of service to be approved by Watermaster in its sole discretion. (Amended 6/21/12)

37. Review Procedures. (Prior Judgment Section 29) Any action, decision, rule or procedure of Watermaster (other than a decision establishing Operating Safe Yield, see Section 43(c)) shall be subject to review by the Court on its own motion or on timely motion for an Order to Show Cause by any party, as follows:

(a) Effective Date of Watermaster Action. Any order, decision or action of Watermaster shall be deemed to have occurred on the date that written notice thereof is mailed. Mailing of draft copies of Watermaster minutes to the parties requesting the same shall constitute notice to all such parties.

(b) Notice of Motion. Any party may, by a regularly noticed motion, petition the Court for review of said Watermaster's action or decision. Notice of such motion shall be mailed to Watermaster and all parties. Unless so ordered by the Court, such petition shall not operate to stay the effect of such Watermaster action.

(c) Time for Motion. Notice of motion to review any Watermaster action or decision shall be served and filed within ninety (90) days after such Watermaster action or decision.

(d) De Novo Nature of Proceeding. Upon filing of such motion for hearing, the

Court shall notify the parties of a date for taking evidence and argument, and shall review de novo the question at issue on the date designated. The Watermaster decision or action shall have no evidentiary weight in such proceeding.

(e) Decision. The decision of the Court in such proceeding shall be an appealable Supplemental Order in this case. When the same is final, it shall be binding upon the Watermaster and the parties.

F. PHYSICAL SOLUTION

38. Purpose and Objective. (Prior Judgment Section 30) Consistent with the California Constitution and the decisions of the Supreme Court, the Court hereby adopts and Orders the parties to comply with this Physical Solution. The purpose and objective of these provisions is to provide a legal and practical means for accomplishing the most economic, long term, conjunctive utilization of surface, Ground Water, Supplemental Water and Ground Water storage capacity to meet the needs and requirements of the water users dependent upon the Basin and Relevant Watershed, while preserving existing equities.

39. Need for Flexibility. (Prior Judgment Section 31) In order that Watermaster may be free to utilize both existing and new and developing technological, social and economic concepts for the fullest benefit of all those dependent upon the Basin, it is essential that the Physical Solution hereunder provide for maximum flexibility and adaptability. To that end, the Court has retained continuing jurisdiction to supplement the broad discretion herein granted to the Watermaster.

40. Watermaster Control. (Prior Judgment Section 32) In order to develop an adequate and effective program of Basin management, it is essential that Watermaster have broad discretion in the making of Basin management decisions within the ambit hereinafter set forth. The maintenance, improvement, and control of the water quality and quantity of the Basin, withdrawal and replenishment of supplies of the Basin and Relevant Watershed, and the utilization of the water resources thereof, must be subject to procedures established by Watermaster in implementation of the provisions of this Judgment. Both the quantity and quality of said water resource are thereby preserved and its beneficial utilization maximized.

(Amended 1/29/91)

(a) Watermaster shall develop an adequate and effective program of Basin management. The maintenance, improvement, and control of the water quality and quantity of the Basin, withdrawal and replenishment of supplies of the Basin and Relevant Watershed, and the utilization of the water resources thereof, must be subject to procedures established by Watermaster in implementation of the Physical Solution provisions of this Judgment. All Watermaster programs and procedures shall be adopted only after a duly noticed public hearing pursuant to Section 37 and 40 of the Amended Judgment herein. (Amended 1/29/91)

(b) Watermaster shall have the power to control pumping in the Basin by water Producers therein for Basin cleanup and water quality control so that specific well production can be directed as to a lesser amount, to total cessation, as to an increased amount, and even to require pumping in a new location in the Basin. Watermaster's right to regulate pumping activities of Producers shall be subordinate to any conflicting Basin cleanup plan established by the EPA or other public governmental agency with responsibility for ground water management or clean up, whether existing at the time of this Judgment or subsequent hereto. (Amended 2/24/92)

(c) Watermaster may act individually or participate with others to carry on technical and other necessary investigations of all kinds and collect data necessary to carry out the herein stated purposes. It may engage in contractual relations with the EPA or other agencies in furtherance of the clean up of the Basin and enter into contracts with agencies of the United States, the State of California, or any political subdivision, municipality, or district thereof, to the extent allowed under the applicable federal or state statutes. Any cooperative agreement between the Watermaster and EPA shall require the approval of the appropriate Agency(s) of the State of California. (Amended 1/29/91)

(d) For the regulation and control of pumping activity in the Basin, Watermaster shall adopt Rules and Regulations and programs to promote, manage and accomplish

clean up of the Basin and its waters, including, but not limited to, measures to confine, move, and remove contaminants and pollutants. Such Rules and Regulations and programs shall be adopted only after a duly Noticed Public Hearing by Watermaster and shall be subject to Court review pursuant to Section 37 of the Amended Judgment herein. (Amended 1/29/91)

(e) Watermaster shall determine whether funds from local, regional, state or federal agencies are available for regulating pumping and the various costs associated with, or arising from such activities. If no public funds are available from local, regional, state, or federal agencies, the costs shall be obtained and paid by way of an In-Lieu Assessment by Watermaster pursuant to Section 10(j) of the Amended Judgment herein. Provided such In-Lieu Assessments become necessary, the costs shall be borne by all Basin Producers. (Amended 1/29/91)

(f) Watermaster is a Court empowered entity with limited powers, created pursuant to the Court's Physical Solution Jurisdiction under Article X, Section 2 of the California Constitution. None of the powers granted herein to Watermaster shall be construed as designating Watermaster a political subdivision of the State of California or authorizing Watermaster to act as "lead agency" to administer the federal Superfund for clean up of the Basin. (Amended 1/29/91)

41. General Pattern of Contemplated Operations. (Prior Judgment Section 33) In general outline (subject to the specific provisions hereafter and to Watermaster Operating Criteria set forth in Exhibit "H"), Watermaster will determine annually the Operating Safe Yield of the Basin and will notify each Pumper of his share thereof, stated in acre feet per Fiscal Year. Thereafter, no party may Produce in any Fiscal Year an amount in excess of the sum of his Diversion Right, if any, plus his Pumper's Share of such Operating Safe Yield, or his Integrated Production Right, or the terms of any Cyclic Storage Agreement, without being subject to Assessment for the purpose of purchasing Replacement Water. In establishing the Operating Safe Yield, Watermaster shall follow all physical, economic, and other relevant parameters provided in the Watermaster Operating Criteria. Watermaster shall have Assessment powers to

raise funds essential to implement the management plan in any of the several special circumstances herein described in more detail.

42. Basin Operating Criteria. (Prior Judgment Section 34) Until further order of the Court, Watermaster shall recharge Replacement Water in accordance with the Watermaster Operating Criteria and, insofar as practicable, to maintain the water level at the Key Well above Elevation two hundred (200). (Amended 6/21/12)

43. Determination of Operating Safe Yield. (Prior Judgment Section 35) Watermaster shall annually determine the Operating Safe Yield applicable to the succeeding Fiscal Year and estimate the same for the next succeeding four (4) Fiscal Years. In making such determination, Watermaster shall be governed in the exercise of its discretion by the Watermaster Operating Criteria. The procedures with reference to said determination shall be as follows:

(a) Preliminary Determination. On or before Watermaster's first meeting in April of each year, Watermaster shall make a Preliminary Determination of the Operating Safe Yield of the Basin for each of the succeeding five Fiscal Years. Said determination shall be made in the form of a report containing a summary statement of the considerations, calculations and factors used by Watermaster in arriving at said Operating Safe Yield.

(b) Notice and Hearing. A copy of said Preliminary Determination and report shall be mailed to each Pumper and Integrated Producer at least ten (10) days prior to a hearing to be held at Watermaster's regular meeting in May, of each year, at which time objections or suggested corrections or modifications of said determinations shall be considered. Said hearing shall be held pursuant to procedures adopted by Watermaster.

(c) Watermaster Determination and Review Thereof. Within thirty (30) days after completion of said hearing, Watermaster shall mail to each Pumper and Integrated Producer a final report and determination of said Operating Safe Yield for each such Fiscal Year, together with a statement of the Producer's entitlement in each such Fiscal Year stated in acre-feet. Any affected party, within thirty (30) days of mailing of notice

of said Watermaster determination, may, by a regularly noticed motion, petition the Court for an Order to Show Cause for review of said Watermaster finding, and thereupon the Court shall hear such objections and settle such dispute. Unless so ordered by the Court, such petition shall not operate to stay the effect of said report and determination. In the absence of such review proceedings, the Watermaster determination shall be final.

44. Reports of Pumping and Diversion. (Prior Judgment Section 36) Each party shall file with the Watermaster quarterly, on or before the last day of January, April, July and October, a report on a form to be prescribed by Watermaster showing the total Pumping and Diversion (separately for Direct Use and for non-consumptive use, if any) of such party during the preceding calendar quarter.

45. Assessments – Purpose. (Prior Judgment Section 37)

(a) Statement of Authority and Need for Flexibility: Watermaster shall have the power to levy and collect Assessments from the parties (other than non-consumptive users, or Production under Special Category Rights or Cyclic Storage Agreements) based upon Production during the preceding Fiscal Year. Assessments on Minimal Producers will apply only to (1) existing parties who become Minimal Producers in the future; and (2) Minimal Producers who intervene after June 21, 2012. Because Supplemental Water may not be available for extended periods of time, Watermaster requires flexibility with respect to the procedures for purchasing Supplemental Water supplies, as and when those supplies become available. This Judgment is a Physical Solution entered pursuant to California Constitution Article X, Section 2, which recognizes that the timing and amount of Watermaster Assessments for Replacement Water costs must be determined in light of this uncertainty. This Judgment therefore grants Watermaster the flexibility and discretion necessary to purchase and pre-purchase Supplemental Water and levy assessments in an appropriate and equitable manner and amount to maximize the opportunities to secure necessary Supplemental Waters in the best interest of the parties and the long-term sustainability of the Basin. In accordance with Rules and Regulations adopted by Watermaster, to further enhance flexibility, Watermaster may borrow money

from any available fund maintained by it for purposes other than Replacement Water purchases, or use accrued funds, to purchase Supplemental Water. (Amended 6/21/12)

(b) Authorized Assessments: Said Assessments may be for one or more of the following purposes:

(1) Watermaster Administration Costs. (Former Section 45(a)) Within thirty (30) days after completion of the hearing on the Preliminary Determination of the Operating Safe Yield of the Basin and Watermaster's determination thereof, pursuant to Section 43 hereof, Watermaster shall adopt a proposed budget for the succeeding Fiscal Year and shall mail a copy thereof to each party, together with a statement of the level of Administration Assessment levied by Watermaster which will be collected for purposes of raising funds for said budget. Said Assessment shall be uniformly applicable to each acre-foot of Production. (Amended 6/21/12)

(2) Replacement Water Costs. (Former Section 45(b)) Replacement Water Assessments shall be collected from each party on account of such party's Production in excess of its Diversion Rights, Pumper's Share or Integrated Production Right, and on account of the consumptive use portion of Overlying Rights, computed at the applicable rate established by Watermaster consistent with the Watermaster Operating Criteria, and other relevant factors, including the projected cost and availability of Supplemental Water supplies. Subject to Rules and Regulations adopted by Watermaster, Watermaster Replacement Water Assessment rates may be in an amount calculated to allow Watermaster to purchase more than one acre-foot of Supplemental Water for each acre-foot of excess Production to which such Assessment applies, when such purchases are necessary to secure Supplemental Water supplies for the benefit of the Basin and parties. (Amended 6/21/12)

(3) Make-Up Obligation. (Former Section 45(c)) An Assessment shall be collected equally on account of each acre-foot of Production, which does not

bear a Replacement Assessment hereunder, to pay all necessary costs of Administration and satisfaction of the Make-Up Obligation. Such Assessment shall not be applicable to water Production for an Overlying Right.

(4) In-Lieu Water Cost. (Former Section 45(d)) Watermaster may levy an Assessment against all Pumping to pay reimbursement for In-Lieu Water Costs except that such Assessment shall not be applicable to the non-consumptive use portion of an Overlying Right.

(5) Basin Water Quality Improvement. (Former Section 45(e)) For purposes of testing, protecting or improving the water quality in the Basin, Watermaster may, after a noticed hearing thereon, fix terms and conditions under which it may waive all or any part of its Assessments on such ground water Production and if such Production, in addition to his other Production, does not exceed such Producer's Share or entitlement for that Fiscal Year, such stated Production shall be allowed to be carried over for a part of such Producer's next Fiscal Year's Producer's Share or entitlement. In connection therewith, Watermaster may also waive the provisions of Section 25, 26 and 57 hereof, relating to Injunction Against Unauthorized Recharge, Injunction Against Transportation From Basin or Relevant Watershed, and Intervention After Judgment, respectively. Nothing in this Judgment is intended to allow an increase in any Producer's annual entitlement nor to prevent Watermaster, after hearing thereon, from entering into contracts to encourage, assist and accomplish the clean up and improvement of degraded water quality in the Basin by non-parties herein. Such contracts may include the exemption of the Production of such Basin water therefor from Watermaster Assessments and, in connection therewith, the waiver of the provisions of Judgment Sections 25, 26, and 57 hereof.

(6) Export and Storage. Watermaster shall levy an assessment to account for costs, burdens or losses incurred in connection with such exported or stored

water, including a fee for storage administration. Such storage or export shall be subject to (1) a determination by Watermaster that no material injury to the Basin or parties will result therefrom; (2) execution of an agreement with Watermaster setting forth the terms and conditions upon which water may be stored in or exported from the Basin; and (3) compliance with Watermaster Rules and Regulations respecting Basin storage and export. (Amended 6/21/12)

(7) Water Resource Development Assessment. Watermaster may levy an Assessment on all Pumping, as determined through Rules and Regulations to be adopted by the Watermaster, to support the purchase, financing, and/or development of new or additional Supplemental Water sources, in cooperation with one or more Responsible Agencies as appropriate. (Amended 6/21/12)

46. Assessments – Procedure. (Prior Judgment Section 38) Assessments herein provided for shall be levied and collected as follows:

(a) Levy and Notice of Assessment. Within thirty (30) days of Watermaster's annual determination of Operating Safe Yield of the Basin for each Fiscal Year and succeeding four (4) Fiscal Years, and at such other time[s] of the year as determined by Watermaster, Watermaster shall levy applicable Administration Assessments, Replacement Water Assessments, Make-Up Water Assessments, In-Lieu Water Assessments, and Water Resource Development Assessments, if any. Watermaster shall give written notice of all applicable Assessments to each party on or before August 15, of each year, and at such other time[s] as determined by Watermaster. To provide flexibility and maximize the opportunity to secure Replacement Water supplies when available, in accordance with criteria set forth in the Watermaster Rules and Regulations, Watermaster may levy supplemental assessments as necessary to create sufficient funds to purchase and pre-purchase such Replacement Water supplies for the benefit of the Basin and parties. (Amended 6/21/12)

(b) Payment. Each Assessment shall be payable, and each party is Ordered to pay the same, on or before September 20, following such Assessment, subject to the

rights reserved in Section 37 hereof.

(c) Delinquency. Any Assessment which becomes delinquent after January 1, 1980, shall bear interest at the annual prime rate plus one percent (1%) in effect on the first business day of August of each year. Said prime interest rate shall be that fixed by the Bank of America NT&SA for its preferred borrowing customers on said date. Said prime interest rate plus one percent (1%) shall be applicable to any said delinquent Assessment from the due date thereof until paid. Provided, however, in no event shall any said delinquent Assessment bear interest at a rate of less than ten percent (10%) per annum. Such delinquent Assessment and interest may be collected in a Show Cause proceeding herein or any other legal proceeding instituted by Watermaster, and in such proceeding the Court may allow Watermaster its reasonable costs of collection, including attorney's fees.

47. Availability of Supplemental Water from Responsible Agencies. (Prior Judgment Section 39) If any Responsible Agency shall, for any reason, be unable to deliver Supplemental Water to Watermaster in a timely fashion when needed, Watermaster may (1) collect funds at an appropriate level and hold them in trust, together with interest accrued thereon, for purchase of such water when available; (2) purchase water from the remaining Responsible Agencies which are the most beneficial and appropriate sources observing all legal and contractual constraints on the availability of such water; or (3) purchase Supplemental Water from any other available source. Watermaster shall consult with the Responsible Agencies involved and in good faith shall determine the appropriate source of Supplemental Water under such circumstances. Should Watermaster arrange to purchase Supplemental Water from a source not involving a Responsible Agency, Watermaster shall provide the Responsible Agencies an opportunity to provide said Supplemental Water or comparable water supplies on comparable terms. (Amended 6/21/12)

48. Accumulation of Replacement Water Assessment Proceeds. (Prior Judgment Section 40) In order to minimize fluctuation in Assessments and to give Watermaster flexibility in Basin management, Watermaster may make reasonable accumulations of Replacement Water

Assessments. Such moneys and any interest accrued thereon shall only be used for the purchase of Replacement Water.

49. Carry-over of Unused Rights. (Prior Judgment Section 41) Any Pumper's Share of Operating Safe Yield, and the Production right of any Integrated Producer, which is not Produced in a given Fiscal Year may be carried over and accumulated for one Fiscal Year, pursuant to reasonable rules and procedures for notice and accounting which shall be adopted by Watermaster. The first water Produced in the succeeding Fiscal Year shall be deemed Produced pursuant to such Carry-over Rights.

50. Minimal Producers. (Prior Judgment Section 42) In the interest of Justice, Minimal Producers who initiated production on or before June 21, 2012, are exempted from the operation of this Physical Solution, so long as such party's annual Production does not exceed five (5) acre-feet. Watermaster may require, and Minimal Producers shall furnish, specific periodic reports. In addition, Watermaster may conduct such investigation of future operations of any Minimal Producer as may be appropriate. As of June 21, 2012, there shall be no new Minimal Producers, and any new Producer shall be subject to all provisions of the Judgment. (Amended 6/21/12)

51. Effective Date. (Prior Judgment Section 43) The effective date for commencing accounting and operation under this Physical Solution, other than for Replacement Water Assessments, shall be July 1, 1972. The first Assessment for Replacement Water shall be payable on September 20, 1974, on account of Fiscal Year 1973-74 Production.

G. MISCELLANEOUS PROVISIONS

52. Puente Narrows Flow. (Prior Judgment Section 44) The Puente Basin is tributary to the Main San Gabriel Basin. All Producers within said Puente Basin have been dismissed herein, based upon the Puente Narrows Agreement (Exhibit "J"), whereby Puente Basin Water Agency agreed not to interfere with surface inflow and to assure continuance of historic subsurface contribution of water to Main San Gabriel Basin. The Court declares said Agreement to be reasonable and fair and in full satisfaction of claims by Main San Gabriel Basin for natural water from Puente Basin.

53. Deleted Section (Amended 6/21/12)

54. Service Upon and Delivery to Parties of Various Papers. (Prior Judgment Section 46) Service of the Judgment on those parties who have executed the Stipulation for Judgment shall be made by first class mail, postage prepaid, addressed to the Designee and at the address designated for that purpose in the executed and filed counterpart of the Stipulation for Judgment, or in any substitute designation filed with the Court.

Each party who has not heretofore made such a designation shall, within thirty (30) days after the Judgment shall have been served upon that party, file with the Court, with proof of service of a copy thereof upon Watermaster, a written designation of the person to whom and the address at which all future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon that party or delivered to that party are to be so served or delivered.

A later substitute designation filed and served in the same manner by any party shall be effective from the date of filing as to the then future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that party.

Delivery to or service upon any party by Watermaster, by any other party, or by the Court, of any item required to be served upon or delivered to a party under or pursuant to the Judgment may be made by deposit thereof (or by copy thereof) in the mail, first class, postage prepaid, addressed to the Designee of the party and at the address shown in the latest designation filed by that party. In lieu of mailing any item required to be served under this Judgment, Watermaster may serve such item by electronic service, which may include posting the document to Watermaster's website, sending an e-mail of the document to that party, or sending a notice of availability to that party indicating the document's availability for viewing on the Watermaster website. If a party does not have a valid e-mail address or internet access, that party shall identify an alternative method of service to be approved by Watermaster in its sole discretion.

Any party desiring to be relieved of receiving notices of Watermaster activity may file a waiver of notice on a form to be provided by Watermaster. Thereafter such party shall be

removed from the active party service list and not receive any notices required under this Judgment. The parties have a duty to keep Watermaster informed of their current e-mail and mailing addresses. If mail or e-mail is returned undeliverable to Watermaster for an incorrect address, Watermaster in its sole discretion may remove that party from the active party service list. (Amended 6/21/12)

55. Assignment, Transfer, etc., of Rights. (Prior Judgment Section 47) Any rights Adjudicated herein except Overlying Rights, may be assigned, transferred, licensed or leased by the owners thereof; provided however, that no such assignment shall be complete until the appropriate notice procedures established by Watermaster have been complied with. No water Produced pursuant to rights assigned, transferred, licensed, or leased may be transported outside the Relevant Watershed except by:

(1) a Transporting Party, or

(2) a successor in interest immediate or mediate to a water system on lands or portion thereof, theretofore served by such a Transporting Party, for use by such successor in accordance with limitations applicable to Transporting Parties, or

(3) a successor in interest to the Special Category rights of MWD.

The transfer and use of Overlying Rights shall be limited, as provided in Section 21 hereof, as exercisable only on the specifically defined Overlying Lands and they cannot be separately conveyed or transferred apart therefrom.

56. Abandonment of Rights. (Prior Judgment Section 48) It is in the interest of reasonable beneficial use of the Basin and its water supply that no party be encouraged to take and use more water in any Fiscal Year than is actually required. Failure to Produce all of the water to which a party is entitled hereunder shall not, in and of itself, be deemed or constitute an abandonment of such party's right, in whole or in part. Abandonment and extinction of any right herein Adjudicated shall be accomplished only by:

(1) a written election by the party, filed in this case, or

(2) upon noticed motion of Watermaster, and after hearing.

In either case, such abandonment shall be confirmed by express subsequent order of this

Court.

57. Intervention After Judgment. (Prior Judgment Section 49) Any person who is not a party or successor to a party and who proposes to Produce water from the Basin or Relevant Watershed, may seek to become a party to this Judgment through a Stipulation For Intervention entered into with Watermaster. Watermaster may execute said Stipulation on behalf of the other parties herein but such Stipulation shall not preclude a party from opposing such Intervention at the time of the Court hearing thereon. Said Stipulation For Intervention must thereupon be filed with the Court, which will consider an order confirming said Intervention following thirty (30) days' notice to the parties. Thereafter, if approved by the Court, such Intervenor shall be a party bound by this Judgment and entitled to the rights and privileges accorded under the Physical Solution herein.

58. Judgment Binding on Successors, etc. (Prior Judgment Section 50) Subject to specific provisions hereinbefore contained, this Judgment and all provisions thereof are applicable to and binding upon and inure to the benefit of not only the parties to this action, but as well to their respective heirs, executors, administrators, successors, assigns, lessees, licensees and to the agents, employees and attorneys in fact of any such persons.

59. Water Rights Permits. (Prior Judgment Section 51) Nothing herein shall be construed as affecting the relative rights and priorities between MWD and San Gabriel Valley Protective Association under State Water Rights Permits Nos. 7174 and 7175, respectively.

60. Costs. (Prior Judgment Section 52) No party shall recover any costs in this proceeding from any other party.

61. Entry of Judgment. (New) The Clerk shall enter this Judgment.

DATED: June 21, 2012

s/ Maureen Duffy-Lewis
Maureen Duffy-Lewis, Judge
Specially Assigned

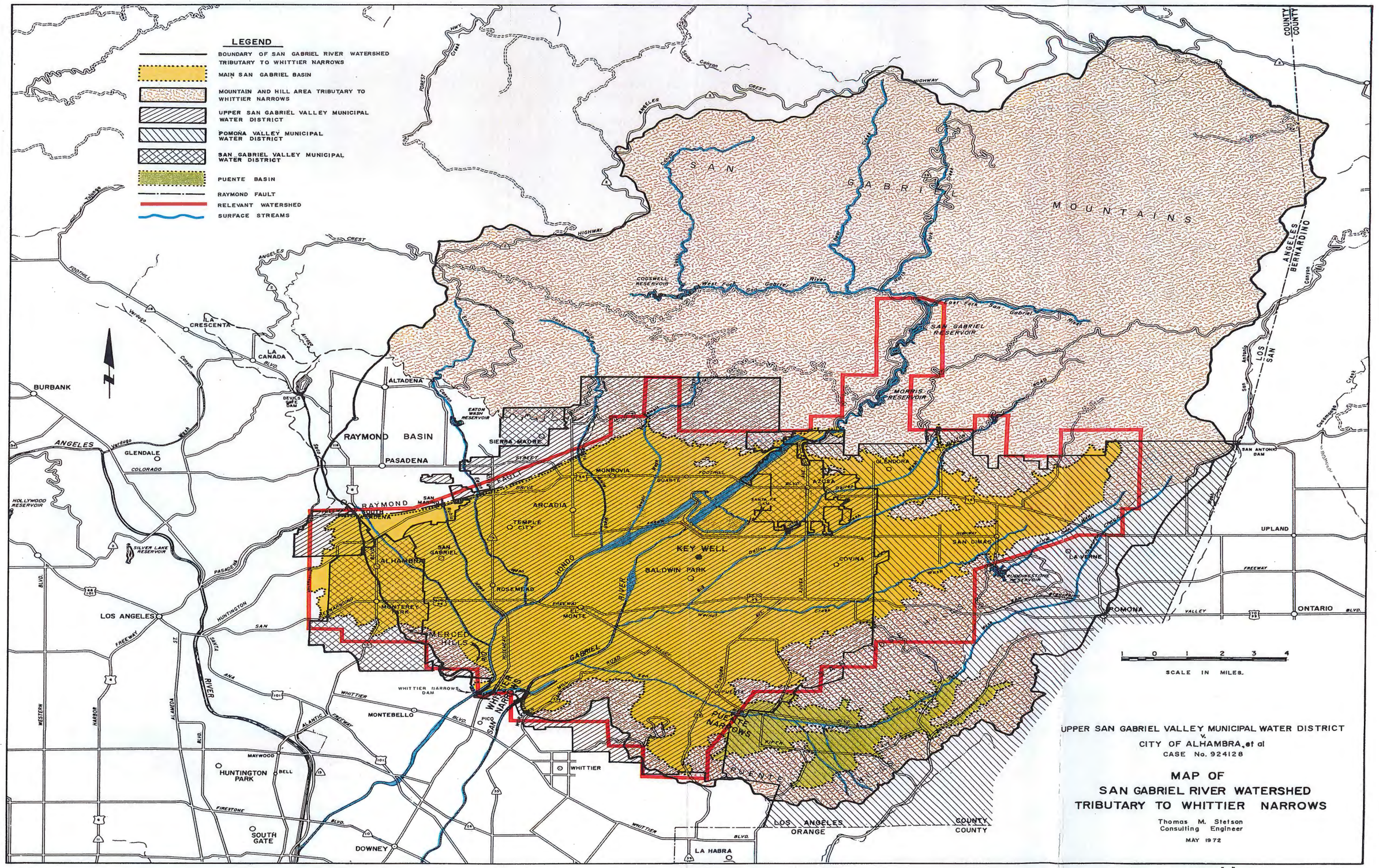

LEGEND
BOUNDARY OF SAN GABRIEL RIVER WATERSHED TRIBUTARY TO WHITTIER NARROWS
MAIN SAN GABRIEL BASIN
MOUNTAIN AND HILL AREA TRIBUTARY TO WHITTIER NARROWS
UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
POMONA VALLEY MUNICIPAL WATER DISTRICT
SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
PUENTE BASIN
RAYMOND FAULT
RELEVANT WATERSHED
SURFACE STREAMS
SAN GABRIEL MOUNTAINS
RAYMOND BASIN
PUENTE BASIN
KEY WELL
COGSWELL RESERVOIR
SAN GABRIEL RESERVOIR
MORRIS RESERVOIR
EATON WASH RESERVOIR
SILVER LAKE RESERVOIR
HOLLYWOOD RESERVOIR
PUDDINGSTONE RESERVOIR
WHITTIER NARROWS DAM
SAN ANTONIO DAM
DEVILS GATE DAM
LA CRESCENTA
LA CANADA
ALTADENA
BURBANK
GLENDALE
PASADENA
SIERRA MADRE
MONROVIA
ARCADIA
TEMPLE CITY
SAN GABRIEL
ALHAMBRA
ROSEMEAD
MONTEREY PARK
MERCED HILLS
EL MONTE
BALDWIN PARK
COVINA
AZUSA
GLENDORA
SAN DIMAS
LA VERNE
POMONA
UPLAND
ONTARIO
LOS ANGELES
MONTEBELLO
WHITTIER
HUNTINGTON PARK
SOUTH GATE
DOWNEY
LA HABRA
LOS ANGELES COUNTY
ORANGE COUNTY
SAN BERNARDINO COUNTY
SCALE IN MILES.
1 0 1 2 3 4
UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT
vs.
CITY OF ALHAMBRA, et al
CASE No. 924128
MAP OF
SAN GABRIEL RIVER WATERSHED
TRIBUTARY TO WHITTIER NARROWS
Thomas M. Stetson
Consulting Engineer
MAY 1972

EXHIBIT "A"

EXHIBIT "B"

BOUNDARIES OF RELEVANT WATERSHED

The following described property is located in Los Angeles County, State of California:

Beginning at the Southwest corner of Section 14, Township 1 North, Range 11 West, San Bernardino Base and Meridian;

Thence Northerly along the West line of said Section 14 to the Northwest corner of the South half of said Section 14;

Thence Easterly along the North line of the South half of Section 14 to the East line of said Section 14;

Thence Northerly along the East line of said Section 14, Township 1 North, Range 11 West and continuing Northerly along the East line of Section 11 to the Northeast corner of said Section 11;

Thence Easterly along the North line of Section 12 to the Northeast corner of said Section 12;

Thence Southerly along the East line of said Section 12 and continuing Southerly along the East line of Section 13 to the Southeast corner of said Section 13, said corner being also the Southwest corner of Section 18, Township 1 North, Range 10 West;

Thence Easterly along the South line of Sections 18, 17, 16 and 15 of said Township 1 North, Range 10 West to the Southwest corner of Section 14;

Thence Northerly along the West line of Section 14 to the Northwest corner of the South half of Section 14;

Thence Easterly along the North line of the South half of Section 14 to the East line of said section;

Thence Northerly along the East line of said Section 14, and continuing Northerly along the West line of Section 12 of said Township 1 North, Range 10 West to the North line of said Section 12;

Thence Easterly along the North line of said Section 12, to the Northeast corner of said Section 12, said corner being also the Southwest corner of Section 6, Township 1 North, Range 9 West;

Thence Northerly along the West line of said Section 6 and continuing Northerly along West line of Sections 31 and 30, Township 2 North, Range 9 West to the Westerly prolongation of the North line of said Section 30;

Thence Easterly along said Westerly prolongation of the North line of said Section 30 and continuing Easterly along the North line of Section 29 to the Northeast corner of said Section 29;

Thence Southerly along the East line of said Section 29 and continuing Southerly along the East line of Section 32, Township 2 North, Range 9 West, and thence continuing Southerly along the East line of Section 5, Township 1 North, Range 9 West to the Southeast corner of said Section 5;

Thence Westerly along the South line of said Section 5 to the Southwest corner of said Section 5, said point being also the Northwest corner of Section 8;

Thence Southerly along the West line of said Section 8 and continuing Southerly along the West line of Section 17, to the Southwest corner of said Section 17, said corner being also the Northwest corner of Section 20;

Thence Easterly along the North line of Sections 20 and 21 to the Northwest corner of Section 22, said corner being also the Southwest corner of Section 15;

Thence Northerly along the West line of said Section 15 to the Northwest corner of the South half of said Section 15;

Thence Easterly along the North line of said South half of Section 15 to the Northeast corner of said South half of Section 15;

Thence Southerly along the East line of Section 15 and continuing Southerly along the East line of Section 22 to the Southeast corner of said Section 22, said point being also the Southwest corner of Section 23;

Thence Easterly along the South line of Sections 23 and 24 to the East line of the West half of said Section 24;

Thence Northerly along said East line of the West half of Section 24 to the North line thereof;

Thence Easterly along said North line of Section 24 to the Northeast corner thereof, said point also being the Northwest corner of Section 19, Township 1 North, Range 8 West;

Thence continuing Easterly along the North line of Section 19 and Section 20 of said Township 1 North, Range 8 West to the Northeast corner of said Section 20;

Thence Southerly along the East line of Sections 20, 29 and 32 of said Township 1 North, Range 8 West to the Southeast corner of said Section 32;

Thence Westerly along the South line of Section 32 to the Northwest corner of the East half of Section 5, Township 1 South, Range 8 West;

Thence Southerly along the West line of the East half of said Section 5 to the South line of said Section 5;

Thence West to the East line of the Northerly prolongation of Range 9 West;

EXHIBIT "C"

TABLE SHOWING BASE ANNUAL DIVERSION RIGHTS OF CERTAIN DIVERTERS AS OF JUNE 21, 2012

DIVERTER	BASE ANNUAL DIVERSION RIGHT (ACRE-FEET)
Covell, Ralph	2.12
(Successor to Rittenhouse, Catherine and Rittenhouse, James)[1]	
(Transferred to Aqua Capital Management LP)[2]	-2.12
	0.00
Maddock, A. G.	3.40
(Transferred to San Gabriel Valley Water Company)[2]	-3.40
	0.00
Rittenhouse, Catherine	**0.00**
(Transferred to Covell, Ralph)[1]	
Rittenhouse, James	**0.00**
(Transferred to Covell, Ralph)[1]	
Ruebhausen, Arline	18.34
(Held in common with Ruebhausen, Victor)	
(Transferred to City of Glendora)[2]	-18.34
	0.00
Ruebhausen, Victor	--
(See Ruebhausen, Arline)	
TOTAL	**0.00**

1/ Permanent transfer of rights as recorded at entry of Judgment.
2/ Permanent transfer of rights after entry of Judgment.
3/ Intervenor after Judgment.

EXHIBIT "D"

TABLE SHOWING RIGHTS AND PUMPER'S SHARE OF EACH PUMPER AS OF JUNE 21, 2012

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
6W Farms, Inc.	1,217.40	0.61599
(Formerly Woodland Farms, Inc.)		
(Transferred to:		
Miller Brewing Company	-919.50	-0.46526
Richard J. Woodland)[2]	-297.90	-0.15073
	0.00	**0.00000**
Adams Ranch Mutual Water Company	**100.00**	**0.05060**
A & E Plastik Pak Co., Inc.	**0.00**	**0.00000**
(Transferred to Industry Properties, Ltd.)[1]		
Alhambra, City of	**8,812.05**	**4.45876**
Amarillo Mutual Water Company	**709.00**	**0.35874**
American Sheds, Inc.[3]		
(Successor to Southwestern Portland Cement Company)[2]	742.00	0.37544
(Transferred to USA Waste of California, Inc.)[2]	-742.00	-0.37544
	0.00	**0.00000**
Anchor Plating Co., Inc.[3]		
(Successor to Bodger & Sons, DBA Bodger Seeds Ltd.)[2]	10.00	0.00506
(Transferred to Crown City Plating Co.)[2]	-10.00	-0.00506
	0.00	**0.00000**
Anderson Family Marital Trust[3]		
(Successor to Anderson, Ray L. and Helen T.)[2]	50.16	0.02538
(Transferred to:		
Brondino, Jeanne	-25.08	-0.01269
Heinrich, Carolyn)[2]	-25.08	-0.01269
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Anderson, Ray[3]		
(Successor to Covina Valley Unified School District)[2]	50.16	0.02538
(Transferred to Anderson, Ray L. and Helen T.)[2]	-50.16	-0.02538
	0.00	**0.00000**
Anderson, Ray L. and Helen T.[3]		
(Successor to Anderson, Ray)[2]	50.16	0.02538
(Transferred to Anderson Family Marital Trust)[2]	-50.16	-0.02538
	0.00	**0.00000**
Andrade, Macario and Consuelo; and Andrade, Robert and Jayne [3]		
(Successor to J. F. Isbell Estate, Inc.)[2]	8.36	0.00423
(Transferred to Susan Andrade)[2]	-8.36	-0.00423
	0.00	**0.00000**
Andrade, Susan[3]		
(Successor to Andrade, Macario and Consuelo; and Andrade, Robert and Jayne)[2]	8.36	0.00423
	8.36	**0.00423**
Arcadia, City of	9,252.00	4.68137
(Successor to First National Finance Corporation)[2]	60.90	0.03081
(Transferred to City of Monrovia)[2]	-951.00	-0.48119
	8,361.90	**4.23099**
Associated Southern Investment Company	16.50	0.00335
(Transferred to Southern California Edison Company)[2]	-16.50	-0.00335
	0.00	**0.00000**
AZ-Two, Inc.[3]	--	--
(See Southdown, Inc.)		
Azusa Associates, LLC[3]		
(Successor to Snyder, Esther)[2]	18.51	0.00937
(Transferred to Aqua Capital Management LP)[2]	-18.51	-0.00937
	0.00	**0.00000**
Azusa-Western Inc.	742.00	0.37544
(Transferred to Southwestern Portland Cement Co.)[2]	-742.00	-0.37544
	0.00	**0.00000**
Bahnsen & Beckman Ind., Inc.	840.50	0.42528
(Transferred to Woodland, Richard)[2]	-840.50	-0.42528
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Bahnsen, Betty M.	441.90	0.22359
(Transferred to Dawes, Mary Kay)[2]	-441.90	-0.22359
	0.00	**0.00000**
Baldwin Park County Water District	--	--
(See Valley County Water District)		
Bandel Family Trust[3]		
(Successor to Garnier, Camille A, Deceased,	16.70	0.00845
Estate of)[2]	**16.70**	**0.00845**
Banks, Gale C. and Vicki Lynn[3]		
(Successor to Doyle, Mr. and Mrs.; and	50.00	0.02530
Madruga, Mr. and Mrs.)[2]	**50.00**	**0.02530**
Base Line Water Company	430.20	0.21767
(Transferred to Hughes Development Corporation)[2]	-430.20	-0.21767
	0.00	**0.00000**
Beverly Acres Mutual Water Company	--	--
(See Beverly Acres Mutual Water Users Association)		
Beverly Acres Mutual Water Users Association	93.00	0.04706
(Formerly Beverly Acres Mutual Water Company)		
(Transferred to:		
San Gabriel Valley Water Company;	-50.00	-0.02530
Nicholson Trust)[2]	-43.00	-0.02176
	0.00	**0.00000**
Birenbaum, Max	6.00	0.00304
(Held in common with Birenbaum, Sylvia;		
Schneiderman, Alan; Schneiderman, Lydia;		
Wigodsky, Bernard; Wigodsky, Estera)		
(Transferred to City of Whittier)[2]	-6.00	-0.00304
	0.00	**0.00000**
Birenbaum, Sylvia	--	--
(See Birenbaum, Max)		
Blue Diamond Concrete Materials Div., The Flintkote Company	1,399.33	0.70804
(Transferred to Sully-Miller Contracting Co.)[2]	-1,399.33	-0.70804
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Bodger & Sons DBA Bodger Seeds Ltd.	10.00	0.00506
(Transferred to Anchor Plating Co., Inc.)[2]	-10.00	-0.00506
	0.00	**0.00000**
Botello Water Company	**0.00**	**0.00000**
Brezina, Raymond W. and Susan W. Trust 2001[3]	**0.00**	**0.00000**
Brondino, Jeanne[3]		
(Successor to Anderson Family Marital Trust)[2]	25.08	0.01269
	25.08	**0.01269**
Burbank Development Company	50.85	0.02563
(Transferred to Wright, Darrell A., Wright, Merle M. &	-50.85	-0.02563
Carlson, Jeanne W.)[2]	**0.00**	**0.00000**
Cadway, Inc.[3]		
(Successor to:		
Corcoran, Jack S. and R. L.	100.00	0.05060
Corcoran, Jack S. and R. L.	100.00	0.05060
Corcoran, Jack S. and R. L.	273.50	0.13839
Corcoran, Jack S. and R. L.	30.00	0.01518
Garnier, Janus	203.00	0.10272
Sloan Ranches	129.60	0.06558
Corcoran, Jack S. and R.L.)[2]	243.50	0.12320
(Transferred to:		
California Domestic Water Company	-243.50	-0.12321
California Domestic Water Company	-129.60	-0.06558
California Domestic Water Company)[2]	-63.30	-0.03203
	643.20	**0.32545**
Cal Fin	118.10	0.05976
(Transferred to Suburban Water Systems)[2]	-118.10	-0.05976
	0.00	**0.00000**
California-American Water Company (San Marino System)	**7,868.70**	**3.98144**
California Country Club[3] (Formerly CCC Management)	**0.00**	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
California Domestic Water Company	11,024.82	5.57839
(Successor to:		
Cantrill Mutual Water Company[1]	42.50	0.02150
Industry Properties, Ltd.[2]	73.50	0.03719
Modern Accent Corporation[2]	256.86	0.12997
Fisher, Russell[2]	19.00	0.00961
Graveline, George Wayne and Alexis June, Trust[2]	216.60	0.10959
Cadway, Inc.[2]	243.50	0.12321
Cadway, Inc.[2]	129.60	0.06558
Cadway, Inc.[2])	63.30	0.03203
	12,069.68	**6.10707**
California Materials Company	**0.00**	**0.00000**
CalMat	--	--
(Formerly Conrock Company)		
(See Vulcan Materials Company)		
Cantrill Mutual Water Company	**0.00**	**0.00000**
(Transferred to California Domestic Water Company)[1]		
Canyon Water Company [3]		
(Successor to McIntyre, William)[2]	1.00	0.00051
	1.00	**0.00051**
Canyon Water & Development Corporation[3]	**0.00**	**0.00000**
CCC Management [3]	--	--
(See California Country Club)		
Cedar Avenue Mutual Water Company	121.10	0.06127
(Transferred to San Gabriel Valley Water Company)[2]	-121.10	-0.06127
	0.00	**0.00000**
CEMEX California Aggregates, Inc. [3]	--	--
(Formerly Southdown)		
Champion Mutual Water Company	**147.68**	**0.07472**
Chevron U.S.A.	**2.00**	**0.00101**
(Formerly Standard Oil of California)		
Chronis, Christine[3]	--	--
(See Polopolus, et al.)		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Clayton Manufacturing Company	511.80	0.25896
(Transferred to City of Glendora)[2]	-511.80	-0.25896
	0.00	**0.00000**
Coiner, James W., dba Coiner Nursery[3]	--	--
Collison, E. O.	**0.00**	**0.00000**
Comby, Erma M.	--	--
(See Wilmott, Erma M.)		
Conrock Company	--	--
(See CalMat)		
(Formerly Consolidated Rock Products Co.)		
Consolidated Rock Products Co.	--	--
(See Conrock Company)		
Corcoran, Jack S.	747.00	0.37797
(Held in common with Corcoran, R. L.)		
(Transferred to:		
Cadway, Inc.	-100.00	-0.05060
Cadway, Inc.	-100.00	-0.05060
Cadway, Inc.	-273.50	-0.13839
Cadway, Inc.	-30.00	-0.01518
Cadway, Inc.)[2]	-243.50	-0.12320
	0.00	**0.00000**
Corcoran, R. L.	--	--
(See Corcoran, Jack S.)		
County Sanitation District No. 18 of Los Angeles County	**4.50**	**0.00228**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Covell, et al.	111.05	0.05619
(Successor to Rittenhouse, Catherine and Rittenhouse, James)[1]		
(Held in common with Tate, Phillip G. and Sieglinde A.; Goedert, Lillian E.; Goedert, Marion W.; Lakin, Kendall R.; Lakin, Kelly R.; Snyder, Harry; Snyder, Esther)		
(Transferred to:		
Lakin, Kelly R.	-9.26	-0.00468
Goedert, Lillian E.	-9.26	-0.00468
Tate, Phillip G. and Sieglinde A.	-57.83	-0.02926
Snyder, Esther	-18.51	-0.00937
Aqua Capital Management LP)[2]	-16.19	-0.00820
	0.00	**0.00000**
Covina, City of	2,507.89	1.26895
(Transferred to:		
Covina Irrigating Company	-1,734.00	-0.87737
Covina Irrigating Company)[2]	-300.00	-0.15179
	473.89	**0.23979**
Covina-Valley Unified School District	50.16	0.02538
(Transferred to Anderson, Ray)[2]	-50.16	-0.02538
	0.00	**0.00000**
Crevolin, A. J.	**2.25**	**0.00114**
Crocker National Bank, Executor of the Estate of A. V. Handorf	**0.00**	**0.00000**
(Transferred to Modern Accent Corp.)[1]		
Cross Water Company	1,103.00	0.05581
(Transferred to Industry Waterworks System, City of)[2]	-1,103.00	-0.05581
	0.00	**0.00000**
Crown City Plating Company	190.00	0.09614
(Successor to Anchor Plating Co., Inc.)[2]	10.00	0.00506
(Transferred to Valencia Heights Water Company)[2]	-200.00	-0.10120
	0.00	**0.00000**
Davidson Optronics, Inc.	22.00	0.01113
(Transferred to Covina Irrigating Company)[2]	-22.00	-0.01113
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Dawes, Mary Kay[3]	**441.90**	**0.22359**
(Successor to Bahnsen, Betty M.)[2]		
Del Rio Mutual Water Company	**199.00**	**0.10069**
Denton, Kathryn W., Trustee for San Jose Ranch Company	185.50	0.09386
(Transferred to White, June G., Trustee	-185.50	-0.09386
of the June G. White share of the	**0.00**	**0.00000**
Garnier Trust)[2]		
Doyle, Mr. and Mrs.; and Madruga, Mr. and Mrs.[3]		
(Successor to Sawpit Farms, Limited)[2]	50.00	0.02530
(Transferred to Banks, Gale C. and Vicki Lynn)[2]	-50.00	-0.02530
	0.00	**0.00000**
Driftwood Dairy	**163.80**	**0.08288**
Duhalde, L.	**0.00**	**0.00000**
(Transferred to El Monte Union High School District)[1]		
Dunning, George		
(Held in common with Dunning, Vera H.)		
(Successor to Vera H. Dunning)[2]	324.00	0.16394
(Transferred to Dunning Trust, George A. V.)[2]	-324.00	-0.16394
	0.00	**0.00000**
Dunning Trust, George A. V. [3]		
(Successor to Dunning, George)[2]	324.00	0.16394
(Transferred to Loyola Marymount University)[2]	-324.00	-0.16394
	0.00	**0.00000**
Dunning, Vera H.	324.00	0.16394
(See Dunning, George)		
(Transferred to Dunning, George)[2]	-324.00	-0.16394
	0.00	**0.00000**
Durfee Property, LLC[3]		
(Successor to Texaco, Inc.)[2]	50.00	0.02530
(Transferred to San Gabriel Valley Water Company)[2]	-50.00	-0.02530
	0.00	**0.00000**
East Pasadena Water Company, Ltd.	**1,407.69**	**0.71227**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Eckis, Rollin[3]		
(Successor to Sawpit Farms, Limited)[2]	123.00	0.06224
(Transferred to City of Monrovia)[2]	-123.00	-0.06224
	0.00	**0.00000**
El Encanto Properties	33.40	0.01690
(Transferred to La Puente Valley	-33.40	-0.01690
County Water District)[2]	**0.00**	**0.00000**
El Monte, City of	2,784.23	1.40878
(Successor to W. E. Hall Company)[2]	0.20	0.00010
	2,784.43	**1.40888**
El Monte Cemetery Association	**18.50**	**0.00936**
El Monte Union High School District	9.80	0.00496
(Successor to Duhalde, L.)[1]	6.40	0.00324
(Transferred to City of Whittier)[2]	-16.20	-0.00820
	0.00	**0.00000**
Everett, Mrs. Alda B.	**0.00**	**0.00000**
(Held in common with Everett, W.B., Executor of the Estate of I. Worth Everett)		
Everett, W.B., Executor of the Estate of I. Worth Everett	--	--
(See Everett, Mrs. Alda B.)		
Faix, Incorporated	**0.00**	**0.00000**
(Successor to Frank F. Pellissier & Sons, Inc.)[1]		
(Transferred to Faix, Ltd.)[1]		
Faix, Ltd.	6,490.00	3.28384
(Successor to Faix, Incorporated)[1]		
(Transferred to Pellissier Irrevocable QTIP Trust, et al,	-6,490.00	-3.28384
Laurence R., Co-tenancy of)[2]	**0.00**	**0.00000**
First National Finance Corporation	60.90	0.03081
(Transferred to City of Arcadia)[2]	-60.90	-0.03081
	0.00	**0.00000**
Fisher, Russell	19.00	0.00961
(Held in common with Hauch, Edward and Warren, Clyde)		
(Transferred to California Domestic Water Company)[2]	-19.00	-0.00961
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Fox Family Trust Michael Edward Fox and Crystal Marie Fox, Trustees[3]		
(Successor to Maggiore, Valarie; Fox, Crystal; and Kirklen, Jeffery)[2]	**145.83**	**0.07378**
Frank F. Pellissier & Sons, Inc.	**0.00**	**0.00000**
(Transferred to Faix, Incorporated)[1]		
Fruit Street Water Company	207.00	0.10474
(Transferred to:		
Gifford, Brooks, Jr.,	-101.29	-0.05125
City of La Verne)[2]	-105.71	-0.05349
	0.00	**0.00000**
Garnier, Anton C. and Anita, Family Trust[3]		
(Successor to:		
South Covina Water Service	203.00	0.10271
Garnier, Camille A., Deceased, Estate of	8.30	0.00420
Garnier, Janus)[2]	3.00	0.00152
	214.30	**0.10843**
Garnier, Camille A., Deceased, Estate of[3]		
(Successor to South Covina Water Service)[2]	83.30	0.04215
(Transferred to:		
The Ruth Elaine Ailor Garnier Trust	-41.70	-0.02110
The George Wayne and Alexis June Graveline Trust	-8.30	-0.00420
The Anton C. and Anita Garnier Family Trust	-8.30	-0.00420
Janus Garnier	-8.30	-0.00420
The Bandel Family Trust)[2]	-16.70	-0.00845
	0.00	**0.00000**
Garnier, Janus[3]		
(Successor to :		
Garnier, Camille A. Deceased, Estate of	8.30	0.00420
South Covina Water Service)[2]	203.00	0.10272
(Transferred to:		
George Wayne and Alexis June Graveline Trust	-5.30	-0.00268
The Anton C. and Anita Garnier Family Trust	-3.00	-0.00152
Cadway, Inc.)[2]	-203.00	-0.10272
	0.00	**0.00000**
Garnier, Ruth Elaine Ailor, Trust[3]		
(Successor to Garnier, Camille A. Deceased,	41.70	0.02110
Estate of)[2]	**41.70**	**0.02110**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Gates, James Richard[3]	**0.00**	**0.00000**
Gifford, Brooks, Jr.[3]		
(Successor to:		
Fruit Street Water Company,	101.29	0.05125
Mission Gardens Mutual Water Company)[2]	96.96	0.04906
(Transferred to City of Whittier)[2]	-198.25	-0.10031
	0.00	**0.00000**
Gilkerson, Frank B.	--	--
(Formerly part of Covell, et al.)		
(Transferred interest in Covell, et al. to Jobe, Darr)[2]		
Glendora Unified High School District	99.00	0.05009
(Transferred to City of Glendora)[2]	-99.00	-0.05009
	0.00	**0.00000**
Goedert, Lillian E.		
(See Covell, et al.)		
(Successor to Covell, et al.)[2]	9.26	0.00468
(Transferred to Covina Irrigating Co.)[2]	-7.00	-0.00354
	2.26	**0.00114**
Goedert, Marion W.	--	--
(See Covell, et al.)		
Golden State Water Company,	**5,773.00**	**2.92105**
San Gabriel Valley District		
(Formerly Southern California Water Company)		
Graham, William	--	--
(Formerly part of Covell, et al.)		
(Transferred interest in Covell et al. to Jobe, Darr)[2]		
Graveline, George Wayne and Alexis June, Trust[3]		
(Successor to:		
South Covina Water Service	203.00	0.10271
Garnier, Camille A., Deceased, Estate of	8.30	0.00420
Garnier, Janus)[2]	5.30	0.00268
(Transferred to California Domestic Water Company)[2]	-216.60	-0.10959
	0.00	**0.00000**
Green, Walter	**71.70**	**0.03628**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Grizzle, Lissa B.	184.00	0.09310
(Held in common with Grizzle, Mervin A.;		
Wilson, Harold R.; Wilson, Sarah C.)		
(Transferred to City of Whittier)[2]	-184.00	-0.09310
	0.00	**0.00000**
Grizzle, Mervin A.	--	--
(See Grizzle, Lissa B.)		
Hansen, Alice	**0.75**	**0.00038**
Hanson Aggregates West, Inc. [3]		
(Successor to:		
Livingston-Graham, Inc.	1,824.40	0.92312
Sully-Miller Contracting Company)[2]	489.77	0.24782
	2,314.17	**1.17094**
Hartley, David[3]	**0.00**	**0.00000**
Hauch, Edward	--	--
(See Fisher, Russell)		
Heinrich, Carolyn[3]		
(Successor to Anderson Family Marital Trust)[2]	25.08	0.01269
	25.08	**0.01269**
Hemlock Mutual Water Company	**166.00**	**0.08399**
Hollenbeck Street Water Company	**0.00**	**0.00000**
(Transferred to Suburban Water Systems)[1]		
Hughes Development Corporation[3]		
(Successor to Base Line Water Company)[2]	430.20	0.21767
(Transferred to:		
San Gabriel County Water District	-400.00	-0.20239
San Gabriel County Water District)[2]	-30.20	-0.01528
	0.00	**0.00000**
Hunter, Lloyd F.[3]		
(Successor to Wade, R.)[2]	4.40	0.00223
(Transferred to Covina Irrigating Company)[2]	-4.40	-0.00223
	0.00	**0.00000**
Hydro-Conduit Corporation	**0.00**	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Industry Waterworks System, City of[3]		
(Successor to Cross Water Company)[2]	1,103.00	0.55810
	1,103.00	**0.55810**
Industry Properties, Ltd.		
(Successor to A & E Plastik Pak Co., Inc.)[1]	73.50	0.03719
(Transferred to California Domestic Water Co.)[2]	-73.50	-0.03719
	0.00	**0.00000**
Irwindale, City of[3]		
(Successor to United Concrete Pipe Corporation)[2]	376.00	0.19025
	376.00	**0.19025**
J. F. Isbell Estate, Inc.	8.36	0.00423
(Transferred to Andrade, Macario and	-8.36	-0.00423
Consuelo; and Andrade, Robert and Jayne)[2]	**0.00**	**0.00000**
Jerris, Helen[3]	--	--
(See Polopolus, et al.)		
Jobe, Darr[3]	--	--
(Formerly part of Covell, et al.)		
(Successor to:		
Gilkerson, Frank B. interest in Covell et al.		
Graham, William interest in Covell et al.)[2]		
(Transferred interest in Covell et al. to Tate, Phillip G. and Sieglinde A.)[2]		
Kirklen Family Trust[3]	375.00	0.18974
(Formerly Kirklen, Dawn L.)		
(Held in common with Kirklen, William R.)		
(Successor to San Dimas-La Verne	62.50	0.03162
Recreational Facilities Authority)[2]		
(Transferred to		
Maggiore, Valarie; Fox, Crystal; and Kirklen, Jeffery)[2]	-437.50	-0.22136
	0.00	**0.00000**
Kirklen, Dawn L.	--	--
(See Kirklen Family Trust)		
Kirklen, Jeffery[3]	**145.84**	**0.07379**
(Successor to Maggiore, Valarie; Fox, Crystal; and Kirklen, Jeffery)[2]		
Kirklen, William R.	--	--
(See Kirklen, Dawn L.)		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Kiyan Farms	30.00	0.01518
(Formerly Kiyan, Hideo)		
(Transferred to West Covina Venture, Ltd.)[2]	-30.00	-0.01518
	0.00	**0.00000**
Kiyan, Hideo	--	--
(See Kiyan Farms)		
(Held in common with Kiyan, Hiro)		
Kiyan, Hiro	--	--
(See Kiyan, Hideo)		
Knight, Kathryn M.[3]		
(Successor to Knight, William)[2]	227.88	0.11530
(Transferred to Knight, William)[2]	-227.88	-0.11530
	0.00	**0.00000**
Knight, William	227.88	0.11530
(Transferred to Knight, Kathryn M.)[2]	-227.88	-0.11530
(Successor to Knight, Kathryn M.)[2]	227.88	0.11530
	227.88	**0.11530**
Lakin, Kelly R.[3]		
(See Covell, et al.)		
(Successor to Covell, et al.)[2]	9.26	0.00468
(Transferred to:		
Covina Irrigating Co.	-6.03	-0.00305
Covina Irrigating Co.)[2]	-3.23	-0.00163
	0.00	**0.00000**
Lakin, Kendall R.[3]	--	--
(See Covell, et al.)		
Landeros, John	**0.75**	**0.00038**
La Grande Source Water Company	**0.00**	**0.00000**
(Transferred to Suburban Water Systems)[1]		
Lang, Frank	**0.00**	**0.00000**
(Transferred to San Dimas-La Verne Recreational Facilities Authority)[1]		
La Puente Cooperative Water Co.	**0.00**	**0.00000**
(Transferred to Suburban Water Systems)[1]		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
La Puente Valley County Water District	1,097.00	0.55507
(Successor to El Encanto Properties)[2]	33.40	0.01690
	1,130.40	**0.57197**
La Verne, City of	250.00	0.12650
(Successor to Fruit Street Water Co.)[2]	105.71	0.05349
(Transferred to Covina Irrigating Co.)[2]	-355.71	-0.17999
	0.00	**0.00000**
Lee, Paul M. and Ruth A.; Nasmyth, Virginia; Nasmyth, John[3]	**0.00**	**0.00000**
Little John Dairy	**0.00**	**0.00000**
Livingston-Graham, Inc.	1,824.40	0.92312
(Transferred to Hanson Aggregates West, Inc.)[2]	-1,824.40	-0.92312
	0.00	**0.00000**
Los Flores Mutual Water Company	26.60	0.01346
(Transferred to City of Monterey Park)[2]	-26.60	-0.01346
	0.00	**0.00000**
Loucks, David	**3.00**	**0.00152**
Lovelady, June G., Trustee[3]		
(Successor to White, June G., Trustee of the June G. White Share of the Garnier Trust)[2]	185.50	0.09386
	185.50	**0.09386**
Loyola Marymount University[3]		
(Successor to George A.V. Dunning Trust)[2]	324.00	0.16394
(Transferred to City of Glendora)[2]	-324.00	-0.16394
	0.00	**0.00000**
Maggiore, Valarie[3]		
(Successor to Maggiore, Valarie; Fox, Crystal; and Kirklen, Jeffrey)[2]	**145.83**	**0.07379**
Maggiore, Valarie; Fox, Crystal; and Kirklen, Jeffery[3]		
(Successor to Kirklen Family Trust)[2]	437.50	0.22136
(Transferred to:		
(Maggiore, Valarie;	-145.83	-0.07379
Kirklen, Jeffrey;	-145.84	-0.07379
Fox Family Trust, Michael Edward Fox	-145.83	-0.07378
and Crystal Marie Fox, Trustees)[2]	**0.00**	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Manning Bros. Rock & Sand Co.	328.00	0.16596
(Transferred to Conrock Company)[2]	-328.00	-0.16596
	0.00	**0.00000**
Maple Water Company	118.50	0.05996
(Transferred to Southwest Water Co.)[2]	-118.50	-0.05996
	0.00	**0.00000**
Martinez, Frances Mercy	**0.75**	**0.00038**
(Held in common with Martinez, Jaime)		
Martinez, Jaime	--	--
(See Martinez, Frances Mercy)		
Massey-Ferguson Company	**0.00**	**0.00000**
McIntyre, William[3]		
(Successor to West Covina Venture, Ltd.)[2]	30.00	0.01518
(Transferred to Canyon Water Company)[2]	-1.00	-0.00051
	29.00	**0.01467**
Miller Brewing Company	111.01	0.05617
(Successor to:		
Maechtlen, Estate of J.J.	151.50	0.07666
Phillips, Alice B., et al.	50.00	0.02530
South Covina Water Service	300.00	0.15180
Woodland Farms	919.50	0.46526
Woodland, Richard)[2]	840.50	0.42528
(Transferred to Miller Breweries West, L.P.)[2]	-2,372.51	-1.20047
	0.00	**0.00000**
Miller Breweries West, L.P.[3]		
(Successor to Miller Brewing Company)[2]	2,372.51	1.20047
(Transferred to MillerCoors LLC)[2]	-2,372.51	-1.20047
	0.00	**0.00000**
MillerCoors LLC[3]		
(Successor to Miller Breweries West, L.P.)[2]	**2,372.51**	**1.20047**
Mission Gardens Mutual Water Company	96.96	0.04906
(Transferred to Gifford, Brooks, Jr.)[2]	-96.96	-0.04906
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Modern Accent Corporation		
(Successor to Crocker National Bank,	256.86	0.12997
Executor of the Estate of A. V. Handorf)[1]		
(Transferred to California Domestic Water Co.)[2]	-256.86	-0.12997
	0.00	**0.00000**
Monterey Park, City of	6,677.48	3.37870
(Successor to Los Flores Mutual Water Co.)[2]	26.60	0.01346
	6,704.08	**3.39216**
Munoz, Ralph E. [3]	**0.00**	**0.00000**
Murphy Ranch Mutual Water Company	223.23	0.11295
(Transferred to Southwest Suburban Water)[2]	-223.23	-0.11295
	0.00	**0.00000**
Namimatsu Farms	196.00	0.09917
(Transferred to California Cities Water Co.)[2]	-196.00	-0.09917
	0.00	**0.00000**
Nick Tomovich & Sons	**0.02**	**0.00001**
Nicholson Trust[3]		
(Successor to Beverly Acres	43.00	0.02176
Mutual Water Users Association)[2]		
(Transferred to:		
Nicholson Family Trust	-7.00	-0.00354
Nicholson Trust, Helene S.)[2]	-12.00	-0.00607
	24.00	**0.01215**
Nicholson Family Trust[3]		
(Successor to Nicholson Trust)[2]	7.00	0.00354
	7.00	**0.00354**
Nicholson Trust, Helene S.[3]		
(Successor to Nicholson Trust)[2]	12.00	0.00607
(Transferred to San Gabriel Valley Water Co.)[2]	-12.00	-0.00607
	0.00	**0.00000**
New Owl Rock Products[3]		
(Successor to Owl Rock Products Co.)[2]	715.60	0.36208
(Transferred to Robertson's Ready Mix, Ltd.)[2]	-715.60	-0.36208
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
No. 17 Walnut Place Mutual Water Co.	21.50	0.01088
(Transferred to San Gabriel Valley Water Co.)[2]	-21.50	-0.01088
	0.00	**0.00000**
Orange Production Credit Association[3]	**0.00**	**0.00000**
Owl Rock Products Co.	715.60	0.36208
(Transferred to New Owl Rock Products)[2]	-715.60	-0.36208
	0.00	**0.00000**
Pacific Rock & Gravel Co.	408.00	0.20644
(Transferred to:	-208.00	-0.10524
City of Whittier,	-200.00	-0.10120
Rose Hills Memorial Park Association)[2]	**0.00**	**0.00000**
Park Water Company	184.01	0.09311
(Transferred to Valley County Water District)[2]	-184.01	-0.09311
	0.00	**0.00000**
Parton Family Trust[3]	46.20	0.02338
(Formerly Via, H., Trust of)[2]		
(Transferred to San Gabriel Valley Water Company)[2]	-46.20	-0.02338
	0.00	**0.00000**
Pellissier Irrevocable QTIP Trust, et al, Laurence R., Co-tenancy of [3]		
(Successor to Faix, Ltd)[2]	6,490.00	3.28384
	6,490.00	**3.28384**
Penn, Margaret[3]	--	--
(See Polopolus, et al.)		
Pico County Water District	**0.75**	**0.00038**
Polopolus, John[3]	--	--
(See Polopolus, et al.)		
Polopolus, et al.[3]		
(Successor to Polopolus, Steve)[2]	22.50	0.01138
(Held in common with Chronis, Christine;	**22.50**	**0.01138**
Jerris, Helen; Penn, Margaret; Polopolus, John)		
Polopolus, Steve	22.50	0.01138
(Transferred to Polopolus, et al.)[2]	-22.50	-0.01138
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Rados, Alexander	**43.00**	**0.02176**
(Held in common with Rados, Stephen and Rados, Walter)		
Rados, Stephen	--	--
(See Rados, Alexander)		
Rados, Walter	--	--
(See Rados, Alexander)		
Richwood Mutual Water Company	192.60	0.09745
(Transferred to San Gabriel Valley Water Company)[2]	-192.60	-0.09745
	0.00	**0.00000**
Rincon Ditch Company	628.00	0.31776
(Transferred to Workman Mill	-628.00	-0.31776
Investment Company)[2]	**0.00**	**0.00000**
Rincon Irrigation Company	314.00	0.15888
(Transferred to Workman Mill	-314.00	-0.15888
Investment Company)[2]	**0.00**	**0.00000**
Rio Hondo Memorial Foundation, The[3]	--	--
(Formerly Rose Hills Foundation, The)		
(See Rose Hills Foundation, The)		
Rittenhouse, Catherine	**0.00**	**0.00000**
(Transferred to Covell, Ralph)[1]		
Rittenhouse, James	**0.00**	**0.00000**
(Transferred to Covell, Ralph)[1]		
Robertson's Ready Mix, Ltd.[3]		
(Successor to New Owl Rock Products)[2]	715.60	0.36208
(Transferred to San Gabriel County Water District)[2]	-715.60	-0.36208
	0.00	**0.00000**
Rose Hills Memorial Park Association	--	--
(See Rose Hills Foundation, The)		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Rose Hills Foundation, The[3]		
(Formerly Rose Hills Memorial Park Association)		
(See Rio Hondo Memorial Foundation, The)		
(Formerly Rio Hondo Memorial Foundation, The)	594.00	0.30055
(Successor to Pacific Rock & Gravel Co.)[2]	200.00	0.10120
(Transferred to:		
Workman Mill Investment Co.	-594.00	-0.30055
Workman Mill Investment Co.)[2]	-200.00	-0.10120
	0.00	**0.00000**
Rosemead Development, Ltd.[3]		
(Successor to Thompson, Earl W.)[2]	1.00	0.00051
	1.00	**0.00051**
Rurban Homes Mutual Water Company	**217.76**	**0.11018**
Ruth, Roy	**0.75**	**0.00038**
San Dimas Golf Inc. DBA Via Verde County Club[3]	**0.00**	**0.00000**
San Dimas-La Verne Recreational Facilities Authority		
(Successor to Lang, Frank)[1]	62.50	0.03162
(Transferred to Kirklen, Dawn L. and William R.)[2]	-62.50	-0.03162
	0.00	**0.00000**
San Gabriel Country Club	**286.10**	**0.14476**
San Gabriel County Water District	4,250.00	2.15044
(Successor to:		
Hughes Development Corporation	400.00	0.20239
Hughes Development Corporation	30.20	0.01528
Robertson's Ready Mix, Ltd.)[2]	715.60	0.36208
	5,395.80	**2.73019**
San Gabriel Valley Municipal Water District	**0.00**	**0.00000**
Sawpit Farms, Limited	173.00	0.08754
(Transferred to:		
Eckis, Rolin	-123.00	-0.06224
Doyle and Madruga)[2]	-50.00	-0.02530
	0.00	**0.00000**
Schneiderman, Alan	--	--
(See Birenbaum, Max)		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Schneiderman, Lydia	--	--
(See Birenbaum, Max)		
Security Pacific National Bank,	38.70	0.01958
Co-trustee for the Estate of Winston F. Stoody		
(See Stoody, Virginia A.)		
(Transferred to City of Whittier)[2]	-38.70	-0.01958
	0.00	**0.00000**
Sierra La Verne Country Club[3]	**0.00**	**0.00000**
Sierra Madre, City of	**0.00**	**0.00000**
Sloan Ranches	129.60	0.06558
(Transferred to Cadway, Inc.)[2]	-129.60	-0.06558
	0.00	**0.00000**
Smith, Charles[3]	**0.00**	**0.00000**
Snyder, Esther[3]		
(Successor to Covell, et al)[2]	18.51	0.00937
(Transfered to Azusa Associates, LLC)[2]	-18.51	-0.00937
	0.00	**0.00000**
Snyder, Harry	--	--
(See Covell, et al.)		
Sonoco Products Company	**311.60**	**0.15766**
South Covina Water Service	992.30	0.50209
(Transferred to:		
Miller Brewing Company	-300.00	-0.15180
Anton C. and Anita Garnier Family Trust	-203.00	-0.10271
The George Wayne and Alexis June Graveline Trust	-203.00	-0.10271
The Estate of Camille A. Garnier, Deceased	-83.30	-0.04215
Garnier, Janus)[2]	-203.00	-0.10272
	0.00	**0.00000**
Southdown, Inc.[3]	--	--
(Formerly AZ-Two, Inc.)		
(See CEMEX California Aggregates, Inc.)		
Southern California Edison Company	155.25	0.07855
(Successor to Associated		
Southern Investment Company)[2]	16.50	0.00835
	171.75	**0.08690**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Southern California Water Company,	--	--
San Gabriel Valley District		
(See Golden State Water Company, San Gabriel Valley District)		
South Pasadena, City of	**3,567.70**	**1.80520**
Southwest Suburban Water	--	--
(See Suburban Water Systems)		
Southwest Water Company [3]		
(Successor to Maple Water Company)[2]	118.50	0.05996
	118.50	**0.05996**
Southwestern Portland Cement Company[3]		
(Successor to Azusa Western, Inc.)[2]	742.00	0.37544
(Transferred to American Sheds, Inc.)[2]	-742.00	-0.37544
	0.00	**0.00000**
Speedway 605, Inc.[3]	**0.00**	**0.00000**
Standard Oil Company of California	--	--
(See Chevron U.S.A.)		
Sterling Mutual Water Company	**120.00**	**0.06072**
Stoody, Virginia A., Co-trustee for the	--	--
Stoody, Winston F., Estate of	--	--
(See Security Pacific National Bank, Co-trustee)		
Suburban Water Systems	20,462.47	10.35370
(Formerly Southwest Suburban Water)		
(Successor to:		
Hollenbeck Street Water Company[1]	646.39	0.32706
La Grande Source Water Company[1]	1,078.00	0.54545
La Puente Cooperative Water Co.[1]	1,210.90	0.61270
Valencia Valley Water Company[1]	651.50	0.32965
Victoria Mutual Water Company[1]	469.60	0.23761
Cal Fin[2]	118.10	0.05976
Murphy Ranch Mutual Water Co.[2])	223.23	0.11295
	24,860.19	**12.57888**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Sully-Miller Contracting Company[3]		
(Successor to Blue Diamond Concrete Materials Div., The Flintkote Company)[2]	1,399.33	0.70804
(Transferred to:		
United Rock Products Corporation	-909.56	-0.46022
Hanson Aggregates West, Inc.)[2]	-489.77	-0.24782
	0.00	**0.00000**
Sunny Slope Water Company	**2,228.72**	**1.12770**
Tate, Phillip G. and Sieglinde A.[3]	**57.83**	**0.02926**
(See Covell,et al.)		
(Successor to Jobe, Darr interest in Covell, et al.)[2]		
(Successor to Covell, et al.)[2]		
Taylor Herb Garden	6.00	0.00304
(Transferred to Covina Irrigating Company)[2]	-6.00	-0.00304
	0.00	**0.00000**
Texaco, Inc. (Chevron U.S.A., Inc.)	50.00	0.02530
(Transferred to Durfee Property, LLC)[2]	-50.00	-0.02530
	0.00	**0.00000**
Thompson, Earl W.	1.00	0.00051
(Held in common with Thompson, Mary)		
(Transferred to Rosemead Development, Ltd.)[2]	-1.00	-0.00051
	0.00	**0.00000**
Thompson, Mary	--	--
(See Thompson, Earl W.)		
Tran, Hieu[3]	**0.00**	**0.00000**
Tyler Nursery	**3.21**	**0.00162**
United Concrete Pipe Corporation	376.00	0.19025
(Transferred to Irwindale, City of)[2]	-376.00	-0.19025
	0.00	**0.00000**
United Rock Products Corporation[3]		
(Successor to:		
Sully Miller Contracting Company)[2]	909.56	0.46022
	909.56	**0.46022**
USA Waste of California, Inc.[3]		
(Successor to American Sheds, Inc.)[2]	742.00	0.37544
(Transferred to Aqua Capital Management LP)[2]	-742.00	-0.37544
	0.00	**0.00000**

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
U.S. Pipe & Foundry Company[3]	--	--
(See United Concrete Pipe Corporation)		
Valencia Heights Water Company	861.00	0.43565
(Successor to Crown City Plating Company)[2]	200.00	0.10120
	1,061.00	**0.53685**
Valencia Valley Water Company	**0.00**	**0.00000**
(Transferred to Suburban Water Systems)[1]		
Vallecito Water Company	2,867.00	1.45066
(Transferred to San Gabriel Valley	-2,867.00	-1.45066
Water Company)[2]	**0.00**	**0.00000**
Valley County Water District	5,775.00	2.92206
(Formerly Baldwin Park County Water District)		
(Successor to Park Water Company)[2]	184.01	0.09311
	5,959.01	**3.01517**
Valley Crating Company	**0.00**	**0.00000**
Valley View Mutual Water Company	**616.00**	**0.31169**
Via, H.	--	--
(See Via, H., Trust of)		
Via, H., Trust of	--	--
(Formerly Via, H.)		
(See Parton Family Trust)		
Victoria Mutual Water Company		
(Transferred to Suburban Water Systems)[1]	**0.00**	**0.00000**
Vietnamese American Buddhist Temple Congregation[3]	**0.00**	**0.00000**
Vulcan Materials Company		
(Formerly CalMat)		
(Successor to Manning Bros. Rock & Sand Co.)[2]	1,793.35	0.90740
	1,793.35	**0.90740**
Wade, R.	4.40	0.00223
(Transferred to Hunter, Lloyd F.)[2]	-4.40	-0.00223
	0.00	**0.00000**
Ward Duck Company	--	--
(See Woodland Farms, Inc.)		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Warren, Clyde	--	--
(See Fisher, Russell)		
W. E. Hall Company	0.20	0.00010
(Transferred to City of El Monte)[2]	-0.20	-0.00010
	0.00	**0.00000**
West Covina Venture, Ltd.[3]		
(Successor to Kiyan Farms)[2]	30.00	0.01518
(Transferred to McIntyre, William)[2]	-30.00	-0.01518
	0.00	**0.00000**
White, June G., Trustee of the June G. White Share of the Garnier Trust[3]		
(Successor to Denton, Kathryn W., Trustee for the San Jose Ranch Company)[2]	185.50	0.09386
(Transferred to Lovelady, June G., Trustee)[2]	-185.50	-0.09386
	0.00	**0.00000**
Whittier, City of	7,620.23	3.85572
(Successor to:		
Grizzle, Lissa B.	184.00	0.09310
Pacific Rock and Gravel Co.	208.00	0.10524
Security Pacific National Bank, Co-trustee for the Estate of Winston F. Stoody	38.70	0.01958
El Monte Union High School District	16.20	0.00820
Gifford, Brooks, Jr.	198.25	0.10031
Birenbaum, Max)[2]	6.00	0.00304
	8,271.38	**4.18519**
Wigodsky, Bernard	--	--
(See Birenbaum, Max)		
Wigodsky, Estera	--	--
(See Birenbaum, Max)		
Wilmott, Erma M.	**0.75**	**0.00038**
(Formerly Comby, Erma M.)		
Wilson, Harold R.	--	--
(See Grizzle, Lissa B.)		
Wilson, Sarah C.	--	--
(See Grizzle, Lissa B.)		

PUMPER	PRESCRIPTIVE PUMPING ACRE-FEET	PUMPER'S SHARE %
Woodland Farms, Inc.	--	--
(See 6W Farms, Inc.)		
(Formerly Ward Duck Company)		
Woodland, Frederick G.[3]	--	--
Woodland, Richard[3]		
(Successor to Bahnsen & Beckman Ind., Inc.)[2]	840.50	0.42528
(Transferred to Miller Brewing Company)[2]	-840.50	-0.42528
(Successor to 6W Farms, Inc.)[2]	297.90	0.15073
(Transferred to Aqua Capital Management LP)[2]	-297.90	-0.15073
	0.00	**0.00000**
Workman Mill Investment Company[3]		
(Successor to:		
Rincon Ditch Company	628.00	0.31776
Rincon Irrigation Company	314.00	0.15888
Rose Hills Memorial Park Association	594.00	0.30055
Rose Hills Foundation, The)[2]	200.00	0.10120
	1,736.00	**0.87839**
Wright, Darrell A., Wright, Merle M. & Carlson, Jeanne W.[3]		
(Successor to Burbank Development Co.)[2]	50.65	0.02563
(Transferred to San Gabriel Valley Water Company)[2]	-50.65	-0.02563
	0.00	**0.00000**
Totals for Exhibit "D"	**129,765.87**	**65.65953**
Totals for Exhibit "E"	**67,868.56**	**34.34047**
GRAND TOTALS	**197,634.43**	**100.00000**

1/ Permanent transfer of rights as recorded at entry of Judgment.
2/ Permanent transfer of rights after entry of Judgment.
3/ Intervenor after Judgment.

EXHIBIT "E"

TABLE SHOWING PRODUCTION RIGHT OF EACH INTEGRATED PRODUCER AS OF JUNE 21, 2012

INTEGRATED PRODUCER	DIVERSION COMPONENT ACRE-FEET	PRESCRIPTIVE PUMPING COMPONENT ACRE-FEET	PUMPING COMPONENT SHARE %
Aqua Capital Management LP[3]			
(Successor to:			
Covell, Ralph	2.12	0.00	0.00000
Covell et al.	0.00	16.19	0.00820
Azusa Associates, LLC	0.00	18.51	0.00937
USA Waste of California, Inc.	0.00	742.00	0.37544
Richard Woodland)[2]	0.00	297.90	0.15073
	2.12	**1,074.60**	**0.54374**
Azusa, City of	0.00	3,655.99	1.84988
(Successor to Monrovia Nursery Company)[2]	363.00	0.00	0.00000
	363.00	**3,655.99**	**1.84988**
Azusa Agricultural Water Company	1,000.00	1,732.20	0.87647
(Transferred to:			
Azusa Valley Water Company	-830.00	-1,437.73	-0.72747
Azusa Valley Water Company)[2]	-170.00	-294.47	-0.14900
	0.00	**0.00**	**0.00000**
Azusa Foot-Hill Citrus Company	718.50	0.00	0.00000
(Transferred to Monrovia Nursery Company)[2]	-718.50		
	0.00	**0.00**	**0.00000**
Azusa Valley Water Company	2,422.00	8,274.00	4.18652
(Successor to:			
Azusa Agricultural Water Company	830.00	1,437.73	0.72747
Azusa Agricultural Water Company)[2]	170.00	294.47	0.14900
	3,422.00	**10,006.20**	**5.06299**
Brierly, Susan K.[3]			
(Successor to Monrovia Nursery Company)[2]	24.00	0.00	0.00000
(Transferred to Miles R. Rosedale)[2]	-8.00		
	16.00	**0.00**	**0.00000**
California-American Water Company (Duarte System)	**1,672.00**	**3,649.00**	**1.84634**

INTEGRATED PRODUCER	DIVERSION COMPONENT ACRE-FEET	PRESCRIPTIVE PUMPING COMPONENT ACRE-FEET	PUMPING COMPONENT SHARE %
California Cities Water Company (See Southern California Water Company, San Dimas District)	--	--	--
Covina Irrigating Company (Successor to:	2,514.00	4,140.00	2.09478
City of Covina		1,734.00	0.87737
City of Covina		300.00	0.15179
Taylor Herb Garden		6.00	0.00304
La Verne, City of		355.71	0.17999
Davidson Optronics, Inc.		22.00	0.01113
Goedert, Lillian		7.00	0.00354
Lakin, Kelly R.		6.03	0.00305
Hunter, Lloyd F.		4.40	0.00223
Lakin, Kelly R.)[2]		3.23	0.00163
	2,514.00	**6,578.37**	**3.32855**
CV Glendora 3 Site, LLC)[3] (Successor to:			
Rosedale, Miles R.	184.00	0.00	0.00000
Monrovia Nursery Company)[2]	10.00	0.00	0.00000
	194.00	**0.00**	**0.00000**
DeFalco, John and Carole[3] (Successor to Nickowitz, at al.)[2]	1.49	0.00	0.00000
	1.49	**0.00**	**0.00000**
Glendora, City of (Successor to:	17.00	8,258.00	4.17842
Maechtlen, Estate of J. J.		150.00	0.07590
Maechtlen, Trust of P. A.		50.00	0.02530
Ruebhausen, Arline	18.34		
Glendora Unified High School District		99.00	0.05009
Loyola Marymount University		324.00	0.16394
Clayton Manufacturing Company)[2]		511.80	0.25896
	35.34	**9,392.80**	**4.75261**
Golden State Water Company, San Dimas District[3] (Formerly California Cities Water Company)	500.00	3,242.53	1.64067
(Successor to Namimatsu Farms)[2]		196.00	0.09917
	500.00	**3,438.53**	**1.73984**

INTEGRATED PRODUCER	DIVERSION COMPONENT ACRE-FEET	PRESCRIPTIVE PUMPING COMPONENT ACRE-FEET	PUMPING COMPONENT SHARE %
JUH#1[3]			
(Successor to Monrovia Nursery Company)[2]	48.00	0.00	0.00000
(Transferred to Miles R. Rosedale)[2]	-16.00		
	32.00	**0.00**	**0.00000**
Los Angeles, County of	**310.00**	**3,721.30**	**1.88292**
Maechtlen, Estate of J. J., Trustee for the Estate of P.A. Maechtlen	0.00	301.50	0.15256
(Transferred to:			
City of Glendora		-150.00	-0.07590
Miller Brewing Company)[2]		-151.50	-0.07666
	0.00	**0.00**	**0.00000**
Maechtlen, Trust of J. J.[3]	1.49	0.00	0.00000
(Transferred to Otting, David; Otting, Larry; and Webster, Scott)[2]	-1.49	0.00	0.00000
(Successor to Otting, David; Otting, Larry; and Webster, Scott)[2]	1.49	0.00	0.00000
(Transferred to Nikowitz, et al)[2]	-1.49	0.00	0.00000
	0.00	**0.00**	**0.00000**
Maechtlen, Trust of P. A.[3]	0.50	100.50	0.05085
(Transferred to:			
City of Glendora		-50.00	-0.02530
Alice B. Phillips, et al.)[2]	-0.50	-50.50	-0.02555
	0.00	**0.00**	**0.00000**
The Metropolitan Water District of of Southern California	**9.59**	**165.00**	**0.08349**
Monrovia, City of	1,098.00	5,042.22	2.55129
(Successor to:			
Eckis, Rollin		123.00	0.06224
City of Arcadia)[2]		951.00	0.48119
	1,098.00	**6,116.22**	**3.09472**

INTEGRATED PRODUCER	DIVERSION COMPONENT ACRE-FEET	PRESCRIPTIVE PUMPING COMPONENT ACRE-FEET	PUMPING COMPONENT SHARE %
Monrovia Nursery Company	239.50	0.00	0.00000
(Successor to Azusa Foothill	718.50	0.00	0.00000
Citrus Company)[2]			
(Transferred:			
City of Azusa	-363.00	0.00	0.00000
Brierly, Susan K.	-24.00	0.00	0.00000
Rosedale, Miles R.	-191.00	0.00	0.00000
VanLandingham, Richard	-21.00	0.00	0.00000
JUH#1	-48.00	0.00	0.00000
Rosedale, Lance	-32.00	0.00	0.00000
CV Glendora 3 Site, LLC)[2]	-10.00	0.00	0.00000
	269.00	**0.00**	**0.00000**
Nikowitz, et al[3]			
(Successor to Maechtlen, Trust of J. J.)[2]	1.49	0.00	0.00000
(Held in common with Nikowitz, Sheryl M. and Walter P.; Pellegrino, Mark and Roxanne; Verdegem, Thomas and Sandra B.)			
(Transferred to DeFalco, John and Carole)[2]	-1.49	0.00	0.00000
	0.00	**0.00**	**0.00000**
Otting, David; Otting, Larry; and Webster, Scott[3]			
(Successor to Maechtlen, Trust of J. J.)[2]	1.49	0.00	0.00000
(Transferred to Maechtlen, Trust of J. J.)[2]	-1.49	0.00	0.00000
	0.00	**0.00**	**0.00000**
Phillips, Alice B., et al.[3]			
(Successor to Maechtlen, Trust of P. A.)[2]	0.50	50.50	0.02555
(Transferred to Miller Brewing Co.)[2]		-50.00	-0.02530
	0.50	**0.50**	**0.00025**
Rosedale, Lance[3]			
(Successor to Monrovia Nursery Company)[2]	**32.00**	**0.00**	**0.00000**
Rosedale, Miles R.[3]			
(Successor to Monrovia Nursery Company)[2]	191.00	0.00	0.00000
(Transferred to CV Glendora 3 Site, LLC)[2]	-184.00	0.00	0.00000
(Successor to:			
Susan K. Brierly	8.00	0.00	0.00000
JUH#1)[2]	16.00	0.00	0.00000
	31.00	**0.00**	**0.00000**

INTEGRATED PRODUCER	DIVERSION COMPONENT ACRE-FEET	PRESCRIPTIVE PUMPING COMPONENT ACRE-FEET	PUMPING COMPONENT SHARE %
San Gabriel Valley Water Company	0.00	16,659.00	8.42920
(Successor to:			
Vallecito Water Co.		2,867.00	1.45066
No. 17 Walnut Place Mutual Water Co.		21.50	0.01088
Cedar Avenue Mutual Water Company		121.10	0.06127
Beverly Acres Mutual Water Users Association		50.00	0.02530
Richwood Mutual Water Company		192.60	0.09745
Nicholson Trust, Helene S.		12.00	0.00607
Durfee Property, LLC		50.00	0.02530
Wright, Darrell A., Wright, Merle M. and Carlson, Jeanne W.		50.65	0.02563
Parton Family Trust		46.20	0.02338
Maddock, A.G.)[2]	3.40		
	3.40	**20,070.05**	**10.15514**
VanLandingham, Richard[3]			
(Successor to Monrovia Nursery Company)[2]	21.00	0.00	0.00000
TOTAL	**10,526.44**	**67,868.56**	**34.34047**

1/ Permanent transfer of rights as recorded at entry of Judgment.
2/ Permanent transfer of rights after entry of Judgment.
3/ Intervenor after Judgment.

EXHIBIT "F"

TABLE SHOWING
SPECIAL CATEGORY RIGHTS

PARTY	NATURE OF RIGHT
*The Metropolitan Water District of Southern California *Transferred to the San Gabriel Valley Protective Association 05/07/1996.	Morris Reservoir Storage and Withdrawal (a) A right to divert, store and use San Gabriel River Water, pursuant to Permit No. 7174. (b) Prior and paramount right to divert 72 acre-feet annually to offset Morris Reservoir evaporation and seepage losses and to provide the water supply necessary for presently existing incidental Morris Dam facilities.
Los Angeles County Flood Control District (now Los Angeles County Department of Public Works)	Puddingstone Reservoir Prior Prescriptive right to divert water from San Dimas Wash for storage in Puddingstone Reservoir in quantities sufficient to offset annual evaporation and seepage losses of the reservoir at approximate elevation 942.

EXHIBIT "G"

TABLE SHOWING NON-CONSUMPTIVE USERS

PARTY	NATURE OF RIGHT
Covina Irrigating Company Azusa Valley Water Company Azusa Agricultural Water Co. Azusa Foot-Hill Citrus Co. Monrovia Nursery	"Committee-of-Nine" Spreading Right To continue to divert water from the San Gabriel River pursuant to the 1888 Settlement, and to spread in spreading grounds within the Basin all water thus diverted without the right to recapture water in excess of said parties' rights as adjudicated in exhibit "E".
California-American Water Company (Duarte System)	Spreading Right To continue to divert water from the San Gabriel River pursuant to the 1888 Settlement, and to continue to divert water from Fish Canyon and to spread said waters in its spreading grounds in the Basin without the right to recapture water in excess of said party's rights as adjudicated in Exhibit "E".
City of Glendora	Spreading Right To continue to spread the water of Big and Little Dalton Washes, pursuant to License No. 2592 without the right to recapture water in excess of said party's rights as adjudicated in Exhibit "E".
San Gabriel Valley Protective Association	Spreading Right To continue to spread San Gabriel River water pursuant to License Nos. 9991 and 12,209, without the right to recapture said water.
Golden State Water Company (formerly *California Cities Water Company*)	Spreading Right To continue to spread waters from San Dimas Wash without the right to recapture water in excess of said party's rights as adjudicated in Exhibit "E".
Los Angeles County Flood Control District	Temporary storage of storm flow for regulatory purposes; Spreading and conservation for general benefit in streambeds, reservoirs and spreading grounds without the right to recapture said water. Maintenance and operation of dams and other flood control works.

EXHIBIT "H"

WATERMASTER OPERATING CRITERIA

1. **Basin Storage Capacity.** The highest water level at the end of a water year during the past 40 years was reached at the Key Well on September 30, 1944 (elevation 316). The State of California, Department of Water Resources, estimates that as of that date, the quantity of fresh water in storage in the Basin was approximately 8,600,000 acre-feet. It is also estimated by said Department that by September 30, 1960, the quantity of fresh water in storage had decreased to approximately 7,900,000 acre-feet (elevation 237 at the Key Well).

The lowest water level at the end of a water year during the past 40 years was reached at the Key Well on September 30, 1965 (elevation 209). It is estimated that the quantity of fresh water in storage in the Basin on that date was approximately 7,700,000 acre-feet.

Thus, the maximum utilization of Basin storage was approximately 900,000 acre-feet, occurring between September 30, 1944, and September 30, 1965 (between elevations 316 and 209 at the Key Well). This is not to say that more than 900,000 acre-feet of storage space below the September 30, 1944 water levels cannot be utilized. However, it demonstrates that pumpers have deepened their wells and lowered their pumps so that such 900,000 acre-feet of storage can be safely and economically utilized.

The storage capacity of the Basin between elevations of 200 and 250 at the Key Well represents a usable volume of approximately 400,000 acre-feet of water.

2. **Operating Safe Yield and Spreading.** Watermaster in determining Operating Safe Yield and the importation of Replacement Water shall be guided by water level elevations in the Basin. He shall give recognition to, and base his operations on, the following general objectives insofar as practicable and subject to Section 47 of the Judgment (Amended 6/21/12):

(a) The replenishment of ground water from sources of supplemental water should not cause excessively high levels of ground water and such replenishment should not cause undue waste of local water supplies.

(b) Certain areas within the Basin are not at the present time capable of being recharged with supplemental water. Efforts should be made to provide protection to such areas from excessive ground water lowering either through the "in lieu" provisions of the

Judgment or by other means.

(c) Watermaster shall consider and evaluate the long-term consequences on ground water quality, as well as quantity, in determining and establishing Operating Safe Yield. Recognition shall be given to the enhancement of ground water quality insofar as practicable, especially in the area immediately upstream of Whittier Narrows where degradation of water quality may occur when water levels at the Key Well are maintained at or below elevation 200.

(d) Watermaster shall take into consideration the comparative costs of supplemental and Make-up Water in determining the savings on a present value basis of temporary or permanent lowering or raising of water levels and other economic data and analyses indicating both the short-term and long-term propriety of adjusting Operating Safe Yield in order to derive optimum water levels during any period. Watermaster shall utilize the provisions in the Long Beach Judgment which will result in the least cost of delivering Make-up Water.

3. **Replacement Water -- Sources and Recharge Criteria.** The following criteria shall control purchase of Replacement Water and Recharge of the Basin by Watermaster.

(a) **Responsible Agency From Which to Purchase.** Watermaster, in determining the Responsible Agency from which to purchase supplemental water for replacement purposes, shall be governed by the following:

(1) **Place of Use of Water** which is used primarily within the Basin or by cities within San Gabriel District in areas within or outside the Basin shall control in determining the Responsible Agency. For purposes of this subparagraph, water supplied through a municipal water system which lies chiefly within the Basin shall be deemed entirely used within the Basin; and

(2) **Place of production of water** shall control in determining the Responsible Agency as to water exported from the Basin, except as to use within San Gabriel District.

Any Responsible Agency may, at the request of Watermaster, waive its right to act as the source for such supplemental water, in which case Watermaster shall be free to purchase such water from the

remaining Responsible Agencies which are the most beneficial and appropriate sources; provided, however, that a Responsible Agency shall not authorize any sale of water in violation of the California Constitution.

(b) **Water Quality.** Watermaster shall purchase the best quality of supplemental water available for replenishment of the Basin, pursuant to subsection (a) hereof.

(c) **Reclaimed Water.** It is recognized that the technology and economic and physical necessity for utilization of reclaimed water is increasing. The purchase of reclaimed water in accordance with the Long Beach Judgment to satisfy the Make-up Obligation is expressly authorized. At the same time, water quality problems involved in the reuse of water within the Basin pose serious questions of increased costs and other problems to the pumpers, their customers and all water users. Accordingly, Watermaster is authorized to gather information, make and review studies, and make recommendations on the feasibility of the use of reclaimed water for replacement purposes; provided that no reclaimed water shall be recharged in the Basin by Watermaster without the prior approval of the court, after notice to all parties and hearing thereon.

(d) **Purchased Water Plan.** On or before November 1 of each year, Watermaster shall prepare and distribute to the Responsible Agencies a three-year projection of its Supplemental Water purchases from each agency. Watermaster shall, to the extent feasible, coordinate the tentative schedule for delivery and payment of those purchases with each agency. (Amended 6/21/12)

4. **Replacement Assessment Rates.** The Replacement Assessment rates may be in an amount calculated to allow Watermaster to purchase more than one acre-foot of Supplemental Water for each acre-foot of excess Production to which such Assessment applies, when such purchases are prudent in order to secure necessary Supplemental Water supplies for the benefit of the Basin and parties. In accordance with Rules and Regulations adopted by Watermaster, to the extent Watermaster purchases more than one acre-foot of Supplemental Water for each acre-foot of excess Production to which such Assessment applies, a credit shall be issued to the affected Producers at the time such excess water is purchased. (Amended 6/21/12)

EXHIBIT "J"

PUENTE NARROWS AGREEMENT

THIS AGREEMENT is made and entered into as of the 8th day of May, 1972, by and between PUENTE BASIN WATER AGENCY, herein called "Puente Agency", and UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT, herein called "Upper District".

A. RECITALS

1. Puente Agency. Puente Agency is a joint powers agency composed of Walnut Valley Water District, herein called "Walnut District", and Rowland Area County Water District, herein called "Rowland District". Puente Agency is formed for the purpose of developing and implementing a ground water basin management program for Puente Basin. Pursuant to said purpose, said Agency is acting as a representative of its member districts and of the water users and water right claimants therein in the defense and maintenance of their water rights within Puente Basin.

2. Upper District. Upper District is a municipal water district overlying a major portion of the Main San Gabriel Basin. Upper District is plaintiff in the San Gabriel Basin Case, wherein it seeks to adjudicate rights and implement a basin management plan for the Main San Gabriel Basin.

3. Puente Basin is a ground water basin tributary to the Main San Gabriel Basin. Said area was included within the scope of the San Gabriel Basin Case and substantially

all water rights claimants within Puente Basin were joined as defendants therein. The surface contribution to the Main San Gabriel Basin from Puente Basin is by way of the paved flood control channel of San Jose Creek, which passes through Puente Basin from the Pomona Valley area. Subsurface outflow is relatively limited and moves from the Puente Basin to the Main San Gabriel Basin through Puente Narrows.

4. Intent of Agreement. Puente Agency is prepared to assure Upper District that no activity within Puente Basin will hereafter be undertaken which will (1) interfere with surface flows in San Jose Creek, or (2) impair the subsurface flow from Puente Basin to the Main San Gabriel Basin. Walnut District and Rowland District, by operation of law and by express assumption endorsed hereon, assume the covenants of this agreement as a joint and several obligation. Based upon such assurances and the covenants hereinafter contained in support thereof, Upper District consents to the dismissal of all Puente Basin parties from the San Gabriel Basin Case. By reason of said dismissals, Puente Agency will be free to formulate a separate water management program for Puente Basin.

B. DEFINITIONS AND EXHIBITS

5. Definitions. As used in this Agreement, the following terms shall have the meanings herein set forth:

(a) Annual or Year refers to the fiscal year July 1 through June 30.

(b) Base Underflow. The underflow through

Puente Narrows which Puente Agency agrees to maintain, and on which accrued debits and credits shall be calculated.

(c) Make-up Payment. Make-up payments shall be an amount of money payable to the Watermaster appointed in the San Gabriel Basin Case, sufficient to allow said Watermaster to purchase replacement water on account of any accumulated deficit as provided in Paragraph 9 hereof.

(d) Puente Narrows. The subsurface geologic constriction at the downstream boundary of Puente Basin, located as shown on Appendix "B".

(e) Main San Gabriel Basin, the ground water basin shown and defined as such in Exhibit "A" to the Judgment in the San Gabriel Basin Case.

(f) San Gabriel Basin Case. Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al., L. A. Sup. Ct. No. 924128, filed January 2, 1968.

6. Appendices. Attached hereto and by this reference made a part hereof are the following appendices:

"A" -- Location Map of Puente Basin, showing major geographic, geologic, and hydrologic features.

"B" -- Map of Cross-Section Through Puente Narrows, showing major physical features and location of key wells.

Exhibit "J"

"C" -- Engineering Criteria, being a description of a method of measurement of subsurface outflow to be utilized for Watermaster purposes.

C. COVENANTS

7. Watermaster. There is hereby created a two member Watermaster service to which each of the parties to this agreement shall select one consulting engineer. The respective representatives on said Watermaster shall serve at the pleasure of the governing body of each appointing party and each party shall bear its own Watermaster expense.

a. Organization. Watermaster shall perform the duties specified herein on an informal basis, by unanimous agreement. In the event the two representatives are unable to agree upon any finding or decision, they shall select a third member to act, pursuant to the applicable laws of the State of California. Thereafter, until said issue is resolved, said three shall sit formally as a board of arbitration. Upon resolution of the issue in dispute, the third member shall cease to function further.

b. Availability of Information. Each party hereto shall, for itself and its residents and water users, use its best efforts to furnish all appropriate information to the Watermaster in order that the required determination can be made.

Exhibit "J"

c. Cooperation With Other Watermasters. Watermaster hereunder shall cooperate and coordinate activities with the Watermasters appointed in the San Gabriel Basin Case and in Long Beach v. San Gabriel Valley Water Company, et al.

d. Determination of Underflow. Watermaster shall annually determine the amount of underflow from Puente Basin to the San Gabriel Basin, pursuant to Engineering Criteria.

e. Perpetual Accounting. Watermaster shall maintain a perpetual account of accumulated base underflow, accumulated subsurface flow, any deficiencies by reason of interference with surface flows, and the offsetting credit for any make-up payments. Said account shall annually show the accumulated credit or debit in the obligation of Puente Agency to Upper District.

f. Report. Watermaster findings shall be incorporated in a brief written report to be filed with the parties and with the Watermaster in the San Gabriel Basin Case. Said report shall contain a statement of the perpetual account heretofore specified.

8. Base Underflow. On the basis of a study and review of historic underflow from Puente Basin to the Main San Gabriel Basin, adjusted for the effect of the paved flood control channel and other relevant considerations, it is

mutually agreed by the parties that the base underflow is and shall be 580 acre feet per year, calculated pursuant to Engineering Criteria.

9. Puente Agency's Obligation. Puente Agency covenants, agrees and assumes the following obligation hereunder:

a. Noninterference with Surface Flow. Neither Puente Agency nor any persons or entities within the corporate boundaries of Walnut District or Rowland District will divert or otherwise interfere with or utilize natural surface runoff now or hereafter flowing in the storm channel of San Jose Creek; provided, however, that this covenant shall not prevent the use, under Watermaster supervision, of said storm channel by the Puente Agency or Walnut District or Rowland District for transmission within Puente Agency of supplemental or reclaimed water owned by said entities and introduced into said channel solely for transmission purposes. In the event any unauthorized use of surface flow in said channel is made contrary to the covenant herein provided, Puente Agency shall compensate Upper District by utilizing any accumulated credit or by make-up payment in the same manner as is provided for deficiencies in subsurface outflow from Puente Basin.

b. Subsurface Outflow. To the extent that

the accumulated subsurface outflow falls below the accumulated base underflow and the result thereof is an accumulated deficit in the Watermaster's annual accounting, Puente Agency agrees to provide make-up payments during the next year in an amount not less than one-third of the accumulated deficit.

c. Purchase of Reclaimed Water. To the extent that Puente Agency or Walnut District or Rowland District may hereafter purchase reclaimed water from the facilities of Sanitation District 21 of Los Angeles County, such purchaser shall use its best efforts to obtain waters originating within San Gabriel River Watershed.

10. Puente Basin Parties Dismissal. In consideration of the assumption of the obligation hereinabove provided by Puente Agency, Upper District consents to entry of dismissals as to all Puente Basin parties in San Gabriel Basin Case. This agreement shall be submitted for specific approval by the Court and a finding that it shall operate as full satisfaction of any and all claims by the parties within Main San Gabriel Basin against Puente Basin parties by reason of historic surface and subsurface flow.

Exhibit "J"

IN WITNESS WHEREOF the parties hereto have caused this Agreement to be executed as of the day and date first above written.

Approved as to form:
CLAYSON, STARK, ROTHROCK & MANN

By _____
Attorneys for Puente Agency

PUENTE BASIN AGENCY

By _____
EDMOND M. BIEDERMAN
President

Approved as to form:

By _____
Attorney for Upper District

UPPER SAN GABRIEL VALLEY
MUNICIPAL WATER DISTRICT

By _____
Howard H. Hawkins
President

The foregoing agreement is approved and accepted, and the same is acknowledged as the joint and several obligation of the undersigned.

Approved as to form:

_____
Attorney for Walnut District

WALNUT VALLEY WATER DISTRICT

By _____
J. P. BOURDET
Vice President

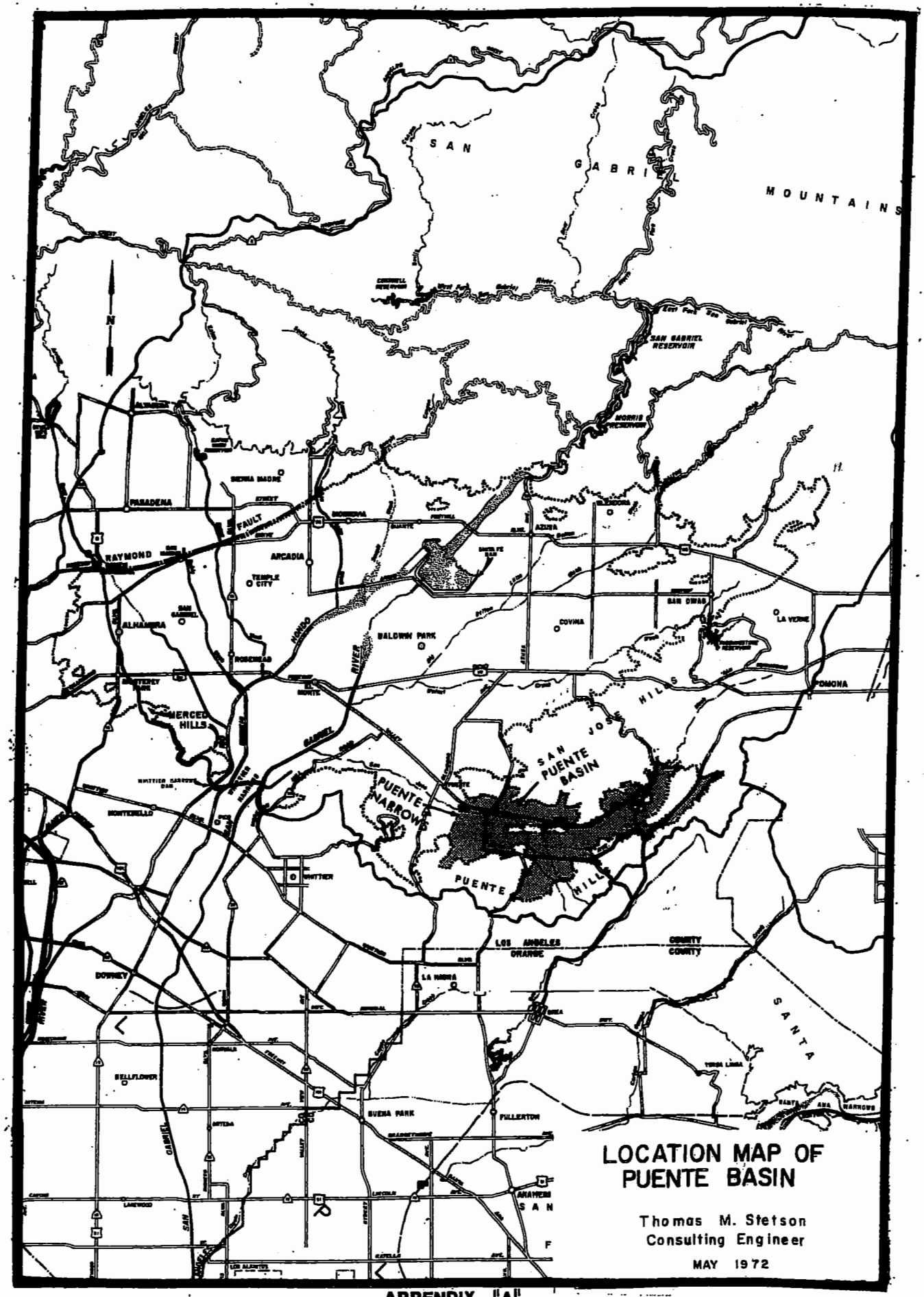
Approved as to form:

_____
Attorneys for Rowland District

ROWLAND AREA COUNTY WATER
DISTRICT

By _____
President
Wm. A. Simmons

Exhibit "J"

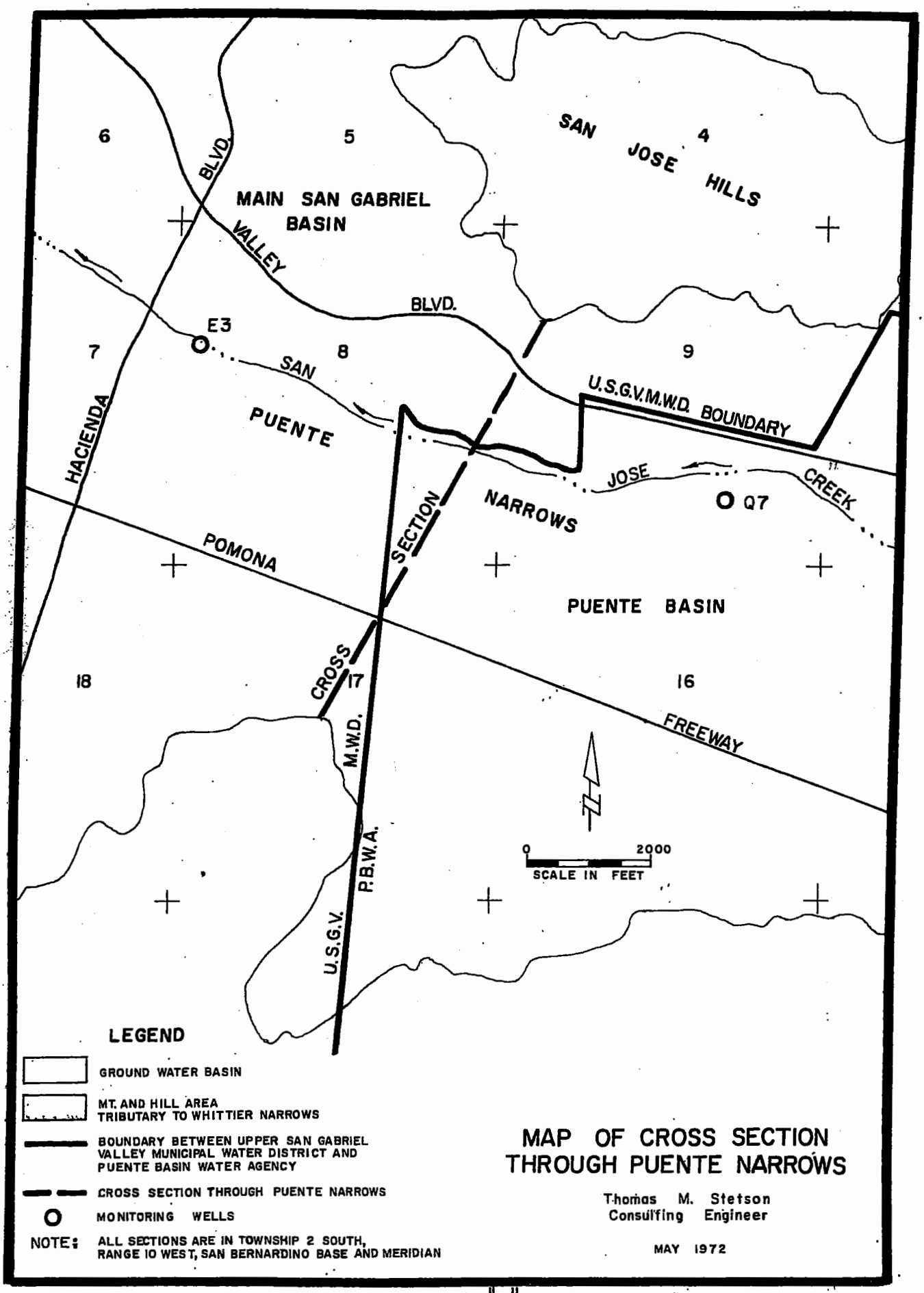


LOCATION MAP OF PUENTE BASIN

Thomas M. Stetson
Consulting Engineer

MAY 1972

APPENDIX "A"
EXHIBIT "J"



APPENDIX "B"
EXHIBIT "J"

ENGINEERING CRITERIA

APPENDIX "C"

1. Monitoring Wells. The wells designated as State Wells No. 2S/10W-9Q7 and 2S/10W-8E3 and Los Angeles County Flood Control District Nos. 3079M and 3048B, respectively, shall be used to measure applicable ground water elevations. In the event either monitoring well should fail or become unrepresentative, a substitute well shall be selected or drilled by Watermaster. The cost of drilling a replacement well shall be the obligation of the Puente Agency.

2. Measurement. Each monitoring well shall be measured and the ground water elevation determined semi-annually on or about April 1 and October 1 of each year. Prior to each measurement, the pump shall be turned off for a sufficient period to insure that the water table has recovered to a static or near equilibrium condition.

3. Hydraulic Gradient. The hydraulic gradient, or slope of the water surface through Puente Narrows, shall be calculated between the monitoring wells as the difference in water surface elevation divided by the distance, approximately 9,000 feet, between the wells. The hydraulic gradient shall be determined for the spring and fall and the average hydraulic gradient calculated for the year.

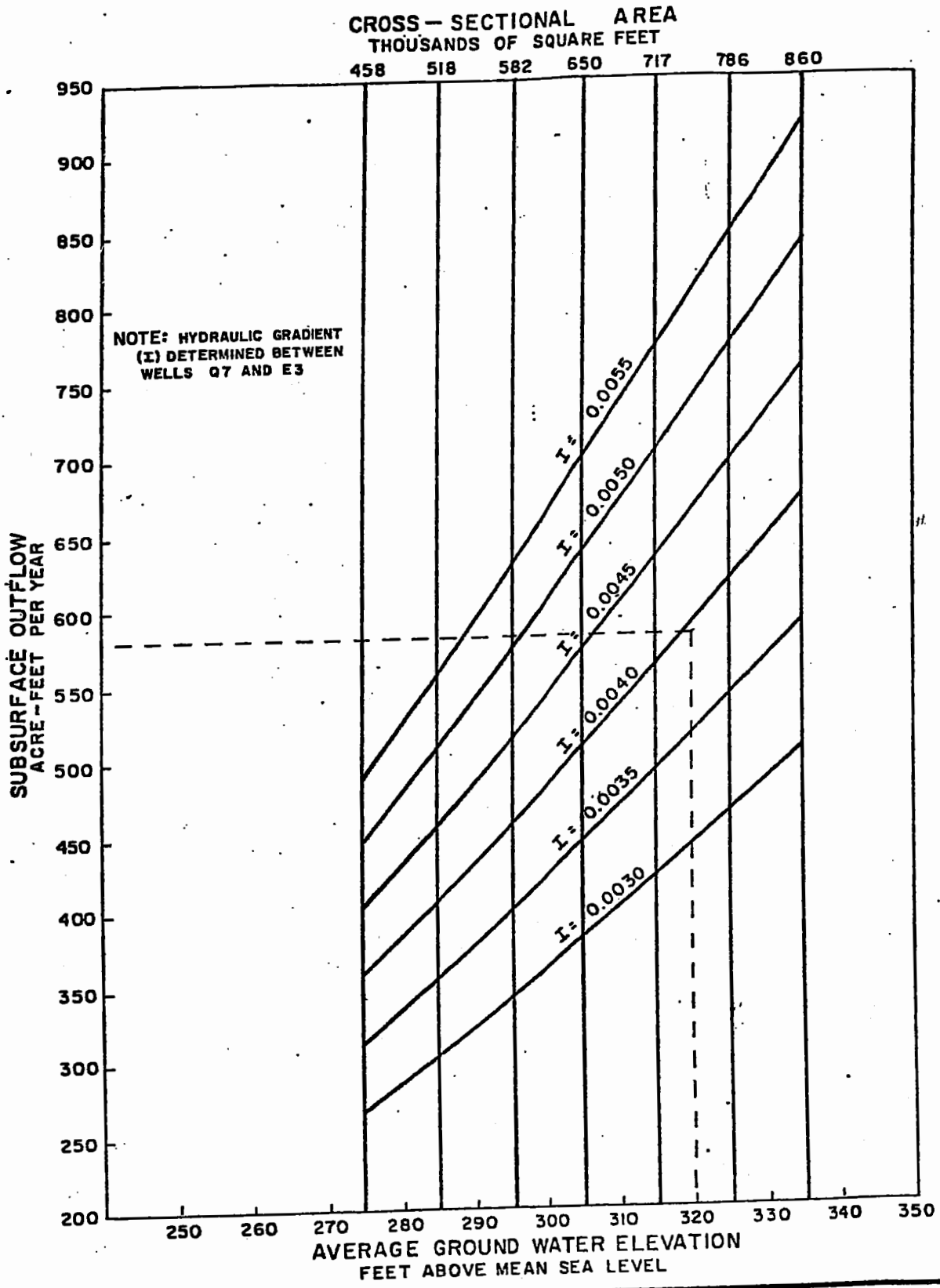
4. Ground Water Elevation at Puente Narrows Cross Section. The ground water elevation at the Puente Narrows

cross section midway between the monitoring wells shall be the average of the ground water elevation at the two wells. This shall be determined for the spring and fall and the average annual ground water elevation calculated for the year.

5. Determination of Underflow. The chart attached is a photo-reduction of a full scale chart on file with the Watermaster. By applying the appropriate average annual hydraulic gradient (I) to the average annual ground water elevation at the Puente Narrows cross section (involving the appropriate cross-sectional area [A]), it is possible to read on the vertical scale the annual acre feet of underflow.

APPENDIX "C"

Exhibit "J"



RELATIONSHIP OF AVERAGE GROUND WATER ELEVATION AT PUENTE NARROWS AND APPLICABLE CROSS-SECTIONAL AREA WITH SUBSURFACE OUTFLOW THROUGH PUENTE NARROWS FOR VARIOUS HYDRAULIC GRADIENTS

Thomas M. Stetson
Consulting Engineer
MAY 1972

EXHIBIT "J"

EXHIBIT "K"

OVERLYING RIGHTS

I. NATURE OF OVERLYING RIGHT

An "Overlying Right" is the right to Produce water from the Main San Gabriel Basin for use on the overlying lands hereinafter described. Such rights are exercisable without quantitative limit only on said overlying land and cannot be separately conveyed or transferred apart therefrom. The exerciser of such right is assessable by Watermaster as provided in Paragraph 21 of the Amended Judgment herein (prior Paragraph 14.5 of the Judgment herein) and is subject to the other provisions of said Paragraph.

II. OVERLYING LANDS (Description)

The overlying lands to which Overlying Rights are appurtenant are described as follows:

> "Those portions of Lots 1 and 2 of the lands formerly owned by W.A. Church, in the Rancho San Francisquito, in the City of Irwindale, County of Los Angeles, State of California, as shown on recorder's filed map No. 509, in the office of the County Recorder of said County, lying northeasterly of the northeasterly line and its southeasterly prolongation of Tract 1888, as shown on map recorded in Book 21 page 183 of Maps, in the office of the County Recorder of said County.
>
> "EXCEPT the portions thereof lying northerly and northwesterly of the center line of Arrow Highway described 'Sixth' and the center line of Live Oak Avenue described 'Third' in a final decree of condemnation, a certified copy of which was recorded August 18, 1933 as Instrument No. 354, in Book 12289, Page 277, Official Records.
>
> "ALSO EXCEPT that portion of said land described in the final decree of condemnation entered in Los Angeles County Superior Court Case No. 805008, a certified copy of which was recorded September 21, 1964, as Instrument No. 3730 in Book D-2634, Page 648, Official Records."

III. PRODUCERS ENTITLED TO EXERCISE OVERLYING RIGHTS AND THEIR RESPECTIVE CONSUMPTIVE USE PORTIONS

The persons entitled to exercise Overlying Rights are both the owners of Overlying Rights and persons and entities licensed by such owners to exercise such Overlying Rights. The persons entitled to exercise Overlying Rights and their respective Consumptive Use portions are as follows:

OWNER PRODUCERS	CONSUMPTIVE USE PORTION
BROOKS GIFFORD, SR. BROOKS GIFFORD, JR. PAUL MNOIAN JOHN MGRDICHIAN J. EARL GARRETT	3.5 acre-feet per year
Present User: Nu-Way Industries	

PRODUCERS UNDER LICENSE

A.	WILLIAM C. THOMAS and EVELYN F. THOMAS, husband and wife, and MALCOLM K. GATHERER and JACQUELINE GATHERER, husband and wife, doing business by and through B & B REDI-I-MIX CONCRETE, INC., a corporation	45.6 acre-feet per year
B.	PRE-STRESS CRANE RIGGING & TRUCK CO., INC., a corporation	1.0 acre-foot per year
	Present Users: Pre-Stress Crane Rigging & Truck Co., Inc., a corporation	
	TOTAL	50.1 acre-feet per year

IV.	**ANNUAL GROSS AMOUNT OF PRODUCTION FROM WHICH CONSUMPTIVE USE PORTIONS WERE DERIVED**	183.65 acre-feet

EXHIBIT "K"

CONSUMPTIVE USE PORTIONS OF PRODUCERS WITH OVERLYING RIGHTS AS OF JUNE 30, 2013

OVERLYING PRODUCER	CONSUMPTIVE USE PORTION (ACRE-FEET)
1. Mnoian-Gifford Interests	
Owner Producers	
Paul Mnoian[3]	
Brooks Gifford, Sr.[3]	
Brooks Gifford, Jr.[3]	
John Mgrdichian[3]	
J. Earl Garrett[3]	
Present User: Nu-Way Industries	**3.5**
Producers Under License	
William C. Thomas[3]	
Evelyn F. Thomas[3]	
Malcolm K. Gatherer[3]	
Jacqueline Gatherer[3]	
Present User: B & B Red-I-Mix Concrete, Inc.	45.6
Pre-Stress Crane Rigging and Truck, Co., Inc.[3]	1.0
	50.1
2. Attalla, Phillip Y. and Mary L.[3]	**29.9**
3. Citrus Valley Medical Center, Queen of the Valley Campus.[3] (Formerly Queen of the Valley Hospital.[3])	**4.5**
4. S.L.S & N. Inc.[3]	--
TOTAL	**84.5**

1/ Permanent transfer of rights as recorded within Exhibits "C", "D", and "E" of Judgment.

2/ Permanent transfer of rights after entry of Judgment.

3/ Intervenor after Judgment.

EXHIBIT "L"

LIST OF PRODUCERS AND THEIR DESIGNEES
June 21, 2012

PRODUCER	DESIGNEE
Adams Ranch Mutual Water Company	Domenic T. Cimarusti
Alhambra, City of	Mary Chavez
Amarillo Mutual Water Company	John Holzinger
Anderson Family Marital Trust	Carolyn Heinrich
Andrade, Susan	Susan Andrade
Aqua Capital Management LP	David L. Penrice
Arcadia, City of	Tom Tait
Azusa, City of	Chet Anderson
Azusa Agricultural Water Company	Chet Anderson
Azusa Valley Water Company	Chet Anderson
Bandel Family Trust	Candace Garnier Bandel
Banks, Gale C. and Vicki L.	Gale and Vicki Banks
Brezina Trust 2001, Raymond W. and Susan W.	Raymond W. Brezina
Brierly, Susan K.	Reiner Kruger
Brondino, Jeanne	Jeanne Brondino
Cadway, Inc.	James M. Byerrum
California-American Water Company (Duarte System)	Todd Brown
California-American Water Company (San Marino System)	Todd Brown
California Domestic Water Company	James M. Byerrum
Canyon Water Company	William McIntyre
Canyon Water & Development Corporation	Chet Anderson
Champion Mutual Water Company	Bryan P. Hellein
Chevron U.S.A.	Leon F. Drozd, Esq.
Citrus Valley Medical Center, Queen of the Valley Campus	Gregory J. Landers
Coiner, James W., dba Coiner Nursery	James W. Coiner
County Sanitation District No. 18	Raymond Tremblay
Covina, City of	Daryl Parrish
Covina Irrigating Company	David D. De Jesus
Crevolin, A. J.	A. J. Crevolin
CV Glendora 3 Site, LLC	Bill McReynolds
Dawes, Mary Kay	Mary Kay Partridge
DeFalco, John and Carole	John and Carole DeFalco
Del Rio Mutual Water Company	Dario Herrera
Driftwood Dairy	David Trenkenschuh

PRODUCER	DESIGNEE
East Pasadena Water Company	Lawrence M. Morales
El Monte, City of	Rene Bobadilla
El Monte Cemetery Association	Todd Brown
Fox Family Trust Michael Edward Fox and Crystal Marie Fox, Trustees	Michael and Crystal Fox
Garnier Family Trust, Anton C. and Anita	Anton C. and Anita Garnier
Garnier, Ruth Elaine Ailor Trust	Renee Garnier Poivre
Gates, James Richard	James Richard Gates
Glendora, City of	Steve Patton
Golden State Water Company - San Dimas District	Patrick Scanlon
Golden State Water Company - San Gabriel Valley District	Benjamin Lewis, Jr.
Green, Walter	Dr. Walter Green
Hanson Aggregates West, Inc.	Michael Rogers
Heinrich, Carolyn	Carolyn Heinrich
Hemlock Mutual Water Company	Robert McClung
Industry Waterworks Systems, City of	Gregory B. Galindo
Irwindale, City of	Sol Benudiz
JUH #1	Reiner Kruger
Kirklen, Jeffery B.	Jeffery B. Kirklen
Knight, William J.	William J. Knight
Landeros, John	John Landeros
La Puente Valley County Water District	Gregory B. Galindo
Lovelady, June G., Trustee	June G. Lovelady
Los Angeles, County of	Robert Maycumber
Loucks, David	David Loucks
Maddock, A.G.	S. Joellen Maddock
Maggiore, Valarie	Valarie Maggiore
McIntyre, William	William McIntyre
Metropolitan Water District of Southern California	Lorraine Aoys
Miller Coors LLC	Jeffrey D. Arbour
Monrovia, City of	Ron Bow
Monrovia Nursery	Reiner Kruger
Monterey Park, City of	Elias Saykali
Munoz, Ralph	Ralph Munoz
Nicholson Trust, The	M. L. Whitehead
Nicholson Family Trust, The	M. L. Whitehead

PRODUCER	DESIGNEE
Parton Family Trust	Vernal O. and Marverna Parton
Pellissier Irrevocable QTIP Trust, et al, Laurence R., Co-tenancy of	James M. Byerrum
Pico County Water District	Mark Grajeda
Polopolus, et. Al	Helen Gaskins
Rados Brothers	Alexander S. Rados
Rosedale, Lance	Reiner Kruger
Rosedale, Miles R.	Reiner Kruger
Rosemead Development LTD.	John W. Lloyd
Rurban Homes Mutual Water Company	George W. Bucey
Ruth, Roy	Roy Ruth
San Gabriel Country Club	Eddie Villanueva
San Gabriel County Water District	Barbara A. Carrera
San Gabriel Valley Municipal Water District	Darin Kasamoto
San Gabriel Valley Water Company	Michael L. Whitehead
Sierra La Verne Country Club	Donald Johnson
Sierra Madre, City of	Bruce Inman
Sonoco Products Company	Khaleda Hamid
South Pasadena, City of	Marcelino Aguilar
Southern California Edison Company	Jorge A. Rosa, Jr.
Southwest Water Company	Richard J. Rich
Sterling Mutual Water Company	Joy Ann Burt
Suburban Water Systems	Michael Quinn
Sunny Slope Water Company	Ken Tcheng
Tate, Phillip G. and Sieglinde A.	Phillip Tate
Three Valleys Municipal Water District	Richard W. Hansen
Tomovich, Nick and Sons	Nick Tomovich
Hieu Tran	Hieu Tran
Tyler Nursery	Fumiko Kishi
USA Waste of California, Inc.	Joseph J. Cassin
United Rock Products Corporation	Russ Caruso
Upper San Gabriel Valley Municipal Water District	Steven P. O'Neill
Valencia Heights Water Company	P. David Michalko
Valley County Water District	Lynda A. Noriega
Valley View Mutual Water Company	Sukie Madrid
VanLandingham, Richard	Reiner Kruger
Vietnamese American Buddhist Temple Congregation	Thích Viên Ly
Vulcan Materials Company	Robert W. Bowcock

PRODUCER	DESIGNEE
Whittier, City of	Daniel Wall
Wilmott, Erma M.	Erma M. Wilmott
Woodland, Richard	Richard J. Woodland
Workman Mill Investment Company	Bruce A. Lazenby

EXHIBIT "M"

WATERMASTER MEMBERS

FOR CALENDAR YEAR 1973

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

RICHARD L. ROWLAND (Producer Member), Secretary

BOYD KERN (Public Member), Treasurer

WALKER HANNON (Producer Member)

HOWARD H. HAWKINS (Public Member)

M.E. MOSLEY (Producer Member)

CONRAD T. REIBOLD (Public Member)

HARRY C. WILLS (Producer Member)

STAFF

Carl Fossette, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1974

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

RICHARD L. ROWLAND (Producer Member), Secretary

BOYD KERN (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

M.E. MOSLEY (Producer Member)

CONRAD T. REIBOLD (Public Member)

HARRY C. WILLS (Producer Member)

STAFF

Carl Fossette, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1975

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

HARRY C. WILLS (Producer Member), Secretary

BOYD KERN (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

D.J. LAUGHLIN (Producer Member)

M.E. MOSLEY (Producer Member)

CONRAD T. REIBOLD (Public Member)

STAFF

Carl Fossette, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1976

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

HARRY C. WILLS (Producer Member), Secretary

BOYD KERN (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

D.J. LAUGHLIN (Producer Member)

M.E. MOSLEY (Producer Member)

CONRAD T. REIBOLD (Public Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1977

ROBERT T. BALCH (Producer Member), Chairman

LINN E. MAGOFFIN (Producer Member), Vice Chairman

HARRY C. WILLS (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

WALKER HANNON (Producer Member)

BURTON E. JONES (Public Member)

BOYD KERN (Public Member)

D.J. LAUGHLIN (Producer Member)

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STAFF

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Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1978

ROBERT T. BALCH (Producer Member), Chairman

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D.J. LAUGHLIN (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

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L.E. MOELLER (Producer Member)

R.H. NICHOLSON, JR. (Producer Member)

WILLIAM M. WHITESIDE (Public Member)

STAFF

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Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1979

LINN E. MAGOFFIN (Producer Member), Chairman

R.H. NICHOLSON, JR. (Producer Member), Vice Chairman

WILLIAM M. WHITESIDE (Public Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

ROBERT G. BERLIEN (Producer Member)*

ANTON C. GARNIER (Producer Member)

D.J. LAUGHLIN (Producer Member)**

TRAVIS L. MANNING (Public Member)

L.E. MOELLER (Producer Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

* Elected March 1979 to replace D.J. Laughlin, following his resignation.
** Resigned from Watermaster in February 1979.

FOR CALENDAR YEAR 1980

LINN E. MAGOFFIN (Producer Member), Chairman

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CONRAD T. REIBOLD (Public Member), Treasurer

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ALFRED F. WITTIG (Public Member)

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Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1984

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CONRAD T. REIBOLD (Public Member), Treasurer

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STAFF

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Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1985

LINN E. MAGOFFIN (Producer Member), Chairman

R.H. NICHOLSON, JR. (Producer Member), Vice Chairman

ROBERT G. BERLIEN (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

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ANTON C. GARNIER (Producer Member)

L.E. MOELLER (Producer Member)

ALFRED F. WITTIG (Public Member)

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Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1986

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R.H. NICHOLSON, JR. (Producer Member), Vice Chairman

ROBERT G. BERLIEN (Producer Member), Secretary

CONRAD T. REIBOLD (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

DONALD F. CLARK (Public Member)

L.E. MOELLER (Producer Member)

REGINALD A. STONE (Producer Member)

ALFRED F. WITTIG (Public Member)

STAFF

Jane M. Bray, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1987

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

L.E. MOELLER (Producer Member), Secretary

ALFRED F. WITTIG (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

GERALD J. BLACK (Producer Member)

DONALD F. CLARK (Public Member)

EDWARD R. HECK (Producer Member)

JOHN E. MAULDING (Public Member)

STAFF

Robert G. Berlien, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1988

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

L.E. MOELLER (Producer Member), Secretary

ALFRED F. WITTIG (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)

GERALD J. BLACK (Producer Member)

DONALD F. CLARK (Public Member)

EDWARD R. HECK (Producer Member)

JOHN E. MAULDING (Public Member)

STAFF

Robert G. Berlien, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1989

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

GERALD J. BLACK (Producer Member), Secretary

ALFRED F. WITTIG (Public Member), Treasurer

ROBERT T. BALCH (Producer Member)*

DONALD F. CLARK (Public Member)

EDWARD R. HECK (Producer Member)

BURTON E. JONES (Public Member)

NELS PALM (Producer Member)**

THOMAS E. SHOLLENBERGER (Producer Member)

STAFF

Robert G. Berlien, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

* DECEASED APRIL 25, 1989

** Appointed August 24, 1989, for the balance of the calendar year term, to replace deceased member, Robert T. Balch.

FOR CALENDAR YEAR 1990

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

GERALD J. BLACK (Producer Member), Secretary

ALFRED F. WITTIG (Public Member), Treasurer

DONALD F. CLARK (Public Member)

EDWARD R. HECK (Producer Member)

BURTON E. JONES (Public Member)

NELS PALM (Producer Member)

THOMAS E. SHOLLENBERGER (Producer Member)

STAFF

Robert G. Berlien, Assistant Secretary-Assistant Treasurer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1991

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

GERALD J. BLACK (Producer Member), Secretary

NELS PALM (Producer Member), Treasurer

ROYALL K. BROWN (Public Member)

MARVIN JOE CICHY (Public Member)

EDWARD R. HECK (Producer Member)

C. ROBER KEISER (Public Member)

ANDREW A. KRUEGER (Producer Member)

STAFF

John E. Maulding, Executive Officer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1992

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

GERALD J. BLACK (Producer Member), Secretary

NELS PALM (Producer Member), Treasurer

ROYALL K. BROWN (Public Member)

RICHARD W. CANTWELL (Producer Member)

BURTON E. JONES (Public Member)

C. ROBER KEISER (Public Member)

ANDREW A. KRUEGER (Producer Member)

STAFF

John E. Maulding, Executive Officer
Ralph B. Helm, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1993

LINN E. MAGOFFIN (Producer Member), Chairman

REGINALD A. STONE (Producer Member), Vice Chairman

GERALD J. BLACK (Producer Member), Secretary

NELS PALM (Producer Member), Treasurer

RICHARD W. CANTWELL (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

ANDREW A. KRUEGER (Producer Member)

LEROY E. MOELLER (Public Member)

STAFF

John E. Maulding, Executive Officer
Frederic A. Fudacz, Attorney (Effective February 1993)
Ralph B. Helm, Attorney (Retired January 1993)
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1994

LINN E. MAGOFFIN (Producer Member), Chairman******

REGINALD A. STONE (Producer Member), Vice Chairman

RICHARD W. CANTWELL (Producer Member), Secretary***

STANLEY D. YARBROUGH (Producer Member), Treasurer

GERALD J. BLACK (Producer Member)*

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

MANNY J. MAGANA (Producer Member)

P. GEOFFREY NUNN (Producer Member)*******

LEROY E. MOELLER (Public Member)

MICHAEL L. WHITEHEAD (Producer Member)**

STAFF

John E. Maulding, Executive Officer****
Carol Williams, Executive Officer*****
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

*	Mr. Black resigned from Watermaster on February 4, 1994
**	Mr. Whitehead was nominated to Watermaster on March 2, 1994
***	Mr. Cantwell was elected as Watermaster Secretary on May 4, 1994
****	Mr. Maulding passed away on March 13, 1994
*****	Ms. Williams was appointed Executive Officer on August 3, 1994
******	Mr. Magoffin resigned from Watermaster on August 3, 1994
*******	Mr. Nunn was nominated to Watermaster on August 8, 1994

FOR CALENDAR YEAR 1995

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

JUDITH L. ALMOND (Producer Member)

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1996

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

JUDITH L. ALMOND (Producer Member)

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1997

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

JUDITH L. ALMOND (Producer Member)

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1998

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

JUDITH L. ALMOND (Producer Member)

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 1999

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

JAMES B. GALLAGHER (Producer Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2000

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

JAMES B. GALLAGHER (Producer Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2001

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

JAMES B. GALLAGHER (Producer Member)

LEROY E. MOELLER (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2002

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

MANNY J. MAGANA (Producer Member), Secretary

MICHAEL L. WHITEHEAD (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

MARVIN JOE CICHY (Public Member)

FRANK F. FORBES (Public Member)

JAMES B. GALLAGHER (Producer Member)

CAROL A. MONTANO (Public Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2003

REGINALD A. STONE (Producer Member), Chairman

RICHARD W. CANTWELL (Producer Member), Vice Chairman

JAMES B. GALLAGHER (Producer Member), Secretary

ROBERT W. NICHOLSON (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

ALFONSO CONTRERAS (Public Member)

FRANK F. FORBES (Public Member)

THOMAS LOVE (Public Member)

CHARLES SHAW (Producer Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2004

PAUL S. CARVER (Producer Member), Chairman

JAMES B. GALLAGHER (Producer Member), Vice Chairman

ROBERT W. BOWCOCK (Producer Member), Secretary

ROBERT W. NICHOLSON (Producer Member), Treasurer

RICHARD W. CANTWELL (Producer Member)

ALFONSO CONTRERAS (Public Member)

FRANK F. FORBES (Public Member)

THOMAS LOVE (Public Member)

CHARLES E. SHAW (Producer Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2005

PAUL S. CARVER (Producer Member), Chairman

JAMES B. GALLAGHER (Producer Member), Vice Chairman

ROBERT W. BOWCOCK (Producer Member), Secretary

ROBERT W. NICHOLSON (Producer Member), Treasurer

RICHARD W. CANTWELL (Producer Member)

ALFONSO CONTRERAS (Public Member)

LEON M.N. GARCIA (Public Member)

THOMAS LOVE (Public Member)

CHARLES E. SHAW (Producer Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2006

PAUL S. CARVER (Producer Member), Chairman

JAMES B. GALLAGHER (Producer Member), Vice Chairman

ROBERT W. BOWCOCK (Producer Member), Secretary

ROBERT W. NICHOLSON (Producer Member), Treasurer

RICHARD W. CANTWELL (Producer Member)

ALFONSO CONTRERAS (Public Member)

LEON M.N. GARCIA (Public Member)

THOMAS LOVE (Public Member)

CHARLES E. SHAW (Producer Member)

STAFF

Carol Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2009

JAMES M. BYERRUM (Producer Member), Chairman

PAT MALLOY (Producer Member), Vice Chairman

DAN ARRIGHI (Producer Member), Secretary

CHARLES E. SHAW (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

ED CHAVEZ (Public Member)

ALFONSO CONTRERAS (Public Member)

THOMAS LOVE (Public Member)

MICHAEL O. QUINN (Producer Member)

STAFF

Carol Thomas Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2010

JAMES M. BYERRUM (Producer Member), Chairman

PAT MALLOY (Producer Member), Vice Chairman

DAN ARRIGHI (Producer Member), Secretary

CHARLES E. SHAW (Producer Member), Treasurer

ROBERT W. BOWCOCK (Producer Member)

ED CHAVEZ (Public Member)

ALFONSO CONTRERAS (Public Member)

THOMAS LOVE (Public Member)

MICHAEL O. QUINN (Producer Member)

STAFF

Carol Thomas Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer

FOR CALENDAR YEAR 2011

JAMES M. BYERRUM (Producer Member), Chairman

PAT MALLOY (Producer Member), Vice Chairman

DAN ARRIGHI (Producer Member), Secretary

CHARLES E. SHAW (Producer Member), Treasurer

CHET ANDERSON (Producer Member)

ED CHAVEZ (Public Member)

THOMAS LOVE (Public Member)

MICHAEL O. QUINN (Producer Member)

CHARLES TREVINO (Public Member)

STAFF

Carol Thomas Williams, Executive Officer
Frederic A. Fudacz, Attorney
Thomas M. Stetson, Engineer*
Stephen B. Johnson, Engineer**

* Thomas M. Stetson passed away 4/14/2011
** Stephen B. Johnson replaced Mr. Stetson

FOR CALENDAR YEAR 2012

JAMES M. BYERRUM (Producer Member), Chairman

PAT MALLOY (Producer Member), Vice Chairman

DAN ARRIGHI (Producer Member), Secretary

DAVID MICHALKO (Producer Member), Treasurer

CHET ANDERSON (Producer Member)

ED CHAVEZ (Public Member)

THOMAS LOVE (Public Member)

MICHAEL O. QUINN (Producer Member)

CHARLES TREVINO (Public Member)

STAFF

Carol Thomas Williams, Executive Officer *
Anthony C. Zampiello, Executive Officer**
Frederic A. Fudacz, Attorney
Stephen B. Johnson, Engineer

* Carol Thomas Williams resigned on 5/12/12
** Anthony C. Zampiello appointed to Executive Officer 9/26/12

FOR CALENDAR YEAR 2013

JAMES M. BYERRUM (Producer Member), Chairman

DAVID MICHALKO (Producer Member), Vice Chairman

DAN ARRIGHI (Producer Member), Secretary

RICHARD RICH (Producer Member), Treasurer

CHET ANDERSON (Producer Member)

ANTHONY R. FELLOW (Public Member)

GARRY HOFER (Producer Member)

THOMAS LOVE (Public Member)

CHARLES TREVINO (Public Member)

STAFF

Anthony C. Zampiello, Executive Officer
Frederic A. Fudacz, Attorney
Stephen B. Johnson, Engineer

APPENDIX K

MAIN SAN GABRIEL BASIN WATERMASTER RULES AND REGULATIONS

MainSanGabrielBasin
WATERMASTER

Rules and Regulations

Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et. al.
Case No. 924128 – Superior Court of Los Angeles County

As amended December 7, 2005, June 6, 2007, and June 21, 2012
Resolutions 12-05-201, 06-07-213, and 03-13-251

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RULES AND REGULATIONS OF
MAIN SAN GABRIEL BASIN WATERMASTER

(As Revised, Amended, and Readopted by Resolution No. 12-05-201, adopted December 7, 2005, and Resolution No. 6-07-213, adopted June 6, 2007, and Resolution No. 03-13-251, adopted March 6, 2013)

The definitions set forth in the Judgment in Los Angeles County Superior Court Civil Action No. 924128, entitled, "Upper San Gabriel Valley Municipal Water District v. City Alhambra. et al," as amended (Judgment herein), as well as additional definitions relating specifically to Section 28 of these Rules and Regulations, are used herein with the same meanings and are listed in Appendix "A" hereof.

1. Offices and Records. Watermaster's records shall be maintained at its offices, currently located at:

725 North Azusa Avenue
Azusa, California 91702
Telephone (626) 815-1300
Fax (626) 815-1303
Watermaster.org

Said records shall be available for inspection by any party during regular business hours. Copies of said records may be had upon payment of the costs of the duplication thereof and of any preparation costs pertaining thereto.

2. Watermaster Meetings and Holidays. Regular meetings of Watermaster shall be held at 2:30 p.m. on the first Wednesday of each and every month in the conference room of the City of Azusa Light and Water Administration Facility, 729 North Azusa Avenue, Azusa, California 91072, or at such time and place as otherwise determined by Watermaster.

(a) Holidays. The following holidays shall be observed by Watermaster:

- January 1 (New Year's Day);
- The third Monday in January (Martin Luther King's Birthday);
- The third Monday in February (Presidents' Day);
- The last Monday in May (Memorial Day);
- July 4 (Independence Day);
- The first Monday in September (Labor Day);
- The second Monday in October (Columbus Day);
- November 11 (Veterans' Day);
- The fourth Thursday and the following Friday in November (Thanksgiving);
- December 25 (Christmas Day);

(1) If January 1, July 4, November 11, or December 25 falls on a Sunday, the Monday following shall be that holiday and if any of said dates fall on a Saturday, the preceding Friday shall be that holiday.

(2) When any regular meeting of Watermaster shall fall on a hereinabove designated Watermaster holiday, said regular meeting shall be held on the next succeeding regular business day at the same time and at the same place as the said regularly scheduled meeting, unless otherwise determined by Watermaster.

(b) Meeting Changes. Any changes in the time or place of said regular meeting shall be in compliance with the Judgment.

(c) Special Meetings. Special meetings of Watermaster may be called at any time by the Chair or Vice-Chair or by any three (3) members of Watermaster, by written notice in compliance with the Judgment. The calling notice shall specify the time and place of the special meeting and the business to be transacted. No other business shall be considered at such meetings.

(d) Adjournment. Any meeting of Watermaster may be adjourned to a time and place specified in the Order of Adjournment. Less than a quorum of Watermaster, Watermaster's Secretary, or the Executive Officer may so adjourn from time to time. A copy of the Order or Notice of Adjournment shall be conspicuously posted on or near the door of the place where the meeting was held or to be held, within twenty-four (24) hours after the adoption of the Order of Adjournment.

3. Quorum of Watermaster, Necessary Votes for Action and Roll Call of Votes. Five (5) members of Watermaster shall constitute a quorum for the transaction of its affairs. Action by the affirmative vote of five (5) members shall constitute action by the Watermaster, except that the affirmative vote of six (6) members shall be required: (a) to enter into any Cyclic Storage Agreement; or (b) to approve the purchase, spreading or injection of Supplemental Water for Ground Water recharge.

Any member of Watermaster may request a roll call vote on any question or motion considered and the ayes and noes thereon shall be recorded in the minutes of the meeting.

4. Agenda of Watermaster Meetings. Any person requesting that a matter be considered by Watermaster for action thereon shall request the same in writing directed to Watermaster's Executive Officer for inclusion on the Agenda of the next scheduled meeting to be held at least ten (10) days after receipt of said request.

5. Conduct of Meetings – Robert's Rules of Order. For the conduct of Watermaster meetings, Roberts' Rules of Order shall be followed and, without consent of Watermaster, the priorities of Watermaster business shall be that stated in the Agenda for a particular meeting.

6. Organization of Watermaster. At its first meeting each year, Watermaster shall elect a Chair and Vice Chair from its membership. It shall also select a Secretary and a Treasurer and may select such assistants as may be appropriate, any of whom may, but need not be, members of Watermaster.

7. Minutes. Minutes of all Watermaster meetings shall be kept, which shall reflect all actions taken. Draft copies thereof shall be furnished to any party who files a request therefor in writing with Watermaster. Said draft copies of minutes shall constitute notice of any Watermaster action therein reported and failure of a party herein to request copies thereof shall constitute his waiver of notice.

8. Designee to Receive Future Notices. Each party who has not heretofore made such a designation shall, within thirty (30) days after the Judgment shall have been served upon that party, file with the court, with proof of service of a copy thereof upon Watermaster, a written designation of the person to whom and the address at which all future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon that party or delivered to that party are to be so served or delivered.

(a) Service Upon and Delivery to Parties of Various Papers. Service of the Judgment on those parties who have executed the Stipulation for Judgment shall be made by first class mail, postage prepaid, addressed to the designee and at the address designated for that purpose in the executed and filed counterpart of the Stipulation for Judgment, or any substitute designation filed with the Court.

(b) Substitute Designee. A later substitute designation filed and served in the same manner by any party shall be effective from the date of filing as to the then future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that party.

(c) Delivery Method. Delivery to or service upon any party by Watermaster, by any other party, or by the Court, of any item required to be served upon or delivered to a party under or pursuant to the Judgment may be made by deposit thereof (or by copy thereof) in the mail, first class, postage prepaid, addressed to the designee of the party and at the address shown in the latest designation filed by that party. In lieu of mailing any item required to be

served under the Judgment, Watermaster may serve such item by electronic service, which may include posting the document to Watermaster's website, sending an e-mail of the document to that party, or sending notice of availability to that party indicating the document's availability for viewing on the Watermaster website. If a party does not have a valid e-mail address or internet access, that party shall identify an alternative method of service to be approved by Watermaster in its sole discretion. Any further reference to "mail" or "mailing" shall constitute "delivery to" or "service upon", pursuant to this Section 8(c).

(d) Party Removal. Any party desiring to be relieved of receiving notices of Watermaster activity may file a waiver of notice on a form to be provided by Watermaster. Thereafter such party shall be removed from the active party service list and not receive any notices required under the Judgment. The parties have a duty to keep Watermaster informed of their current e-mail and mailing addresses. If mail or e-mail is returned undeliverable to Watermaster for an incorrect address, Watermaster in its sole discretion may remove that party from the active party service list.

(e) List of Designees. Watermaster shall maintain a current list of party designees to receive notices under the Judgment.

9. Election of Producer Representatives.

(a) Notice of Nomination Election. Watermaster shall annually give ten (10) days notice to all parties that an election shall be held at Watermaster's regularly scheduled meeting in November of each year, for the purpose of nominating Producer representatives to Watermaster.

(b) Voting. Nominations of six (6) Producer representatives shall be by cumulative voting in person or by proxy, with each Producer entitled to one (1) vote for each one hundred (100) acre-feet, or portion thereof, owned by him, of Base Annual Diversion Right, Prescriptive Pumping Right or Integrated Production Right, as defined in the Judgment. When the names placed in

nomination exceed the number of representatives to be elected, votes shall be cast by ballot using official ballot forms provided by Watermaster. Each ballot form must list the Producer and designee or proxy holder casting the vote, the Producer's voting entitlement, the names of the nominees for whom the votes have been cast, and the number of votes cast for each nominee.

(c) Conduct of Elections. Prior to the nomination of Producer representatives, the Chair shall appoint tellers to conduct the election. Such tellers may include any member of Watermaster staff to monitor the canvassing and counting of votes. The tellers shall distribute the ballots, and, at the conclusion of the balloting, collect the ballots, retire to tabulate the votes, and promptly report the results of the election to the parties present at the election.

(1) In the event there is a challenge to the declared election results, the Chair shall appoint three (3) Producer parties as election inspectors who shall recount the election ballots and immediately certify the results of such election to Watermaster and others present at the election.

(2) All ballots shall be considered confidential, and no ballot or information thereon shall be disclosed except to the appointed tellers and election inspectors, without the express permission of the Producer casting the ballot.

(d) Appointment. All Watermaster nominations shall be promptly certified to the Court, which will in ordinary course confirm the same by an appropriate order appointing said Watermaster; provided, however, that the Court at all times reserves the right and power to refuse to appoint, or to remove any

member of Watermaster. Notwithstanding Section 27 of the Judgment, Watermaster nominations may be promptly certified by the Court upon ten (10) calendar days' notice thereof, plus the time prescribed by statute for service by mail, e-mail or other electronic means.

10. Vacancy on Watermaster and Replacement. In the event of a vacancy on Watermaster, a successor shall be nominated at a special meeting of Watermaster and Producers to be called by Watermaster within ninety (90) days in the case of a Producer representative or by the action of the appropriate District Board of Directors in the case of a Public Representative. Subject to approval and appointment by the Court, such successor Watermaster shall fill the unexpired term of the Watermaster member replaced.

11. Watermaster Action Subject to Court Review. Any action, decision, rule or procedure of Watermaster shall be subject to review by the Court on its own motion or on timely petition or motion for an Order to Show Cause by any party, as follows:

(a) Effective Date of Watermaster Action. Any order, decision or action of Watermaster shall be deemed to have occurred on the date that written notice thereof is delivered. Delivery of draft copies of Watermaster minutes which contain such order, decision, action, or contemplated action, to the parties requesting the same shall constitute such notice to all parties, as of the date of such delivery.

(b) Notice of Motion. Any party may, by a regularly noticed motion, petition the Court for a review of any Watermaster action or decision. Notice of such motion shall be delivered to Watermaster and to the designees of all parties. Unless ordered by the Court, such petition shall not operate to stay the effect of such Watermaster action.

(c) Time for Motion. Within thirty (30) days of delivery of Notice of Watermaster Determination of Operating Safe Yield together with a statement of each Producer's entitlement thereunder, any affected party may, by a regularly

noticed motion, Petition the Court for an Order to Show Cause for review of said Watermaster findings, determination or entitlement and thereupon the Court shall hear objections thereto and settle such dispute.

Notice of motion to review any other Watermaster action or decision shall be served and filed within ninety (90) days after such Watermaster action or decision.

(d) *De Novo* Nature of Proceedings. Upon filing of such motion for hearing, the Court shall notify the parties of the date for taking evidence and argument, and shall review *de novo* the question at issue on the date designated. The Watermaster decision or action shall have no evidentiary weight in such proceedings.

(e) Decision. The decision of the Court in such proceedings shall be an appealable Supplemental Order in this case. When the same is final, it shall be binding upon the Watermaster and the parties.

12. Water Measuring Devices and Meter Test Program. Parties producing in excess of five (5) acre-feet per year shall, pursuant to these uniform rules, install and maintain in good operating condition, at the cost of each such party, such necessary water measuring devices or meters as may be appropriate. Any such measuring device is subject to such inspection and testing as Watermaster may, from time to time, deem necessary. Upon testing, the meters shall be sealed by Watermaster and remain so sealed. Watermaster will conduct a formal meter-testing program to help the parties accurately report their Production. Watermaster intends to test every meter under its jurisdiction at least once every two (2) years.

(a) Tests of Meters Which Supply Watermaster. At least once every two (2) years, Watermaster shall request certified meter tests of all meters of Responsible Agencies through which Supplemental Water is furnished to Watermaster and of the meters which measure all Cyclic Storage deliveries authorized by Watermaster.

(b) Wells. Water wells shall be equipped with a positive displacement, velocity impeller, venturi, orifice-type or electromagnetic flow meter with a totalizer. The totalizer on positive displacement, velocity impeller, venturi and orifice-type meters shall be correctable only by changing mechanical gear equipment. Producers using electromagnetic flow meters shall ensure that electronic access to meter data is user-defined and password-protected to prevent unauthorized resetting of the totalizer. Additionally, all wells equipped with electromagnetic flow meters shall also have a run-hour meter installed to provide verification of production in the event the totalizer is inappropriately or accidentally reset or its accuracy is otherwise disputed. The meter shall be accessible and installed according to good design practices. Watermaster personnel shall assist any party having any question as to installation requirements.

(c) Calibrated Test Equipment. Watermaster or its approved meter tester will maintain a complete line of carefully calibrated test equipment. This equipment is the standard with which all water meters must be compared. The tolerance for each meter is plus (+) or minus (-) five percent (5%) of the standard. Watermaster may require any Producer with multiple wells and meters to maintain an aggregate accuracy of plus (+) or minus (-) two percent (2%).

(d) Repair or Replacement of Inaccurate Meters. Defective or inaccurate meters must be repaired within thirty (30) days of receipt of notice thereof from Watermaster.

(e) Surface Diversions. Surface Water Diversions shall be measured with a weir and recorder or meter capable of accurately measuring and recording such Diversions.

(f) Interim Meter Tests. Should a Producer discover that the meter which measures the water Production from his well is measuring inaccurately, he shall first notify Watermaster thereof, have the meter retested and, if measuring

inaccurately, then have the same repaired at the earliest practical and reasonable time. Upon the completion of such repair, such Producer shall immediately have such meter tested and sealed by Watermaster and it shall remain so sealed. Such testing and sealing will be accomplished by Watermaster upon request therefor by said Producer or said repaired meter may be tested and sealed by any meter tester authorized by Watermaster, as provided in Subsection (g) of this Section 12. Results of such meter tests shall be furnished to Watermaster within ten (10) days of testing, on forms provided by Watermaster.

(g) Watermaster Approved Meter Testers. Persons, firms or corporations in the business of repairing and/or testing water measuring devices may be approved by Watermaster to test and seal meters on behalf of Watermaster by submitting their qualifications therefor to Watermaster and obtaining Watermaster's approval to perform meter tests and seal such meters as agents of Watermaster. The name, address and telephone number of all such Watermaster approved meter testers shall be maintained at and be available from the office of Watermaster.

(h) Meter Seal by Watermaster and Notification of Meter Maintenance. At the completion of all meter tests Watermaster's seal shall be placed on the meter, if the meter test demonstrates that the meter is within the accuracy standard of five percent (5%).

Such sealing then requires that Watermaster be notified in writing within seven (7) days if Watermaster's seal has been broken or if any of the following events occur: (a) the meter is to be repaired or recalibrated; (b) there is any other interference affecting the meter or Watermaster's seal; (c) the meter is to be relocated even if Watermaster's seal is still intact; or (d) a new meter is to be installed.

(i) Estimation of Production Due to Meter Maintenance. When aProducer must estimate Production due to meter maintenance, he shall consult

with Watermaster or its engineer for approval of the method of estimation. A copy of the estimate calculations shall be supplied to Watermaster with the corresponding Quarterly Production Report.

13. Reports of Producers to Watermaster. Each Producer with an adjudicated right in excess of five (5) acre-feet per year and each Producer with an Overlying Right in any amount shall file with Watermaster a quarterly report of water Produced from the Basin or Relevant Watershed, on forms provided by Watermaster. Producers using electromagnetic flow meters shall report run hours in addition to totalizer readings. Quarterly Production Reports shall be so filed no later than the last day of the month next succeeding the end of the relevant quarter, i.e. April 30, July 31, October 31 and January 31.

Each party shall file with the Watermaster quarterly, on or before the last day of January, April, July and October, a report on a form to be prescribed by Watermaster showing the total Pumping and Diversion (separately for Direct Use and for non-consumptive use, if any) of such party during the preceding calendar quarter.

Minimal Producers who initiated production on or before June 21, 2012, are exempted from the operation of this Physical Solution, so long as such party's annual Production does not exceed five (5) acre-feet. Watermaster may require, and Minimal Producers shall furnish, specific periodic reports. In addition, Watermaster may conduct such investigation of future operations of any Minimal Producer as may be appropriate. As of June 21, 2012, there shall be no new Minimal Producers, and any new Producer shall be subject to all provisions of the Judgment.

(a) Adjudicated Right in Excess of Five (5) Acre-Feet Not to be Reduced to Minimal Producer by Transfer. Any portion of: (1) the Base Annual Diversion Right of a Diverter; (2) the Prescriptive Pumping Right of a Pumper; or (3) the Diversion Component and Prescriptive Pumping Component of an Integrated Producer, adjudicated in any amount in excess of five (5) acre-feet per year [at the time that Judgment herein was entered, January 4, 1973], that is or

may be reduced to five (5) acre-feet or less by assignment or transfer of rights, as permitted by Section 55 of the Judgment, shall not enjoy the status of a Minimal Producer as defined in Section 10 (o) of the Judgment.

(b) Notice to Watermaster of Transfers of Water Rights. Within fifteen (15) days thereof all parties shall notify Watermaster of any transfer, assignment, license or lease of any water right, or portion thereof, not shown in the Judgment or previously filed with Watermaster and such transferee must be or become a party to the action (as provided in Section 57 of the Judgment). All parties are required to notify Watermaster of any subsequent assignment, transfer, license or lease of water rights granted or acquired by them and they shall file a duly acknowledged copy of the document(s) therefor with Watermaster, within fifteen (15) days after execution and acknowledgement of such document(s).

For such assignment, transfer, license or lease of water rights to be effective for, or be deemed by Watermaster to apply to, Production in a particular Fiscal Year (July 1 - June 30), the document(s) therefor shall be executed and acknowledged prior to the end of said Fiscal Year (June 30) and copies thereof showing such acknowledgement must be received by Watermaster prior to July 15, following the end of said particular Fiscal Year. The transferee must be, or petition to become, a party to the action within ninety (90) days following such assignment, transfer, license or lease of water rights.

When the term of a temporary assignment, transfer, license or lease of water rights extends beyond the end of the current Fiscal Year, it shall be the obligation of the transferee thereof to annually, during the month of July of each Fiscal Year during said term, notify Watermaster of said transferee's intention to exercise said water right during the then current applicable Fiscal Year.

(c) Conveyance of Water Right with Conveyance of Property. Parties are advised that when a water right owner conveys the property where a water right was developed, the said water right shall not be conveyed with such property unless and until the appropriate notice procedures established by Watermaster have been complied with. When it is intended to transfer or acquire adjudicated water rights in the Basin or Relevant Watershed, the parties thereto are advised to use the appropriate forms contained in exhibits to these Rules and Regulations and to notify Watermaster of such transfers by furnishing a copy of such transfer documents(s) within fifteen (15) days of execution and acknowledgement thereof.

(d) Conveyance of Water Right without Conveyance of Property. Parties are also advised that the owner of an adjudicated water right herein (except an Overlying Right) may transfer the same (temporarily or permanently) without conveyance of the property where the water right was developed.

(e) Transfer of Overlying Right. The transfer and use of Overlying Rights shall be limited (as provided in Section 21 of the Judgment) as exercisable only on specifically defined Overlying Lands and they cannot be separately conveyed or transferred apart therefrom.

(f) Intervention Stipulation Required. No conveyance of water rights to a person who is not a party to the subject action shall be recognized by Watermaster unless the transferee thereof files with Watermaster a Stipulation in Intervention to the subject action (Exhibit "E") agreeing to be bound by the Judgment herein, and until the Court approves said Stipulation and Intervention.

(g) Notice Required. Any transfer of water rights shall be effective only when the requirements of this Section 13 are met and when the parties file with Watermaster, within fifteen (15) days of such transfer, a copy of the transfer document(s) which:

(1) Identifies both the transferee(s) and the transferor(s);

(2) Accurately recites the total quantity (in acre-feet) of water rights transferred;

(3) Is executed by both the transferee(s) and the transferor(s);

(4) Is acknowledged by both transferee(s) and transferor(s) in a form sufficient for recordation;

(5) Lists the designee(s) of both the transferor(s) and transferee(s) to receive future service and notice of papers and process; and

(6) Is accompanied by a map of the service area where the water was used by transferor(s) (assignors) and a map of the service area where the water is intended to be used by the transferee(s) (assignees), if requested by Watermaster.

(h) Approved Forms of Transfer Documents and Other Forms. Approved forms of such transfer documents and other approved Watermaster forms are attached hereto, marked and identified as follows:

Exhibit "A"	Permanent Transfer of Water Rights – Prescriptive Pumping Rights
Exhibit "B"	Permanent Transfer of Water Rights--Base Annual Diversion Right
Exhibit "C"	Permanent Transfer of Water Rights--Integrated Production Right
Exhibit "D"	Temporary Assignment or Lease of Water Right
Exhibit "E"	Stipulation Re Intervention After Judgment
Exhibit "F"	Designee to Receive Future Notices for and on Behalf of Defendant(s)

Exhibit "G"	Notice of Transfer of Overlying Rights With Property to Which They are Appurtenant
Exhibit "H"	Application To Drill Water Well
Exhibit "I"	Application To Modify Existing Water Well
Exhibit "J"	Application To Destroy Water Well
Exhibit "K"	Application For Water Treatment Facility

(i) Presumption as to Unexercised Rights. Unless otherwise noted on the above mentioned transfer documents(s), it will be presumed by Watermaster that the permanent transfer of water rights will include all unexercised rights thereunder, including authorized carry-over of unused rights.

14. Operating Safe Yield. Watermaster shall annually determine the Operating Safe Yield applicable to the succeeding Fiscal Year and estimate the same for the next succeeding four (4) Fiscal Years. Said determination shall be made at the close of the hearing thereon, which shall be commenced at Watermaster's regular meeting in May of each year. Watermaster shall notify each Pumper and Integrated Producer of his share thereof, stated in acre-feet per Fiscal Year. Thereafter, no party may produce in any Fiscal Year any Consumptive Use Portion of any Overlying Right, or an amount in excess of the sum of his Diversion Right, if any, plus his Pumper's Share of such Operating Safe Yield, or his Integrated Production Right, or the terms of any Cyclic Storage Agreement, without being subject to Assessment for the purpose of purchasing Replacement Water. The rate of such Assessment shall be established at the same meeting at which the Operating Safe Yield is established, and it may be estimated for the years for which Operating Safe Yield is estimated. In establishing the Operating Safe Yield, the Watermaster shall follow all physical, economic, and other relevant parameters provided in the Judgment herein. Said determination shall be made in accordance with the following:

(a) Preliminary Determination. At Watermaster's regular meeting in April of each year, Watermaster shall make a Preliminary Determination of the

Operating Safe Yield of the Basin for each of the succeeding five (5) Fiscal Years. Said determination shall be made in the form of a report containing a summary statement of the considerations, calculations and factors utilized by Watermaster in arriving at the said Operating Safe Yield.

(b) Notice of Hearing. A copy of said Preliminary Determination Report shall be delivered to all parties at least ten (10) days prior to a hearing thereon to be commenced at Watermaster's regular meeting in May of each year, at which time objections or suggested corrections or modifications of said determination shall be considered.

(c) Watermaster Final Determination and Review Thereof. Within thirty (30) days after completion of said hearing, Watermaster shall deliver to each Pumper, Diverter, Overlying User and Integrated Producer a Final Report and Determination of said Operating Safe Yield for each such Fiscal Year, together with a statement of the Producer's entitlement in each such Fiscal Year stated in acre-feet. Any affected party, within thirty (30) days of delivery of notice of said Watermaster determination, may petition the Court for an Order to Show Cause for Review of said determination in accordance with Section 11 hereof.

15. Carry-over Rights.

(a) Pumping. Any Pumper's Share of Operating Safe Yield, and the Production right of any Integrated Producer which is not Produced in a given year may be carried over and accumulated for one (1) year.

(b) Diversions. Diverters shall be entitled to Divert for direct use up to two hundred percent (200%) of their Base Annual Diversion Right in any Fiscal Year, provided that the aggregate quantities of water Diverted in any consecutive ten (10) Fiscal Year period shall not exceed ten (10) times such Diverter's Base Annual Diversion Right.

(c) Overlying Rights. By definition, there is no carry-over of Overlying Rights.

(d) Presumption as to Carry-over Rights. The first water Produced in the succeeding Fiscal Year shall be deemed Produced pursuant to such Producer's Carry-over Rights.

16. Special Hearings. Watermaster shall conduct such special hearings as deemed appropriate upon thirty (30) days notice to the parties hereto.

17. Policy Decisions. No policy decision shall be made by Watermaster until its next regular meeting after the question involved has been raised for discussion at a Watermaster meeting and noted in the draft of minutes thereof.

18. Assessments. Watermaster shall have the power to levy and collect Assessments from the parties (other than non-consumptive users, or Production under Special Category Rights or Cyclic Storage Agreements) based upon Production during the preceding Fiscal Year. Assessments on Minimal Producers will apply only to (1) existing parties who become Minimal Producers in the future; and (2) Minimal Producers who intervene after June 21, 2012. Said Assessments may be for one or more of the following purposes:

(a) Administration Costs. At its regular May meeting Watermaster shall adopt a proposed budget for the succeeding Fiscal Year and within fifteen (15) days shall deliver a copy thereof to each party, together with a statement of the level of Administration Assessment levied by Watermaster and which will be collected for purposes of raising funds for said budget. Said Assessments shall be uniformly applicable to each acre-foot of Production.

(b) Replacement Water Costs. Replacement Water Assessments shall be collected from each Producer on account of such party's Production in excess of its Diversion Rights, Pumper's Share or Integrated Production Right, and on account of the consumptive use portion of Overlying Rights, computed at the applicable rates established by Watermaster, consistent with Watermaster's Operating Criteria (Exhibit "H" to the Judgment) – and other relevant factors, including the projected cost and availability of Supplemental Water supplies.

Watermaster Replacement Water Assessment rates may be in an amount calculated to allow Watermaster to purchase more than one acre-foot of Supplemental Water for each acre-foot of excess Production to which such Assessment applies, when such purchases are necessary to secure Supplemental Water supplies for the benefit of the Basin and parties. Such assessment shall be in accordance with the "Policy/Criteria for Replacement Water Assessment" as appended hereto.

(c) Make-up Obligation. An Assessment shall be levied and collected equally on account of each acre-foot of Production, which does not bear a Replacement Water Assessment hereunder, to pay all necessary costs of administration and satisfaction of the Make-up Obligation. Such Assessment shall not be applicable to water Production of an Overlying Right.

(d) In-Lieu Water Cost. An Assessment may be levied against all Pumping to pay reimbursement for In-Lieu Water Cost except that such Assessments shall not be applicable to the non-consumptive use portion of Overlying Rights.

(e) Water Resource Development Costs. Watermaster may levy an Assessment on all Pumping to support the purchase, financing, and/or development of new or additional Supplemental Water sources, in cooperation with one or more Responsible Agencies as appropriate. Such assessment shall be in accordance with the "Policy/Criteria for Water Resource Development Assessment" as appended hereto.

(f) Waivers Possible for Water Quality Improvement or Protection. In accordance with Section 45 (e) of the Judgment, a Producer of water from the Basin for the purpose of testing, protecting, or improving water quality, may apply in writing by verified petition or application (hereinafter "Application") to Watermaster, for approval of such water Production free of all or any part of Watermaster Assessments thereon, and for waiver of one or more of the

provisions of Sections 25, 26, and 57 of said Judgment, where appropriate, upon terms and conditions to be established by Watermaster after a noticed hearing on such Application.

A waiver of Assessment shall not be granted for the purpose of removal of contamination or improvement of the quality of Basin water which has, or could have, resulted from the activity of the Applicant for such waiver.

In the event cleanup or Treatment Facilities are installed in the Basin by or for the benefit of a Producer, and the Basin water receiving treatment from said Treatment Facilities is subsequently delivered by or used for beneficial purposes of such Producer, the Production of such water shall not be entitled to waiver or modification of Watermaster Assessments thereon.

Notwithstanding the above, if Basin water is treated and immediately percolated or reintroduced to the Basin by way of spreading, injection, or otherwise, for purposes of this Section 18 (f), its Production may, upon Watermaster's approval of an Application to waive or modify its Assessments on the same, be entitled thereto. In any event, such water shall only be percolated or reintroduced to the Basin with the consent of Watermaster and said water shall be of a quality acceptable to Watermaster.

Although all Production from the Basin must be reported to Watermaster on a timely basis in accordance with these Rules and Regulations, Production which is granted a waiver of Assessment hereunder may, by reason of certain circumstances as specifically determined by Watermaster, be deemed an unused right and entitled to carry-over, in accordance with Section 49 of the Judgment.

(g) Application for Waiver of Assessment. An Application for Waiver of Assessment, as above set forth, shall contain all relevant information relied upon by Applicant which he believes justifies the granting of said Application. All such Applications shall explain the special needs and circumstances for such

Production and specify the approximate amounts to be Produced, the time frame of such Production, the specific location(s) of the points(s) of extraction(s), and the place of intended disposal of such water, as well as any supplemental or additional information requested by Watermaster. All such extractions shall be metered and reported quarterly to Watermaster, along with all other Basin Production, in accordance with these Rules and Regulations.

Should an Application contain incomplete information or should Watermaster desire additional, other, or further information in relation thereto, the same shall also be furnished and verified by Applicant.

(h) Hearing and Effective Date. Within thirty (30) days of the filing of any such Watermaster accepted Application, Watermaster shall give at least thirty (30) days notice to the designees of all parties that it will hold a hearing on said Application. Watermaster may, after the conclusion of said hearing, under then existing conditions, waive all or any part of its Assessments on such Production, such waiver shall not be effective prior to the date of the filing of said accepted Application, and may also waive the provisions of Sections 25, 26, and 57 of the Judgment herein.

The effective date for the granting of an Application to waive or modify Watermaster Assessments shall be no later than ten (10) days after approval thereof by Watermaster and it shall continue for the period of time specified therein, unless sooner terminated or extended by Watermaster. Nothing herein is intended to allow an increase in any Producer's annual entitlement under the Judgment.

(i) Borrowing. Upon approval by the Watermaster at its regularly scheduled public meeting, when necessary to secure Supplemental Water, Watermaster may borrow funds in excess of the annual amount of Assessments levied but uncollected. Prior to borrowing funds, Watermaster shall meet and confer with Responsible Agencies and

seek their input. Borrowing shall be in accordance with the "Policy/Criteria for Borrowing" as appended hereto.

19. Levy and Notice of Assessments. Within thirty (30) days of Watermaster's annual determination of Operating Safe Yield of the Basin for each Fiscal Year and succeeding four (4) Fiscal Years, and at such other time [s] of the year as determined by Watermaster, Watermaster shall levy applicable Administration Assessments, Replacement Water Assessments, Make-Up Water Assessments, In-Lieu Water Assessments, and Water Resource Development Assessments, if any. Watermaster shall give written notice of all applicable Assessments to each party on or before August 15, of each year, and at such other time [s] as determined by Watermaster. To provide flexibility and maximize the opportunity to secure Replacement Water supplies when available, Watermaster may levy supplemental assessments as necessary to create sufficient funds to purchase and pre-purchase such Replacement Water supplies for the benefit of the Basin and parties.

(a) Payment. All Watermaster Assessments shall be due and payable on or before September 20, or at such other times as determined by Watermaster, following such Assessment levy or Assessment rate fixing, subject to the rights reserved in Section 37 of the Judgment, and such Assessment shall be paid or become delinquent after September 20.

(b) Delinquency. Any Assessment payment which becomes delinquent shall bear interest at the annual prime interest rate in effect on the first business day of August of each year, plus one percent (1 %). Said prime interest rates shall be that fixed by the Bank of America NT&SA for its preferred borrowing on said date. Said prime interest rate plus one percent (1%) shall be applicable to any said delinquent Assessment payment from the due date thereof until paid, provided, however, in no event shall any said delinquent Assessment bear interest at a rate of less than ten percent (10%) per annum. Such delinquent Assessment and said interest thereon may be collected in a Show Cause

proceeding in the subject action or in any other legal proceeding instituted by Watermaster, and in such proceeding the Court may allow Watermaster its reasonable costs of collection, including attorney's fees.

(c) Adjustments. By reason of Watermaster's inability to control the direct costs and other charges incurred for Supplemental Water obtained from Responsible Agencies, it may be necessary from time to time for Watermaster to adjust the foregoing Assessments. Such Assessments may only be adjusted after giving at least 15 days Notice to all Parties of the meeting at which such adjustments will be considered by Watermaster.

20. Responsibility for Watermaster Assessments. Parties Producing water from the Relevant Watershed shall be responsible for Watermaster Assessments levied upon all Production.

21. Over and/or Under Reporting.

(a) Over Reporting. Watermaster shall make refunds, in whole or in part, of Assessments theretofore paid, to any Producer who has erroneously overstated his Production in any sworn statement for a quarterly period required hereunder and who has overpaid any Assessment for that quarter, but only upon compliance by the Producer with the procedure hereinafter set forth and within the time hereinafter provided.

Any such Producer, within one (1) year of the last day for filing of the said sworn statement for the quarterly period in question, may file a verified application with Watermaster requesting a refund of that portion of any Assessment claimed to have been paid by reason of that Producer's erroneous overstatement of Production. If incomplete information is contained in said application, or if Watermaster desires other, further, or additional information than that set forth in said application, the same shall also be furnished by a verified statement mailed to Watermaster on behalf of Applicant within thirty (30) days of the mailing of the written notice or request therefor from Watermaster to the

Producer's designee, at his address as shown by Watermaster records, or the application shall be deemed abandoned. Such request by Watermaster shall not cause any application otherwise timely filed to be considered as not filed within said one (1) year period. The Watermaster may pay any refund claimed without a hearing thereon, but no application shall be denied, in whole or in part, without a hearing being accorded to the Applicant, in which said hearing the Applicant shall have the burden of proof. Any determination by Watermaster on any matter in connection with said application shall be final and conclusive upon the said Producer.

Any refund authorized to be paid under the provisions of this Section may be paid only out of moneys realized from the appropriate Watermaster Assessment levied or thereafter raised. Under election of the Producer, any refund determined by Watermaster to be owing may be credited to the Producer against any subsequent Assessments which might become due and owing from him to Watermaster. No refunds shall be made except as authorized by this section and this section may not apply to over reporting unless there has been compliance with the provisions of Section 12 hereof.

(b) Under Reporting. If Watermaster shall have probable cause to believe that the Production of water from any water Producing facility is in excess of that disclosed by the sworn statements covering such water Producing facility, Watermaster may cause an investigation and report to be made concerning the same. Watermaster may fix the amount of water Production from such facility at an amount not to exceed the maximum Production capacity thereof, provided, however, where a Watermaster tested water measuring device is permanently attached to such facility, the record of Production as so disclosed by such measuring device shall be presumed to be accurate and the burden of proof shall be upon Watermaster to establish the contrary.

A determination by Watermaster that a Producer has under reported Production shall require Watermaster to give written notice thereof to such Producer by mailing such notice to his designee, at the address shown by Watermaster records. A determination of under reporting made by Watermaster shall be conclusive on any Producer who has Produced water from the facility in question and the Watermaster Assessments based thereon, together with interest as set forth in Section 19 (b) hereof, shall be payable forthwith, unless such Producer shall file with Watermaster within ten (10) days after the mailing of such notice, a written protest setting forth the ground or grounds for protesting the amount of Production so fixed or the Assessments and interest thereon.

Upon the filing of such protest, Watermaster shall hold a hearing at which time the total amount of water Production and the Assessments and interest thereon shall be determined, which action shall be conclusive if based upon substantial evidence. A notice of such hearing shall be mailed to protestant at least ten (10) days before the date fixed for the hearing. Notice of the determination by the Watermaster at the close of such hearing shall be mailed to the protestant. The Producer shall have twenty (20) days from the date of mailing of such notice to pay the Assessments fixed by Watermaster and interest thereon, as fixed herein, before the same becomes delinquent.

(c) Delinquent Assessments; Interest; Costs; and Attorney's Fees. Watermaster may bring suit in the Court having jurisdiction against any Producer of water from the Basin or Relevant Watershed for the collection of any delinquent Assessment and interest thereon. The Court having jurisdiction of the suit may, in addition to any delinquent Assessment, award interest and reasonable costs, including attorney's fees.

22. Information Concerning Offers to Purchase, Sell or Lease Water Rights. Watermaster shall maintain a record of any offer to purchase, sell or lease water rights reported to Watermaster, for the purpose of encouraging the orderly transfer of such

rights by acting as a clearing house for such information. Any person desiring to purchase, sell, or lease such rights may examine such Watermaster records.

23. Watermaster Control of Spreading and Ground Water Storage. Except for the exercise of non-consumptive uses, no party shall spread water within the Basin or Relevant Watershed for subsequent recovery or Watermaster credit without prior Watermaster written permission to do so because Watermaster has sole custody and control of all Ground Water storage rights in the Basin.

(a) Replacement Water and Cyclic Storage Deliveries. Deliveries of water for replenishment or cyclic storage shall be made either pursuant to Watermaster's duly authorized order for Replacement Water or in accordance with terms and conditions of a valid Cyclic Storage Agreement with Watermaster. All such water deliveries shall be subject to the conditions and priorities set forth in Section 26 herein.

(b) Storage of Water for Export. As provided in Section 34(r) of the Judgment, any party may enter into an agreement with Watermaster to store Supplemental Water and export said stored Supplemental Water under specific terms and conditions approved by Watermaster. Such storage and export shall be subject to (1) a determination by Watermaster that no material injury to the Basin or parties will result therefrom; (2) execution of an agreement with Watermaster setting forth the terms and conditions upon which water may be stored in or exported from the Basin; and (3) compliance with Watermaster Rules and Regulations respecting Basin storage and export. In accordance with Section 45(b)(6) of the Judgment; Watermaster shall levy an assessment to account for costs, burdens or losses incurred in connection with such exported or stored water, including a fee for storage administration. Such storage or export shall be subject to the "Policy/Criteria for Agreement for Storage and Export of Supplemental Water" as appended hereto.

(c) Supplemental Water Quality. In an effort to prevent degradation of Basin groundwater quality, and in accordance with Section 40 of the Judgment, Watermaster may establish criteria for the quality of Supplemental Water delivered for Basin replenishment or Cyclic Storage. Such criteria shall consider applicable Basin Plan objectives as set forth by the California Regional Water Quality Control Board - Los Angeles Region, but shall also balance the need to maintain adequate water supplies with the need to preserve Basin water quality.

Watermaster may review and update its Criteria for Supplemental Water Quality as needed to address changes in regulations or hydrologic conditions. Watermaster shall provide the Responsible Agencies with at least 30 days notice of its intent to adopt or modify such criteria, along with the proposed draft or changes, and shall consider comments from those agencies prior to adoption. Watermaster shall also provide the Responsible Agencies with the final, adopted Criteria for Supplemental Water Quality.

24. Watermaster Annual Report. Watermaster shall annually file with the Court and deliver to the parties a report of all Watermaster activities during the preceding Fiscal Year, including an audited statement of all accounts and financial activities of Watermaster, summaries of Diversions and Pumping, and all other pertinent information. To the extent practical, said report shall be delivered to all parties and filed with the Court on or before November 1 of each Year.

25. Watermaster Stipulation Re Intervention After Judgment. Attached hereto and marked "Exhibit E" is a form of Stipulation for Intervention After Judgment which Watermaster will execute, file with the Court if accompanied by the necessary filing fee, obtain a Court hearing date thereon, give Notice thereof and attempt to obtain an approving Court Order thereon.

26. Uniform Rules and Conditions of Cyclic Storage Agreements.

(a) Application for Cyclic Storage Agreements. Any person or entity, private or public, desiring to spread and store Supplemental Water within the

Basin for subsequent recovery and use or for Watermaster credit shall make application to Watermaster for a Cyclic Storage Agreement pursuant to these Uniform Rules and Conditions. Watermaster shall have first call on Supplemental Water for Replacement Water, Make-up Water and for the "Alhambra Exchange" before such water is made available for Cyclic Storage Agreements.

(b) Purpose of Cyclic Storage Agreements. All Cyclic Storage Agreements shall be for the utilization of Ground Water storage capacity of the Basin and for cyclic or regulatory storage of Supplemental Water.

(c) Available Storage Capacity. In considering the available Ground Water storage capacity of the Basin for such Agreements, Watermaster shall take into account the operation of the Basin under the Physical Solution provisions of the Judgment.

(d) Provisions of Cyclic Storage Agreements. Any such Agreement shall include provisions for:

(1) Watermaster control of all spreading (or injection) and extraction scheduling and procedures for such stored waters:

a) The time, place, and amount of said spreading shall be approved in advance by Watermaster.

(2) Calculations by Watermaster of any special costs, damages or burdens resulting from such operation;

(3) Priorities for Cyclic Storage Agreements in the following order:

a) Responsible Agencies on the basis of their relative requirements for Replacement Water within their respective corporate boundaries,

b) Other parties on the basis of priority of application to Watermaster for such Agreements, and

c) Non-parties;

(4) Determinations by Watermaster of, and accounting for, all losses in stored water, assuming that such stored water floats on top of the Ground Water supplies, and accounting for all losses of water which otherwise would have replenished the Basin. Such losses of stored water shall be assigned by Watermaster as follows:

a) First losses by non-parties in the reverse priority of the earliest original dates of their respective Cyclic Storage Agreements, to the whole of such non-parties' stored water,

b) The next losses by parties who are not Responsible Agencies in reverse priority of the earliest original dates of their respective Cyclic Storage Agreements, to the whole of their stored water, and

c) The last losses by Responsible Agencies to be shared on the basis of water actually in storage in the Basin at the time of the loss of such stored water;

(5) The priorities for spreading of Supplemental Water are hereby established as follows, in the order of their priority:

First: Supplemental Water ordered by Watermaster from Responsible Agencies for direct delivery to the Basin as Replacement Water,

Second: Supplemental Water for delivery to the Basin for storage under Cyclic Storage Agreements between Watermaster and Responsible Agencies whereby such Supplemental Water will not be exported from the Basin. In the event that more than one Responsible

Agency wishes to deliver water to Cyclic Storage simultaneously and there is inadequate spreading capacity available, deliveries by each Responsible Agency so desiring to deliver Supplemental Water shall be scheduled so that the total quantity of water in Cyclic Storage of those Agencies can be increased proportionately in percent of their maximum allowed Cyclic Storage,

Third: Supplemental Water for delivery to Individual Cyclic Storage accounts of parties to the Judgment whereby such Supplemental Water will not be exported from the Basin. In the event that more than one party wishes to deliver water to such Cyclic Storage accounts simultaneously and there is inadequate spreading capacity available, deliveries for each such party shall be scheduled so that the total quantity of water in such parties' Individual Cyclic Storage accounts can be increased proportionately in percent of their maximum allowed Cyclic Storage, and

Fourth: Supplemental Water for delivery to the Basin for storage under Cyclic Storage Agreements between

Watermaster and Responsible Agencies, whereby Supplemental Water may be exported from the Basin.

Fifth: Supplemental Water for delivery to Individual Cyclic Storage Accounts of parties to the Judgment whereby such Supplemental Water may be exported from the Basin.

Sixth: Non-parties as established by Watermaster at the time; and

(6) Payment to Watermaster for the benefit of parties in said action of all special costs, damages or burdens incurred (without any charge, rent, assessment or expense as to parties to said action by reason of the adjudicated proprietary character of said storage rights, nor credit for offset for benefits resulting from such storage); provided, no party shall have any direct interest in or control over such contracts or the operation thereof by reason of the adjudicated right of such party. Watermaster has sole custody and control of all Ground Water storage rights in the Basin pursuant to the Physical Solution in the Judgment and all said Agreements are subject to review and approval of the Court.

(e) Terms of Cyclic Storage Agreements and Extensions. The term of such Agreements shall not exceed five (5) years but may be extended for additional terms, not to exceed five (5) years each, provided Watermaster shall report its intention to consider an extension of any such Agreement in minutes of its meeting held prior to its meeting when any such extension request shall be acted upon.

(f) Maximum Storage. Such Agreements shall fix the maximum amount of Supplemental Water to be stored in the Basin at any point in time by a particular storing entity.

(g) Watermaster to be Held Harmless. The storing entity of such Agreement shall save and hold harmless Watermaster, its officers, agents and employees from any and all costs, damages or liability resulting from said Agreement and shall provide Watermaster with the defense or costs of the defense of any action brought against Watermaster, its officers, agents or employees arising or alleged to arise by reason of such Agreement for storage of Supplemental Water in the Basin.

(h) Reports of Stored Water. The storing entity, if not a Producer, shall quarterly report to Watermaster the amount of Supplemental Water which it spreads and withdraws each quarter under such Agreement. Such reports shall be due on the last day of the month next succeeding the end of the relevant quarter, i.e. April 30, July 31, October 31, and January 31. Such reports shall be cumulative and shall indicate the credit balance of the relevant quarter. If the storing entity is a Producer storing water pursuant to an Individual Producer Cyclic Storage Account whereby Watermaster has purchased the stored water on the Producer's behalf and credited the Producer's account, then Watermaster shall provide the Producer with a quarterly accounting of storage credit in the regular quarterly production report form. The Producer shall be responsible for verifying the credit and notifying Watermaster of any dispute or discrepancy.

(i) Court Approval of Cyclic Storage Agreements. Upon its approval of a Cyclic Storage Agreement, Watermaster shall Petition the Court for approval thereof and said Agreement shall become effective only upon such Court approval.

27. Responsible Agency from Whom Watermaster Shall Purchase Replacement Water.

(a) Responsible Agencies. There are three Responsible Agencies within or partially within the Basin. Two of such Agencies, Upper San Gabriel Valley Municipal Water District (Upper District) and Three Valleys Municipal Water District (Three Valleys District) are member agencies of The Metropolitan Water District of Southern California (Metropolitan) and supply Watermaster with Replacement Water purchased from Metropolitan. The third Responsible Agency is San Gabriel Valley Municipal Water District (San Gabriel District) which has contracted with the State of California and has constructed facilities to deliver water from the State Water Project and, thus, can directly supply Watermaster with Replacement Water.

(1) Availability of Supplemental Water from Responsible Agencies. If any Responsible Agency shall, for any reason, be unable to deliver Supplemental Water to Watermaster in a timely fashion when needed, Watermaster may (1) collect funds at an appropriate level and hold them in trust, together with interest accrued thereon, for purchase of such water when available; (2) purchase water from the remaining Responsible Agencies which are the most beneficial and appropriate sources observing all legal and contractual constraints on the availability of such water; or (3) purchase Supplemental Water from any other available source. Watermaster shall consult with the Responsible Agencies involved and in good faith shall determine the appropriate source of Supplemental Water under such circumstances. Should Watermaster arrange to purchase Supplemental Water from a source not involving a Responsible Agency, Watermaster shall provide the Responsible Agencies an opportunity to provide said Supplemental Water or comparable water supplies on comparable terms.

(b) Water Used Within the Basin. For water used within the Basin, the Responsible Agency within whose boundaries is located the place of use of water Produced from the Basin will determine the Responsible Agency from whom Watermaster shall purchase Replacement Water.

(c) Water Exported from the Basin. Except for water Produced from the Basin and used within the City of Sierra Madre (for which San Gabriel District shall be the Responsible Agency), the place of such Production of water exported from the Basin shall determine the Responsible Agency from whom Watermaster shall purchase Replacement Water.

(d) Computations of the Amount of Replacement Water to be Purchased from Responsible Agencies. In computing the amount of Replacement Water to be provided by a Responsible Agency, Watermaster shall:

(1) Determine the Replacement Water requirement of each party to the Judgment and apportion such Replacement Water requirement as required in (b) and (c) above;

(2) Calculate the total Replacement Water requirement for each Responsible Agency as determined in (1) above;

(3) Tabulate Interagency Transfers of water rights as described in (e) (1) below;

(4) Calculate the Net Interagency Transfer adjustment as described in (e) (2) below;

(5) Determine the adjusted Replacement Water requirements, calculated for each Responsible Agency as required in (e) below; and

(6) Determine the effect of deferred Replacement Water requirements as calculated in (h) below.

(e) Net Interagency Transfer Adjustment and Replacement Water Requirement. Replacement Water requirements as heretofore calculated shall be modified by a "Net Interagency Transfer Adjustment." "Interagency Transfer"

shall mean the aggregate amount of Production Right resulting from the temporary transfer of all or a portion of a Pumper's Share of Operating Safe Yield, or a Base Annual Diversion Right, or the Diversion Component or Pumping Component of an Integrated Production Right for use within the boundaries of a Responsible Agency other than the Responsible Agency within which such water rights were developed and adjudicated.

The annual Replacement Water requirement resulting from Net Interagency Transfers for each Responsible Agency shall be calculated as follows:

(1) Net Interagency Transfers shall be calculated for each Responsible Agency as the difference between such rights transferred for use outside or partially outside that Responsible Agency and such rights transferred for use within or partially within that Responsible Agency.

(2) Tabulate the total Interagency Transfers of water rights, calculated for each of the Responsible Agencies in (1) above. The sum of said total Interagency Transfers for each of the three Responsible Agencies is that Responsible Agency's Net Interagency Transfer Adjustment. The total of such adjustments for all Responsible Agencies shall equal zero. The Responsible Agency(s) having a positive amount shall have this Net Interagency Transfer Adjustment added to the Replacement Water requirement computed for it in (d) (2) above. The Responsible Agency(s) having a negative amount shall have this Net Interagency Transfer Adjustment subtracted from the Replacement Water requirement calculated for it in (d) (2) above.

(f) Special Provisions.

(1) The Replacement Water requirement calculated for each of the Responsible Agencies in (e) (2) above cannot exceed the total quantity

of Replacement Water obligation calculated for all Responsible Agencies, and/or;

(2) If the Replacement Water requirement calculated in (e) (2) above results in a negative value, that negative value shall be adjusted to zero, as described in (h) below.

(g) Special Provisions Re Alhambra Exchange. An adjustment shall be made to San Gabriel District's calculated Replacement Water requirement, if necessary, to allow Upper District to deliver an amount of Replacement Water to the City of Alhambra equal to the quantity delivered through connection USG-5 for the previous year, the year in which the Replacement Water requirement was incurred.

(h) Adjustments to Calculated Replacement Water Requirements. Adjustments to Replacement Water requirements resulting from the calculations in (f) (2) or (g) above shall be apportioned as follows:

(1) As between Upper District and Three Valleys District, the district with a negative value shall have added to it an amount sufficient to equal zero, that amount shall be subtracted from the Replacement Water requirement of the other Responsible Agency, but it shall not be reduced to less than zero. If a negative balance still exists, then it shall be subtracted from San Gabriel District.

(2) If San Gabriel District's Replacement Water requirement is less than zero, it shall be adjusted to zero by deducting equal amounts of San Gabriel District's adjustment from both Upper District and Three Valleys District.

(3) All adjustments shall be accumulated in a Deferred Replacement Water Requirement Account for each of the Responsible Agencies. In future years when deliveries of Replacement Water may be made by a Responsible Agency, up to the amount, or any portion of the

amount, in the Deferred Replacement Water Requirement Account, such deliveries will be equally subtracted from the Replacement Water requirement of the Responsible Agency(s) from which it was derived in (1) and/or (2) above for that year so long as such deliveries shall not cause total deliveries of all Responsible Agencies to exceed the amounts provided for in paragraph (f) (1) and/or paragraph (f) (2) above. At the time that deliveries are made by a Responsible Agency from its Deferred Replacement Water Requirement Account, Watermaster shall pay to that Responsible Agency its price prevailing at that time for Replacement Water.

(i) Advanced Delivery Account. Whenever the total quantity calculated in (e) (1) above, is less than that delivered to the City of Alhambra through USG-5 for the previous year, an accounting of the difference shall be maintained in an "Advanced Delivery Account" and such difference, or as much as possible thereof, shall be subtracted from the Replacement Water Requirement of Upper District in the next year when an obligation to deliver Replacement Water exists for Upper District.

28. Ground Water Quality Management. The Watermaster, Upper District, San Gabriel District, and San Gabriel Valley Water Association, through a Joint Resolution dated February-March 1989, affirmed their commitment to participate in a coordinated federal, state and local response to contamination of Ground Water supplies of the Basin for both the purpose of preventing additional contamination and the purpose of cleaning up and limiting the spread of existing contamination. The entities adopting that Joint Resolution designated and accepted Watermaster as the entity to coordinate local involvement in the efforts to preserve and restore the quality of Ground Water within the Basin. Watermaster sought and received additional powers from the Court to regulate extractions of water from the Basin for water quality control purposes, and this Section 28 is to implement the same. These efforts shall be that any

New or Increased Extraction to meet water needs from the Basin shall include planned treatment in existing areas of High Level Degradation or Contamination. An important part of exercising these additional powers and coordinating federal, state and local responses to contamination of the Basin's water supplies is the collection and compilation of essential data from Producers and the expeditious distribution of such data to the proper state and federal regulatory agencies involved in water quality matters in the Basin

(a) Watermaster Approvals. Each Producer shall, after the effective date of this amendment to these Rules and Regulations (June 28, 1991), apply to Watermaster, on forms provided by Watermaster, for a permit to do any of the following:.

-- Construct any well;

-- Deepen any existing well;

-- Modify the perforations of the casing of any existing well;

-- Notwithstanding natural fluctuations in Basin water levels, physically increase or decrease the Effective Extraction Capacity of any existing well, including that which may occur due to installation or modification of pipelines, booster pumps or other distribution system components, as of said effective date of these Rules and Regulations;

-- Abandon any existing well; or

-- Construct, relocate or abandon Ground Water Treatment Facilities.

Such application will be acted upon by Watermaster no later than at its first regular meeting following sixty (60) days after receipt of the complete application. If an emergency exists, Watermaster shall expedite its actions to the maximum extent practicable.

(b) Watermaster Directed Change in Water Production.

(1) Based on available data, Watermaster's Five-Year Plan, and/or Ground Water modeling, Watermaster will, for water quality protection

purposes, direct any Producer to increase, decrease or cease Production from existing wells, initiate new well Production or deliver water to or accept water from another water system or direct a Producer to obtain water from another source in-lieu of Pumping from its own wells, or take other appropriate actions in compliance with an approved Watermaster plan by giving such Producer advanced written notice thereof, specifying a time certain for compliance.

(2) The increase in cost to a Producer resulting from a Watermaster directed change in water Production shall not be borne by the Producer, but will be reimbursed to the Producer by Watermaster through In-Lieu Water Assessments levied by Watermaster, unless such funding is made available from other sources such as federal, state or local governmental entities or by those found to be responsible for the contamination in the Basin which caused Watermaster to direct the change in Production by the Producer.

(c) Producer Data, Initial Submittal. After June 28, 1991, Producers shall submit, within sixty (60) days of Watermaster's request, initial data in a form acceptable to Watermaster, to update and ensure the accuracy of the existing Basin database. The data shall include:

(1) Identification and location of all Active, Inactive or Abandoned Wells;

(2) Water quality data concerning organic compounds, nitrates and any other water quality parameters as specified by Watermaster, including all data from other sampling Producers may conduct in addition to governmental requirements;

(3) Available construction details of each well owned or operated by Producer, as well as all logs (driller's, electric, etc.);

(4) Depths or zones from which water is extracted from each well, if available; and

(5) A current map of the main water transmission system of Producer's distribution system showing the location and sizes of transmission mains and storage reservoirs, all interconnections with other systems and their sizes and capacities, and any other data pertinent to the transmission (but not distribution to customers) of water through the Producer's system.

(d) Quarterly Reports. After the initial submittal of data per subparagraph (c) above, the following data shall be submitted by all Producers to Watermaster quarterly, on or before the last day of January, April, July and October:

(1) Chemical water quality data collected during the quarter and provided to any state, federal or local public agency;

(2) Data described under Section 28 (c) (3), (4) and (5) hereof which supplement, amend or change the data previously submitted by a Producer; and

(3) All data from other sampling which Producers may conduct in addition to governmental requirements.

(e) Operating Principles. Any New or Increased Extraction by a Producer in the Basin to meet water supply needs shall have prior Watermaster approval, shall not contribute to contaminant migration, and shall include planned treatment in existing areas of High-level Degradation and Contamination. In giving such approval, Watermaster shall consider the cumulative effects of multiple actions by all Producers in the area of concern by using available information, the Five-Year Plan, and Ground Water modeling. If Watermaster determines that a proposed new well is a Replacement Well and is not a New or Increased Extraction, the requirement for Planned Treatment in existing areas of High-level Degradation and Contamination may be waived.

(f) Emergency Exemptions. Where a Producer's water supply or water quality problem is so urgent that the viable option for maintaining an adequate short-term supply that meets drinking water standards involves an action in conflict with the operating principles outlined in Section 28 (e) hereof, Watermaster may approve a short-term action contingent upon the Applicant Producer concurrently submitting an acceptable long-term action plan with acceptable deadlines for implementation. In general, the long-term action plan must be approved prior to or concurrently with the short-term action.

(g) Water Quality and Supply Plans. To assure that Pumping does not lead to further degradation of water quality in the Basin, a Five-Year Water Quality and Supply Plan must be prepared and updated annually by Watermaster, projecting water supply requirements and water quality conditions for each period of five (5) calendar years beginning November 1, 1991, and each November 1 thereafter. This Plan will also include a water quality monitoring element to obtain supplemental information as needed to assist in projecting contamination levels. Watermaster will supply the Producers with projections of contaminant migration by June 1 of each year for the preparation of these Water Quality and Supply Plans.

Each purveyor of potable water produced from the Basin shall submit the following information to Watermaster by July 31 of each year:

(1) Projected quarterly water supply requirements for each of the following five calendar years and the proposed pumping rates, in gallons per minute, for each well;

(2) Identification of each Production well known to contain contaminants and the contaminant levels;

(3) Proposed methods for meeting the water supply requirements of the system if contaminant levels are, or are projected by Watermaster to become, greater than drinking water standards; and

(4) Any intended treatment facility.

Watermaster shall analyze the information submitted by Producers and develop an overall draft Basin Water Quality and Supply Plan. A draft Plan will be submitted by Watermaster to the Los Angeles Regional Water Quality Control Board, and for public review and comment per Section 28 (i) hereof, by November 1. Appropriate modifications resulting from comments received will be reflected in the final draft, and a staff report providing an explanation of decisions will be made available.

(h) Ground Water Treatment Facilities.

(1) Producers in the Basin shall notify Watermaster in advance at the initial stages of planning of their intent to construct any Facility to remove volatile organic compounds (VOCs), nitrates, or other contaminants from water Produced from the Basin. Such notice shall include the following information:

- the intended location and a description of the Treatment Facility;
- the water production capacity;
- the rate of contaminant removal capacity;
- the expected concentration of all identified contaminants in the water to be treated;
- the expected concentration of all identified contaminants in the water after treatment;
- the intended disposition of all water to be treated;
- the expected initiation date and period of time over which the Treatment Facility will operate; and
- the expected capital and operating costs of the Treatment Facility.

(2) In addition, the Producer shall describe all necessary permits and/or all permits for which it has applied or has received from all

regulatory agencies with regard to such Treatment Facility and shall supply to Watermaster copies of all environmental documents required under the California Environmental Quality Act and/or the National Environmental Protection Act. No construction of such Treatment Facilities shall be initiated without the prior written approval of Watermaster. Watermaster shall promptly examine each submittal for compatibility with available information, the Five-Year Plan and the operating principles, and notify the Applicant of its findings and decision regarding such proposed Treatment Facility no later than at its first regular meeting following sixty (60) days after receipt of a complete submittal by the Producer. Watermaster will also report its determination to the Los Angeles Regional Water Quality Control Board.

(3) All operators of Treatment Facilities shall report quarterly to Watermaster at least the following information:

- name or other designation of the Treatment Facility;
- quantity of water treated during quarter;
- quantity of each contaminant removed;
- quality of water before treatment, at beginning and end of each quarter;
- quality of water after treatment, at beginning and end of each quarter; and
- operation and maintenance costs for each quarter.

(i) Decision Making Process. Hearings and Appeals.

(1) All Watermaster determinations relating to the control of Pumping for water quality purposes shall be based upon a staff recommendation and information and recommendations received from or furnished by affected Producers. Staff's recommendation shall result from staff's analysis of information presented by interested parties, all available

water quality data, Watermaster's Five-Year Plan, Ground Water modeling and other water quality trend analysis reports, and will be based on the operating principles set forth in these rules. Staff shall provide supporting data to document each recommendation that it makes to Watermaster. After consideration of the staff recommendation and public comment provided at the Watermaster meeting, Watermaster shall make a final decision.

(2) Public hearings on Watermaster's draft annual Five-Year Water Quality and Supply Plan will be held following a thirty (30) day public review and comment period. A notice of the availability of such draft will be sent to all parties to the Judgment as well as to all other interested parties following the regular Watermaster meeting in November of each year, along with a notice of the date, time and place of the public hearing, to be scheduled not less than thirty (30) days after the mailing date of the notice of availability of the draft Plan. A notice of public hearing will also be published in the San Gabriel Valley's key local newspaper(s) at the beginning of the public review period. Consideration of comments received is described in Section 28 (g) hereof.

(3) Appeal of a Watermaster decision may be made to the Watermaster who shall notice and consider the same at a public hearing. Actions by the Watermaster are subject to review by the Court. Any party may, by a regularly noticed motion, petition the Court for review of Watermaster's action or decision. Notice of such motion shall be served and filed within ninety (90) days after such Watermaster action or decision.

29. Watermaster-directed Groundwater Management Programs. Upon written request by any party, or on recommendation of Watermaster staff, Watermaster may initiate an investigation of existing or proposed pumping activities, groundwater levels, recharge potential and other factors that influence groundwater supply in any specific

area of the Basin. Based on the findings of the investigation, and in accordance with Section 40(a) of the Judgment, Watermaster may determine that a groundwater management program is needed to assure equitable water supply availability to all affected parties in the investigation area. Such a program may require that Producers reduce pumping from one or more wells, take water from another source in lieu of pumping groundwater, or a combination of those and/or other measures; however, no program adopted by Watermaster pursuant to this section shall effect a modification or amendment of the quantities specified in the declared rights of any party under the Judgment.

If Watermaster determines such a management program is needed within a specific area of the Basin, Watermaster will develop the program with review and comment by affected parties, and will first attempt to facilitate its implementation through voluntary agreements among the various affected parties. Watermaster may also participate in such agreements as appropriate, subject to court approval.

If any affected party refuses voluntary participation in the groundwater management program, or if the affected Parties cannot reach agreement within a reasonable time not to exceed 12 months from the date that Watermaster receives the draft program at a regular meeting, Watermaster will consider adoption of the program at a duly noticed public hearing and, if the program is adopted, will seek court approval of the program as part of the Watermaster Operating Criteria set forth in the Judgment. Watermaster will implement the program upon court approval and may use funds collected through the In-lieu Assessment to reimburse a Producer for costs incurred beyond normal operating costs to comply with the Watermaster-directed groundwater management program.

30. Purchase Water Plan. On or before November 1 of each year, Watermaster shall prepare and distribute to the Responsible Agencies a three-year projection of its supplemental water purchases from each agency. Watermaster shall, to the extent feasible, coordinate the tentative schedule for delivery and payment of those

purchases with each Responsible Agency. Such three-year projection shall be in accordance with the "Policy/Criteria for Three-year Purchased Water Plan" as appended hereto.

31. Export Agreements. Any party may enter into an agreement with Watermaster to store Supplemental Water and export said stored Supplemental Water under specific terms and conditions approved by Watermaster. Such export shall be in accordance with the "Policy/Criteria for Agreement for Storage and Export of Supplemental Water".

APPENDIX "A"

DEFINITIONS

(a) Active Party – Section 54 of the Judgment refers to specific language regarding electronic service and removal from service list. An active party list will be maintained by Watermaster.

(b) Base Annual Diversion Right -- The average annual quantity of water which a Diverter has the right to Divert for Direct Use.

(c) Deliver – Pursuant to Section 54 of the Judgment, in lieu of mailing any item required to be served under the Judgment, Watermaster may serve such item by electronic service which may include posting the document to Watermaster's website, sending documents to a party by e-mail, or sending notice to the party of the documents availability and viewing location.

(d) Direct Use -- Beneficial use of water other than for spreading or Ground Water recharge.

(e) Divert or Diverting -- To take waters of any surface stream within the Relevant Watershed.

(f) Diverter -- Any party who Diverts.

(g) Elevation -- Feet above mean sea level.

(h) Fiscal Year -- The period July 1 through June 30, following.

(i) Ground Water -- Water beneath the surface of the ground and within the zone of saturation.

(j) Ground Water Basin -- An interconnected permeable geologic formation capable of storing a substantial Ground Water supply.

(k) Integrated Producer -- Any party that is both a Pumper and a Diverter, and has elected to have its rights adjudicated under the optional formula provided in Section 18 of the Amended Judgment.

(l) In-Lieu Water Cost -- The differential between a particular Producer's cost of Watermaster directed Produced, treated, blended, substituted or Supplemental Water

delivered or substituted to, for, or taken by such Producer in-lieu of his cost of otherwise normally producing a like amount of Ground Water.

(m) Judgment -- Judgment entered in Los Angeles Superior Court Civil Action No. 924128, entitled "Upper San Gabriel Valley Municipal Water District v. City of Alhambra, et al.," as amended.

(n) Key Well -- Baldwin Park Key Well, being elsewhere designated as State Well No. IS/IOW-7R2, or Los Angeles County, Department of Public Works, Well No. 3030-F. Said well has a ground surface elevation of 386.7.

(o) Long Beach Case -- Los Angeles Superior Court Case No. 722647, entitled "The Board of Water Commissioners of the City of Long Beach, et al, v. San Gabriel Valley Water Company, et al."

(p) Main San Gabriel Basin or Basin -- The Ground Water Basin underlying the area shown as such on Exhibit "A" of the Judgment.

(q) Make-up Obligation -- The total cost of meeting the obligation of the Basin to the area at or below Whittier Narrows, pursuant to the Judgment in the Long Beach Case.

(r) Minimal Producer -- Any Producer whose Production in any Fiscal Year does not exceed five (5) acre-feet.

(s) Natural Safe Yield -- The quantity of natural water supply which can be extracted annually from the Basin under conditions of the long-term average annual supply, net of the requirement to meet downstream rights as determined in the Long Beach Case (exclusive of Pumped export), and under cultural conditions as of a particular year.

(t) Operating Safe Yield -- The quantity of water which Watermaster determines may be Pumped from the Basin in a particular Fiscal Year, free of the Replacement Water Assessment under the Physical Solution of the Judgment.

(u) Overdraft -- A condition wherein the total annual Production from the Basin exceeds the Natural Safe Yield thereof.

(v) Overlying Rights -- The right to Produce water from the Basin for use on Overlying Lands, which rights are exercisable only on specifically defined Overlying Lands and which cannot be separately conveyed or transferred apart therefrom.

(w) Physical Solution -- The Court-decreed method of managing the waters of the Basin so as to achieve the maximum utilization of the Basin and its water supply, consistent with the rights declared in the Judgment.

(x) Prescriptive Pumping Right -- The highest continuous extraction of water by a Pumper from the Basin for beneficial use in any five (5) consecutive years after commencement of Overdraft and prior to filing of the action, as to which there has been no cessation of use by that Pumper during any subsequent period of five (5) consecutive years prior to the filing of said action.

(y) Produce or Producing -- To Pump or Divert water from the Basin.

(z) Producer -- A party who Produces water from the Basin.

(aa) Production -- The annual quantity of water Produced from the Basin, stated in acre-feet.

(bb) Pump or Pumping -- To extract ground water from the Basin by Pumping or by any other method.

(cc) Pumper -- A party who Pumps water.

(dd) Pumper's Share -- A Pumper's right to a percentage of the entire Natural Safe Yield, Operating Safe Yield and appurtenant Ground Water storage of the Basin.

(ee) Reclaimed Water -- Water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur.

(ff) Relevant Watershed -- That portion of the San Gabriel River Watershed tributary to Whittier Narrows which is shown as such on Exhibit "A" to the Judgment and the exterior boundaries of which are described in Exhibit "B" of the Judgment.

(gg) Replacement Water -- Water purchased by Watermaster to replace: (1) Production in excess of a Pumper's Share of Operating Safe Yield; (2) the consumptive

use portion resulting from the exercise of an Overlying Right; and (3) Production in excess of a Diverter's right to Divert for Direct Use.

(hh) Responsible Agency -- The municipal water district which is the normal and appropriate source from whom Watermaster shall purchase Supplemental Water for replacement purposes under the Physical Solution of the Judgment, being one of the following:

(1) Upper District -- Upper San Gabriel Valley Municipal Water District, a member public agency of The Metropolitan Water District of Southern California (MWD).

(2) San Gabriel District -- San Gabriel Valley Municipal Water District, which has a direct contract with the State of California for State Project water.

(3) Three Valleys District -- Three Valleys Municipal Water District, a member public agency of MWD.

(ii) Service – Synonymous with the definition for Deliver.

(jj) Stored Water -- Supplemental Water stored in the Basin pursuant to a Cyclic Storage Agreement with Watermaster as authorized by Section 34(n) of the Judgment herein.

(kk) Supplemental Water -- Non-tributary water imported through a Responsible Agency and reclaimed water or water obtained from other available sources when water is not available in a timely fashion from a Responsible Agency.

(ll) Transporting Parties -- Any party who has transported water from the Relevant Watershed or Basin to an area outside thereof within the Year immediately preceding the entry of Judgment, and any party presently or hereafter having an interest in lands or having a service area outside the Basin or Relevant Watershed contiguous to lands in which it has an interest or a service area within the Basin or Relevant Watershed. Division by a road, highway, or easement shall not interrupt contiguity. Said term shall also include the City of Sierra Madre, or any party supplying water thereto, so

long as the corporate limits of said City are included within one of the Responsible Agencies.

(mm) Water Level -- The measured Elevation of water in the Key Well, corrected for any temporary effects of mounding caused by replenishment or local depressions caused by Pumping.

(nn) Year -- A calendar year, unless the context clearly indicates a contrary meaning.

The following are supplemental definitions relating to Section 28 of these rules and regulations.

(oo) New Extraction -- Any extraction from the Main San Gabriel Basin using a well or other Ground Water extraction facility that becomes active for the first time for water supply purposes on ,or after June 28, 1991.

(pp) Increased Extraction (Decreased) -- Any modification to an existing well or extraction facility that physically increases (or decreases) the Effective Extraction Capacity of that well or extraction facility. Such modifications may include: (1) changing the well depth, (2) modifying the perforation intervals, (3) modifying the pump and/or motor, (4) installing or modifying distribution pipelines, (5) installing or modifying booster pumps, and (6) installing or modifying other distribution system components. Normal maintenance work would be excluded.

(qq) Effective Extraction Capacity -- The actual capacity of a well or extraction facility to extract Ground Water from the Basin using the pumping equipment and system appurtenances in good working order as they existed on June 28, 1991.

(rr) Treatment Facility -- Any facility that provides treatment for contaminated Ground Water in order to meet drinking water standards.

(ss) Planned Treatment -- A specific Treatment Facility with a designated source of Ground Water supply and schedule for development.

(tt) Active Well -- Any well used or that could be used without modifications to extract Ground Water.

(uu) Inactive Well -- Any well that is not in service at the time of filing of an application hereinunder.

(vv) Abandoned Well -- A well that has been abandoned in accordance with the provisions of state, county or local laws and regulations.

(ww) High-level Degradation and Contamination -- Ground Water containing contaminants in excess of the federal or state maximum contaminant level. Some areas of the Basin contain higher contaminant concentrations than others and Treatment Facilities shall be planned to extract Ground Water from the higher level areas of contamination in the Basin.

(xx) Replacement Well -- A new well that will replace an existing well due to structural or mechanical failure, which is located in the same general vicinity and which has the same physical characteristics (size, depth, perforation intervals) and design extraction capacity as the well it is replacing.

APPENDIX "B"

SUMMARY OF CRITICAL DATES AND ACTIONS FOR WATERMASTER

This summary of critical dates and actions for Watermaster is presented for the convenience of Watermaster members, the Parties and others in carrying out the provisions of the Court Judgment. It does not necessarily include all critical dates and actions under the Judgment.

SUMMARY OF CRITICAL DATES AND ACTIONS FOR WATERMASTER

1. Watermaster members' terms of office.

   January 1 – December 31.

2. Watermaster's first meeting in January.

   (a) Election of Watermaster Chair and Vice-Chair (from Watermaster membership) and selection of Secretary, Treasurer and assistants (who may, but need not, be Watermaster members). Watermaster Rules and Regulations, Section 6 (R/R 6)

   (b) Order Engineering Report for Preliminary Determination of Operating Safe Yield. (R/R 14(a))

3. January 31 - Quarterly Reports, as required by the Rules and Regulations, of Production (R/R 13), Cyclic Storage (R/R 26(h)) and data required by Section 28 (d), due to Watermaster.

4. March - Receive San Gabriel River Watermaster Report.

5. Watermaster's first meeting in April.

   Watermaster shall make a Preliminary Determination of the Operating Safe Yield of the Basin for the next five Fiscal Years and deliver a copy thereof to all Parties at least ten (10) days prior to a hearing thereon and which said hearing shall commence at Watermaster's first meeting in May. (R/R 14(a))

6. April 30 - Quarterly Reports, as required by the Rules and Regulations, of Production (R/R 13), Cyclic Storage (R/R 26(h)) and data required by Section 28 (d), due to Watermaster.

7. Watermaster's first meeting in May.

   (a) Hearing on Preliminary Determination for Watermaster to make Final Determination of Operating Safe Yield. (R/R 14(b)) Within thirty (30) days of the Final Determination of the Operating Safe Yield a copy of the Final Report and Determination must be delivered to each Pumper and

Integrated Producer, including a statement of their entitlements under such Determination. (R/R 14(c))

(b) Budget.

Adopt a proposed Administration Budget for the succeeding Fiscal Year and within fifteen (15) days deliver a copy thereof together with a statement of the level of the Administration Assessment levied by Watermaster which will be collected for purposes of raising the necessary funds for said budget. (R/R 18(a))

(c) Assessments.

In addition to the Administration Assessment, Watermaster shall levy the Replacement Water Assessment, Make-up Obligation Assessment and the In-lieu Water Assessments, if any. (R/R 19)

8. June 1 - Watermaster to supply Producers with projections of contaminant migration by June 1. (R/R 28(g))

9. July - Authorize preparation of Annual Watermaster Report. Receive tentative budget from San Gabriel River Watermaster.

10. July 31 - Quarterly Reports, as required by the Rules and Regulations, of Production (R/R 13), Cyclic Storage (R/R 26(h)) and data required by Section 28 (d), due to Watermaster. Producers of potable water from the Basin must submit to Watermaster the data required by Section 28(g).

11. August 15 - On or before this date Watermaster must give written notice of all applicable Assessments to all Parties. (R/R 19)

12. September 20 - All Assessments payable to Watermaster. (R/R 19(a))

13. September 30 - Must pay Upper Area share of San Gabriel River Watermaster budget by this date.

14. October 1 - Deliver Notice of Nomination Election of Producer representatives to be held at Watermaster's November meeting. (R/R 19(a))

15. October 31 - Quarterly Reports, as required by the Rules and Regulations, of Production (R/R 13), Cyclic Storage (R/R 26(h)) and data required by Section 28 (d), due to Watermaster.

16. November

(a) Watermaster Annual Report filed with the Court and copies delivered to each party by November 1. (R/R 24)

(b) Draft Annual Five-Year Water Quality and Supply Plan under Section 28 (g) to be filed with the Los Angeles Regional Quality Control Board and circulated for public review and comment by November 1.

(c) Prior to Watermaster's meeting in November, nomination of Public Representatives to Watermaster by Upper District and San Gabriel District.

(d) Watermaster's meeting in November--election of six Producer Representatives for nomination to Watermaster. (R/R 9(b)) Petition Court for confirmation of nominees and give notice of hearing on Petition to all Parties. Within ninety (90) days of a vacancy on Watermaster, it shall be filled by nomination by Upper District or San Gabriel District if for a Public Representative and by a special election at a Watermaster meeting for a Producer Representative, after notice thereof to all Parties, and Watermaster Petition (and notice thereof to all parties) for Court confirmation of nominee. (R/R 10)

PERMANENT TRANSFER OF WATER RIGHTS - PRESCRIPTIVE PUMPING RIGHT

For a valuable consideration, receipt of which is hereby acknowledged, _____ _____ ("Seller") does hereby assign and transfer in perpetuity to _____, ("Buyer") all rights to the quantity of _____ acre-feet of the "Prescriptive Pumping Right" and the appropriate % of "Pumper's Share" adjudicated to Seller or his predecessor in the Judgment in the case of Upper San Gabriel Valley Municipal Water District, v. City of Alhambra, et al, Los Angeles Superior Court No. 924128, together with all the attendant rights, powers and privileges pertaining thereto.

(Check appropriate provision)

This transfer does ☐ does not ☐ include_____acre-feet of "carry-over of unused rights" associated with said transferred rights and in existence on the date hereof.

DATED: _____

BUYER	SELLER
_____	_____
_____	_____
_____	_____
_____ (Signature)	_____ (Signature)
Name of Designee (of Buyer) to receive service of Processes and Notices:	Name of Designee (of Seller) to receive service of Processes and Notices:
_____	_____
_____	_____
_____ Address	_____ Address
Telephone No.:_____	Telephone No.: _____
E-mail Address:_____	**E-mail Address:**_____

To be executed by both Buyer and Seller and, if separately requested by Watermaster, be accompanied by a map of the service area where the water was used by Seller and a map of the service area where the water is intended to be used by the Buyer.

(Have the appropriate individual(s) or corporate attached acknowledgments completed by both Buyer and Seller as part of the transfer.)

A TRUE COPY HEREOF MUST BE FILED WITH WATERMASTER WITHIN 15 DAYS OF EXECUTION.

(To be accompanied by completed "Stipulation Re Intervention After Judgment" if Buyer is not a party to the Judgment)

EXHIBIT A-1

CORPORATE ACKNOWLEDGMENT

STATE OF CALIFORNIA)§
COUNTY OF LOS ANGELES)

On this _____ day of _____, 20___, before me, the undersigned Notary Public, personally appeared _____

_____ personally known to me

_____ or, proved to me on the basis of satisfactory evidence to be the person(s) who executed the within Instrument as

_____,

or on behalf of the Corporation therein named, and acknowledged to me that the Corporation executed it.

WITNESS my hand and official seal.

Signature _____

_____

Name (Typed or Printed)
Notary Public in and for said
County and State

(SEAL)

INDIVIDUAL(S) ACKNOWLEDGMENT

STATE OF CALIFORNIA)§
COUNTY OF LOS ANGELES)

On this _____ day of _____, 20___, before me, the undersigned Notary Public, personally appeared _____,

_____ personally known to me

_____ or, proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) _____ subscribed to the within instrument and acknowledged to me that executed the same.

WITNESS my hand and official seal.

Signature _____

_____

Name (Typed or Printed)
Notary Public in and for said
County and State

(SEAL)

PERMANENT TRANSFER OF WATER RIGHTS – BASE ANNUAL DIVERSION RIGHT

For a valuable consideration, receipt of which is hereby acknowledged, _____ _____ ("Seller") does hereby assign and transfer in perpetuity to _____, ("Buyer") all rights to the quantity of _____ acre-feet of the "Base Annual Diversion Right" adjudicated to Seller or his predecessor in the Judgment in the case of Upper San Gabriel Valley Municipal Water District, v. City of Alhambra, et al, Los Angeles Superior Court No. 924128, together with all the attendant rights, powers and privileges pertaining thereto.

DATED: _____

BUYER	SELLER
_____	_____
_____	_____
_____	_____
_____ (Signature)	_____ (Signature)
Name of Designee (of Buyer) to receive service of Processes and Notices:	Name of Designee (of Seller) to receive service of Processes and Notices:
_____	_____
_____	_____
_____ Address	_____ Address
Telephone No.: _____	Telephone No.: _____
E-mail Address: _____	**E-mail Address:** _____

To be executed by both Buyer and Seller and, if separately requested by Watermaster, be accompanied by a map of the service area where the water was used by Seller and a map of the service area where the water is intended to be used by the Buyer.

(Have the appropriate individual(s) or corporate attached acknowledgments completed by both Buyer and Seller as part of the transfer.)

A TRUE COPY HEREOF MUST BE FILED WITH WATERMASTER WITHIN 15 DAYS OF EXECUTION.

(To be accompanied by completed "Stipulation Re Intervention After Judgment" if Buyer is not a party to the Judgment)

CORPORATE ACKNOWLEDGMENT

STATE OF CALIFORNIA)§
COUNTY OF LOS ANGELES)

On this _____ day of _____, 20___, before me, the undersigned Notary Public, personally appeared _____

_____ personally known to me

_____ or, proved to me on the basis of satisfactory evidence to be the person(s) who executed the within Instrument as

_____,

or on behalf of the Corporation therein named, and acknowledged to me that the Corporation executed it.

WITNESS my hand and official seal.

Signature _____

_____

Name (Typed or Printed)
Notary Public in and for said
County and State

(SEAL)

INDIVIDUAL(S) ACKNOWLEDGMENT

STATE OF CALIFORNIA)§
COUNTY OF LOS ANGELES)

On this _____ day of _____, 20___, before me, the undersigned Notary Public, personally appeared _____,

_____ personally known to me

_____ or, proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) _____ subscribed to the within instrument and acknowledged to me that executed the same.

WITNESS my hand and official seal.

Signature _____

_____

Name (Typed or Printed)
Notary Public in and for said
County and State

(SEAL)

PERMANENT TRANSFER OF WATER RIGHTS – INTEGRATED PRODUCTION RIGHT

For a valuable consideration, receipt of which is hereby acknowledged, _____ _____ ("Seller") does hereby assign and transfer in perpetuity to _____, ("Buyer") all rights to the quantity of _____ acre-feet of the "Diversion Component" adjudicated to Seller or his predecessor in the Judgment in the case of Upper San Gabriel Valley Municipal Water District, v. City of Alhambra, et al, Los Angeles Superior Court No. 924128, together with all the attendant rights, powers and privileges pertaining thereto.

(Check appropriate provision)

This transfer does ☐ does not ☐ include_____acre-feet of "carry-over of unused rights" associated with said transferred rights and in existence on the date hereof.

DATED: _____

BUYER	SELLER
_____	_____
_____	_____
_____	_____
_____ (Signature)	_____ (Signature)
Name of Designee (of Buyer) to receive service of Processes and Notices:	Name of Designee (of Seller) to receive service of Processes and Notices:
_____	_____
_____	_____
_____ Address	_____ Address
Telephone No.:_____	Telephone No.: _____
E-mail Address:_____	**E-mail Address:**_____

To be executed by both Buyer and Seller and, if separately requested by Watermaster, be accompanied by a map of the service area where the water was used by Seller and a map of the service area where the water is intended to be used by the Buyer.

(Have the appropriate individual(s) or corporate attached acknowledgments completed by both Buyer and Seller as part of the transfer.)

A TRUE COPY HEREOF MUST BE FILED WITH WATERMASTER WITHIN 15 DAYS OF EXECUTION.

(To be accompanied by completed "Stipulation Re Intervention After Judgment" if Buyer is not a party to the Judgment)

CORPORATE ACKNOWLEDGMENT

STATE OF CALIFORNIA)§
COUNTY OF LOS ANGELES)

On this _____ day of _____, 20___, before me, the undersigned Notary Public, personally appeared _____

_____ personally known to me

_____ or, proved to me on the basis of satisfactory evidence to be the person(s) who executed the within Instrument as

_____,

or on behalf of the Corporation therein named, and acknowledged to me that the Corporation executed it.

WITNESS my hand and official seal.

Signature _____

_____

Name (Typed or Printed)
Notary Public in and for said
County and State

(SEAL)

INDIVIDUAL(S) ACKNOWLEDGMENT

STATE OF CALIFORNIA)§
COUNTY OF LOS ANGELES)

On this _____ day of _____, 20___, before me, the undersigned Notary Public, personally appeared _____,

_____ personally known to me

_____ or, proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) _____ subscribed to the within instrument and acknowledged to me that executed the same.

WITNESS my hand and official seal.

Signature _____

_____

Name (Typed or Printed)
Notary Public in and for said
County and State

(SEAL)

TEMPORARY ASSIGNMENT OR LEASE OF WATER RIGHT

For a valuable consideration, receipt of which is hereby acknowledged, _____ ("Assignor") does hereby assign and transfer to _____, ("Assignee") commencing on _____ and terminating _____, on the following water right(s):

(Check following appropriate category)

☐ Production Right _____AF

☐ Prescriptive Pumping Right _____AF

☐ Base Annual Diversion Right _____AF

☐ Integrated Production Right (consisting of _____AF of "Prescriptive Pumping Component" and _____AF of "Diversion Component")

☐ Carryover Right_____AF

adjudicated to Assignor or his predecessor in the Judgment in the case of "Upper San Gabriel Valley Municipal Water District, v. City of Alhambra, et al," Los Angeles Superior Court No. 924128.

Said assignment is made upon condition that:

(1) Assignee shall exercise said right on behalf of Assignor for the period described hereinabove and the first water produced by Assignee from the Relevant Watershed of the Main San Gabriel Basin after the date hereof shall be that produced hereunder;

(2) Assignee shall put all waters utilized pursuant to said transfer to reasonable beneficial use; and

(3) Assignee shall pay all Watermaster assessments on account of the water production hereby assigned or leased.

DATED: _____

ASSIGNEE	ASSIGNOR
_____	_____
_____	_____
_____	_____
Signature	Signature
Name of Designee (of Assignee) to receive service of Processes and Notices:	Name of Designee (of Assignor) to receive service of Processes and Notices:
_____	_____
_____	_____
_____	_____
Address	Address
Tel. No.: _____	Tel. No.: _____
E-mail Address:_____	**E-mail Address:**_____

To be executed by both Assignee and Assignor and, if separately requested by Watermaster, be accompanied by a map of the service area where the water was used by Assignor and a map of the service area where the water is intended to be used by the Assignee.

(Have the appropriate individual(s) or corporate attached acknowledgments completed as part of the temporary transfer.)

A TRUE COPY HEREOF MUST BE FILED WITH WATERMASTER WITHIN 15 DAYS OF EXECUTION

(To be accompanied by completed "Stipulation Re Intervention After Judgment" if Assignee is not a party to the Judgment)

EXHIBIT D-1

CORPORATE ACKNOWLEDGMENT

STATE OF CALIFORNIA)§
COUNTY OF LOS ANGELES)

On this _____ day of _____, 20___, before me, the undersigned Notary Public, personally appeared _____

_____ personally known to me

_____ or, proved to me on the basis of satisfactory evidence to be the person(s) who executed the within Instrument as

_____,

or on behalf of the Corporation therein named, and acknowledged to me that the Corporation executed it.

WITNESS my hand and official seal.

Signature _____

_____

Name (Typed or Printed)
Notary Public in and for said
County and State

(SEAL)

INDIVIDUAL(S) ACKNOWLEDGMENT

STATE OF CALIFORNIA)§
COUNTY OF LOS ANGELES)

On this _____ day of _____, 20___, before me, the undersigned Notary Public, personally appeared _____,

_____ personally known to me

_____ or, proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) _____ subscribed to the within instrument and acknowledged to me that executed the same.

WITNESS my hand and official seal.

Signature _____

_____

Name (Typed or Printed)
Notary Public in and for said
County and State

(SEAL)

Frederic A. Fudacz, State Bar #050546
Alfred E. Smith, State Bar #186257
Nossaman LLP
777 South Figueroa Street, 34th Floor
Los Angeles, CA 90017
(213) 612-7800 Office
(213) 612-7801

Attorney for Main San Gabriel Basin Watermaster

EXEMPT FROM FILING FEES
GOVERNMENT CODE 6103

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT Plaintiff vs. CITY OF ALHAMBRA, ET AL, Defendants	CASE NO.: C 924128 STIPULATION RE INTERVENTION AFTER JUDGMENT OF _____

IT IS HEREBY STIPULATED by and between the Main San Gabriel Basin Watermaster for and on behalf of all parties to the instant action (pursuant to Section 57 of the amended Judgment) and _____, the proposed Intervenor(s) herein, that said proposed Intervenor(s) may intervene in the instant action and become entitled to all of the benefits bound by all of the burdens of the Judgment herein.

The Court will consider the attached proposed Order confirming said Intervention at _____ o'clock _____on_____ 20____, in Department 38, located at 111 North Hill Street, Los Angeles, CA 90012.

Watermaster shall give at least 30 days notice to the parties herein of said hearing.

DATED:_____

WATERMASTER

By _____

Chairman

Attest:

_____

Secretary

DATED:_____

INTERVENOR(S)

_____

By_____

By_____

Name of Intervenor's Designee:

_____

Address of Designee:

_____

_____

Telephone Number of Designee:

_____

E-mail for Designee:

_____

Frederic A. Fudacz, State Bar #050546
Alfred E. Smith, State Bar #186257
Nossaman LLP
777 South Figueroa Street, 34th Floor
Los Angeles, CA 90017
(213) 612-7800 Office
(213) 612-7801

Attorney for Main San Gabriel Basin Watermaster

EXEMPT FROM FILING FEES
GOVERNMENT CODE 6103

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF LOS ANGELES

UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT Plaintiff vs. CITY OF ALHAMBRA, ET AL, Defendants	CASE NO.: C 924128 DESIGNEE TO RECEIVE FUTURE NOTICES FOR AND ON BEHALF OF DEFENDANT(S)

Defendant(s) _____ hereby designates: _____, whose address is _____, and whose telephone number is _____, and whose **e-mail address is** _____as said Defendant's Designee to receive service of all future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon said defendant(s) or delivered to said defendant(s) herein.

A copy hereof has been served upon the Watermaster herein, by mail, on _____, 20___.

Executed under penalties of perjury at _____, California, this _____ day of _____, 20___.

_____

Printed Name of Designee

_____

Signature of Designee

NOTICE OF TRANSFER OF OVERLYING RIGHTS
WITH PROPERTY TO WHICH THEY ARE APPURTENANT

On _____, 20____, the undersigned (or his predecessor), adjudged Overlying Rights on the property described in Exhibit 1 attached hereto and by this inference incorporated herein, in the case of "UPPER SAN GABRIEL VALLEY MUNICIPAL WATER DISTRICT, v. CITY OF ALHAMBRA, ET AL," Los Angeles Superior Court No. 924128, transferred said property and said Overlying Rights appurtenant thereto to _____, whose address is _____, whose **e-mail address is** _____ and whose telephone number is _____.

That said transferee hereby names _____ Whose address is _____, whose telephone number is _____, and whose e-mail address is _____ as his/her Designee to receive all future notices and processes in said action.

DATED: _____

BUYER	SELLER
_____	_____
_____	_____
_____	_____
_____ (Signature)	_____ (Signature)

To be executed by both Buyer and Seller and, if separately requested by Watermaster, be accompanied by a map of the service area where the water was used by Seller and a map of the service area where the water is intended to be used by the Buyer.

(Have the appropriate individual(s) or corporate attached acknowledgments completed as part of the transfer, and include Exhibit 1)

A TRUE COPY HEREOF MUST BE FILED WITH WATERMASTER WITHIN 15 DAYS OF EXECUTION.

(To be accompanied by completed "Exhibit E" if Buyer is not a party to the Judgment)

CORPORATE ACKNOWLEDGMENT

STATE OF CALIFORNIA)§
COUNTY OF LOS ANGELES)

On this _____ day of _____, 20___, before me, the undersigned Notary Public, personally appeared _____

_____ personally known to me

_____ or, proved to me on the basis of satisfactory evidence to be the person(s) who executed the within Instrument as

_____,

or on behalf of the Corporation therein named, and acknowledged to me that the Corporation executed it.

WITNESS my hand and official seal.

Signature _____

_____

Name (Typed or Printed)
Notary Public in and for said
County and State

(SEAL)

INDIVIDUAL(S) ACKNOWLEDGMENT

STATE OF CALIFORNIA)§
COUNTY OF LOS ANGELES)

On this _____ day of _____, 20___, before me, the undersigned Notary Public, personally appeared _____,

_____ personally known to me

_____ or, proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) _____ subscribed to the within instrument and acknowledged to me that executed the same.

WITNESS my hand and official seal.

Signature _____

_____

Name (Typed or Printed)
Notary Public in and for said
County and State

(SEAL)

Mailing Address:
725 North Azusa Ave.
Azusa, CA 91702

MAIN SAN GABRIEL BASIN WATERMASTER

SUPERIOR COURT CASE NO. 924128-LOS ANGELES COUNTY

(State Well Number) _____

(Recordation Number) _____

(Owner's Designation) _____

APPLICATION TO DRILL WATER WELL

(To Be Completed by Watermaster)

(1) APPLICANT:
Name_____
Address_____
_____
E-mail Address_____

(2) LOCATION OF PROPOSED WELL:
*Well Address:*_____
Township, Range, and Section_____
Thomas Brothers Guide *(Please indicate year, page number and coordinates.)*_____
_____
Assessor's Parcel No._____
(Please attach copy of a map or sketch showing well location relative to streets or other major landmarks.)

(3) NAME OF WELL DRILLING CONTRACTOR:_____
_____

(4) PROPOSED USE:
Municipal ( ) Irrigation ( )
Domestic ( ) Industrial ( )
Water Quality Cleanup ( )
Other ( )_____

(5) DRILLING EQUIPMENT:
Rotary ( )
Cable ( )
Other ( )_____

(6) PROPOSED WELL CHARACTERISTICS:

A. Casing Installed:
STEEL ( ) PLASTIC ( )
OTHER ( )

Gravel Packed:
Yes ( ) No ( ) Size_____

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	Packed From ft.	Packed To ft.

Size of shoe or well ring:_____
Describe joint_____

B. Perforations or Screen:
Type of perforation or size of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Slot Size

C. Construction:
Will a surface sanitary seal be provided? Yes ( ) No ( )
To what depth? _____ft.
Is any strata anticipated to be sealed against pollution?
Yes ( ) No ( )
If yes, note anticipated depth of strata
from _____ft. to _____ft.
from _____ft. to _____ft.
Proposed method sealing_____
_____

(7) WELL TESTS:
Will a pump test be made? Yes ( ) No ( ) If yes by whom?
_____
Anticipated Well Yield_____
Will a chemical analysis be made? Yes ( ) No ( )
Will an electric log be made of well? Yes ( ) No ( ) (If yes, file Copy with Watermaster upon well completion)

(8) PROPOSED PUMPING EQUIPMENT:
(A) Pump
Electric ( ) Natural Gas ( )
Propane ( ) Diesel ( )
Other ( )_____
(B) Make_____
(C) Pump Size (hp)_____(gpm)_____
(D) Design Efficiency_____

(9) PROXIMITY TO POTENTIAL SOURCES OF CONTAMINATION:
(A) Distance to nearest sewer line or septic tank_____(ft.)
(B) Wells (Please provide distance, direction and name of nearest upgradient well(s) with volatile organic chemical or nitrate levels above a maximum contaminant level, if known.)
_____
_____
_____

(10) Please provide copy of County of Los Angeles permits and State Department of Water Resources Water Well Driller Reports and any other permits for construction of a new well upon completion of proposed well.

(11) Please provide Watermaster with copies of all feasibility studies, alternative water supply sources, water quality studies or other reports which validate the Applicant's need to drill a new well. Applicant must provide supporting data to show compliance with the requirements of Section 28 with particular reference to Section 28(e) of Watermaster's Rules and Regulations.

I hereby agree to comply with all regulations of the Main San Gabriel Basin Watermaster pertaining to well construction, repair, modification, destruction and inactivation. The applicant will furnish the Watermaster a complete well log upon completion of well construction.

Submitted for Applicant by:_____
_____

Signature:_____

Title:_____

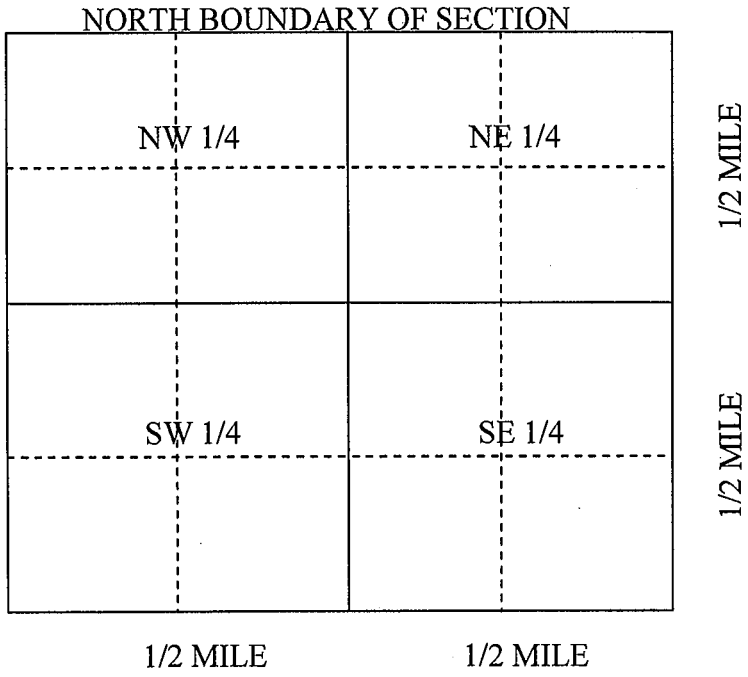
Date:_____

Date Received by Watermaster:_____
Watermaster Action: Approved ( ) Denied ( )
Date of Action:_____
Permit Number:_____
By:_____
(Name)
_____
(Title)

EXHIBIT H-1

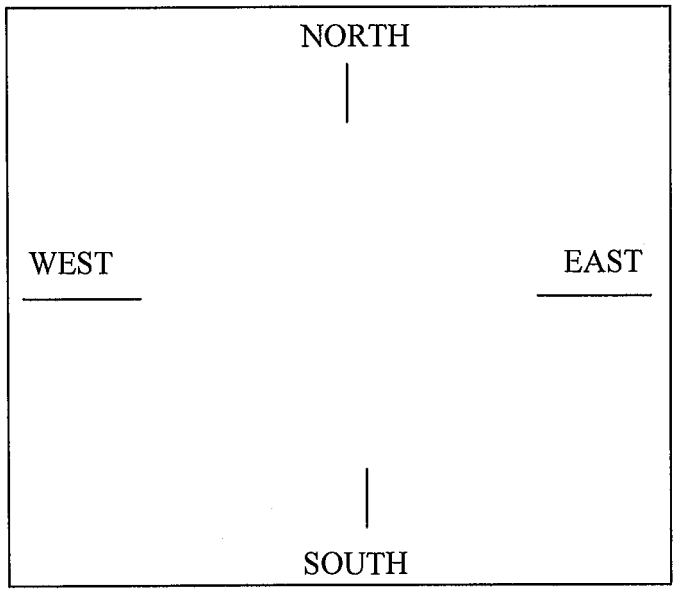
Form No. RR 28-03 – 08/00

WELL LOCATION SKETCH



Township _____ **N/S**
Range_____**E/W**
Section No._____

A. Location of well in sectionized areas. Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized. Sketch roads, railroads, streams, or other features as necessary. Indicate distances.

Mailing Address:
725 North Azusa Ave.
Azusa, CA 91702

MAIN SAN GABRIEL BASIN WATERMASTER

SUPERIOR COURT CASE NO. 924128-LOS ANGELES COUNTY

APPLICATION TO MODIFY EXISTING WATER WELL

(State Well Number)
(Recordation Number)
(Owner's Designation)

(1) APPLICANT:
Name_____
Address_____
_____
E-mail Address_____
(2) LOCATION OF PROPOSED WELL:
*Well Address:*_____
*Township, Range, and Section*_____
*Thomas Brothers Guide (Please indicate year, page number and coordinates.)*_____
_____
*Assessor's Parcel No.*_____
(Please attach copy of a map or sketch showing well location relative to streets or other major landmarks.)
(3) NAME OF WELL DRILLING CONTRACTOR:_____
_____
(4) TYPE OF WORK:
Deepening ( ) Modify Perforations ( ) Increase Yield ( )
Reconditioning ( ) Other ( )_____
(5) PROPOSED USE:
Municipal ( ) Irrigation ( )
Domestic ( ) Industrial ( )
Water Quality Cleanup ( )
Other ( )_____
(6) DRILLING EQUIPMENT:
Rotary ( )
Cable ( )
Other ( )
(7A) CASING INSTALLED (existing):
STEEL ( ) PLASTIC ( )
OTHER ( )
Gravel Packed:
Yes ( ) No ( ) Size_____

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	Packed From ft.	Packed To ft.

Size of shoe or well ring:_____
Describe joint_____
(7B) CASING INSTALLED (proposed):
STEEL ( ) PLASTIC ( )
OTHER ( )
Gravel Packed:
Yes ( ) No ( ) Size_____

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	Packed From ft.	Packed To ft.

Size of shoe or well ring:_____
Describe joint_____
(8A) PERFORATIONS OR SCREEN (existing):
Type of perforation or size of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Slot Size

(8B) PERFORATIONS OR SCREEN (proposed):
Type of perforation or size of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Slot Size

(9A) EXISTING CONSTRUCTION:
Was a surface sanitary seal provided? Yes ( ) No ( )
To what depth? _____ft.
Were any strata sealed against pollution? Yes ( ) No ( )
If yes, note depth of strata
from _____ft. to _____ft.
from _____ft. to _____ft.
Method of sealing _____

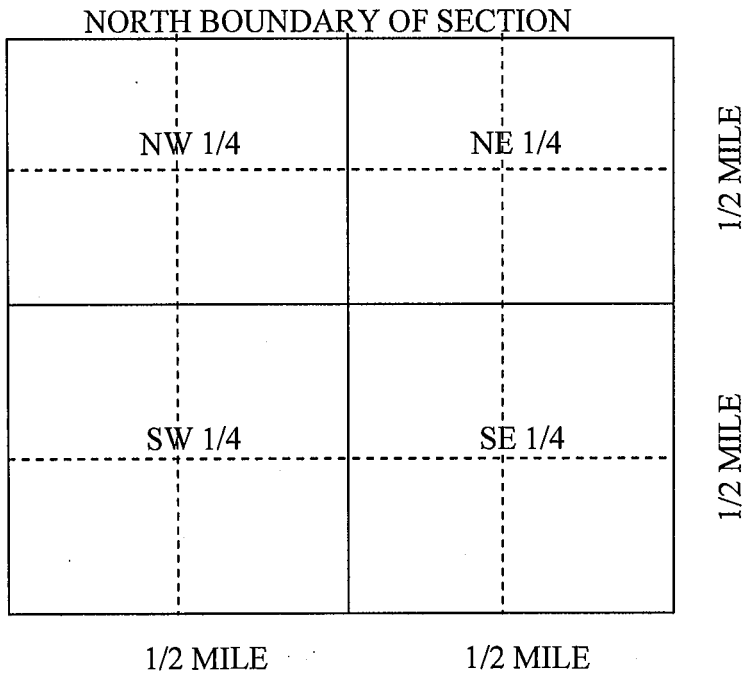
(9B) PROPOSED CONSTRUCTION:
Will a surface sanitary seal be provided? Yes ( ) No ( )
To what depth? _____ft.
Is any strata anticipated to be sealed against pollution? Yes ( ) No ( )
If yes, note depth of strata
from _____ft. to _____ft.
from _____ft. to _____ft.
Method of sealing _____
(10) WELL TESTS:
Was a pump test made? Yes ( ) No ( ) (If yes, attach most recent copy)
_____gal. min. with _____ft. drawdown after _____hrs.
Temperature of water_____
Was a chemical analysis made? Yes ( ) No ( )
Was electric log made of well? Yes ( ) No ( ) (If yes, attach most recent copy)
(11) WELL LOG:
Total depth_____ft. Depth of completed well_____ft.
Formation: Describe by color, character, size of material and structure_____ft. to_____ft.
(Please attach copy of existing well log. If well log is not available, describe well lithology in space provided or on attached page.)
_____
_____
(12) HISTORIC WELL MODIFICATIONS:
(On an attached page, please provide a chronology of all historic well modifications which may have affected well yield or water quality.)
(13A) EXISTING WELL PUMP DATA:
A. Pump Type:
Electric ( ) Natural Gas ( ) Other ( )
Propane ( ) Diesel ( )
B. Pump Performance:
Horsepower_____(GPM)_____
Design Efficiency_____
(13B) PROPOSED WELL PUMP DATA:
A. Pump Type:
Electric ( ) Natural Gas ( ) Other ( )
Propane ( ) Diesel ( )
B. Pump Performance:
Horsepower_____(GPM)_____
Design Efficiency_____
(14) Please provide copy of County of Los Angeles permits and State Department of Water Resources Water Well Driller Reports and any other permits for modification of an existing well upon completion of modification of well.
(15) Please provide Watermaster with copies of all feasibility studies, alternative water supply sources, water quality studies or other reports which validate the Applicant's need to modify this well. Applicant must provide supporting data to show compliance with the requirements of Section 28 with particular reference to Section 28(e) of Watermaster's Rules and Regulations.

I hereby agree to comply with all regulations of the Main San Gabriel Basin Watermaster pertaining to well construction, operation, repair, modification, destruction and inactivation. The Applicant will furnish the Watermaster a complete well log upon completion of well modification.

Submitted for Applicant by:_____
Signature:_____
Title:_____
Date:_____
Date Received by Watermaster:_____
Watermaster Action:
Approved ( ) Denied ( )
Date of Action:_____
Permit Number:_____
By:_____
(Name)
_____
(Title)

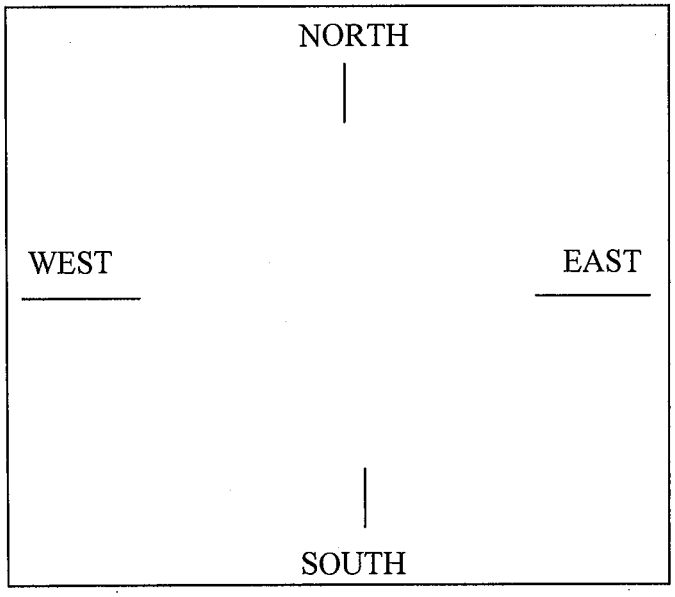
EXHIBIT I-1

WELL LOCATION SKETCH



Township _____ **N/S**
Range_____**E/W**
Section No._____

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary. Indicate distances.

Mailing Address:
725 North Azusa Ave.
Azusa, CA 91702

MAIN SAN GABRIEL BASIN WATERMASTER

SUPERIOR COURT CASE NO. 924128-LOS ANGELES COUNTY

_____ (State Well Number)

_____ (Recordation Number)

_____ (Owner's Designation)

APPLICATION TO DESTROY WELL

(1) APPLICANT:
Name_____
Address_____
_____
E-mail Address_____

(2) LOCATION OF WELL:
*Well Address:*_____
*Township, Range, and Section*_____
*Thomas Brothers Guide (Please indicate year, page number and coordinates.)*_____
_____
*Assessor's Parcel No.*_____
(Please attach copy of a map or sketch showing well location relative to streets or other major landmarks.)

(3) NAME OF WELL DRILLING CONTRACTOR:_____
_____

(4) PURPOSE FOR DESTROYING WELL
Water Quality ( ) Physical ( )
Other ( )_____

(5) CURRENT USE:
Municipal ( ) Irrigation ( )
Domestic ( ) Industrial ( )
Water Quality Cleanup ( )
Other ( )_____

(6) EXISTING CASING INSTALLED:
STEEL ( ) PLASTIC ( )
OTHER ( )

Gravel Packed:
Yes ( ) No ( ) Size_____

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	Packed From ft.	Packed To ft.

Size of shoe or well ring:
_____
Describe joint_____

(7) EXISTING PERFORATIONS OR SCREEN:
Type of perforation or size of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Slot Size

(8) CONSTRUCTION:
Was a surface sanitary seal provided? Yes ( ) No ( )
To what depth? _____ft.
Were any strata sealed against pollution? Yes ( ) No ( )
If yes, note depth of strata
from _____ft. to _____ft.
from _____ft. to _____ft.
Method of sealing_____

(9) WELL LOG: (Please provide a copy of well log.)
Total depth _____ft. Depth of completed well _____ft.
Formation: *Describe by color, character, size of material and structure if well log cannot be provided.*
_____ft. to _____ft._____
_____

(10) METHOD OF DESTROYING: (Please provide an explanation of how the well is to be destroyed including drawings showing the proposed method of destroying. Please provide copy of County of Los Angeles permits and State Department of Water Resources Water Well Drillers reports and any other permits for destruction of well following destruction of the well.)
_____
_____
_____
_____
_____

I hereby agree to comply with all regulations of the Main San Gabriel Basin Watermaster pertaining to well construction, operation, repair, modification, destruction and inactivation. The Applicant will notify the Watermaster upon completion of well destruction.

Submitted for Applicant by:_____
_____

Signature:_____

Title:_____

Date:_____

Date Received by Watermaster:_____

Watermaster Action:
Approved ( ) Denied ( )

Date of Action:_____

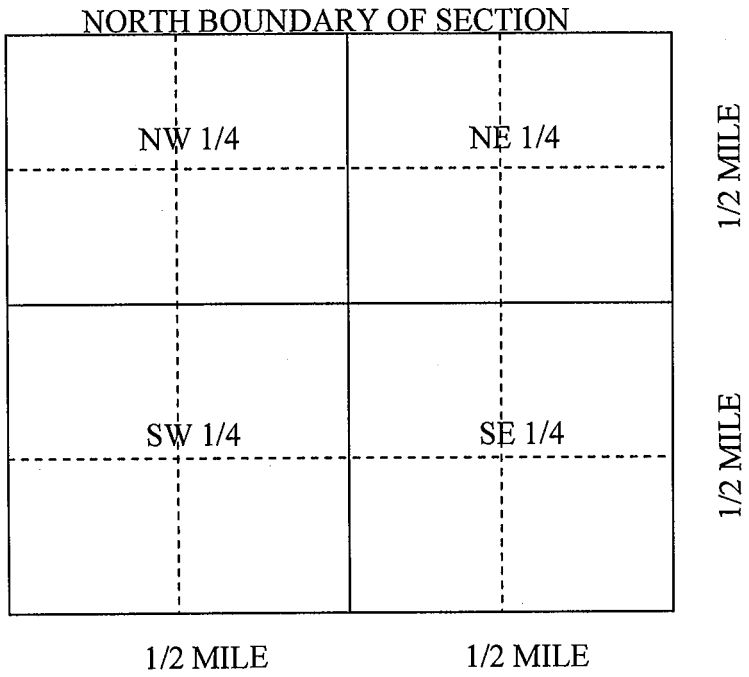
Permit Number:_____

By:_____
(Name)
_____
(Title)

EXHIBIT J-1

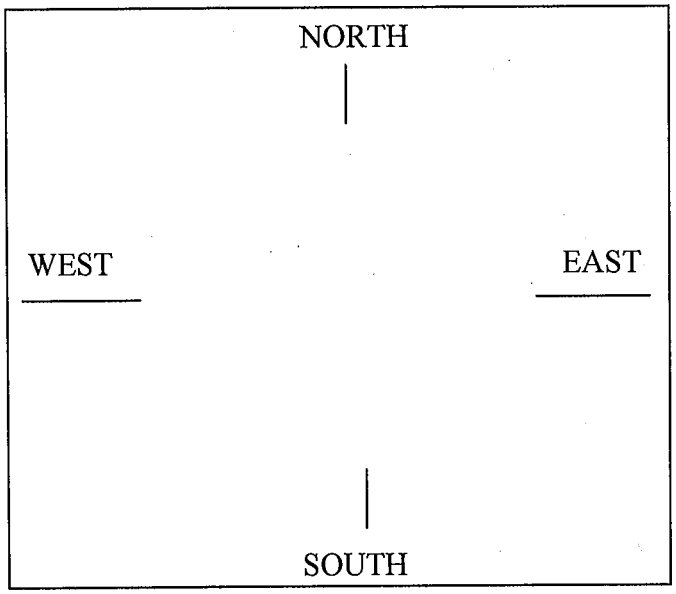
Form No. RR 28-03 – 08/00

WELL LOCATION SKETCH



Township _____ **N/S**
Range_____**E/W**
Section No._____

A. Location of well in sectionized areas. Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized. Sketch roads, railroads, streams, or other features as necessary. Indicate distances.

Mailing Address:
725 North Azusa Ave.
Azusa, CA 91702

MAIN SAN GABRIEL BASIN WATERMASTER

SUPERIOR COURT CASE NO. 924128-LOS ANGELES COUNTY

APPLICATION FOR WATER TREATMENT FACILITY

(1) APPLICANT:
Name_____
Address_____
_____
E-mail Address_____

(2) LOCATION OF TREATMENT FACILITY:
Address_____
Thomas Brothers Guide (Please indicate year, page number and coordinates.)_____
_____
(Please include a map showing the location of the treatment facility relative to streets, buildings, water system facilities and other points of reference.)

(3) (A) NAME OF WATER TREATMENT FACILITY CONTRACTOR:_____
(B) NAME OF DESIGN ENGINEER AND STATE REGISTRATION NUMBER:_____

(4) PROPOSED ACTION AT TREATMENT FACILITY
Construction ( ) Modification ( ) Removal ( )
Destruction ( ) Other ( )

(5) DESCRIPTION OF FACILITY:
(A) Type of treatment:
Volatile Organic Chemical ( ) Nitrate ( ) Other ( )
(B) Please describe the treatment process to be used at the proposed treatment plant.
_____
_____
_____
(C) Please list, by Owner Designation, all wells to be treated:
_____
_____
_____

(6) ANTICIPATED TREATMENT FACILITY CAPACITY:
_____Gallons Per Minute
_____Acre-feet Per Year

(7) EXPECTED CONCENTRATION OF CONTAMINANTS:

Contaminant	Influent Concentration (Parts per Billion)	Effluent Concentration (Parts per Billion)	Contaminant Removal Rate (Percent)
Trichloroethylene (TCE)	_____	_____	_____
Tetrachloroethylene (PCE)	_____	_____	_____
1,1,1-Trichloroethane (1,1,1-TCA)	_____	_____	_____
Carbon Tetrachloride (CTC)	_____	_____	_____
1,1-Dichloroethylene (1,1-DCE)	_____	_____	_____
1,1-Dichloroethane (1,1-DCA)	_____	_____	_____
1,2-Dichloroethane (1,2-DCA)	_____	_____	_____
Others:			
_____	_____	_____	_____
_____	_____	_____	_____

(8) DISPOSITION OF ALL TREATED WATER:
(Please describe disposition of all treated water, and the corresponding annual amount of discharge.)
_____
_____
_____

(9) INITAIL START-UP DATE:
_____

(10) EXPECTED OPERATING SCHEDULE:
(A) Daily schedule_____
(B) Number of days each month (*Please specify if operating schedule varies month-to-month)*
_____
_____

(11) EXPECTED COSTS
(A) Capital cost:$_____
(B) Operation and maintenance:$_____/AF.

(12) REGULATORY PERMITS: Please describe all necessary permits and/or all permits for which you have applied or have received from all regulatory agencies with regard to the proposed treatment facility. Please supply to Watermaster, copies of all environmental documents required under the California Environmental Quality Act and/or the National Environmental Protection Act.

(13) Applicant acknowledges it will comply with all portions of Section 28 of Watermaster's Rules and Regulations pertaining to quarterly data submittal, for treatment plant operation, to Watermaster. Specifically, at least the following data shall be provided on a quarterly basis:

- Name or other designation of treatment facility;
- Quantity of water treated during quarter;
- Quantity of each contaminant removed;
- Quality of water before treatment, at beginning and end of each quarter;
- Quality of water after treatment, at beginning and end of each quarter; and
- Operation and maintenance costs for each quarter.

(14) Please provide Watermaster with copies of all feasibility studies, alternative water supply sources, water quality studies or other reports which validate the Applicant's need to install a water treatment facility.

Applicant must provide supporting data to show compliance with the requirements of Section 28 with particular reference to Section 28(h) of Watermaster's Rules and Regulations.

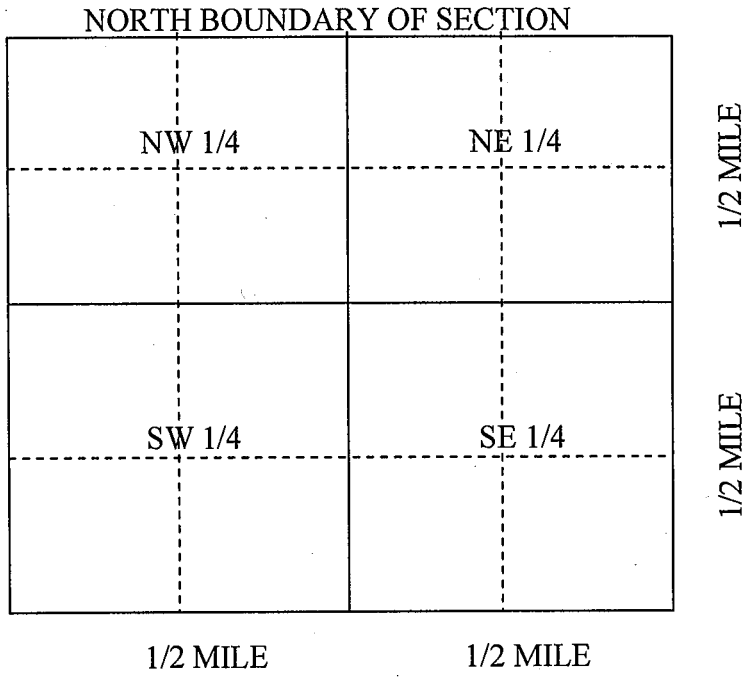
I hereby agree to comply with all regulations of the Main San Gabriel Basin Watermaster pertaining to treatment plant construction, operation, repair, modification, destruction and inactivation.

Submitted for Applicant by:_____
Signature:_____
Title:_____
Date:_____

Date Received by Watermaster:_____
Watermaster Action:
Approved ( ) Denied ( )
Date of Action:_____
Permit Number:_____
By:_____
(Name)
_____
(Title)

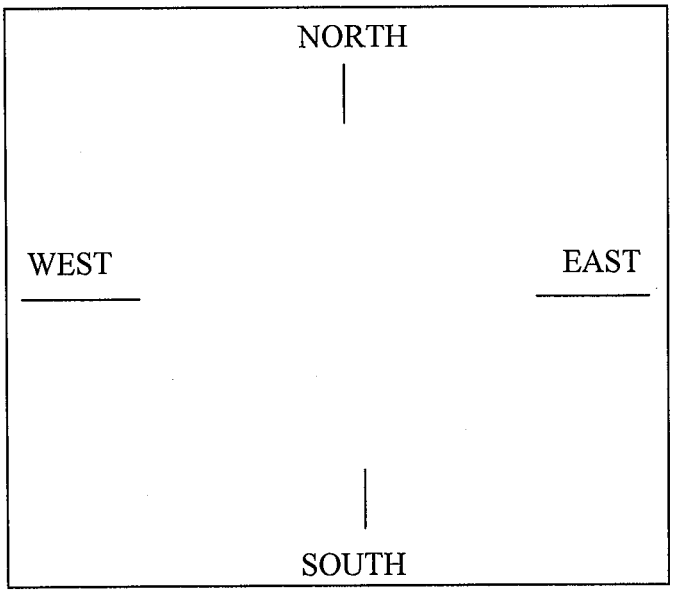
EXHIBIT K-1

WELL LOCATION SKETCH



Township _____ **N/S**
Range_____**E/W**
Section No._____

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary. Indicate distances.

POLICY/CRITERIA FOR
BORROWING
Section 18 (i)

A. Watermaster may borrow money from any available fund maintained by it for purposes other than Replacement Water purchases, or use accrued funds, to purchase Supplemental Water. "Any available fund" shall mean the Administration Fund, the In-Lieu Fund, the Make-up Obligation Fund or any fund other than the Replacement Water Fund. The following criteria shall be followed when borrowing from any available fund. **(Note: The provisions for levying assessments, including repayment of borrowed funds, should be added to Sections 18 (Assessments) and 19 (Levy and Notice of Assessments).)**

1. The first priority for using borrowed funds is for the pre-purchase of Replacement Water based upon unique water supply availability conditions. In this case, borrowed funds shall be repaid by the subsequent over-producers as normal Replacement Water purchases. The Watermaster may also use borrowed funds to purchase Supplemental Water for the general benefit of the Basin.
2. Watermaster shall maintain sufficient amounts in the fund(s) it borrows from to reliably manage those funds.
    a. The Replacement Water fund has accumulated amounts which reflect interest income. The surplus amounts in the Replacement Water fund may be used for the purchase of Replacement Water.
    b. The Make-up Obligation fund has been established through Make-up Obligation assessments to fund the purchase of Make-up Water to satisfy a Make-up Obligation of the Upper Area to the Lower Area pursuant to the Long Beach Judgment.

i. The Upper Area shall have an Accrued Credit of no less than 50,000 acre-feet in order to consider any borrowing for the purchase of Supplement Water.

ii. If, at any time, amounts are borrowed from the Make-up Obligation fund, and the Upper Area accrued credit falls below 50,000 acre-feet, the amount borrowed shall be repaid, with accrued interest, within one-year of the date of the San Gabriel River Watermaster Annual Report identifying the accrued credit is below 50,000 acre-feet.

B. Borrowing from Financial Institutions

1. When necessary to secure Supplemental Water, upon approval by Watermaster at its regularly scheduled public meeting, Watermaster may borrow funds in excess of the annual amount of assessments levied but uncollected.
2. Prior to borrowing funds, Watermaster shall conduct the following:
   a. Meet and confer with Responsible Agencies and seek their input and;
   b. Obtain prior approval of the Court before incurring debt that exceeds the total of one year's levied Assessments.
   c. Identify the terms and conditions for Court approval.
3. Debt repayment will be allocated among the Parties subject to the beneficial use of the Supplemental Water.
   a. Supplemental Water used as a pre-delivery of a Replacement Water obligation shall be allocated amongst the Parties which incur a Replacement Water obligation.
   b. Supplemental Water used as a delivery for the general benefit of the Basin shall be allocated based upon total

Prescriptive Pumping Rights and Surface Diversion Rights (or total Production).

4. Watermaster may establish a line of financial credit with a financial institution. Watermaster shall maintain a record of all fees, principal and interest associated with any loan or withdrawal on its line of credit until such funds are repaid. Watermaster shall establish an applicable assessment rate for repayment in full, including fees and interest.
    a. Upon receipt of assessment funds each year, Watermaster shall make a repayment to the lending institution, in part or in whole, to complete repayment.

POLICY/CRITERIA FOR
THREE-YEAR PURCHASED WATER PLAN
Section 30

A. By August 1 of each year, Watermaster staff will prepare a draft Three-year Purchased Water Plan estimating the Supplemental Water purchases for each of the three subsequent years.

1. Estimated Supplemental Water purchases shall be provided to correspond to water supply allocations made by other agencies (currently calendar year).
    a. Allocations of State Water Project water entitlement are provided on a calendar year basis.
    b. The Metropolitan Water District of Southern California allocations are provided on a calendar year basis.
2. The Supplemental Water requirement from the end of Watermaster's fiscal year (ends June 30) is assumed to be delivered by the end of the respective calendar year (i.e. June 30, 2013 delivered by December 31, 2013).
3. The estimated Supplemental Water requirements to be included in the draft Three-year Purchased Water Plan may be based on the following:
    a. The first year of the Three-year Purchased Water Plan shall be, at a minimum, the total Replacement Water requirement for the three Responsible Agencies for the immediately preceding fiscal year's Operating Safe Yield and Production, and any Supplemental Water, at the discretion of Watermaster.
    b. The second and third years of the Three-year Purchased Water Plan may be estimated as follows:

i. The Operating Safe Yield established by Watermaster for the current fiscal year and the preliminary Operating Safe Yield for the next succeeding years.

ii. Alternative projections of the Operating Safe Yield that may be set by Watermaster.

iii. An evaluation of potential wet, average, and dry hydrologic conditions.

iv. Future groundwater Production provided by, or estimated for, each Producer pursuant to Section 28(g) (1) of these Rules and Regulations and preparation of Watermaster's Five-year Water Supply and Water Quality Plan.

v. Depending upon Basin conditions, Watermaster may consider additional factors as necessary.

B. Prior to October 1 of each year, the draft Three-year Purchased Water Plan shall be provided to the appropriate Watermaster Committee(s) for review.

C. At its October meeting, the Watermaster Board shall be presented with the draft Three-year Purchased Water Plan.

D. On or before November 1 of each year, Watermaster shall prepare and distribute to the Responsible Agencies a three-year projection of its supplemental water purchases from each agency.

E. Watermaster shall, to the extent feasible, coordinate the tentative schedule for delivery and payment of those Supplemental Water purchases with each agency.

POLICY/CRITERIA FOR
REPLACEMENT WATER ASSESSMENT
Section 18 (b)

Section 18(b) – Watermaster Replacement Water rates may be in an amount calculated to allow Watermaster to purchase more than one acre-foot of Supplemental Water for each acre-foot of excess Production (Production which exceeds annual Production rights) to which such Assessment applies, when such purchases are prudent in order to secure necessary supplies for the benefit of the Basin and parties, subject to the following conditions:

1. To the extent Watermaster purchases more than one acre-foot of Supplemental Water for each acre-foot of excess Production to which such assessment applies, a credit shall be issued to the affected Producers at such time excess water is purchased.
2. Watermaster shall maintain a record of the Producers which were assessed and the quantity of Supplemental Water that was purchased for the current year's Replacement Water obligation and the incremental additional amount of Supplemental Water that was purchased for which a credit will be issued.
3. Producers that have been assessed an amount to purchase more than one acre-foot of Supplemental Water and have received a credit shall have the option of:
    a. Retaining the additional Supplemental Water in an individual Producer cyclic storage account for use by the Producer to off-set a future Replacement Water obligation – (requires cyclic storage agreement).
    b. Transferring the additionally purchased Supplemental Water credit to the appropriate Responsible Agency, and placed in the Responsible Agency's cyclic storage account.
4. Interest shall not accrue to the Producer on the assessment used to purchase additional Supplemental Water.

POLICY/CRITERIA FOR
WATER RESOURCE DEVELOPMENT ASSESSMENT
Section 18 (e)

e) Watermaster may levy an assessment on all Pumping to support the purchase, financing and/or development of new or additional Supplemental Water sources, in cooperation with one or more Responsible Agencies as appropriate.

1. Any Water Resource Development Assessment approved by the Watermaster shall be assessed on all Production.
2. The Water Resource Development Assessment funds are intended to ensure that the Basin maintains a reliable Supplemental Water supply to support the Judgment's Physical Solution and are intended to be used for the benefit of the entire Basin.
3. Any proposed use of Water Resource Development Assessment for development of a new or additional Supplemental Water source(s) shall require a technical document to be prepared and presented to the Watermaster, and shall include, as a minimum, the following information.
    a. Engineering Report
        i. Description
        ii. Source of water supply
        iii. Water supply reliability
        iv. Description of new facilities
        v. Detailed cost estimate
        vi. Detailed operations and maintenance cost estimate
        vii. A cost/benefit analysis
        viii. Description of potential impacts to Responsible Agencies
        ix. Description of basin-wide benefits
    b. California Environmental Quality Act (CEQA) and/or National Environment Policy Act (NEPA) compliance, as necessary

i. A Categorical Exemption
ii. A Negative Declaration
iii. A Mitigated Negative Declaration
iv. An Environmental Impact Report

c. Regulatory approval, as applicable
   i. California Department of Public Health
   ii. Regional Water Quality Control Board
   iii. United States Environmental Protection Agency
   iv. State Water Resources Control Board
   v. Other State, County and Local Agencies

d. Funding summary and financial analysis
   i. Description of all sources of funding
   ii. Capital costs funding
   iii. Operations, maintenance, repair and replacement costs funding
   iv. Long-term financial strategy

4. In the event a Supplemental Water Supply project is presented to the Watermaster, Watermaster's Engineer and/or other designated Watermaster consultant(s) shall review the technical documents submitted and prepare a Staff Report evaluating the proposed project, including but not limited to :
   a. Any Watermaster obligation and benefits.
   b. Potential impacts to Responsible Agencies
   c. Benefits to the Basin and the Producers.
   d. An analysis of project costs compared to existing source(s) of supply.
   e. An analysis of the long-term reliable yield of the proposed project.
5. The Watermaster Engineer's staff report shall be reviewed by the appropriate Watermaster Committee(s).

6. A new Supplemental Water Supply project that is endorsed by a Watermaster Committee(s) shall be subject to Section 11 of the Rules and Regulations
7. A new Supplemental Water Resources Development Assessment supply project that satisfies the public hearing process may be agenized for action by Watermaster regarding a Water Resources Development Assessment.
    a. Watermaster's action on a Water Resources Development Assessment is subject to Court approval.
    b. Parties wishing to oppose or support Watermaster's action may do so pursuant to Section 11 of these Rules and Regulations.
8. Following Court approval of a Water Resource Development Assessment, but prior to levying the assessment, Watermaster may execute an Agreement with the project proponent, if appropriate, including but not limited to a description of:
    a. Reliable annual project yield.
    b. All funding requirements.
    c. Provisions for repayment of Watermaster Resource Development Assessments in the event alternative funding becomes available in the future.
    d. The specific amount and length of time the Resources Development Assessment will be levied.
    e. Any other items deemed appropriate by Watermaster.

POLICY/CRITERIA FOR
AGREEMENT FOR STORAGE AND EXPORT OF SUPPLEMENTAL WATER
Section 34 (r)

1. Potential Parties to a Storage and Export Agreement shall include, but not be limited to the following:
    a. Main San Gabriel Basin Watermaster.
    b. Party to the Judgment, as applicable.
    c. The appropriate Responsible Agency(s)
        i. Three Valleys Municipal Water District
        ii. Upper San Gabriel Valley Municipal Water District
        iii. San Gabriel Valley Municipal Water District
    d. Non-party to the Judgment, as applicable.

2. Recitals (likely need a lot more)
    a. Watermaster may fix terms and conditions under which parties and non-parties may store Supplemental Water in and export said Supplemental Water from the Basin;(Section 34 (r) of the amended Judgment)
    b. Entities to a Storage and Export Agreement who are Parties to the Watermaster Judgment remain bound by ALL provisions of the Judgment and Rules and Regulations.
    c. Entities to a Storage and Export Agreement who are non-Parties to the Watermaster Judgment shall remain non-parties to the Judgment and receive no rights, privileges, or responsibilities under the Judgment, except those specified herein.
    d. Non-parties wishing to store and export Supplemental Water agree to the enforcement and dispute resolution procedures of the Judgment, including without limitation, submission to dispute resolution before the Court with continuing jurisdiction under the Judgment.
    e. A Storage and Export Agreement shall be administered by the Watermaster.

f. At a minimum, the following shall be reported to the Watermaster:
    i. Production
    ii. Meter test results
    iii. Section 28 submittals (if applicable)
    iv. Monthly Supplemental Water delivery and export
g. There shall be no obligation or commitment by Watermaster for a proposed "Project's" success or failure.
h. All extractions under this Agreement shall be for export purposes only and are not a primary water supply source to the exporter.
i. Compliance with all provisions of Section 28 (new or increased production), as applicable.
j. Watermaster shall control all spreading or injection and extraction scheduling and procedures for the storage and export of Supplemental Water.
k. In an effort to facilitate Storage and Export agreements, Watermaster shall impose conditions to ensure that there will be no adverse impact to any other production source as a result of the agreement, and shall maintain continuing authority over such storage and export.
l. Parties through Watermaster, shall maintain continuing ownership of all storage space in the Basin.
m. Exporter shall be solely responsible for securing any and all permits and regulatory approvals necessary for the storage and export of Supplemental Water.
n. All costs pursuant to this action shall be borne by the project proponent.

3. <u>Supplemental Water Storage and Export Project Description</u>

(Specific to each project)

a. The source of Supplemental Water shall be identified.
b. The Supplemental Water supply reliability shall be addressed.
c. The description of delivery location(s) (turnout) shall be identified.
d. The proposed replenishment location(s) shall be identified.

e. The proposed extraction facilities and location(s) shall be described and the location identified.

f. The proposed extraction plan shall be identified.

g. A detailed description of project operation shall be provided.

h. Compliance with all regulatory and environmental requirements.

4. Agreement Provisions

a. Storage Requirement to store Supplemental Water in the Basin prior to export.

i. Watermaster shall determine the minimum balance which shall be in storage at all times.

ii. Watermaster shall determine the quantity of Supplemental Water deliveries which shall be deemed a contribution to the Basin.

iii. All water stored pursuant to a Storage and Export Agreement shall be subordinate in priority to other Supplemental Water pursuant to Section 26(d)(3), 26(d)(4), and 26(d)(5) of the Rules and Regulations.

iv. Watermaster may establish conditions regarding the export at such time the storage falls below the minimum balance.

v. Watermaster shall determine the minimum quantity of water to be maintained in storage before all export must cease.

vi. Watermaster shall determine a cost for the evaluation, negotiation, and implementation of a Storage and Export Agreement, and require a financial deposit in advance pursuant to Section 46(a).

vii. Watermaster shall calculate any special costs, damages or burdens resulting from the storage and export of Supplemental Water. Exporter shall be solely responsible for payment of any such damages, burdens and costs assessed by Watermaster.

viii. Watermaster shall determine and account for all losses in stored water.

b. Description of the Supplemental Water Supply

c. Supplemental Water Quality

   i. The quality of the Supplemental Water shall be subject to Watermaster pre-approval.

   ii. Watermaster may use the "Criteria for the Delivery of Supplemental Water" and the "Salt and Nutrient Management Plan" as a guide.

d. Basin Contribution for Export

   i. Watermaster shall determine the amount of stored water that shall be contributed to the Basin.

   ii. All contributed water shall be provided to the Basin at no cost to Watermaster or Parties to the Judgment.

e. Watermaster Assessment (Section 45(b)(6))

   i. Exporter shall be assessed and shall pay to Watermaster applicable Administration assessment on all Production.

   ii. Exporter shall be assessed and shall pay to Watermaster all other applicable assessments on all Production.

   iii. Failure to promptly pay any assessment or fee may be cause for immediate termination of the Agreement.

f. Project Scheduling – Watermaster Notification

   i. Term of agreement shall consider turn-over and abandonment of stored water.

   ii. Exporter shall provide Watermaster with a schedule which identifies all planning, funding, design, permitting, and construction, and shall be updated on a regular basis. Project delay may be cause for termination.

   iii. Exporter shall at minimum, annually provide Watermaster with an operations schedule identifying planned deliveries and extractions for Watermaster approval.

g. Replenishment Facilities Priorities

   i. All storage agreements shall at all times consider priorities expressed in Section 26 of the Rules and Regulations.

ii. Priority for storage and export shall be pro-rated by the Watermaster at its discretion, as needed.

h. All Agreements shall address limitation on extraction based upon the Key Well elevation.

i. Reporting to Watermaster consistent with the Rules and Regulations.

j. Watermaster Continuing Authority

   i. Watermaster shall retain control of pumping for Basin water quality.

   ii. Agreement shall consider Basin cleanup plans and projects (which may be coordinated with EPA, WQA and other agencies).

   iii. Watermaster shall incur no liability.

k. Other Agreement (considerations).

   i. Project Modification, Reduction, or Termination by all parties to the Agreement

   ii. Disputes/Resolution

   iii. Agreement Term

   iv. Good Faith

   v. Watermaster to have, or shall be considered for, the first right of refusal to purchase Stored Water prior to such water being exported.

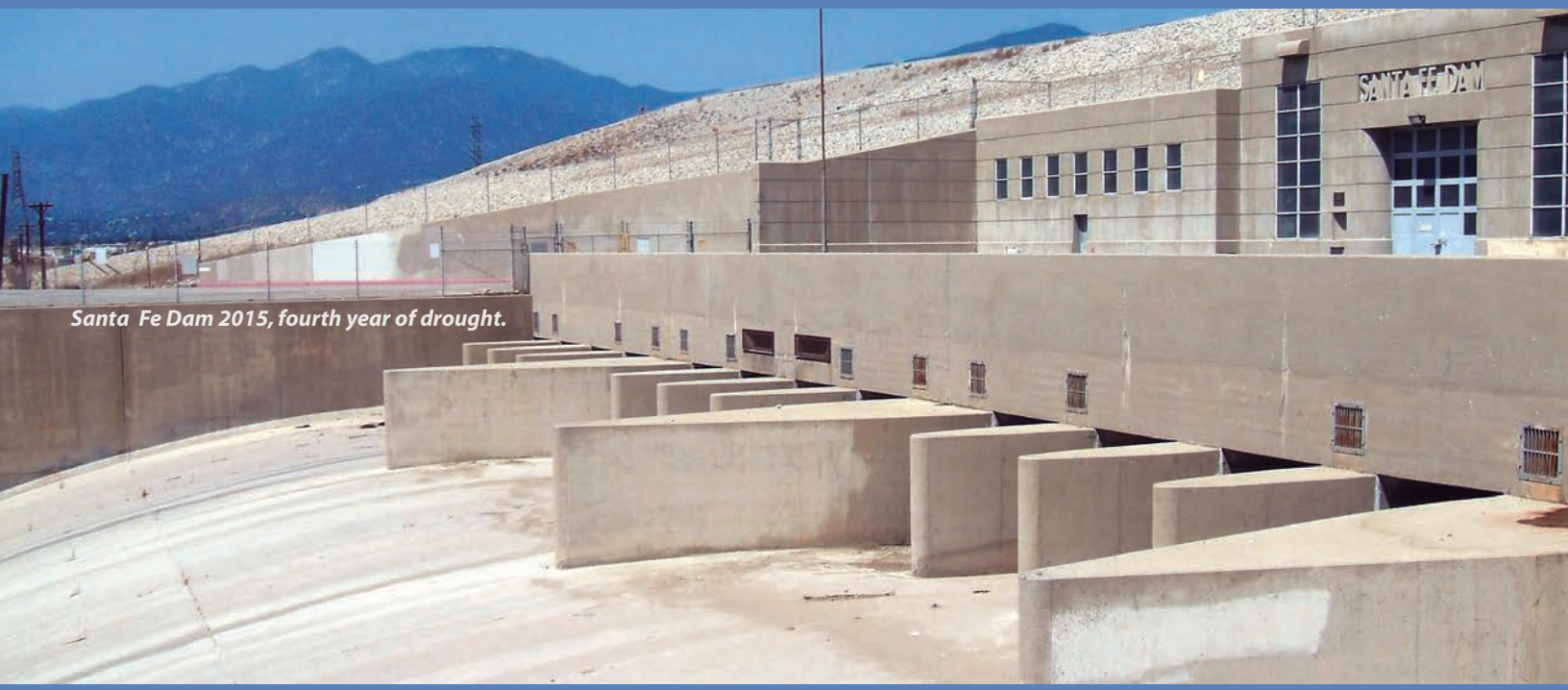
   vi. The storing and exporting parties agree to indemnify and hold Watermaster harmless from any and all claims resulting from the storage and export of Supplemental Water.

   vii. Force Majore

APPENDIX L

DRAFT MAIN SAN GABRIEL BASIN WATERMASTER FIVE YEAR WATER QUALITY AND SUPPLY PLAN, 2015-16 TO 2019-20

Five-Year
Water Quality and Supply Plan



Santa Fe Dam 2015, fourth year of drought.

MainSanGabrielBasin
WATERMASTER

2015–2016 to 2019–20

Santa Fe Dam 2005, last El Niño.

DRAFT

"To assure that pumping does not lead to further degradation of water quality in the Basin, a Five-Year Water Quality and Supply Plan must be prepared and updated annually by Watermaster…"

Section 28 of Watermaster's Rules and Regulations

Five-Year Water Quality and Supply Plan

November 2015

MainSanGabrielBasin
WATERMASTER

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INTRODUCTION

Watermaster prepares and annually updates this Five-Year Water Quality and Supply Plan (Five-Year Plan) in accordance with the requirements of Section 28 of its Rules and Regulations. The objective is to coordinate groundwater-related activities so that both water supply and water quality in the Main San Gabriel Basin (Basin) are protected and improved.

PURPOSE OF THE FIVE-YEAR PLAN

Many important issues are detailed in the Five-Year Plan, including Watermaster's plans to:

1. monitor groundwater supply and quality;
2. develop projections of future groundwater supply and quality;
3. ensure adequate supplemental water is available for groundwater replenishment;
4. review and cooperate on cleanup projects, and provide technical assistance to other agencies;
5. assure that pumping does not lead to further degradation of water quality in the Basin;
6. address emerging contaminants in the Basin;
7. develop a cleanup and water supply program consistent with the U.S. Environmental Protection Agency (USEPA) plans for its San Gabriel Basin Superfund sites; and
8. continue to perform responsibilities under the Baldwin Park Operable Unit (BPOU) Project Agreement relating to project administration and performance evaluation.

WATERMASTER BACKGROUND

The Los Angeles County Superior Court created the Main San Gabriel Basin Watermaster in 1973 to resolve water issues that had arisen among water users in the San Gabriel Valley. Watermaster's mission was to generally manage the water supply of the Main San Gabriel Groundwater Basin.

During the late 1970s and early 1980s, significant groundwater contamination was discovered in the Basin. The contamination was caused in part by past practices of local industries that had inappropriately disposed of industrial solvents, as well as by infiltration of nitrates from an earlier agricultural period. Cleanup efforts for industrial contamination were undertaken at the local, state, and federal levels.

WATERMASTER RECEIVES WATER QUALITY RESPONSIBILITIES

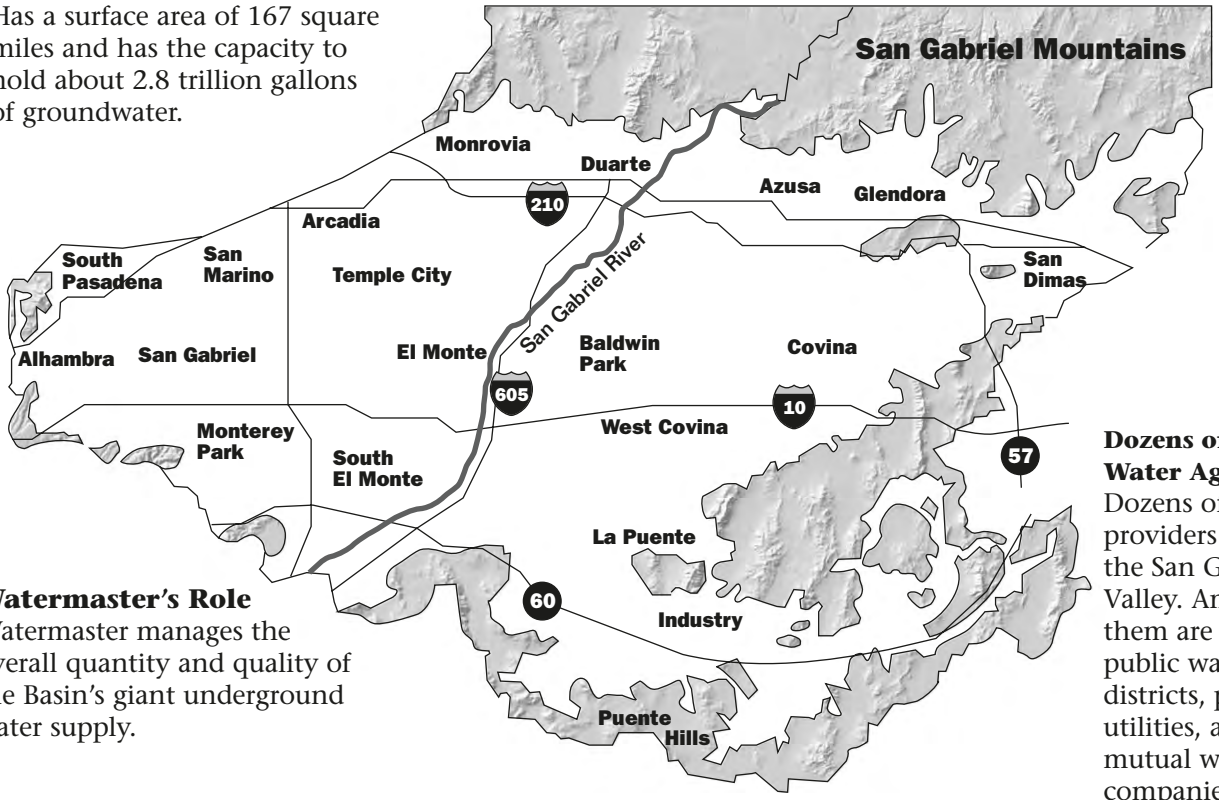
By 1989, local water agencies adopted a joint resolution concerning water quality issues, which stated that Watermaster should coordinate local activities aimed at preserving and restoring the quality of groundwater in the Basin. The joint resolution also called for a cleanup plan.

In 1991, the Los Angeles County Superior Court granted Watermaster the authority to control pumping for water quality purposes. Accordingly, Watermaster added Section 28 to its Rules and Regulations regarding water quality management. The new responsibilities included: developing this Five-Year Water Quality and Supply Plan; updating it annually, and submitting it to the California Regional Water Quality Control Board Los Angeles Region (Regional Board); and making it available for public review by November 1 of each year.

Figure 1. AREA COVERED BY MAIN SAN GABRIEL BASIN

Precious Underground Water Supply
Provides up to 90 billion gallons of groundwater annually, enough to meet 80 percent or more of San Gabriel Valley's 1.4 million residents' demand for water.

2.8 Trillion Gallons
Has a surface area of 167 square miles and has the capacity to hold about 2.8 trillion gallons of groundwater.



Watermaster's Role
Watermaster manages the overall quantity and quality of the Basin's giant underground water supply.

Dozens of Water Agencies
Dozens of water providers serve the San Gabriel Valley. Among them are cities, public water districts, private utilities, and mutual water companies.

CURRENT WATER SUPPLY CONDITIONS

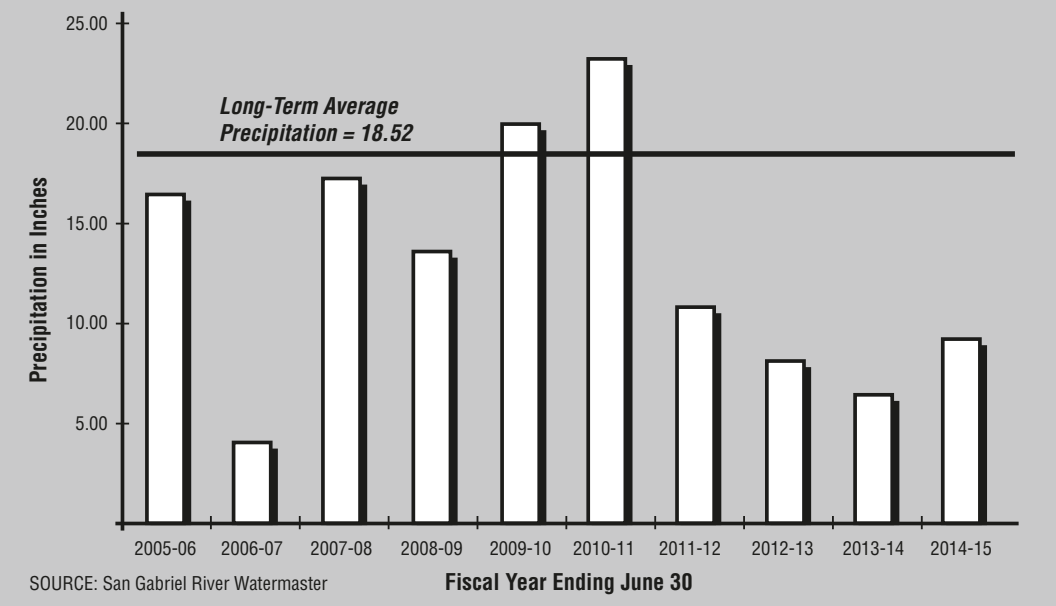
Rainfall in the San Gabriel Valley was well below average. As a result, replenishment of storm runoff was also below average. Consequently, the groundwater level decreased by about 10 feet during fiscal year 2014-15.

WATER SUPPLY INFLOWS DURING 2014-15

VALLEY RECEIVES BELOW-AVERAGE RAINFALL

In 2014-15 the San Gabriel Valley received about 9 inches of rain, which is about 49 percent of the long-term average of 18.52 inches.

Figure 2. RAINFALL BELOW LONG-TERM AVERAGE



The long-term average rainfall is 18.52 inches. The rainfall total is made up of an average taken from four stations located in San Dimas, Diamond Bar, El Monte and Pasadena.

LOCAL STORMWATER CAPTURE
6 PERCENT OF LONG-TERM AVERAGE

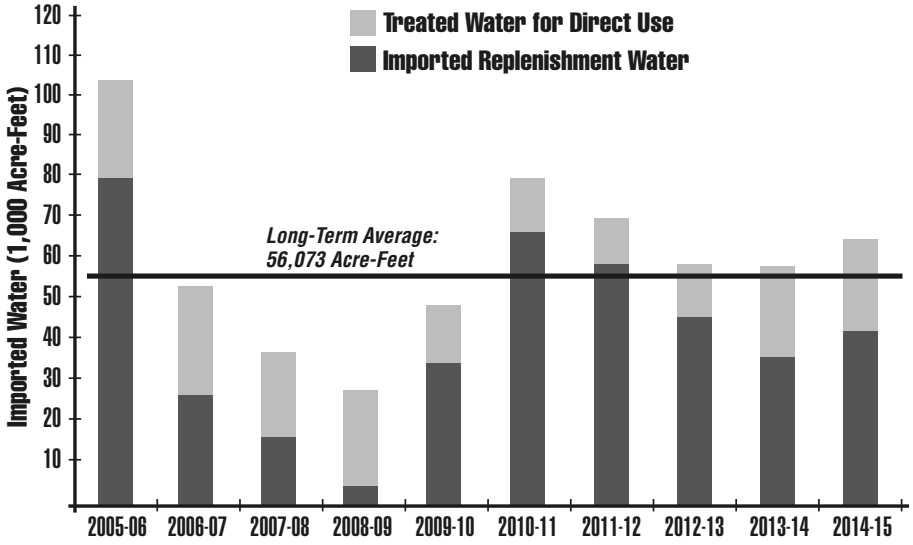
Fiscal year 2014-15 is the fourth consecutive year of below average rainfall. During fiscal year 2014-15, rainfall was about 49 percent of average and contributed to storm water capture of about 6,600 acre-feet, which is about 6 percent of the long-term average. In addition, as of June 30, 2015, only about 20,000 acre-feet of local storm runoff remained in storage in reservoirs in the San Gabriel Canyon. Typically, about 13,000 acre-feet is in the reservoir at the beginning of the storm season in October. That would leave only about 7,000 acre-feet of water for groundwater replenishment—representing a scant ten-inch increase in groundwater elevation within the Basin.

LOCAL WATER USE BELOW AVERAGE

Total water use within the San Gabriel Valley consists of groundwater production, surface water diversions, treated imported water deliveries, and recycled water for irrigation projects. During fiscal year 2013-14, total water use was about 267,500 acre-feet. During fiscal year 2014-15, total water use was about 235,800 acre-feet, consisting of about 196,400 acre-feet of groundwater production, 11,900 acre-feet of treated local surface water, 22,500 acre-feet of treated imported water, and 5,000 acre-feet of recycled water. The decrease in total water use from the prior year (about 35,000 acre-feet) is due to a greater awareness by consumers of the drought conditions and increased water conservation efforts by those consumers. Total water use is about 12 percent lower than the long-term average of about 267,000 acre-feet.

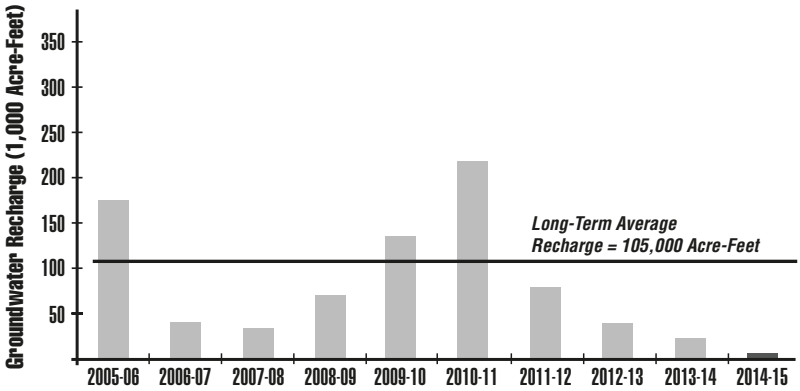
Main San Gabriel Basin Watermaster annually establishes an Operating Safe Yield (OSY), which is based on prevailing hydrologic conditions in the San Gabriel Valley. Production in excess of the OSY is subject to an assessment that is used to purchase untreated imported water to replenish the Basin. Overproduction during fiscal year 2014-15 was 47,700 acre-feet, which is about 20 percent greater than the 10-year average of 39,700 acre-feet.

Figure 3. IMPORTED WATER DELIVERIES ABOVE LONG-TERM AVERAGE



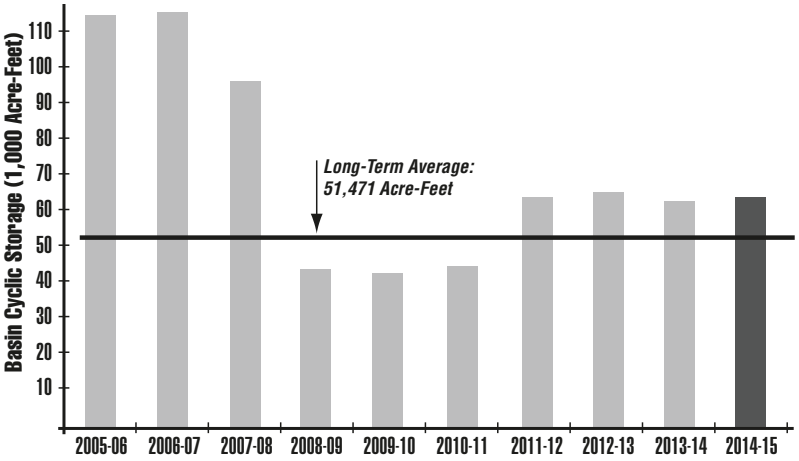
2014-15 Imported Water. Imported water deliveries (treated and untreated) totaled about 64,000 acre-feet for direct use and groundwater replenishment. This is 14 percent higher than the long-term average.

Figure 4. LOCAL WATER CONSERVED ABOUT 6% OF AVERAGE



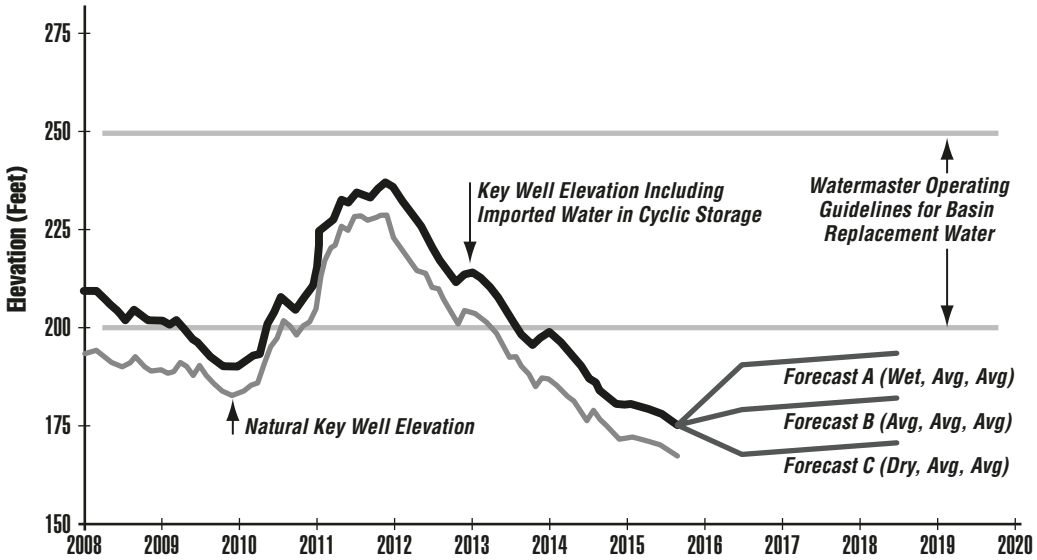
Approximately 6,600 acre-feet of local water was conserved during 2014-15, which is about 6 percent of the long-term average of 105,000 acre feet.

Figure 5. CYCLIC STORAGE REMAINS STEADY



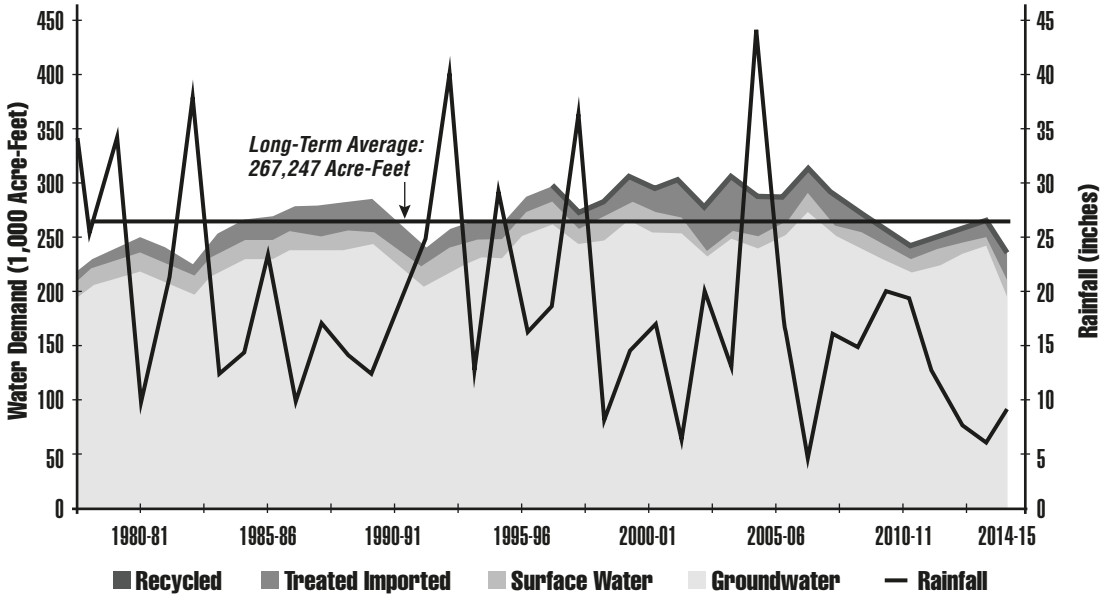
As of June 30, 2015, a total of about 61,900 acre-feet was in Cyclic Storage, consisting of about 14,300 acre-feet of Three Valleys Municipal Water District, about 3,000 acre-feet of San Gabriel Valley Municipal Water District, about 5,000 acre-feet of Upper San Gabriel Valley Municipal Water District, about 7,000 acre-feet of Watermaster, and about 32,600 acre-feet of Producer Cyclic Storage. Cyclic Storage, as of June 30, 2014, has increased by about 500 acre-feet since the end of fiscal year 2014-14. The long-term average is about 51,500 acre-feet.

Figure 6. CYCLIC STORAGE AND RAINFALL IMPACTS ON KEY WELL



The additional water provided by cyclic storage (shown with the black line) helps local agencies meet their future replacement water obligations. This graph also forecasts Key Well elevations for three scenarios: upcoming: wet years, average years and dry years.

FIGURE 7. TOTAL WATER DEMAND DECREASED SIGNIFICANTLY



Long-term average water demand is about 267,247 acre-feet. During fiscal year 2014-15 the total demand was about 235,800 acre-feet, made up of groundwater (196,400 acre-feet), surface water (11,900 acre-feet), imported treated water (22,500 acre-feet), and recycled water (5,000 acre-feet).

OPERATING SAFE YIELD

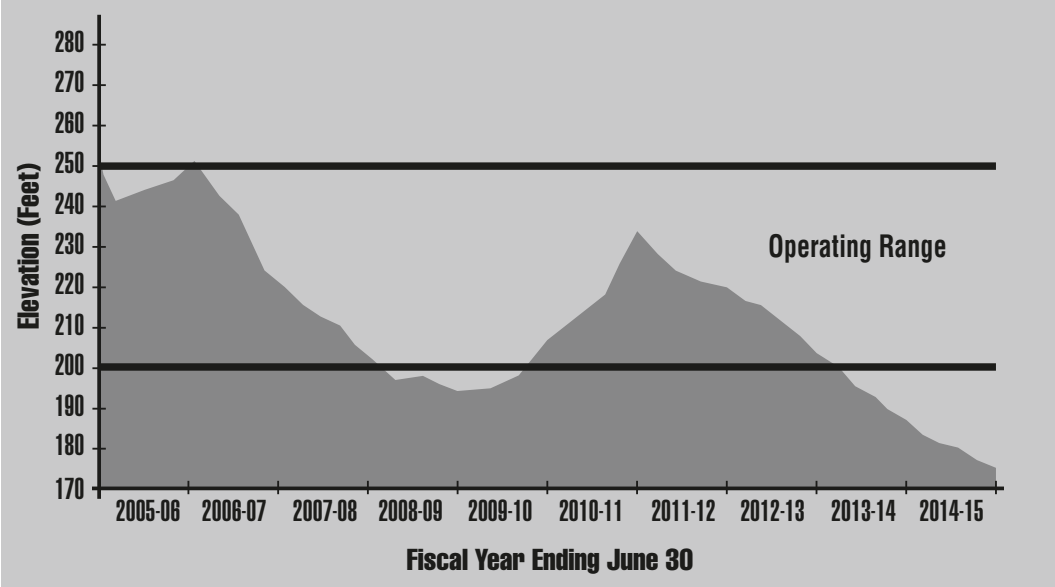
Main San Gabriel Basin Watermaster annually establishes an Operating Safe Yield (OSY), which is based on prevailing hydrologic conditions in the San Gabriel Valley. Production in excess of the OSY is subject to an assessment that is used to purchase untreated imported water to replenish the Basin. Overproduction during fiscal year 2014-15 was about 47,700 acre-feet, which is about 28 percent higher than the long-term average of 37,200 acre-feet. The OSY was set at 150,000 AF for fiscal year 2014-15. The historical long-term average OSY is about 195,000 AF. During fiscal year 2014-15, the OSY was set using a management approach that seeks to set the OSY within a narrower range than previously. This is part of the overall effort to manage the Basin in a way that makes the water supply more stable and costs more predictable in both wet and dry years.

Watermaster aggressively responded to the decreasing trend of the groundwater level at the Key Well during fiscal year 2014-15 by establishing an OSY of 150,000 acre-feet for fiscal year 2015-16 (identical to the OSY for fiscal year 2014-15 and about 45,000 acre-feet below the long-term average of about 195,000 acre-feet). The reduced OSY provides Watermaster with a mechanism to purchase additional replenishment supplies for the Basin, compared to the long-term average OSY.

KEY WELL BELOW OPERATING RANGE

The Baldwin Park Key Well is used as the benchmark for determining how the groundwater level for the entire Basin is trending. Pursuant to the Judgment, Watermaster manages the Basin to maintain the groundwater level at the Key Well between 200 feet and 250 feet to the extent possible. Below-average rainfall between fiscal years 2005-06 and 2008-09, coupled with below-average storm runoff, contributed to the Baldwin Park Key Well water level falling from about 248.4 feet in June 2005 to a historical low (at that time) of 189.2 feet on December 3, 2009. Two consecutive years of above-average rainfall (20 inches during fiscal year 2009-10 and 24 inches during fiscal year 2010-11), contributed to increase the groundwater elevation at the Key Well to about 233.5 feet as of June 30, 2011. However, four consecutive years of below-average rainfall, below average stormwater runoff, and local groundwater production resulted in a decrease in the groundwater elevation at the Key Well to 177.5 feet as of June 30, 2015, despite delivery of about 41,000 acre-feet per year of untreated imported water and reduced production. This level is about 23 feet below the “low” end of the operating range for Watermaster, about 10 feet lower than the year before, and represents a new historic low groundwater elevation at the Key Well.

Figure 8. KEY WELL ELEVATIONS DURING THE LAST TEN YEARS



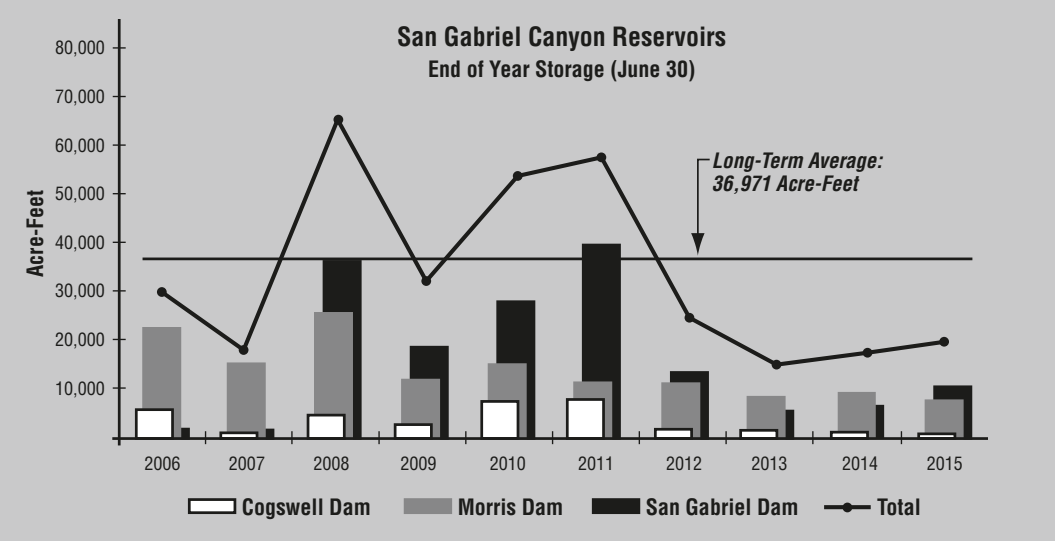
The groundwater elevation at the Key Well on June 30, 2015, was about 177.5 feet, which is below the Basin's operating range of 200 to 250 feet and represents a new historic low.

DECREASE IN WATER STORED IN CANYON RESERVOIRS

Cogswell, San Gabriel, and Morris reservoirs have a combined maximum storage capacity of about 85,000 acre-feet. At the end of the 2014-15 fiscal year, about 20,000 acre-feet of water was stored in these reservoirs. This is about 4,000 acre-feet more than the previous year, representing about 55 percent of the long-term average of about 37,000 acre-feet of water in storage at the end of the fiscal year, but only about 25 percent of total reservoir capacity. In addition, about 6,600 acre-feet of local runoff was released from storage in local reservoirs for recharge into the groundwater basin during fiscal year 2014-15.

Figure 9. WATER STORED IN SAN GABRIEL CANYON RESERVOIRS

Total water stored in San Gabriel Canyon Reservoirs at the end of the fiscal year was 20,000 acre-feet, about 55 percent of the long-term average.



BASIN REPLENISHMENT ACTIVITIES

Historical Basin management practices encouraged Producers to maximize groundwater production instead of relying on treated imported water to address water demands in excess of Producer's water rights. Under normal conditions, Watermaster quantifies groundwater production in excess of Producers' water rights, and arranges to have an equal amount of untreated imported water delivered to replenish the overproduction from the Basin at a "Full Service" untreated water rate. However, in response to the recent drought, Watermaster has implemented additional actions to manage Basin groundwater supplies.

IN-LIEU REPLENISHMENT PROGRAM

As a result of four consecutive years of below average precipitation, untreated imported water supplies have been significantly reduced. In an effort to manage the impact of reduced untreated imported water available for Basin replenishment, Watermaster developed a program to temporarily shift groundwater demand (in excess of Producers' water rights) to treated imported water to reduce the need for untreated imported water deliveries. The In-lieu Program was implemented during fiscal year 2014-15, and about 5,000 acre-feet of groundwater production was shifted to treated imported water.

IMPLEMENTATION OF WATER RESOURCE DEVELOPMENT PROGRAM

Watermaster adopted Resolution No. 05-14-263, which established a Water Resource Development Assessment (RDA), that was applied to all production during fiscal year 2014-15. The purpose of the RDA is to establish a fund from which untreated imported water may be purchased and delivered to the Basin. It is intended to create a "reservoir" of water that is available to assist in the management of the Basin in the event untreated water is not available in the future as a result of a short-term Statewide emergency.

IMPORTED WATER ALLOCATION

Watermaster and Producers recognized prolonged drought conditions will adversely impact untreated imported water availability. Consequently, Watermaster took proactive measures to increase Producer Cyclic Storage from about 15,000 acre-feet as of the end of June 2010 to 42,000 acre-feet as of June 2015. In response to four consecutive years of drought conditions, the Metropolitan Water District of southern California (MWD) implemented a "Water Supply Allocation Program" (WSAP). The WSAP provides an untreated imported water allocation to Upper District of about 25,000 acre-feet and about 4,000 acre-feet to Three Valleys District. Consequently, additional untreated imported water requirements which may be incurred may be deducted from pre-deliveries made by Watermaster and Producers to Cyclic Storage accounts.

In addition to those programs noted above, Watermaster is actively pursuing alternative means of Basin replenishment including:

- encouraging consumer-based conservation efforts to reduce groundwater production;
- securing alternative Supplemental Water supplies and maximizing delivery of imported water from State Water Project contractors;
- pursuing a firm supply of treated recycled water;
- implementing tighter coordination and management to allow replenishment of imported water even during rainy periods, and finding new opportunities to bring in imported water,
- instituting use of new, more flexible financial tools such as mid-year assessments, pre-purchase of water, and other tools to increase water imports, and;
- developing criteria for potential new water storage and export programs.

PROJECTED GROUNDWATER DEMANDS

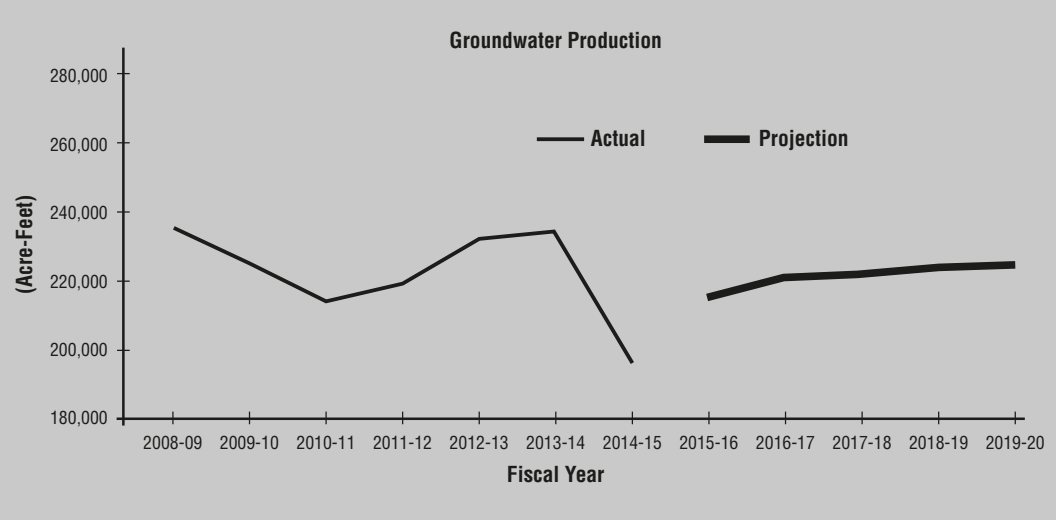
PRODUCER ESTIMATES

Section 28 directs each Producer to submit a report to Watermaster detailing its projected water supply and water production requirements over the following five years. Projections were received from 21 Producers, accounting for about 88 percent of the groundwater production from the Basin.

For those Producers who did not submit projections, Watermaster provided an estimate based on the assumption that each Producer had an aggregate projected growth rate that was the same as those Producers who did submit projections. Projected groundwater production is shown in Appendix A. Figure 10 shows the total projected and historical groundwater production from the Basin since 2007-08.

Figure 10. PROJECTED AND HISTORICAL WATER PRODUCTION

Water production has decreased over the prior year, due in part to consumer water conservation.



Total groundwater production for the 2014-15 fiscal year from the Basin was 196,400 acre feet, which is significantly lower than the previous year's production of 233,700 acre-feet. The decrease in groundwater production is primarily the result of increased water conservation at the consumer level. Groundwater production is influenced by a variety of conditions, including population, seasonal precipitation, groundwater contamination, and availability of surface water. Excluding the impacts of seasonal precipitation, groundwater production had experienced a gradual long-term increase, consistent with increasing population, as shown on Figure 7. The impacts of groundwater contamination during the 1980s and 1990s resulted in reduced groundwater production, offset by an equal increase of treated imported water purchases. Since the late 1990's groundwater production and treatment facilities have become operational, enabling water purveyors to resume use of groundwater. However, since the late-2000s, there has been a significant decrease in groundwater (and overall) demand, which is likely the result of increased water conservation by consumers.

CURRENT WATER QUALITY CONDITIONS

Groundwater delivered to customers continues to be of high quality and always meets state and federal drinking water standards. However, a number of contaminants in areas of the Basin require careful monitoring and treatment before the water is served for domestic use. These contaminants include a variety of industrial solvents referred to as Volatile Organic Compounds, or VOCs. Another common contaminant found in the Basin is nitrate, primarily from fertilizers used during the Valley's agricultural period.

Since 1997, additional contaminants have been detected: perchlorate, a solid rocket fuel ingredient; N-nitrosodimethylamine (NDMA), associated with liquid rocket fuel; 1,2,3-trichloropropane (1,2,3-TCP), a degreasing agent; and 1,4-dioxane, a stabilizer for chlorinated solvents.

In response to the detection of these contaminants, Watermaster and local water entities aggressively pursued construction of treatment facilities to control the spread of contaminants, and continue providing high quality water to consumers, which meets all state and federal drinking water standards. This policy of remediation and reuse both preserves a valuable resource, particularly in the midst of the current drought, and reduces the overall cost of groundwater cleanup. Initially, a number of VOC treatment facilities were constructed, while excessive nitrate concentrations were blended with higher quality water to acceptable levels. Since the detection of perchlorate, NDMA, 1,2,3-TCP, and 1,4-dioxane, Watermaster has been instrumental in the successful operation of treatment facilities to treat those contaminants.

While only present in limited parts of the Basin, these chemicals pose difficult challenges to water Producers. When the chemicals were initially detected, Watermaster responded vigorously by working closely with the local water community to sponsor research, as well as to design, fund, and construct cleanup projects as rapidly as possible rather than wait for the USEPA and the firms named as responsible for the contamination. Watermaster subsequently led negotiations that resulted in the Baldwin Park Operable Unit (BPOU) Project Agreement, including reimbursement for groundwater cleanup costs from certain parties responsible for the contamination. Under the BPOU Agreement, Watermaster is responsible for overall project coordination and administration, groundwater monitoring, and compliance with USEPA reporting requirements. Watermaster also participates in decisions regarding technology selection, construction, and operations. Now that all of the BPOU treatment facilities are operational, Watermaster also monitors the BPOU project's performance in containing and removing contamination.

In addtion cleanup activities with the BPOU, Watermaster coordinates and maintains records on groundwater cleanup efforts within the Puente Valley Operable Unit (PVOU), the El Monte Operable Unit (EMOU), South El Monte Operable Unit (SEMOU), and the Area 3 Operable Unit (Area 3 OU). The location of these Operable Units is shown on Figure 11.

PRIMARY CONTAMINANTS IN THE GROUNDWATER BASIN

VOLATILE ORGANIC COMPOUNDS AND NITRATES

VOCs and nitrates are the most prevalent contaminants found in the Basin. Intensive monitoring and research concerning these two types of contaminants have been underway for many years. The location and cleanup methods for VOCs are generally well understood; during fiscal year 2014-15, 30 plants treated about 25 billion gallons (about 78,300 acre-feet), as shown in Appendix E, of VOC-contaminated water.

Note in Figure 12 that although VOC contamination is substantial, it is centered in just a few areas, leaving a large portion of the Basin unaffected. Water containing nitrates above the Maximum Contaminant Level (MCL) is either blended with other water sources or not used. Figure 13 indicates that nitrates, similar to VOCs, are centered in a few areas and have the highest concentrations in the eastern portion of the Basin away from the most productive pumping areas.

PERCHLORATE

In January 2002, the State Water Resources Control Board, Division of Drinking Water (DDW) formerly the California Department of Public Health (CDPH), and prior to that the California Department of Health Services, lowered the Notification Level (NL) for perchlorate from 18 to 4 parts per billion, and a total of 22 wells were removed from service due to unacceptable levels of perchlorate. DDW subsequently raised the NL to 6 parts per billion in March 2004 and later established an MCL of 6 parts per billion during October 2007. Watermaster played a key role in development of the first treatment facility to remove perchlorate from drinking water. Ion-exchange technology treatment facilities were operational at five sites in the BPOU and at two facilities in other parts of the Basin during fiscal year 2014-15.

NDMA

During 1998, eight local wells were found to contain levels of NDMA above the NL at that time of 2 parts per trillion. Five of the wells with measurable levels of NDMA had already been taken out of service for other reasons, and the other three were put on inactive status once NDMA was detected. DDW subsequently raised the NL to 10 parts per trillion. As with perchlorate, Watermaster played a key role in the construction of NDMA treatment facilities in the BPOU area of the Basin. Five facilities were operational during fiscal year 2014-15.

Figure 11. LOCATION MAP OF USEPA OPERABLE UNITS

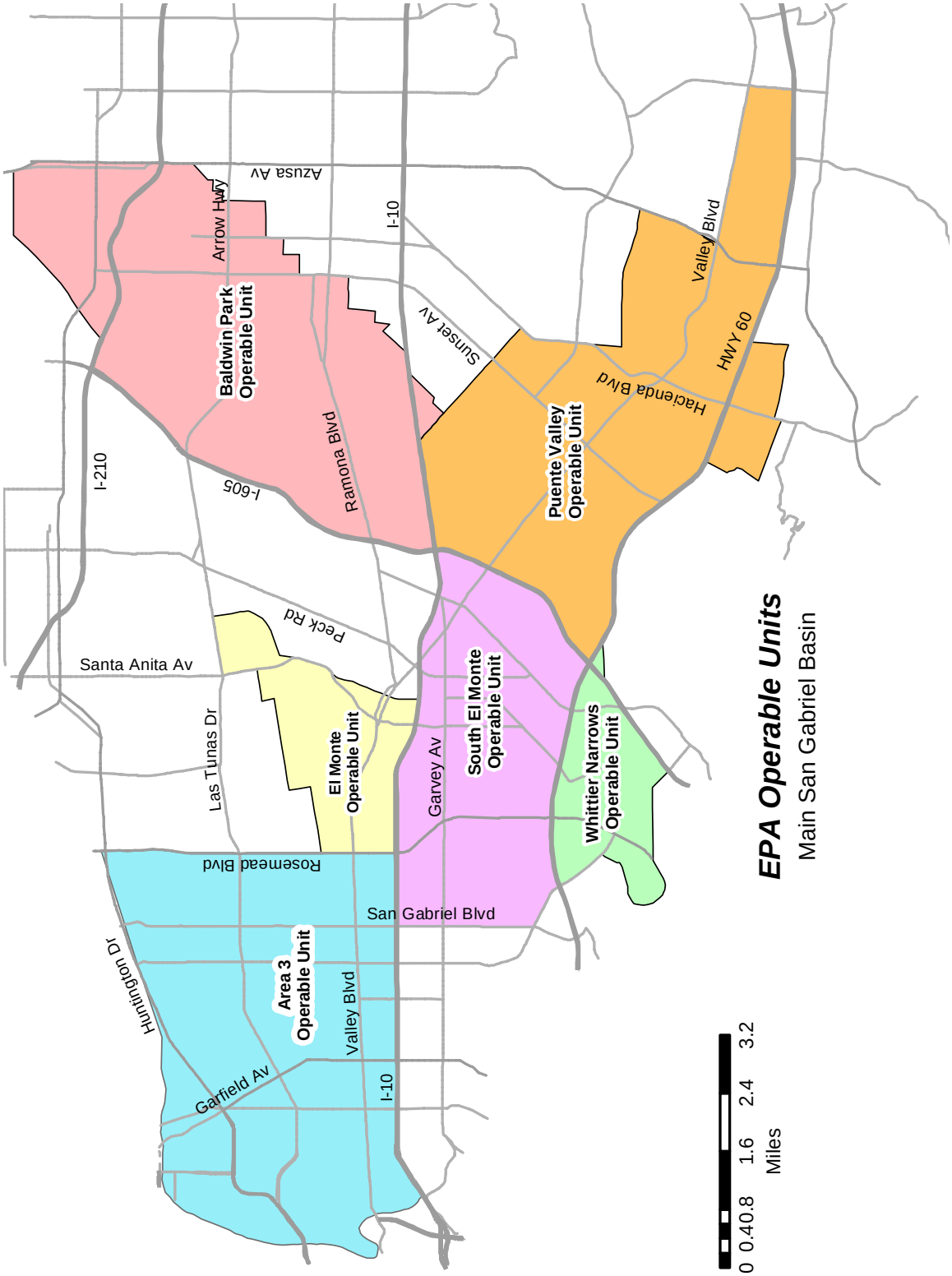


Figure 12. VOLATILE ORGANIC COMPOUND LEVELS IN GROUNDWATER THROUGHOUT THE BASIN

Extensive cleanup programs are underway in the areas affected by VOC contamination. Because the main plumes of contamination are centered in just a few areas, much of the Basin remains unaffected.

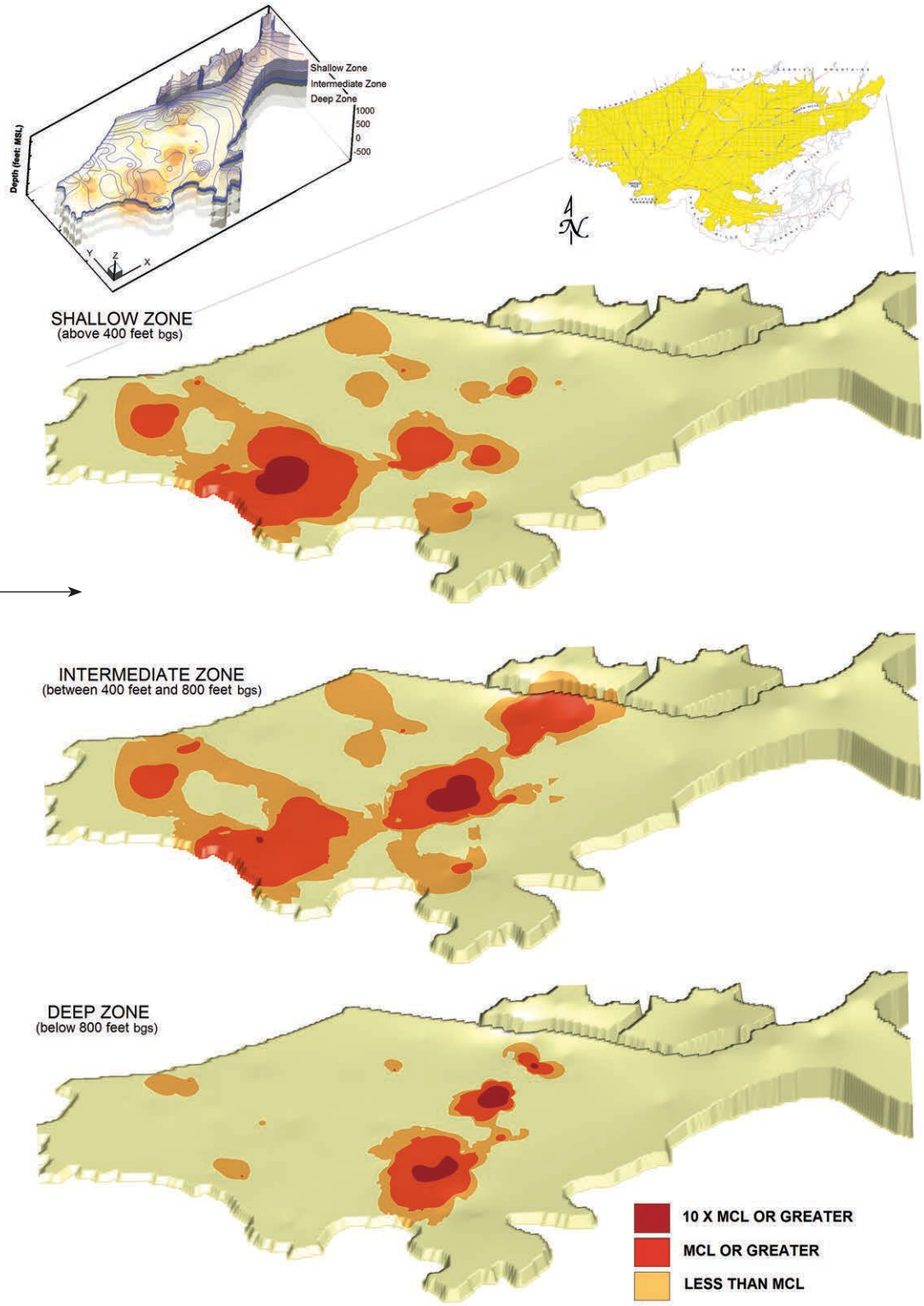
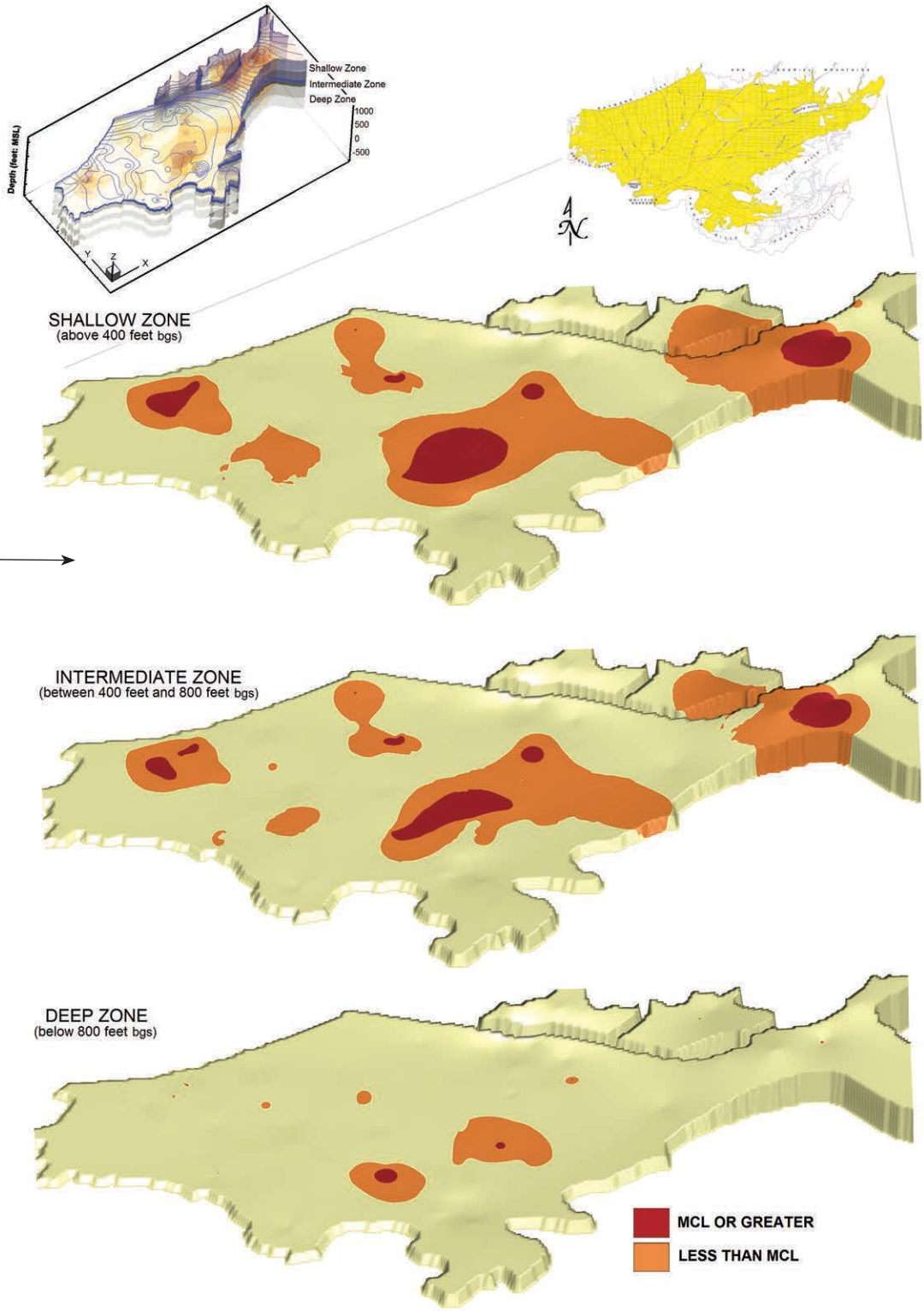


Figure 13. NITRATE LEVELS IN GROUNDWATER THROUGHOUT THE BASIN

Nitrate (NO3) contamination is highest in the eastern portion of the Basin, away from the San Gabriel River, the area of most intensive groundwater pumping.



TRICHLOROPROPANE (1,2,3-TCP)

The compound 1,2,3-trichloropropane is a degreasing agent that has been detected in the groundwater above the NL of 5 parts per trillion, primarily in the BPOU and the Area 3 OU. It was detected in the BPOU during the winter of 2006, and its presence delayed use of one treatment facility for potable purposes. Following detection, DDW indicated that the appropriate treatment technology is liquid phase granular activated carbon. Subsequently, Watermaster, in cooperation with its BPOU project partners, worked to construct treatment facilities to remove 1,2,3-TCP from the groundwater to make it suitable for potable uses. Those facilities were operational during fiscal year 2014-15.

HEXAVALENT CHROMIUM (CR6)

Cr 6 is a naturally occurring substance that has been detected in drinking water wells throughout the Basin. Historically, it was included in the analytical test results for Total Chromium, which has an MCL of 50 parts per billion. Effective July 1, 2014, DDW established a new MCL (exclusively for Cr6) of 10 parts per billion. In addition to being a naturally occurring substance, Cr6 is also associated with industrial sources of contamination, such as metal plating. Watermaster is coordinating with regulators to identify Basinwide Cr6 concentrations in an effort to establish a background water quality, although Cr6 concentrations in all active wells are below the MCL.

WELLS ASSESSED FOR VULNERABILITY TO CONTAMINATION

One of the primary purposes of the Five-Year Plan is to identify wells in the Basin that are vulnerable to contamination. A well is considered vulnerable if the concentration of contaminants has ever reached 50 percent of the NL or MCL allowed by state drinking water regulations. Watermaster reviews: water quality tests performed on each well, regional water quality conditions, and contaminant migration patterns in an effort to project which wells may be vulnerable over the next five years, and participates in plans to construct treatment facilities, as needed.

WATER QUALITY PROTECTION PLAN

Watermaster maintains a Water Quality Protection Plan that provides an early warning to Producers of potential increases in contaminant levels. The Water Quality Protection Plan also provides suggested alternative sources of supply, and proposes long-term actions to solve the contamination problem(s) without contributing to the migration of contaminants in the Basin.

FIVE-YEAR WATER QUALITY AND SUPPLY PLAN

The Main San Gabriel Basin's designation as a federal Superfund site was prompted by the discovery of widespread VOC contamination. Cleanup plans were developed to contain and remove VOCs from groundwater, and Watermaster, along with various other local water agencies, water Producers and regulators, have worked to develop the expertise, financing and treatment technologies to effectively address Basin wide cleanup of VOCs.

Watermaster facilitates groundwater cleanup projects that also meet water supply needs.

The discovery of perchlorate and NDMA, however, complicated the existing VOC cleanup approach by creating a number of challenges. Most important, these new contaminants could not be removed using existing treatment facilities, and new, additional treatment methods had to be identified, financed, and implemented.

This report outlines a comprehensive water quality cleanup and water supply plan for the Main San Gabriel Basin, including each of the USEPA Operable Units. Watermaster's plan for each area is consistent with the USEPA plans, and its goal is to implement cleanup as promptly as possible, with or without the cooperation of the Responsible Parties.

SALT AND NUTRIENT MANAGEMENT PLAN

During February 2009, the State Water Resources Control Board (SWRCB) adopted the "Recycled Water Policy", which adopted goals for water recycling, water conservation and replenishment of stormwater runoff to enhance water supplies throughout California. One component of the Recycled Water Policy requires all groundwater basins to develop a "Salt and Nutrient Management Plan" (SNMP) no later than May 2016. Watermaster took the lead role in developing the SNMP for the Main San Gabriel Basin. The SNMP identifies the existing water quality of the Main San Gabriel Basin (specifically Total Dissolved Solids (TDS), Nitrate, Chloride and Sulfate), which are not addressed by USEPA cleanup activities, and compares that water quality to standards established by the Los Angeles Regional Water Quality Control Board (LA RWQCB). Each of the four water quality parameters comply with the standards established by LA RWQCB resulting in significant flexibility to implement new programs to enhance groundwater replenishment and reliability.

GROUNDWATER MONITORING PROGRAMS

Monitoring involves measuring groundwater levels, groundwater quality, and groundwater flow. Watermaster continuously refines its understanding of the groundwater Basin to better define the safe yield of the Basin, and to protect and improve local water quality.

GROUNDWATER ELEVATION MONITORING

CONTINUE KEY WELL AND SUPPLEMENTAL KEY WELL OPERATION AND DATA PROCESSING

The entire 167-square-mile groundwater Basin is managed as one unit based on the groundwater levels as measured at a single Key Well in Baldwin Park. Water levels have been measured at this well since 1903 and are currently measured every three hours by an automated recorder.

Additional groundwater level recorders have been installed near the Santa Fe Spreading Grounds; adjacent to the San Gabriel River above the I-210 Freeway; in the City of Rosemead; in the City of Covina; and near the Whittier Narrows Dam. These water level records are synchronized with the record in the Key Well. Collectively, water level data from these wells provides a better understanding of impacts of recharge operations at the Santa Fe Spreading Grounds on Basin hydrogeology. Water elevation data are collected semi-annually at about 170 additional wells throughout the Basin, and water level recorders may be installed in some of those wells over the next five years.

CONTINUE BASINWIDE GROUNDWATER ELEVATION MONITORING PROGRAM (BGWEMP)

The purpose of the BGWEMP is to obtain groundwater level measurements from a large number of wells across the Basin. The information is used to prepare groundwater contour maps showing the direction of groundwater flow. The data are also used in the Basin computer model to simulate future groundwater flow patterns. The BGWEMP plan for the coming years includes:

- taking weekly measurements of water levels in 9 of the 170 primary wells;
- gathering semi-annual measurements of water levels at all 170 of the primary wells;
- obtaining water levels in secondary wells from well owners or water Producers, the San Gabriel Valley Protective Association, Regional Board, USEPA, and others;
- updating the database with water level data;
- preparing semi-annual groundwater contour maps of the entire Basin; and
- participating in the California Statewide Groundwater Elevation Monitoring (CASGEM) program.

GROUNDWATER QUALITY MONITORING

CONTINUE BASINWIDE GROUNDWATER QUALITY MONITORING PROGRAM (BGWQMP)

Under the BGWQMP, all production wells in the Basin are sampled at least once a year for VOCs, nitrates, and TDS. In addition, sulfate and chloride are sampled at least once every three years as required by DDW. The frequency of BGWQMP sampling compliments the monitoring requirements under state law, and supplements information gathered through Regional Water Quality Control Board source investigations, and USEPA remedial investigations. The data collected by BGWQMP are used to identify and evaluate the current locations and magnitude of contaminant levels, along with the effectiveness of the cleanup project.

CONTINUE TITLE 22 WATER QUALITY TESTING

Watermaster continues to perform DDW-mandated Title 22 water quality sampling of groundwater from approximately 200 active wells in the Basin. Watermaster also continues to track regulations and inform local water purveyors about regulatory issues and requirements. Information from centralized water quality testing is added to Watermaster's water quality database, which contains data from many sources. The centralized testing enables Watermaster to identify water quality trends on a regional scale that might otherwise go unnoticed at a specific well, and also lowers monitoring costs to Producers.

GROUNDWATER FLOW AND CONTAMINANT MIGRATION STUDIES

Groundwater level and quality data are entered into the Basin computer model, which simulates where contamination is projected to flow in the future. The goal is to project contaminant levels by areas in advance of the actual event, and identify remedial steps to be taken. The Basin computer model has been used to identify the area of contamination that may be captured (capture zone) under various groundwater pumping scenarios. The capture zone is also able to show the length of time it may take contamination to flow toward a well, and subsequently be treated for contaminant removal prior to use as a drinking water supply.

GROUNDWATER ELEVATION SIMULATIONS SHOW FUTURE PUMPING WILL NOT SIGNIFICANTLY CHANGE GROUNDWATER MOVEMENT

To determine the direction of groundwater flow through the Basin, Watermaster compiles the daily average 2014-15 production for each well, enters the data into the groundwater model, and simulates how production impacts water levels throughout the Basin. A computer simulation is then run using estimated production for 2019-20, assuming all other water supply variables (i.e. local water recharge, imported water recharge, subsurface inflow/outflow) do not change. These simulations indicate the

estimated increase in groundwater production, based on projections by Producers, as of fiscal year 2019-20 will not significantly change the overall direction of Basin groundwater movement, which continues to flow generally from east to west to a pumping trough in the western portion of the Basin, and also northeast to southwest, exiting through Whittier Narrows. The simulation for 2019-20 also shows localized pumping depressions in the Baldwin Park area, which are expected to be created by continuous pumping from groundwater extraction wells associated with the BPOU contaminant cleanup project to contain and control groundwater contaminant movement. Contaminated groundwater from those wells is treated at several treatment facilities and the DDW-permitted water is provided for potable use.

Simulations of the direction of groundwater flow in 2014-15 and projections for 2019-20 show that the estimated increase in groundwater pumping during this period would not significantly change the overall direction of Basin groundwater movement.

SIMULATE IMPACTS OF GROUNDWATER PUMPING ON CONTAMINANT MIGRATION

Simulations similar to the ones described above were used to make the finding that pumping from USEPA mandated cleanup projects as managed by Watermaster helps to control and contain contaminant migration. Groundwater quality data collected during 2014-15 and projected quality data for 2019-20 were entered into the groundwater model for the contamination migration studies. The computer model is used to simulate how the flow of water would affect the migration of contamination. The simulation showed that changes in groundwater flow did not have major impacts on the migration of contaminants (refer to Figures 16 and 17 in Appendix F).

GROUNDWATER CLEANUP PROJECTS

Watermaster coordinates and provides technical assistance on many cleanup projects in the Basin, although the cleanup facilities are owned and operated by local water utilities. Watermaster's involvement includes coordinating proposed USEPA cleanup programs to ensure, to the extent feasible, that treated water is put to beneficial use within the Basin, and that projects are consistent with the Judgment.

REVIEW OF SECTION 28 APPLICATIONS

Watermaster reviews every proposal to construct, destroy, or modify a well, or build a treatment plant pursuant to Section 28 of its Rules and Regulations.

Watermaster's review ensures that any new or increased extractions from the Basin or any changes in production patterns are consistent with contamination cleanup efforts, and will not adversely affect Basin water quality. In conjunction with the evaluation of an application to construct a new well or a treatment facility, Watermaster uses a computer model to predict the potential future impacts of each project on contaminant migration and Basin cleanup.

BASIN CLEANUP PROJECTS/USEPA OPERABLE UNIT PLANS

The USEPA established Operable Units for the various areas within the Basin that have been contaminated and require groundwater cleanup. The Operable Units are Area 3 (Alhambra area), Baldwin Park, El Monte, Puente Valley, South El Monte, and Whittier Narrows (See Figure 11). USEPA has established a methodical process that includes a review of the extent of contamination (Remedial Investigation), development of cleanup alternatives (Feasibility Study), and selection of the most appropriate cleanup plan (Proposed Plan). Following these activities, the USEPA issues a report identifying the agreed-upon Cleanup Plan (Record of Decision). Subsequently, the project facilities are designed and constructed.

The USEPA has identified cleanup plans for nearly all the Operable Units. Unlike the USEPA, Watermaster is not only concerned with cleaning up the Basin, but also wants to ensure that the water supply needs of the region are met. With USEPA plans generally in place, Watermaster continues to work with affected Producers, Responsible Parties, and others to implement solutions that not only provide effective cleanup and conform to the USEPA plans, but also meet local water supply needs.

This Five-Year Plan describes each of the Operable Units along with the USEPA proposed cleanup plan. In addition, Appendix A identifies current, and projected groundwater production over the next five years, to address the contamination and to implement the cleanup plans. In areas where the groundwater supply has been affected by contamination, Watermaster works with affected Producers and other local water agencies to implement cleanup as quickly as possible, with or without the cooperation of the Responsible Parties. Watermaster and affected Producers continue to seek cost recovery from the Responsible Parties for any cleanup costs they incur.

BALDWIN PARK OPERABLE UNIT (BPOU)

The BPOU is a seven-mile-long, one-mile-wide area of groundwater contamination that lies east of the San Gabriel River, stretching from an area north of the I-210 freeway in Azusa to south of the I-10 freeway in Baldwin Park (see Figure 11). The contamination primarily has been the result of improper use and disposal of industrial chemicals in the Azusa area, and it continues to spread generally in a southwesterly direction.

The USEPA originally issued its Record of Decision (ROD), or cleanup plan, for the BPOU in the mid-1990s. The ROD calls for pumping and treating groundwater in the northern area, where contaminant concentrations are highest, and also in the southern area to limit further migration of contaminants. The ROD involves pumping and treating an average of about 7,000 gallons per minute in the northern area and 16,000 gallons per minute in the southern area. The ROD also recommends

the use of existing water supply wells, treatment systems, and pipelines when feasible. Importantly, the plan encourages adding the treated water to the potable supply, rather than simply recharging it back into the ground or discharging it to storm drain.

The discovery of perchlorate and NDMA during the late 1990s resulted in the shutdown of numerous treatment facilities, including the La Puente Valley County Water District (LPVCWD) Plant and San Gabriel Valley Water Company (SGVWC) Plant B6 that were designed by local water agencies to remove VOCs but not the new contaminants. Shutting down the VOC treatment plants allowed contaminants to migrate southward into previously unaffected areas, in turn forcing the shutdown of other water supply wells.

In 2002, after several years of negotiation led by Watermaster, eight of the BPOU Responsible Parties (called Cooperating Respondents, or CRs) and seven Water Entities signed the BPOU Project Agreement. Under this landmark agreement, Watermaster continues to provide overall project management and project coordination services. The CRs have paid the cost to construct, and are required to continue to provide funding to operate the USEPA-required BPOU cleanup facilities for a total of about 15 years under the current agreement through 2017. Several water purveyors own and operate the facilities, and they use the highly treated water in their water systems. The San Gabriel Basin Water Quality Authority (WQA) has also obtained outside funds to help construct necessary BPOU treatment facilities, extraction wells, and pipelines. Negotiations by Watermaster, WQA, and the Water Entities with the CRs to extend the cleanup are ongoing.

The BPOU Project consists of four centralized treatment facilities with a combined extraction and treatment capacity of up to 25,900 gpm. Those treatment facilities are located at Valley County Water District's Lante Plant (7,800 gpm), San Gabriel Valley Water Company's Plant B6 (7,800 gpm) and Plant B5 (7,800 gpm), and La Puente Valley County Water District's (LPVCWD) site (2,500 gpm). The location of these treatment facilities is shown on Figures 14 and 15.

VALLEY COUNTY WATER DISTRICT (VCWD) PROJECT

In the northerly portion of the BPOU, the VCWD Project consists of three extraction wells, including two wells, pumping up to 7,800 gpm (average annual rate of 7,000 gpm) to a centralized treatment facility at the VCWD Lante Plant. The VCWD Project consists of separate facilities to treat VOCs, 1,2,3-TCP, perchlorate, NDMA, and 1,4-dioxane. In addition, a treated-water pipeline provides up to 6,000 gpm of fully treated water to Suburban Water Systems (SWS) to offset production lost due to contamination of some of its wells; VCWD can use the remaining portion of the treated water. The VCWD Project began operation for contamination cleanup in 2006 and received its DDW operating permit in July 2007 to provide

potable water to customers. Since operation began in 2006, the VCWD treatment facility has treated about 62,500 acre-feet and has removed about 39,600 pounds of contaminants, as shown in Appendix E.

VCWD and its BPOU partners are coordinating the construction of a new single-pass, ion-exchange facility that will remove perchlorate more cost effectively. Construction of the new system is complete, but start-up has been pushed back while the parties determine the most cost-effective way to address high nitrate concentrations. Meanwhile, the existing VCWD treatment facility continues to provide treated water for municipal use.

LPVCWD PROJECT

The LPVCWD consists of three existing production wells. Well-pumping capacity is limited to 2,500 gpm to equal the capacity of the treatment facility. The LPVCWD project consists of separate facilities to treat VOCs, perchlorate, NDMA, and 1,4-dioxane. The LPVCWD project is permitted by DDW and has been operating since March 2001. Treated water in excess of LPVCWD's needs is provided to SWS to enable the treatment facility to be operated on a continuous basis. Since operation began, the LPVCWD treatment facility has treated about 61,000 acre-feet (including prior operations with only VOC treatment) and removed about 11,100 pounds of contaminants, as shown in Appendix E.

SGVWC B6 PROJECT

The SGVWC B6 project is permitted by DDW and has been operational since July 2005. The B6 project consists of four extraction wells and a centralized treatment facility that treats up to 7,800 gpm (average annual rate of 7,000 gpm). The facility treats the contaminated groundwater for VOCs, perchlorate, NDMA, and 1,4-dioxane. The treated water is provided to SGVWC customers. Since operation began, the SGVWC B6 treatment facility has treated about 101,200 acre-feet, (including prior operations with only VOC treatment), and removed about 18,000 pounds of contaminants, as shown in Appendix E.

SGVWC B5 PROJECT

The SGVWC B5 Project consists of one extraction well and two existing wells that provide up to 7,800 gpm (average annual rate of 7,000 gpm) to a centralized treatment facility located at the SGVWC B5 site. The treatment facility treats the contaminated water for VOCs, perchlorate, NDMA, and 1,4-dioxane. The treated water is provided to City of Industry customers (1,200 gpm) and the balance (6,600 gpm) is provided to SGVWC customers. The SGVWC B5 Project was permitted by DDW in fiscal year 2007-08. Since operation began in 2007, the SGVWC B5 treatment facility has treated about 86,500 acre-feet and has removed about 3,700 pounds of contaminants, as shown in Appendix E.

Figure 14. VOC PLUME MAP IN BPOU

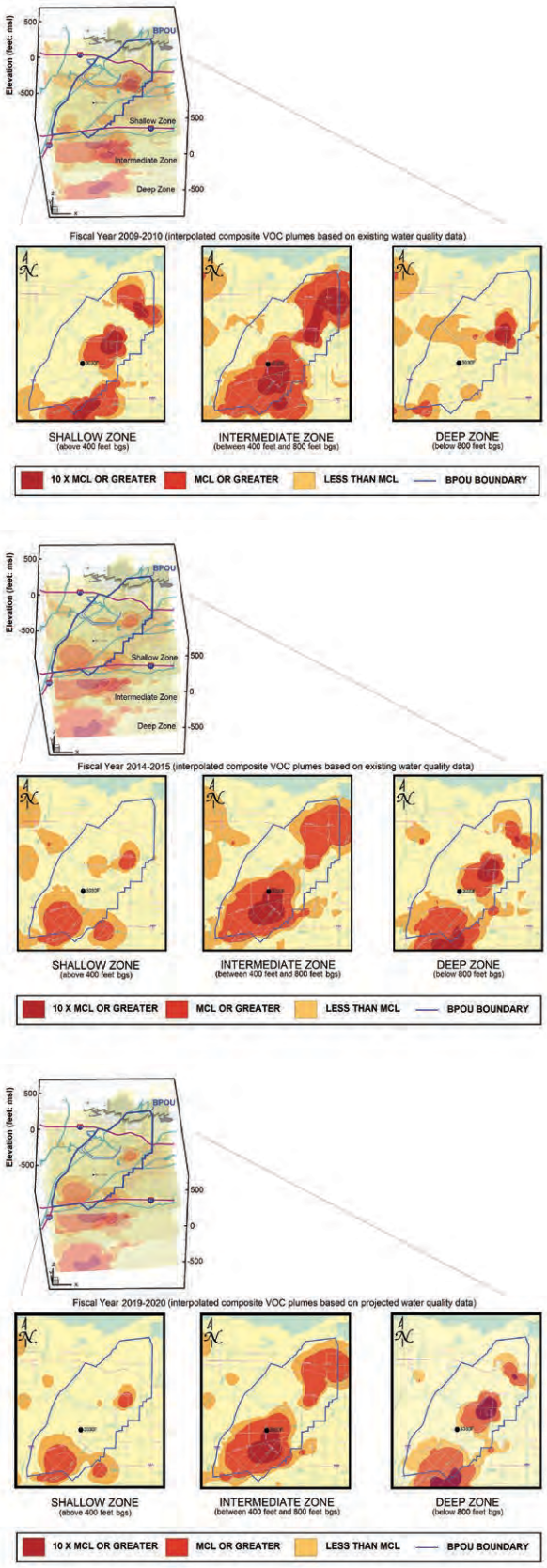
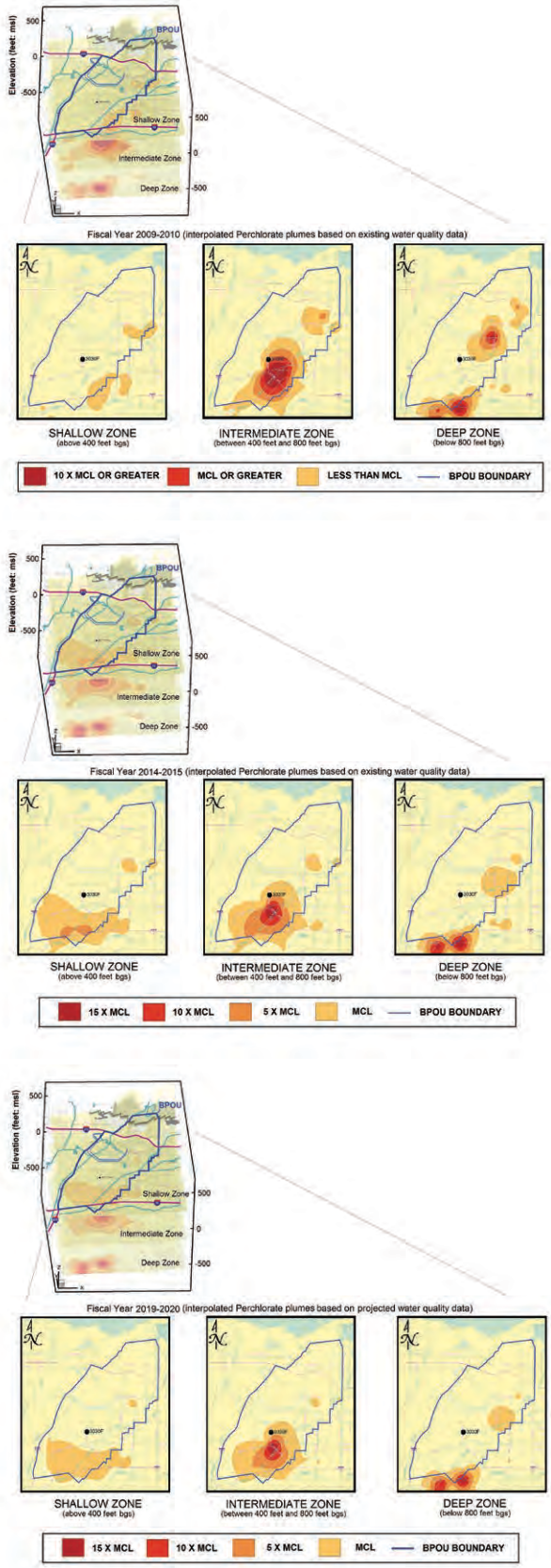


Figure 15. PERCHLORATE PLUME MAP IN BPOU



PURVEYOR PROJECTS

In addition to the USEPA-required BPOU facilities, several water purveyors have built treatment facilities at other wells within the BPOU area to meet water supply needs until the USEPA remedy prevents the continued spread of contamination. California Domestic Water Company (CDWC) has constructed facilities at its well field to remove VOCs, perchlorate, and NDMA and the quantity of water treated is shown in Appendix E. Similarly, Watermaster has issued permits under Section 28 of its Rules and Regulations to SWS to construct new wells that also are being used to blend with wells impacted by contaminants. These activities reduce reliance on expensive imported water, and contribute to contaminant removal.

BPOU CLEANUP PROGRESS

Watermaster regularly reviews water quality data to evaluate the impact the production wells and specially-constructed extraction wells have on control of contamination migration. It is difficult to develop a precise picture of the geographic extent of contamination because water quality is obtained from numerous wells that produce water from different depths below the groundwater table. Figure 14 shows the approximate extent of VOC contamination and operating VOC treatment facilities from about five years ago and from current data. In addition, the anticipated treatment facilities and the approximate geographic extent of VOC contamination, using engineering judgment, for five years into the future is also shown on Figure 14. The 2014-15 plume indicates treatment facilities are controlling plume movement. Watermaster anticipates the area of the VOC plume will continue to decrease, as shown on the 2019-20 plume. Similarly, Figure 15 shows the approximate extent of perchlorate. The series of three plume characterizations indicate that plume movement is expected to be controlled and, similar to VOCs, continue to decrease in the future (2019-20).

The term of the BPOU Project Agreement is 15 years and extends through 2017. Watermaster will continue to coordinate BPOU cleanup activities among the various parties to the BPOU Project Agreement through at least 2017 (which is the expiration of the initial BPOU Agreement), including negotiation of an extension to the BPOU Project Agreement, interfacing with USEPA, overseeing agreements between water purveyors to use the treated water, and providing accounting services to track BPOU Project costs and funds received. With all of the BPOU facilities now operational, Watermaster is also coordinating collection of field data, such as water production, water quality and water levels, and is providing BPOU Project performance reports to USEPA in cooperation with the CRs.

The projects will ensure that there is an adequate water supply for the BPOU area. These projects are consistent with the USEPA ROD, meet contaminant removal and containment requirements, and meet local water supply needs.

SOUTH EL MONTE OPERABLE UNIT (SEMOU)

The SEMOU covers approximately eight square miles in the south-central portion of the Basin. It is bounded by the I-10 Freeway, the 60 Freeway, the I-605 Freeway, and San Gabriel Boulevard (See Figure 11). A ROD for the SEMOU was issued in 2000, addressing VOC contamination in a limited area. Subsequently, additional water supply wells became contaminated, and new contaminants, including perchlorate, were detected in wells in the SEMOU area. In November 2005, USEPA revisited its ROD and issued an Explanation of Significant Differences (ESD) indicating that SEMOU cleanup projects would also address treatment of perchlorate. Because a perchlorate source has not yet been identified in that area, the Responsible Parties (RPs) objected to a requirement to pay for perchlorate treatment, and negotiations for the RPs to fund SEMOU groundwater cleanup activities have been moving slowly.

In the meantime, area water purveyors who were impacted by contaminant migration and new perchlorate detections were forced to construct new or additional treatment facilities to maintain safe, reliable water supplies. The City of Monterey Park, San Gabriel Valley Water Company, and Golden State Water Company (GSWC) have all constructed new or additional treatment facilities within SEMOU. The San Gabriel Basin Water Quality Authority (WQA) has assisted these Producers by securing outside funding to help offset project costs.

MONTEREY PARK PROJECT

Monterey Park constructed a water treatment facility at its Delta Plant to treat VOCs and perchlorate. Monterey Park Well No. 9 (which only had detectable concentrations of VOCs) began operating through the VOC treatment facility in April 2002. Following construction and permitting of the perchlorate treatment facility, Monterey Park Well No. 12 began operation in spring 2005. Monterey Park began operation of Well No. 15 in summer 2006. Production is from Monterey Park Wells No. 12 and No. 15 to operate consistent with the SEMOU ROD. Watermaster and Monterey Park maintain data on water quality in monitoring wells located up gradient of Wells No. 9, 12, and 15. Since the treatment facility began operation, over 61,300 acre-feet of water has been treated and about 10,100 pounds of contaminants removed from the groundwater, as shown in Appendix E.

SAN GABRIEL VALLEY WATER COMPANY (SGVWC) PLANT 8 PROJECT

SGVWC Plant 8 VOC Treatment Facility has a capacity of 5,000 gpm and has been in operation since fiscal year 2001-02. In response to increasing VOC concentrations, SGVWC voluntarily constructed supplemental VOC treatment at Plant 8. The supplemental VOC treatment facility was permitted by DDW in September 2006 and went online in December 2006. Since the original VOC treatment facility operation, over 37,200 acre-feet of water has been treated and about 4,900 pounds of contaminants have been removed from the groundwater, as shown in Appendix E.

GOLDEN STATE WATER COMPANY (GSWC) PROJECT

GSWC VOC treatment facility at San Gabriel Wells No. 1 and 2 had been permitted and operating. However, with the establishment of the revised Perchlorate NL in 2002, GSWC voluntarily removed the wells from operation. Subsequently, GSWC installed an ion exchange system to remove perchlorate and has resumed operation at its San Gabriel Well No. 1. The treatment facility has treated about 16,300 acre-feet of water and removed about 500 pounds of contaminants, as shown in Appendix E.

EL MONTE OPERABLE UNIT (EMOU)

The EMOU covers an area of about 10 square miles in the south-central portion of the Basin. It is bounded by the I-10 Freeway on the south, Rosemead Boulevard on the west, and Santa Anita Avenue and Rio Hondo on the east. The northern boundary generally follows Lower Azusa Road (see Figure 11). While shallow contamination is found throughout the EMOU, deep (intermediate zone) contamination is found in the northwest and easterly area of the EMOU.

The USEPA's ROD for the EMOU includes numerous small, shallow extraction wells and treatment, along with two areas of deep extraction and treatment. Due to generally poor water quality in the area, the shallow groundwater will not be used for a potable supply. The deep extractions are recommended for potable use by local water purveyors. The remediation efforts are separated into "Westside" and "Eastside" activities.

EMOU WESTSIDE PROJECTS

On the Westside, there are plans to clean up contaminants occurring in the shallow aquifer. The shallow zone water is treated for VOCs, discharged to an adjacent channel and the fully treated water is infiltrated back into the Basin. The treatment facility (Hermetic Seal) has treated about 200 acre-feet and removed about 20 pounds of contaminants, as shown in Appendix E. The deep-zone extraction and treatment in the northwest area is being accomplished by the existing Encinita Wellfield and Treatment Facility owned by GSWC, which began operation during 1998. During July 2002, USEPA issued an Explanation of Significant Differences (ESD), which indicated that perchlorate, NDMA, 1,4-dioxane, and hexavalent chromium had been detected in excess of DDW notification levels. In the event water from extraction wells cannot be blended to acceptable levels, additional treatment facilities will need to be installed, significantly increasing cleanup costs. Thus far, extraction and treatment of VOCs at GSWC Encinita Plant have not been impacted. The GSWC treatment facility has treated about 23,200 acre-feet of water and has removed about 550 pounds of contaminants, as shown in Appendix E.

EMOU EASTSIDE PROJECTS

The remediation on the Eastside will also involve cleanup of contaminants in the shallow aquifer. Final disposition of the water has not yet been determined and is still being coordinated by Watermaster. The VOC contamination in the deep aquifer is anticipated to be produced from three wells and the fully treated water will be provided to the City of El Monte. Watermaster will continue to assist with data collection and permitting of facilities over the next five years.

PUENTE VALLEY OPERABLE UNIT (PVOU)

The PVOU lies in the southeastern portion of the Basin, essentially bounded by the 60 Freeway on the south, Azusa Avenue on the east, and the I-10 Freeway on the north (see Figure 11). The PVOU encompasses the Puente Valley, which is tributary to the southeasterly portion of the Basin. Contamination in the PVOU includes various VOCs. All aquifers within the PVOU (shallow, intermediate, and deep) are considered sources for municipal water supplies. The USEPA has issued a ROD for the PVOU. The plan identified in the ROD includes extraction and treatment of groundwater within the shallow and intermediate zones from wells located in the center of the PVOU.

PVOU SHALLOW-ZONE PROJECT

The cleanup plan for shallow-zone contamination includes nine wells that will collectively produce about 1,000 gpm. Due to the poor quality of shallow-zone water (which is high in naturally-occurring dissolved solids), the water will not be used as drinking water, but will instead be treated to remove VOCs and will then be recharged back into the Basin. Watermaster is currently working with USEPA and the Responsible Party to develop an agreement to allow production and discharge of the PVOU shallow-zone water.

PVOU INTERMEDIATE ZONE

Watermaster is working with USEPA, Responsible Parties, and local water entities to develop a cleanup solution that meets potable water supply needs. Approximately 1,000 gpm will be produced from the intermediate zone extraction wells, treated and used for potable purposes by a local water purveyor.

WHITTIER NARROWS OPERABLE UNIT (WNOU)

The USEPA declared the WNOU is a “fund-lead” project, meaning that the USEPA (with the state) has funded the design, construction, and operation of the remedy, and will seek cost recovery from Responsible Parties later. The USEPA cleanup plan involves a series of shallow and intermediate zone extraction wells with treatment (see Figure 11). As of May 2013, the responsibility for the WNOU was transferred

from USEPA to the California Department of Toxic Substances Control (DTSC). Furthermore, the WNOU Shallow Zone Project (as described below) ceased operation during 2013 due to improved water quality.

WNOU SHALLOW ZONE PROJECT

During fiscal year 2002-03, NDMA was detected in some of the shallow extraction wells, prolonging the testing and review process for the shallow zone water through June 2007. Studies indicated the shallow zone contamination could be adequately contained at an extraction rate of 2,500 gpm. Treated shallow zone water has been discharged for conservation and recreational use at Legg Lake, and Watermaster entered into a production agreement with USEPA and the County of Los Angeles regarding the accounting of that water. Since production began at the WNOU facility, over 30,000 acre-feet of groundwater has been treated, and over 1,620 pounds of contaminants have been removed. During fiscal year 2012-13 the WNOU's Shallow Zone Project ceased operation.

WNOU INTERMEDIATE ZONE PROJECT

The City of Whittier obtained a DDW permit to use the 6,000 gpm of treated intermediate zone water for municipal use instead of producing water from its existing wells. During April 2013, the City of Whittier ceased taking treated intermediate zone water. Subsequently, the treated intermediate zone water has been delivered to Legg Lake, while DTSC negotiates with a municipal water supplier to accept additional treated intermediate zone water. Since production began in late 2005, about 43,900 acre-feet of groundwater has been treated and about 1,600 pounds of contaminants removed, as shown in Appendix E.

AREA 3 OPERABLE UNIT

The Area 3 Operable Unit is located in the westerly portion of the Basin. It is generally bounded on the south by the I-10 Freeway, on the east by Rosemead Boulevard, on the North by Huntington Drive, and on the west by the boundary of the Main Basin (see Figure 11). EPA has installed a series of monitoring wells to collect water quality data to supplement data collected from water supply wells and has initiated a Remedial Investigation and Feasibility Study to identify the extent of the contamination and to evaluate appropriate cleanup remedies. In addition, Watermaster issued a permit during 2005-06 to the City of Alhambra to construct a treatment facility to remove VOCs from wells No. 7, 8, 11, and 12. The treatment facility became operational in April 2009, prior to USEPA's development of a final remedy, but is necessary for Alhambra to receive a reliable source of supply from the groundwater basin. The facility has treated about 22,300 acre-feet and has removed about 700 pounds of contaminants, as shown in Appendix E.

PRODUCERS' WATER SUPPLY PLANS

Watermaster's Water Quality Protection Plan provides early warning to Producers before their wells are found to exceed drinking water quality standards. The Plan also contains pre-analyzed suggestions to the Producers for responding to the presence of contaminants.

WATER SUPPLY PLANS TO MEET PROJECTED DEMANDS

Water Producers propose to construct 10 new wells and five treatment plants during the next five years. Watermaster will continue providing the following services to assist Producers in meeting water demand:

- investigate all new or increased water extractions;
- provide computer modeling and technical support on treatment issues concerning the impact of extractions on contaminant migration;
- prioritize areas requiring further investigation, and coordinate with Producers on water supply modifications; and
- direct changes in pumping or treatment as necessary.

CONDUCT STUDIES, MONITORING AND INVESTIGATIONS

The Main San Gabriel Groundwater Basin is very complex, covering 167 square miles, and has the capacity to hold about 2.8 trillion gallons of water. Water enters the Basin from countless, natural and man-made locations, and is extracted by over 200 wells operated by dozens of independent Producers. Watermaster conducts special studies to identify projected water demands and to increase understanding of the Basin, so that it can be managed in a way that preserves and improves water supply and quality. In addition, Watermaster routinely reviews available data and is prepared to construct new monitoring wells to obtain supplemental water level and water quality data to better, manage the Basin. As a result of these activities, and the cooperative activities with, the Regional Board (noted below), there is no longer on-going VOC or Perchlorate contamination occurring; rather the focus and emphasis are on clean-up activities.

LANDFILL INSPECTIONS

Watermaster routinely conducts on-site inspections of area landfills to ensure they are operated in a way that does not allow contaminants to seep into the groundwater. Watermaster reports any violations of Waste Discharge Requirements to the Regional Water Quality Control Board for enforcement.

IDENTIFY AND REDUCE POTENTIAL SOURCES OF CONTAMINATION, COOPERATE WITH THE REGIONAL WATER QUALITY CONTROL BOARD

Since 1993, Watermaster has obtained information from the RWQCB about sources of VOC contamination in the Basin as part of the RWQCB investigations of potential contaminated sites. The information includes a description of all potential sources of contamination investigated by the RWQCB, including:

- maps showing the location of all investigation sites;
- available cause-and-effect relationships between pollution sources and contaminated wells; and
- plans and tentative schedules to abate the source of pollution and to clean up the soil and water.

Watermaster has reviewed a large amount of information gathered in RWQCB files and entered it into a database. This information is used in Watermaster's Section 28 process to help evaluate changes in pumping practices in relation to known contamination sources.

AQUIFER PERFORMANCE TESTS

Watermaster has developed a groundwater flow model for the entire Basin that assists in evaluating the potential impacts of changes in groundwater production. Although Watermaster completed its three-year Aquifer Performance Test investigation, additional tests will be conducted as required for Section 28 applications or for other needs. A tabulation of potential Aquifer Performance Test investigation sites is included in Appendix D. The sites identified include a pumping well and at least one monitoring well. The tests provide information on the characteristics of the aquifer, such as transmissivity, hydraulic conductivity, and coefficient of storage. The information gathered on aquifer characteristics will support cleanup activities including groundwater model development and calibration (see Appendix D).

DIRECTORY TO APPENDICES

The Following Appendices Are Found in This Section:

A. Projected Groundwater Demands from 2015-16 to 2019-20

B. Simulated Changes in Groundwater Elevations at Wells or Wellfields in Main San Gabriel Basin

C. Highlights of Volatile Organic Compounds and Nitrate Concentrations and Wells Vulnerable to Contamination

D. Potential Sites for Aquifer Performance Tests

E. Summary of Treatment Facility Activity in the Main San Gabriel Basin

F. Simulated Basin Groundwater Contours 2014-15 and 2019-20 (Figures 16 and 17)

APPENDIX A.

Projected Groundwater Demands—2015-16 to 2019-20

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
ADAMS RANCH MUTUAL WATER COMPANY (1)									
1902106	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902689	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000182	3	379	235	55.59	75.00	75.00	75.00	75.00	75.00
SUBTOTAL:		NA	NA	55.59	75.00	75.00	75.00	75.00	75.00
ALHAMBRA, CITY OF (2)									
1900010	MOELR (8)	3,387	2,100	1,701.63	2,199.89	2,232.09	2,264.53	2,297.43	2,274.10
1900011	9	807	500	9.97	12.89	13.08	13.27	13.46	13.32
1900012	10	323	200	0.00	0.00	0.00	0.00	0.00	0.00
1900013	12	807	500	43.15	55.78	56.60	57.42	58.26	57.67
1900014	13	1,048	650	180.68	233.59	237.00	240.45	243.94	241.46
1900015	14	1,532	950	866.40	1,120.09	1,136.49	1,153.00	1,169.76	1,157.88
1900016	15	1,774	1,100	1,352.96	1,749.12	1,774.73	1,800.52	1,826.68	1,808.13
1900017	2 LON	1,597	990	1,285.32	1,661.68	1,686.00	1,710.50	1,735.36	1,717.73
1900018	GARF	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902789	1 LON	1,613	1,000	1,141.77	1,476.09	1,497.70	1,519.47	1,541.54	1,525.89
1903014	11	1,032	640	321.29	415.37	421.45	427.57	433.79	429.38
1903097	7	1,258	780	388.69	502.50	509.86	517.27	524.78	519.45
SUBTOTAL:		15,178	9,410	7,291.86	9,427.00	9,565.00	9,704.00	9,845.00	9,745.00
AMARILLO MUTUAL WATER COMPANY (SAN GABRIEL VALLEY WATER COMPANY) (3)									
1900791	1	644	399	180.03	369.21	382.15	380.35	382.69	388.76
1900792	2	424	263	163.85	0.44	0.45	0.45	0.46	0.46
SUBTOTAL:		1,068	662	343.88	369.65	382.60	380.80	383.15	389.22
ANDERSON, RAY L. AND HELEN									
8000085	NA	18	11	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		18	11	0.00	0.00	0.00	0.00	0.00	0.00
ARCADIA, CITY OF (2)									
1901013	1 LON	1,613	1,000	894.12	1,018.00	998.00	978.00	959.00	940.00
1901014	2 LON	1,613	1,000	109.25	482.00	472.00	463.00	454.00	445.00
1901015	1 BAL	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902077	1 CAM	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902078	2 CAM	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902084	2 LGY	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902358	1 STJ	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902791	2 BAL	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902854	1 PEC	5,968	3,700	3,833.75	4,201.00	4,119.00	4,038.00	3,959.00	3,881.00
8000127	1 LO	6,613	4,100	2,179.36	2,687.00	2,635.00	2,583.00	2,532.00	2,483.00
8000177	2 STJ	1,452	900	39.93	226.00	222.00	217.00	213.00	209.00
8000213	3 CAM	4,355	2,700	2,393.61	3,277.00	3,213.00	3,150.00	3,088.00	3,028.00
8000214	3 LGY	2,903	1,800	2,559.66	2,149.00	2,107.00	2,066.00	2,025.00	1,986.00
SUBTOTAL:		24,518	15,200	12,009.68	14,040.00	13,766.00	13,495.00	13,230.00	12,972.00
ATTALLA, MARY L.									
8000119	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
AZUSA, CITY OF (AZUSA AGRICULTURAL WATER COMPANY, AZUSA VALLEY WATER COMPANY) (2)									
1902533	5 (1)	1,613	1,000	949.20	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00
1902535	6 (3)	4,839	3,000	389.77	550.00	550.00	550.00	550.00	550.00
1902536	GENESIS 1 (4)	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902537	GENESIS 2 (5)	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902538	GENESIS 3 (6)	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000072	1 (7)	4,839	3,000	1,244.07	1,300.00	1,300.00	1,300.00	1,300.00	1,300.00
8000086	3 (8)	4,678	2,900	2,417.51	2,380.00	2,380.00	2,380.00	2,380.00	2,380.00
1902457	2 (1 NORTH)	3,549	2,200	820.46	1,370.00	1,370.00	1,370.00	1,370.00	1,370.00
1902458	4 (2 SOUTH)	4,516	2,800	2,171.17	2,160.00	2,160.00	2,160.00	2,160.00	2,160.00
1902113	AVWC 1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902114	AVCW 2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902115	8 (AVWC 4)	3,065	1,900	36.45	200.00	200.00	200.00	200.00	200.00
1902116	7 (AVWC 5)	1,613	1,000	295.79	550.00	550.00	550.00	550.00	550.00
1902117	9 (AVWC 6)	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902425	AVWC 7	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000103	10 (AVWC 8)	4,194	2,600	16.00	70.00	70.00	70.00	70.00	70.00
8000178	11	3,468	2,150	1,710.83	1,600.00	1,600.00	1,600.00	1,600.00	1,600.00
8000179	12	2,823	1,750	1,737.68	1,450.00	1,450.00	1,450.00	1,450.00	1,450.00
1903119	VULCAN	NA	NA	116.86	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		15,162	9,400	11,905.79	12,830.00	12,830.00	12,830.00	12,830.00	12,830.00
AZUSA ASSOCIATES LLC (COVELL, ET AL)									
1900390	DALTON	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
B & B RED-I-MIX CONCRETE INC.									
1902589	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
BANKS, GALE & VICKI (1)									
1900415	NA	560	347	34.00	30.00	30.00	30.00	30.00	30.00
SUBTOTAL		560	347	34.00	30.00	30.00	30.00	30.00	30.00
BASELINE WATER COMPANY									
1901200	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901201	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901202	3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
BEVERLY ACRES MUTUAL									
8000004	ROSE HILLS	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
BIRENBAUM, MAX									
8000005	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
BROOKS, GIFFORD JR.									
1902144	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
BURBANK DEVELOPMENT COMPANY									
1900093	BURB	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
CALIFORNIA-AMERICAN WATER COMPANY/DUARTE SYSTEM (3)									
1900354	STA FE	1,694	1,050	525.66	622.01	625.16	628.30	631.35	634.58
1900355	B V	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900356	MT AVE	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900357	LAS L	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900358	FISH C	484	300	0.00	0.00	0.00	0.00	0.00	0.00
1902907	WILEY	2,420	1,500	2,002.55	2,169.61	2,181.59	2,193.56	2,205.18	2,217.50
1903018	CR HV	2,097	1,300	739.17	874.66	879.08	883.50	887.79	892.33
8000139	ENCTO	2,903	1,800	288.05	340.85	342.57	344.29	345.96	347.74
8000140	LASL 2	2,258	1,400	297.37	351.88	353.66	355.43	357.16	358.99
1900497	BACON	484	300	13.50	15.97	16.06	16.14	16.21	16.30
8000216	B V 2	2,903	1,800	1,821.19	2,355.01	2,365.90	2,376.79	2,387.35	2,398.56
SUBTOTAL:		15,243	9,450	5,687.49	6,730.00	6,764.00	6,798.00	6,831.00	6,866.00
CALIFORNIA-AMERICAN WATER COMPANY/SAN MARINO SYSTEM (3)									
1900917	HALL	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900918	GUESS	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900919	MISVW	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900920	MISVW	2,097	1,300	1,826.27	1,868.88	1,879.33	1,889.56	1,900.24	1,910.70
1900921	RIC-1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900922	RIC-2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900923	IVR-1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900924	MAR-1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900925	MAR-2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900926	GRAND	1,532	950	1,407.57	1,394.55	1,402.61	1,410.50	1,418.73	1,426.79
1900927	ROSE	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900934	ROAN	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900935	LONG	1,548	960	489.89	754.97	757.77	760.52	763.38	766.19
1901441	BR-1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902424	HOWL	968	600	511.57	779.53	782.46	785.32	788.31	791.24
1902787	BR-2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902867	IVR-2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1903019	MAR-3	1,936	1,200	1,344.26	1,522.83	1,530.53	1,538.06	1,545.92	1,553.62
1903059	DELMAR	1,613	1,000	1,406.94	1,393.84	1,401.90	1,409.78	1,418.01	1,426.06
8000175	HALL-2	1,936	1,200	1,048.16	1,387.40	1,393.40	1,399.27	1,405.40	1,411.40
SUBTOTAL:		11,630	7,210	8,034.66	9,102.00	9,148.00	9,193.00	9,240.00	9,286.00
CALIFORNIA COUNTRY CLUB (1)									
1902529	CLUB	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902531	ARTES	1,129	700	0.00	1.25	1.25	1.25	1.25	1.25
1903084	SYC	1,290	800	0.00	3.75	3.75	3.75	3.75	3.75
SUBTOTAL:		2,420	1,500	0.00	5.00	5.00	5.00	5.00	5.00
CALIFORNIA DOMESTIC WATER COMPANY (3)									
1901181	2	5,404	3,350	1,167.09	1,088.19	1,305.82	1,305.82	2,173.71	2,192.37
1901182	1-E	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901183	5	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901185	13-N	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902967	6	6,452	4,000	3,026.31	2,821.71	3,386.05	3,386.05	4,621.40	4,669.77
1903057	3	7,259	4,500	6,216.37	5,796.10	6,955.32	6,955.32	7,049.57	7,148.93
1903081	8	4,839	3,000	2,919.10	2,721.75	3,266.10	3,266.10	3,686.02	3,732.68
8000100	5A	6,452	4,000	5,440.05	5,072.26	6,086.71	6,086.71	6,169.29	6,256.24
8000174	14	4,516	2,800	0.00	0.00	0.00	0.00	0.00	0.00
1900092	10	8,065	5,000	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		42,986	26,650	18,768.92	17,500.00	21,000.00	21,000.00	23,700.00	24,000.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
CARRIER CORPORATION (1)									
--	--	--	--	33.71	30.00	30.00	30.00	30.00	30.00
SUBTOTAL:		--	--	33.71	30.00	30.00	30.00	30.00	30.00
CEDAR AVENUE MUTUAL WATER COMPANY									
1901411	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902783	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		0	0	0.00	0.00	0.00	0.00	0.00	0.00
CEMEX CONSTRUCTION MATERIALS L.P. (AZ-TWO INC.)									
1900038	2	2,305	1,429	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		2,305	1,429	0.00	0.00	0.00	0.00	0.00	0.00
CHAMPION MUTUAL WATER COMPANY (1)									
1900908	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902816	2	516	320	0.79	0.00	0.00	0.00	0.00	0.00
8000121	3	145	90	49.56	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		661	410	50.35	0.00	0.00	0.00	0.00	0.00
CHEVRON USA									
1900250	TEMP1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
CITRUS VALLEY MEDICAL CENTER, QUEEN OF THE VALLEY CAMPUS (QUEEN OF THE VALLEY HOSPITAL) (1)									
8000138	NA	NA	NA	0.00	20.00	20.00	20.00	20.00	20.00
SUBTOTAL:		NA	NA	0.00	20.00	20.00	20.00	20.00	20.00
CLAYTON MANUFACTURING COMPANY									
1901055	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000170	MW-4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
COINER, JAMES W., DBA COINER NURSERY (WOODLAND FARMS INC.) (1)									
1902951	3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1903072	5R	NA	NA	121.85	100.00	100.00	100.00	100.00	100.00
SUBTOTAL:		NA	NA	121.85	100.00	100.00	100.00	100.00	100.00
COLLISON, E.O.									
1902968	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
CORCORAN BROS.									

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
1902814	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
COUNTY SANITATION DISTRICT NO. 18 (1)									
8000008	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000009	3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000104	LE 1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000105	LE 2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000106	LE 3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000107	LE 4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000128	EO8A	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000129	E09A	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000130	E10A	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000131	E11A	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000141	EX1	NA	NA	0.40	0.58	0.58	0.58	0.58	0.58
8000142	EX2	NA	NA	0.06	0.11	0.11	0.11	0.11	0.11
8000143	EX3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000144	EX4	NA	NA	0.01	0.00	0.00	0.00	0.00	0.00
8000153	E16A	NA	NA	0.76	1.10	1.10	1.10	1.10	1.10
8000154	E17A	NA	NA	2.79	7.51	7.51	7.51	7.51	7.51
8000155	E18A	NA	NA	0.57	0.76	0.76	0.76	0.76	0.76
8000156	E19A	NA	NA	0.94	1.13	1.13	1.13	1.13	1.13
8000173	E20A	NA	NA	0.66	1.83	1.83	1.83	1.83	1.83
8000161	E01R	NA	NA	0.13	0.20	0.20	0.20	0.20	0.20
8000162	E03R	NA	NA	1.35	0.06	0.06	0.06	0.06	0.06
8000163	E05R	NA	NA	0.04	0.99	0.99	0.99	0.99	0.99
8000164	E07R	NA	NA	0.35	1.54	1.54	1.54	1.54	1.54
8000165	E02R	NA	NA	0.61	2.35	2.35	2.35	2.35	2.35
8000166	E04R	NA	NA	0.16	0.63	0.63	0.63	0.63	0.63
8000167	E06R	NA	NA	0.91	0.31	0.31	0.31	0.31	0.31
8000168	E08R	NA	NA	0.57	0.92	0.92	0.92	0.92	0.92
SUBTOTAL:		NA	NA	10.31	20.00	20.00	20.00	20.00	20.00
COVINA, CITY OF									
1901685	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901686	2	968	600	0.00	0.00	0.00	0.00	0.00	0.00
1901687	3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		968	600	0.00	0.00	0.00	0.00	0.00	0.00
COVINA IRRIGATING COMPANY (2)									
1900881	CONTR	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900882	3 BAL	2,903	1,800	1,915.95	750.00	2,050.00	2,300.00	2,300.00	2,500.00
1900883	2 BAL	2,581	1,600	1,149.67	550.00	1,400.00	1,600.00	1,600.00	1,950.00
1900885	1 BAL	2,097	1,300	277.74	550.00	1,200.00	1,500.00	1,500.00	1,900.00
1900880	VALEN	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		7,581	4,700	3,343.36	1,850.00	4,650.00	5,400.00	5,400.00	6,350.00
CREVOLIN, A.J.									
8000011	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
CROWN CITY PLATING COMPANY									
8000012	01	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
DAVIDSON OPTRONICS INC.									
8000013	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
DAWES, MARY K.									
1902952	04	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
DEL RIO MUTUAL WATER COMPANY (1)									
1900331	BURKE	261	162	114.00	150.00	150.00	150.00	150.00	150.00
1900332	KLING	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		261	162	114.00	150.00	150.00	150.00	150.00	150.00
DRIFTWOOD DAIRY									
1902924	01	298	185	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		298	185	0.00	0.00	0.00	0.00	0.00	0.00
DUNNING, GEORGE									
1900091	1910	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
EAST PASADENA WATER COMPANY, LTD. (2)									
1901508	9	2,581	1,600	1,438.44	1,134.26	1,156.96	1,180.10	1,203.70	1,227.78
8000217	11	2,581	1,600	5.50	4.34	4.42	4.51	4.60	4.69
SUBTOTAL:		5,162	3,200	1,443.94	1,138.60	1,161.38	1,184.61	1,208.30	1,232.47
EL MONTE, CITY OF (2)									
1901692	2A	1,532	950	486.15	447.34	447.34	447.34	447.34	447.34
1901693	3	968	600	0.00	0.00	0.00	0.00	0.00	0.00
1901694	4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901695	5	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901699	10	2,420	1,500	1,059.22	974.67	974.67	974.67	974.67	974.67
1901700	11	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902612	MT VW	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1903137	12	3,387	2,100	0.00	0.00	0.00	0.00	0.00	0.00
8000066	--	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000101	13	4,839	3,000	736.80	677.99	677.99	677.99	677.99	677.99
SUBTOTAL:		13,146	8,150	2,282.17	2,100.00	2,100.00	2,100.00	2,100.00	2,100.00
EL MONTE CEMETERY ASSOCIATION									
8000017	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
FRUIT STREET WATER COMPANY									
1901199	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
GATES, JAMES RICHARD (1)									
8000215	NA	NA	NA	1.16	5.00	5.00	5.00	5.00	5.00
SUBTOTAL:		NA	NA	1.16	5.00	5.00	5.00	5.00	5.00
GLENDORA, CITY OF (3)									
1900826	11-E	1,452	900	381.11	541.55	541.55	541.55	541.55	541.55
1900827	12-G	3,226	2,000	1,877.76	2,668.28	2,668.28	2,668.28	2,668.28	2,668.28
1900828	10-E	1,048	650	14.81	321.04	321.04	321.04	321.04	321.04
1900829	8-E	2,742	1,700	1,305.18	2,154.65	2,154.65	2,154.65	2,154.65	2,154.65
1900830	9-E	2,742	1,700	1,931.39	2,144.48	2,144.48	2,144.48	2,144.48	2,144.48
1900831	7-G	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901523	1-E	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901524	4-E	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901525	3-G	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901526	2-E	807	500	167.03	445.93	445.93	445.93	445.93	445.93
8000003	--	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000149	5-E	2,903	1,800	1,810.23	2,572.32	2,572.32	2,572.32	2,572.32	2,572.32
8000184	13-E	1,290	800	951.27	1,151.74	1,151.74	1,151.74	1,151.74	1,151.74
SUBTOTAL:		16,211	10,050	8,438.78	12,000.00	12,000.00	12,000.00	12,000.00	12,000.00
GOEDERT, LILLIAN									
8000027	GOEDERT	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
GOLDEN STATE WATER COMPANY (SOUTHERN CALIFORNIA WATER COMPANY)/SAN DIMAS DISTRICT (1)									
1902148	BAS-3	968	600	420.87	602.25	602.25	602.25	602.25	602.25
1902149	BAS-4	1,210	750	83.15	318.99	318.99	318.99	318.99	318.99
1902150	HIGHWAY	1,129	700	472.88	676.68	676.68	676.68	676.68	676.68
1902151	ART-1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902152	ART-2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902154	L H-2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902266	COL-1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902267	COL-2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902268	COL-4	726	450	425.20	508.45	508.45	508.45	508.45	508.45
1902269	COL-5	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902270	COL-6	686	425	0.00	0.00	0.00	0.00	0.00	0.00
1902271	COL-7	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902272	COL-8	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902286	CITY	323	200	150.39	215.20	215.20	215.20	215.20	215.20
1902842	ART-3	403	250	8.75	112.52	112.52	112.52	112.52	112.52
1902287	MALON	605	375	396.51	367.40	367.40	367.40	367.40	367.40
8000212	HIGHWAY 2	1,613	1,000	837.55	1,198.51	1,198.51	1,198.51	1,198.51	1,198.51
SUBTOTAL:		7,662	4,750	2,795.30	4,000.00	4,000.00	4,000.00	4,000.00	4,000.00
GOLDEN STATE WATER COMPANY (SOUTHERN CALIFORNIA WATER COMPANY)/SAN GABRIEL DISTRICT (1)									
1900510	1 S G	1,774	1,100	1,521.47	1,588.12	1,588.12	1,588.12	1,588.12	1,588.12
1900511	2 S G	1,452	900	490.54	512.03	512.03	512.03	512.03	512.03
1900512	2 GAR	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900513	1 GAR	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900514	3 SAX	565	350	144.55	150.88	150.88	150.88	150.88	150.88
1900515	1 SAX	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000146	4 SAX	1,532	950	362.09	377.95	377.95	377.95	377.95	377.95
1902144	1 EAR	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902017	1 JEF	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902018	2 JEF	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902019	3 JEF	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902020	1 AZU	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902024	1 ENC	1,936	1,200	500.20	522.11	522.11	522.11	522.11	522.11
1902027	1 PER	697	432	43.97	45.90	45.90	45.90	45.90	45.90
1902030	1 GRA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902031	2 GID	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902032	1 GID	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902034	1 FAR	1,936	1,200	348.52	363.79	363.79	363.79	363.79	363.79
1902035	2 ENC	968	600	652.50	681.09	681.09	681.09	681.09	681.09
1902461	2 GRA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
1902948	2 FAR	1,210	750	104.28	108.85	108.85	108.85	108.85	108.85
8000073	3 ENC	1,048	650	691.43	721.72	721.72	721.72	721.72	721.72
8000111	4 JEF	2,097	1,300	888.63	927.56	927.56	927.56	927.56	927.56
SUBTOTAL:		9,891	6,132	5,748.18	6,000.00	6,000.00	6,000.00	6,000.00	6,000.00
GREEN, WALTER									
8000027	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000028	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
HANSEN, ALICE									
8000029	2946	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
HANSON AGGREGATES WEST, INC. (LIVINGSTON-GRAHAM) (1)									
1900961	1 DUA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900963	1 KIN	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901492	1 EL	3,302	2,047	123.80	299.71	299.71	299.71	299.71	299.71
1901493	3 EL	4,563	2,829	0.12	0.29	0.29	0.29	0.29	0.29
1903006	4 EL	356	221	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		8,221	5,097	123.92	300.00	300.00	300.00	300.00	300.00
HARTLEY, DAVID									
8000029	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
HEMLOCK MUTUAL WATER COMPANY (1)									
1901178	NORTH	219	136	28.30	37.77	37.77	37.77	37.77	37.77
1902806	SOUTH	516	320	46.63	62.23	62.23	62.23	62.23	62.23
SUBTOTAL:		736	456	74.93	100.00	100.00	100.00	100.00	100.00
HERMETIC SEAL CORPORATION (1)									
--	--	NA	NA	50.31	70.00	70.00	70.00	70.00	70.00
SUBTOTAL:		NA	NA	50.31	70.00	70.00	70.00	70.00	70.00
INDUSTRY WATERWORKS SYSTEM, CITY OF (2)									
1902581	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902582	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902583	5TH AVE	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000078	3	2,420	1,500	0.00	0.00	0.00	0.00	0.00	0.00
8000096	4	3,871	2,400	0.00	0.00	0.00	0.00	0.00	0.00
8000097	5	1,936	1,200	1,386.39	1,920.00	1,920.00	1,920.00	1,920.00	1,920.00
SUBTOTAL:		8,226	5,100	1,386.39	1,920.00	1,920.00	1,920.00	1,920.00	1,920.00
KIYAN, HIDEO									
1902970	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
LA PUENTE VALLEY COUNTY WATER DISTRICT (2)									
1901459	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901460	2	2,016	1,250	323.61	4.00	4.00	4.00	4.00	4.00
1902859	3	2,016	1,250	56.85	4.00	4.00	4.00	4.00	4.00
8000062	4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000209	5	4,033	2,500	2,881.76	3,628.00	3,628.00	3,628.00	3,628.00	3,628.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
SUBTOTAL:		8,065	5,000	3,262.22	3,636.00	3,636.00	3,636.00	3,636.00	3,636.00
LA VERNE, CITY OF									
1902322	SNIDO	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
LAKIN, KELLY									
8000158	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
LANDEROS, JOHN									
8000031	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
LOS ANGELES, COUNTY OF (1)									
1902579	1 WHI	2,710	1,680	0.00	0.00	0.00	0.00	0.00	0.00
1902580	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902663	3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902664	4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902665	5	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902666	6	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000070	1 SF	3,349	2,076	936.35	1,242.59	1,242.59	1,242.59	1,242.59	1,242.59
8000074	2 SF	458	284	24.10	31.98	31.98	31.98	31.98	31.98
8000088	B RED	174	108	0.00	0.00	0.00	0.00	0.00	0.00
8000089	N LK	1,323	820	0.00	0.00	0.00	0.00	0.00	0.00
8000090	600	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902158	BN PK	2,087	1,294	0.00	0.00	0.00	0.00	0.00	0.00
8000150	3A	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
NA	WNOU	NA	NA	2,225.24	3,025.42	3,025.42	3,025.42	3,025.42	3,025.42
SUBTOTAL:		10,101	6,262	3,185.69	4,300.00	4,300.00	4,300.00	4,300.00	4,300.00
LOS FLORES MUTUAL WATER COMPANY									
1902098	1-LO	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
21902098	1-HI	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
LOUCKS, DAVID									
8000032	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
MAECHTLEN, J.J. TRUSTEE									
1902321	OLD60	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902322	SNIDO	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902323	M & N	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
MANNING BROS. ROCK & SAND COMPANY									
1900117	36230	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
MAPLE WATER COMPANY (SUBURBAN WATER SYSTEMS)									
1900042	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000109	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
MARTINEZ, FRANCES MERCY									
8000033	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA									
1900693	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900694	3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
MILLERCOORS LLC (MILLER BREWERIES WEST, L.P. /MILLER BREWING COMPANY) (1)									
8000034	--	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000075	1	5,533	3,430	401.67	400.00	400.00	400.00	400.00	400.00
8000076	2	5,533	3,430	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		11,065	6,860	401.67	400.00	400.00	400.00	400.00	400.00
MONROVIA, CITY OF (2)									
1900417	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900418	2	2,742	1,700	27.24	24.05	22.87	21.76	20.70	19.69
1900419	3	2,742	1,700	1,670.04	1,474.18	1,402.12	1,333.94	1,269.16	1,207.05
1900420	4	2,903	1,800	1,572.93	1,388.45	1,320.59	1,256.37	1,195.36	1,136.86
1940104	5	3,871	2,400	1,435.20	1,266.88	1,204.95	1,146.36	1,090.69	1,037.31
8000171	6	3,871	2,400	2,177.87	1,922.45	1,828.48	1,739.57	1,655.09	1,574.09
SUBTOTAL:		16,130	10,000	6,883.28	6,076.00	5,779.00	5,498.00	5,231.00	4,975.00
MONROVIA NURSERY									
1902456	DIV 4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
MONTEREY PARK, CITY OF (2)									
1900453	1	968	600	97.34	142.47	142.47	142.47	142.47	142.47
1900454	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900455	3	968	600	0.00	0.00	0.00	0.00	0.00	0.00
1900456	4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900457	5	2,903	1,800	1,169.42	1,711.56	1,711.56	1,711.56	1,711.56	1,711.56
1900458	6	968	600	0.00	0.00	0.00	0.00	0.00	0.00
1902372	7	1,290	800	0.00	0.00	0.00	0.00	0.00	0.00
1902373	8	2,903	1,800	0.00	0.00	0.00	0.00	0.00	0.00
1902690	9	2,903	1,800	536.63	1,085.41	1,085.41	1,085.41	1,085.41	1,085.41
1902818	10	2,903	1,800	1,443.91	2,213.30	2,213.30	2,213.30	2,213.30	2,213.30
1903033	12	3,226	2,000	2,742.60	3,014.06	3,014.06	3,014.06	3,014.06	3,014.06
1903092	14	1,129	700	0.00	0.00	0.00	0.00	0.00	0.00
8000126	FERN	1,613	1,000	271.11	696.80	696.80	696.80	696.80	696.80
8000196	15	3,226	2,000	1,878.53	3,049.41	3,049.41	3,049.41	3,049.41	3,049.41
SUBTOTAL:		25,002	15,500	8,139.54	11,913.00	11,913.00	11,913.00	11,913.00	11,913.00
MUNOZ, RALPH (1)									
MUNOZ	8000219	--	--	1.25	2.00	2.00	2.00	2.00	2.00
SUBTOTAL:		--	--	1.25	2.00	2.00	2.00	2.00	2.00
NAMIMATSU FARMS INC.									
1901034	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
NICK TOMOVICH & SON									
8000037	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
NO. 17 WALNUT PLACE MUTUAL WATER COMPANY									
8000038	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
OWL ROCK PRODUCTS (ROBERTSON'S READY MIX)									
1900043	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902241	NA	3,205	1,987	0.00	0.00	0.00	0.00	0.00	0.00
1903119	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		3,205	1,987	0.00	0.00	0.00	0.00	0.00	0.00
PARK WATER CO.									
1901307	26-A	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000039	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
PICO COUNTY WATER DISTRICT									
8000040	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
POLOPOLUS, ET AL									
1902169	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
RICHWOOD MUTUAL WATER COMPANY									
1901521	1 SOUTH	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901522	2 NORTH	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
ROWLAND WATER DISTRICT (1)									
--	--	NA	NA	66.45	80.00	80.00	80.00	80.00	80.00
SUBTOTAL:		NA	NA	66.45	80.00	80.00	80.00	80.00	80.00
RURBAN HOMES MUTUAL WATER COMPANY (1)									
1900120	1-NORTH	726	450	173.90	200.00	200.00	200.00	200.00	200.00
1900121	2-SOUTH	484	300	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		1,210	750	173.90	200.00	200.00	200.00	200.00	200.00
RUTH, ROY									
8000041	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
S.L.S. & N. INC. (1)									
8000151	NA	NA	NA	11.18	10.00	10.00	10.00	10.00	10.00
SUBTOTAL:		NA	NA	11.18	10.00	10.00	10.00	10.00	10.00
SAN GABRIEL COUNTRY CLUB (1)									
1900547	1	226	140	28.57	33.29	33.29	33.29	33.29	33.29
1902979	2	750	465	228.86	266.71	266.71	266.71	266.71	266.71
SUBTOTAL:		976	605	257.43	300.00	300.00	300.00	300.00	300.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
SAN GABRIEL COUNTY WATER DISTRICT (3)									
1901669	5 BRA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901670	6 BRA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901671	7	1,371	850	0.00	0.00	0.00	0.00	0.00	0.00
1901672	8	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902785	9	1,613	1,000	1,526.40	1,600.00	1,600.00	1,600.00	1,600.00	1,600.00
1902786	10	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000067	11	1,452	900	458.75	460.00	460.00	460.00	460.00	460.00
8000123	12	4,033	2,500	1,282.60	1,280.00	1,280.00	1,280.00	1,280.00	1,280.00
8000133	14	3,871	2,400	947.26	1,210.00	1,210.00	1,210.00	1,210.00	1,210.00
8000220	15	3,871	2,400	987.81	1,200.00	1,200.00	1,200.00	1,200.00	1,200.00
SUBTOTAL:		16,211	10,050	5,202.82	5,750.00	5,750.00	5,750.00	5,750.00	5,750.00
SAN GABRIEL VALLEY WATER COMPANY (2)									
1900725	G4A	1,855	1,150	215.51	207.00	207.00	207.00	207.00	207.00
1900733	5A	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902635	B1	1,815	1,125	0.00	0.00	0.00	0.00	0.00	0.00
8000112	B5C	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000038	--	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900729	1B	2,742	1,700	304.85	884.00	884.00	884.00	884.00	884.00
1902946	1C	2,452	1,520	49.88	206.00	206.00	206.00	206.00	206.00
8000081	1B4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000082	1B5	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000102	1D	4,678	2,900	2,777.69	2,767.00	2,767.00	2,767.00	2,767.00	2,767.00
1900749	2C	1,924	1,193	0.00	0.00	0.00	0.00	0.00	0.00
1902857	2D	3,226	2,000	816.31	25.00	25.00	25.00	25.00	25.00
8000065	2E	4,436	2,750	1,361.67	1,008.00	1,008.00	1,008.00	1,008.00	1,008.00
1900736	8A	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900746	8B	2,016	1,250	6.54	37.00	37.00	37.00	37.00	37.00
1900747	8C	2,097	1,300	1,077.21	749.00	749.00	749.00	749.00	749.00
1903103	8D	5,000	3,100	1,726.57	1,327.00	1,327.00	1,327.00	1,327.00	1,327.00
8000113	8E	4,839	3,000	51.58	11.00	11.00	11.00	11.00	11.00
1900739	11A	4,436	2,750	1,542.93	2,404.00	2,404.00	2,404.00	2,404.00	2,404.00
1900745	11B	2,984	1,850	1,201.17	1,766.00	1,766.00	1,766.00	1,766.00	1,766.00
1902713	11C	1,742	1,080	725.28	422.00	422.00	422.00	422.00	422.00
8000083	11B7	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902858	B4B	3,629	2,250	0.00	0.00	0.00	0.00	0.00	0.00
1902947	B4C	3,629	2,250	0.00	0.00	0.00	0.00	0.00	0.00
1900718	B5A	3,065	1,900	0.00	0.00	0.00	0.00	0.00	0.00
1900719	B5B	5,323	3,300	3,522.23	3,551.00	3,551.00	3,551.00	3,551.00	3,551.00
1900721	B6B	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1903093	B6C	3,226	2,000	0.12	0.00	0.00	0.00	0.00	0.00
8000084	B6B2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000098	B6D	3,226	2,000	0.46	0.00	0.00	0.00	0.00	0.00
1902525	B2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000122	B7E	968	600	175.21	249.00	249.00	249.00	249.00	249.00
1901435	--	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901436	B8	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901437	B9	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901439	B11A	968	600	0.00	0.00	0.00	0.00	0.00	0.00
1901440	B7B	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000068	B7C	3,791	2,350	551.25	0.00	0.00	0.00	0.00	0.00
8000094	B7D	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000099	B9B	1,613	1,000	280.20	718.00	718.00	718.00	718.00	718.00
8000108	B11B	4,033	2,500	875.23	2,232.00	2,232.00	2,232.00	2,232.00	2,232.00
8000172	1E	4,436	2,750	1,787.09	1,626.00	1,626.00	1,626.00	1,626.00	1,626.00
8000160	B5D	4,839	3,000	88.43	392.00	392.00	392.00	392.00	392.00
8000169	8F	5,646	3,500	38.53	63.00	63.00	63.00	63.00	63.00
NA	G4B	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
NA	1F	NA	NA	0.00	20.00	20.00	20.00	20.00	20.00
8000197	2F	NA	2,200	617.03	2,186.00	2,186.00	2,186.00	2,186.00	2,186.00
NA	B11C	3,226	2,000	0.00	0.00	0.00	0.00	0.00	0.00
8000203	B24A	4,033	2,500	115.95	507.00	507.00	507.00	507.00	507.00
8000204	B24B	4,033	2,500	78.31	539.00	539.00	539.00	539.00	539.00
8000187	B25A	4,516	2,800	3,040.71	1,809.00	1,809.00	1,809.00	1,809.00	1,809.00
8000188	B25B	4,516	2,800	3,922.23	2,322.00	2,322.00	2,322.00	2,322.00	2,322.00
8000189	B26A	1,774	1,100	812.48	884.00	884.00	884.00	884.00	884.00
8000190	B26B	1,774	1,100	1,869.66	1,296.00	1,296.00	1,296.00	1,296.00	1,296.00
8000205	B5E	5,565	3,450	4,705.35	3,886.00	3,886.00	3,886.00	3,886.00	3,886.00
NA	11D	NA	NA	0.00	20.00	20.00	20.00	20.00	20.00
NA	B24C	NA	NA	0.00	1,053.00	1,053.00	1,053.00	1,053.00	1,053.00
NA	B24D	NA	NA	0.00	20.00	20.00	20.00	20.00	20.00
SUBTOTAL:		124,069	79,118	34,337.65	35,186.00	35,186.00	35,186.00	35,186.00	35,186.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
SLOAN RANCHES									
1901198	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000045	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SIERRA LA VERNE COUNTRY CLUB (1)									
8000124	1	NA	NA	6.41	30.00	30.00	30.00	30.00	30.00
8000125	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000192	15 OFFSITE	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	6.41	30.00	30.00	30.00	30.00	30.00
SIERRA MADRE, CITY OF (1)									
8000193	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SONOCO PRODUCTS COMPANY (1)									
1912786	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902971	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000137	2	NA	NA	141.80	150.00	150.00	150.00	150.00	150.00
SUBTOTAL:		NA	NA	141.80	150.00	150.00	150.00	150.00	150.00
SOUTH COVINA WATER SERVICE									
1901606	102	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SOUTH PASADENA, CITY OF (2)									
1901679	GRAV 2	1,137	705	244.47	245	245	245	245	245
1901681	2 WIL	1,936	1,200	0.00	0	0	0	0	0
1901682	3 WIL	3,161	1,960	2,556.30	2,218	2,218	2,218	2,218	2,218
1903086	4 WIL	1,774	1,100	909.21	1,245	1,245	1,245	1,245	1,245
SUBTOTAL:		8,009	4,965	3,709.98	3,708	3,708	3,708	3,708	3,708
SOUTHERN CALIFORNIA EDISON COMPANY (1)									
1900342	1EB86	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900343	2EB76	211	131	0.00	0.00	0.00	0.00	0.00	0.00
8000046	110RH	NA	NA	0.39	0.00	0.00	0.00	0.00	0.00
8000047	MURAT	2,420	1,500	0.00	0.00	0.00	0.00	0.00	0.00
11900344	38EIS	1,415	877	0.00	0.00	0.00	0.00	0.00	0.00
21900344	38W	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		4,045	2,508	0.39	0.00	0.00	0.00	0.00	0.00
STERLING MUTUAL WATER COMPANY (1)									
1902085	SOUTH	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
1902096	NORTH	397	246	59.27	78.44	78.44	78.44	78.44	78.44
8000132	NEW SO	436	270	54.07	71.56	71.56	71.56	71.56	71.56
SUBTOTAL:		832	516	113.34	150.00	150.00	150.00	150.00	150.00
SUBURBAN WATER SYSTEMS (2)									
1900337	152W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901429	201W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901430	201W2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901431	201W3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901432	201W5	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901433	201W4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901434	201W6	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901596	147W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901597	142W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901598	139W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901599	139W2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901600	139W3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901602	140W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901604	148W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901608	105W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901609	106W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901610	111W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901611	112W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901612	113W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901613	114W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901614	117W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901615	120W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901616	122W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901617	123W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901618	124W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901619	125W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901620	126W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901621	131W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901622	133W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901623	134W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901624	135W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901625	136W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901627	202W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902119	149W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902519	150W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902760	147W2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902761	153W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902762	154W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902763	157W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1903067	140W3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000069	139W4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000077	147W3	2,007	1,244	1,926.62	1,825.55	1,825.55	1,825.55	1,825.55	1,825.55
8000087	125W2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000092	126W2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000093	140W4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000145	140W5	2,797	1,734	1,182.24	1,006.96	1,006.96	1,006.96	1,006.96	1,006.96
8000095	139W5	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000152	139W6	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902518	151W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902819	155W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902820	155W2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901605	101W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901607	103W1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000181	121W1	3,020	1,872	1,225.44	1,500.49	1,500.49	1,500.49	1,500.49	1,500.49
8000183	142W2	4,297	2,664	2,049.64	3,909.65	3,909.65	3,909.65	3,909.65	3,909.65
8000195	201W7	4,987	3,092	4,520.79	4,533.95	4,533.95	4,533.95	4,533.95	4,533.95
8000198	201W8	4,233	2,624	2,365.63	2,564.45	2,564.45	2,564.45	2,564.45	2,564.45
8000207	151W2	5,758	3,570	2,907.44	4,344.96	4,344.96	4,344.96	4,344.96	4,344.96

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
8000208	201W9	2,103	1,304	1,724.59	758.84	758.84	758.84	758.84	758.84
8000210	201W10	6,452	4,000	764.58	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		35,654	22,104	18,666.97	20,444.85	20,444.85	20,444.85	20,444.85	20,444.85
SUNNY SLOPE WATER COMPANY (2)									
1900026	8	2,724	1,689	1,304.87	1,821.14	1,821.14	1,821.14	1,821.14	1,821.14
1902792	9	2,710	1,680	516.10	720.29	720.29	720.29	720.29	720.29
8000048	10	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000157	13	2,831	1,755	416.08	580.70	580.70	580.70	580.70	580.70
SUBTOTAL:		8,265	5,124	2,237.05	3,122.13	3,122.13	3,122.13	3,122.13	3,122.13
TEXACO INC.									
1900001	14	519	322	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		519	322	0.00	0.00	0.00	0.00	0.00	0.00
TRAN, HIEU (1)									
TRAN	8000218	NA	NA	4.99	5.00	5.00	5.00	5.00	5.00
SUBTOTAL:		NA	NA	4.99	5.00	5.00	5.00	5.00	5.00
TYLER NURSERY									
8000049	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
UNITED CONCRETE PIPE CORPORATION									
8000067	NA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
UNITED ROCK PRODUCTS CORPORATION (1)									
1900106	IRW-1	NA	NA	297.79	283.48	283.48	283.48	283.48	283.48
1902532	SIERRA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1903062	IRW-2	NA	NA	17.35	16.52	16.52	16.52	16.52	16.52
SUBTOTAL:		NA	NA	315.14	300.00	300.00	300.00	300.00	300.00
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY									
NA	EW4-3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
NA	EW4-4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
NA	EW4-8	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
NA	EW4-9	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		0	0	0.00	0.00	0.00	0.00	0.00	0.00
VALENCIA HEIGHTS WATER COMPANY (2)									
8000051	1	NA	NA	809.00	0.00	0.00	0.00	0.00	0.00
8000052	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000054	4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000055	3A	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000120	5	968	600	0.00	228.26	230.87	243.91	243.91	243.91
8000180	6	1,129	700	0.00	266.30	269.35	284.57	284.57	284.57
8000211	7	1,613	1,000	0.00	380.43	384.78	406.52	406.52	406.52
SUBTOTAL:		3,710	2,300	809.00	875.00	885.00	935.00	935.00	935.00
VALECITO WATER COMPANY									
1901435	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901436	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901437	3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901438	4	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
1901439	5	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901440	6	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
VALLEY COUNTY WATER DISTRICT (2)									
1900027	E MAIN	2,742	1,700	1,775.25	1,557.33	1,557.33	1,557.33	1,557.33	1,557.33
1900028	W MAIN	1,855	1,150	1,051.69	1,053.49	1,053.49	1,053.49	1,053.49	1,053.49
1900029	MORADA	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900031	PADDY	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900032	E NIXON (JOAN)	4,194	2,600	1,490.16	2,381.80	2,381.80	2,381.80	2,381.80	2,381.80
1900034	ARROW	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900035	B DAL	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901307	11	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902356	W NIXON (JOAN)	3,629	2,250	2,752.55	2,061.17	2,061.17	2,061.17	2,061.17	2,061.17
8000039	PALM	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000060	LANTE (SA1-3)	5,484	3,400	2,480.70	1,758.07	1,758.07	1,758.07	1,758.07	1,758.07
8000185	SA1-1	5,484	3,400	2,274.68	1,758.07	1,758.07	1,758.07	1,758.07	1,758.07
8000186	SA1-2	3,871	2,400	0.00	1,240.99	1,240.99	1,240.99	1,240.99	1,240.99
SUBTOTAL:		27,260	16,900	11,825.03	11,810.92	11,810.92	11,810.92	11,810.92	11,810.92
VALLEY VIEW MUTUAL WATER COMPANY (2)									
1900363	1	310	192	0.00	0.00	0.00	0.00	0.00	0.00
1900364	2	766	475	623.97	670.00	670.00	670.00	670.00	670.00
1900365	3	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		1,076	667	623.97	670.00	670.00	670.00	670.00	670.00
VIA TRUST									
1903012	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
VIETNAMESE AMERICAN BUDDHIST TEMPLE (1)									
8000191	NA	NA	NA	0.82	5.00	5.00	5.00	5.00	5.00
SUBTOTAL		NA	NA	0.82	5.00	5.00	5.00	5.00	5.00
VULCAN MATERIALS COMPANY (CALMAT COMPANY) (1)									
1902920	E DUR	6,386	3,959	0.00	0.00	0.00	0.00	0.00	0.00
1903088	1 REL	4,068	2,522	420.78	439.50	446.83	454.15	461.48	468.80
8000063	W DUR	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
NA	TEMP/NEW PERM	NA	NA	153.66	160.50	163.17	165.85	168.52	171.20
SUBTOTAL:		10,454	6,481	574.44	600.00	610.00	620.00	630.00	640.00
WHITTIER, CITY OF (1)									
1901745	9	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901746	10	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901747	11	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901748	12	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1901749	13	1,774	1,100	262.30	273.66	273.66	273.66	273.66	273.66
8000021	FROM	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
8000071	15	5,968	3,700	974.37	1,016.59	1,016.59	1,016.59	1,016.59	1,016.59
8000110	16	7,259	4,500	3,555.69	3,709.75	3,709.75	3,709.75	3,709.75	3,709.75
8000135	17	6,452	4,000	0.00	0.00	0.00	0.00	0.00	0.00
8000136	18	6,452	4,000	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		27,905	17,300	4,792.36	5,000.00	5,000.00	5,000.00	5,000.00	5,000.00

APPENDIX A

PROJECTED GROUNDWATER DEMANDS FROM 2015-16 TO 2019-20

RECORDATION NUMBER	WELL NAME	WELL CAPACITY		2014-15 PRODUCTION	PROJECTED GROUNDWATER DEMANDS				
		ACRE-FEET	GPM		2015-16	2016-17	2017-18	2018-19	2019-20
WILMOTT, ERMA M.									
8000006	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
WOODLAND, RICHARD									
1902949	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1902950	2	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
WORKMAN MILL INVESTMENT COMPANY (RINCON DITCH COMPANY) (1)									
1902790	4	2,153	1,335	186.91	100.00	100.00	100.00	100.00	100.00
SUBTOTAL:		2,153	1,335	186.91	100.00	100.00	100.00	100.00	100.00
WORKMAN MILL INVESTMENT COMPANY (RINCON IRRIGATION COMPANY) (1)									
1900132	1	NA	NA	0.00	0.00	0.00	0.00	0.00	0.00
1900095	2	1,428	885	0.00	0.00	0.00	0.00	0.00	0.00
SUBTOTAL:		1,428	885	0.00	0.00	0.00	0.00	0.00	0.00
WORKMAN MILL INVESTMENT COMPANY (ROSE HILLS MEMORIAL PARK) (1)									
1900052	3	1,192	739	0.00	0.00	0.00	0.00	0.00	0.00
1900094	1	673	417	326.29	500.00	500.00	500.00	500.00	500.00
SUBTOTAL:		1,865	1,156	326.29	500.00	500.00	500.00	500.00	500.00
TOTAL		**573,996**	**358,056**	**196,408.51**	**215,236.15**	**221,238.88**	**221,736.31**	**224,161.35**	**224,918.59**

NOTES :

GROUNDWATER PRODUCTION AND DEMANDS IN ACRE-FEET
GPM : GALLONS PER MINUTE
NA : NOT AVAILABLE
(1) GROUNDWATER DEMANDS PROJECTED BY WATERMASTER
(2) PROJECTED GROUNDWATER DEMANDS PROVIDED BY PRODUCER
(3) PROJECTED GROUNDWATER DEMANDS PROVIDED BY PRODUCER AND ADJUSTED BY WATERMASTER

APPENDIX B.

Simulated Changes in Groundwater Elevations at Wells or Wellfields in Main San Gabriel Basin

APPENDIX B

SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
ADAMS RANCH MUTUAL WATER COMPANY					
01	1902106	INACTIVE	147.41	145.89	-1.52
02	1902689	INACTIVE			
03	8000182	ACTIVE			
ALHAMBRA, CITY OF					
MOEL (08)	1900010	ACTIVE	126.84	124.04	-2.80
09	1900011	ACTIVE	133.48	130.93	-2.55
10	1900012	ACTIVE	130.90	128.60	-2.30
12	1900013	ACTIVE	131.98	129.25	-2.73
13	1900014	INACTIVE	129.39	127.83	-1.56
14	1900015	ACTIVE	126.05	124.05	-2.00
15	1900016	ACTIVE	128.98	128.53	-0.45
LON 1	1903014	ACTIVE	117.77	116.09	-1.68
LON 2	1900017	ACTIVE			
GARF	1900018	INACTIVE	139.09	136.64	-2.45
11	1903014	ACTIVE	127.60	125.04	-2.56
07	1903097	ACTIVE	127.20	124.46	-2.74
AMARILLO MUTUAL WATER COMPANY					
01	1900791	ACTIVE	146.93	145.34	-1.59
02	1900792	INACTIVE			
ARCADIA, CITY OF					
LON 1	1901013	ACTIVE	167.71	166.25	-1.46
LON 2	1901014	ACTIVE	168.34	166.85	-1.49
CAM REAL 3	8000213	ACTIVE	166.37	165.08	-1.29
ST JO 2	8000177	ACTIVE	192.44	186.77	-5.67
BAL 2	1902791	INACTIVE	153.34	151.65	-1.69
PECK 1	1902854	ACTIVE	162.48	160.05	-2.43
L OAK 1	8000127	ACTIVE	163.16	161.02	-2.14
LGY 3	8000214	ACTIVE	156.11	154.54	-1.57
AZUSA, CITY OF (AZUSA AGRICULTURE WATER COMPANY, AZUSA VALLEY WATER COMPANY)					
05 (01)	1902533	ACTIVE	557.61	588.35	30.74
06 (03)	1902535	ACTIVE	559.55	589.03	29.48
GENESIS 1 (04)	1902536	DESTROYED	259.94	255.93	-4.01
GENESIS 2 (05)	1902537	INACTIVE	245.53	241.50	-4.03
GENESIS 3 (06)	1902538	DESTROYED	260.66	257.31	-3.35
01 (07)	8000072	ACTIVE	571.72	610.01	38.29
03 (08)	8000086	ACTIVE	571.31	613.73	42.42

APPENDIX B

SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
02 (1 NORTH)	1902457	ACTIVE	572.36	615.10	42.74
04 (2 SOUTH)	1902458	ACTIVE	570.94	609.56	38.62
AVWC 01	1902113	DESTROYED	184.12	185.19	1.07
AVWC 02	1902114	DESTROYED	196.13	199.48	3.35
08 (AVWC 04)	1902115	ACTIVE	559.10	587.44	28.34
07 (AVWC 05)	1902116	ACTIVE	557.05	585.85	28.80
09 (AVWC 06)	1902117	INACTIVE	246.74	245.00	-1.74
10 (AVWC 08)	8000103	ACTIVE	238.08	237.65	-0.43
11	8000178	ACTIVE	573.29	618.35	45.06
12	8000179	ACTIVE	576.00	623.60	47.60
BASELINE WATER COMPANY					
01	1901200	DESTROYED	933.09	946.11	13.02
02	1901201	DESTROYED			
03	1901202	DESTROYED	929.66	944.73	15.07
CALIFORNIA-AMERICAN WATER COMPANY/DUARTE SYSTEM					
STA FE	1900354	ACTIVE	194.94	191.62	-3.32
B V	1900355	ACTIVE	188.03	184.86	-3.17
B V 2	8000216	ACTIVE			
MT AVE	1900356	DESTROYED	185.45	183.40	-2.05
FISH C	1900358	INACTIVE	574.17	611.96	37.79
WILEY	1902907	ACTIVE	559.04	589.93	30.89
CR HV	1903018	ACTIVE	197.68	196.58	-1.10
ENCANTO	8000139	ACTIVE	561.46	592.62	31.16
LAS L2	8000140	ACTIVE	560.62	596.00	35.38
BACON	1900497	ACTIVE	561.52	596.56	35.04
CALIFORNIA-AMERICAN WATER COMPANY/SAN MARINO SYSTEM					
GUESS	1900918	INACTIVE	146.21	144.78	-1.43
MIVW 2	1900920	ACTIVE	145.52	143.84	-1.68
RIC 1	1900921	INACTIVE	140.04	138.72	-1.32
IVAR 1	1900923	DESTROYED	151.77	149.73	-2.04
GRAND	1900926	ACTIVE	140.70	139.34	-1.36
ROSEMEAD	1900927	ACTIVE	140.87	139.50	-1.37
ROANOKE	1900934	INACTIVE	135.36	133.39	-1.97
LONGDEN	1900935	ACTIVE	120.69	118.81	-1.88
BR 1	1901441	INACTIVE	159.22	156.52	-2.70
HOWLAND	1902424	ACTIVE	153.05	151.32	-1.73
BR 2	1902787	INACTIVE	158.54	155.83	-2.71

APPENDIX B

SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
MAR 3	1903019	ACTIVE	151.07	149.43	-1.64
DELMAR	1903059	ACTIVE	107.75	106.28	-1.47
HALL 2	8000175	ACTIVE	155.45	153.70	-1.75
CALIFORNIA COUNTRY CLUB					
ARTES	1902531	STANDBY	171.68	169.70	-1.98
SYCAMORE	1903084	STANDBY	171.87	169.85	-2.02
CALIFORNIA DOMESTIC WATER COMPANY					
02	1901181	ACTIVE	163.10	160.99	-2.11
06	1902967	ACTIVE	160.60	158.25	-2.35
03	1903057	ACTIVE	159.99	157.81	-2.18
08	1903081	ACTIVE	163.76	161.77	-1.99
05A	8000100	ACTIVE	159.40	156.91	-2.49
14	8000174	INACTIVE	163.43	161.32	-2.11
CHAMPION MUTUAL WATER COMPANY					
02	1902816	ACTIVE	166.67	163.56	-3.11
03	8000121	ACTIVE			
CITRUS VALLEY MEDICAL CENTER, QUEEN OF THE VALLEY CAMPUS (QUEEN OF THE VALLEY HOSPITAL)					
NA	8000138	ACTIVE	182.66	182.60	-0.06
COINER, JAMES W., DBA COINER NURSERY (WOODLAND FARM INC.)					
03	1902951	INACTIVE	168.23	166.59	-1.64
05R	1903072	ACTIVE	169.76	168.11	-1.65
COVINA, CITY OF					
01	1901685	INACTIVE	249.07	257.01	7.94
02 (GRAND)	1901686	INACTIVE	357.43	361.81	4.38
COVINA IRRIGATING COMPANY					
CONTR	1900881	INACTIVE	233.13	233.50	0.37
BAL 3	1900882	ACTIVE	177.25	176.56	-0.69
BAL 1	1900885	ACTIVE	177.58	177.04	-0.54
BAL 2	1900883	ACTIVE			
VALEN	1900880	INACTIVE	493.16	498.41	5.25
CROWN CITY PLATING COMPANY					
01	8000012	INACTIVE	153.15	151.39	-1.76

APPENDIX B

SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
DEL RIO MUTUAL WATER COMPANY					
BURKETT	1900331	ACTIVE	169.28	167.09	-2.19
DRIFTWOOD DAIRY					
01	1902924	ACTIVE	160.44	158.09	-2.35
EAST PASADENA WATER COMPANY, LTD.					
09	1901508	ACTIVE	150.11	148.24	-1.87
11	8000217	ACTIVE			
EL MONTE, CITY OF					
02A	1901692	ACTIVE	163.52	160.24	-3.28
03	1901693	INACTIVE	164.31	161.05	-3.26
04	1901694	INACTIVE	166.00	162.55	-3.45
05	1901695	DESTROYED	161.28	158.50	-2.78
10	1901699	ACTIVE	164.39	161.17	-3.22
MT VW	1902612	DESTROYED	167.88	165.58	-2.30
12	1903137	ACTIVE	162.78	159.53	-3.25
13	8000101	ACTIVE	161.93	158.80	-3.13
GLENDORA, CITY OF					
11-E	1900826	ACTIVE	534.67	530.41	-4.26
08-E	1900829	ACTIVE	563.30	597.28	33.98
09-E	1900830	ACTIVE			
12-G	1900827	ACTIVE			
10-E	1900828	ACTIVE	539.70	534.32	-5.38
07-G	1900831	INACTIVE	243.95	241.31	-2.64
01-E	1901523	INACTIVE	545.06	538.37	-6.69
13-E	8000184	ACTIVE			
02-E	1901526	ACTIVE	545.02	538.55	-6.47
03-G	1901525	INACTIVE	209.80	212.50	2.70
04-E	1901524	INACTIVE			
05-E	8000149	ACTIVE	565.87	596.12	30.25
GOLDEN STATE WATER COMPANY (SOUTHERN CALIFORNIA WATER COMPANY)/SAN DIMAS DISTRICT					
BAS-3	1902148	ACTIVE	888.77	891.31	2.54
BAS-4	1902149	ACTIVE	875.59	876.83	1.24
HIGHWAY	1902150	ACTIVE	889.57	889.83	0.26
HIGHWAY 2	8000212	ACTIVE	894.67	894.13	-0.54
ART-3	1902842	ACTIVE	882.80	883.35	0.55
COL-4	1902268	INACTIVE	608.46	586.45	-22.01
COL-6	1902270	INACTIVE	606.93	585.08	-21.85
COL-7	1902271	DESTROYED	649.31	625.47	-23.84

APPENDIX B

SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
COL-8	1902272	INACTIVE	780.83	765.80	-15.03
CITY	1902286	ACTIVE	1032.05	1026.70	-5.35
MALON	1902287	ACTIVE	1007.70	1000.65	-7.05
GOLDEN STATE WATER COMPANY (SOUTHERN CALIFORNIA WATER COMPANY)/SAN GABRIEL VALLEY DISTRICT					
S G 1	1900510	ACTIVE	120.36	119.15	-1.21
S G 2	1900511	ACTIVE			
GAR 1	1900513	INACTIVE	138.23	136.84	-1.39
GAR 2	1900512	INACTIVE			
SAX 1	1900515	DESTROYED	132.83	132.40	-0.43
SAX 3	1900514	ACTIVE			
SAX 4	8000146	ACTIVE			
EARL 1	1902144	INACTIVE	146.03	144.15	-1.88
JEF 1	1902017	DESTROYED	168.25	166.94	-1.31
JEF 3	1902019	INACTIVE			
JEF 4	8000111	ACTIVE			
AZU 1	1902020	DESTROYED	157.85	155.85	-2.00
ENC 1	1902024	ACTIVE	145.71	144.22	-1.49
ENC 2	1902035	ACTIVE	144.35	142.88	-1.47
ENC 3	8000073	ACTIVE			
PER 1	1902027	ACTIVE	160.11	157.83	-2.28
GRA 1	1902030	INACTIVE	181.56	179.58	-1.98
GRA 2	1902461	INACTIVE			
GID 1	1902032	DESTROYED	159.43	157.03	-2.40
GID 2	1902031	DESTROYED			
FAR 1	1902034	ACTIVE	164.11	161.43	-2.68
FAR 2	1902948	ACTIVE	163.73	161.10	-2.63
HANSON AGGREGATES WEST, INC. (LIVINGSTON-GRAHAM)					
EL 4	1903006	ACTIVE	172.74	171.11	-1.63
EL 1	1901492	ACTIVE	172.96	171.42	-1.54
EL 3	1901493	ACTIVE			
HARTLEY, DAVID					
NA	8000085	INACTIVE	727.58	707.61	-19.97
HEMLOCK MUTUAL WATER COMPANY					
NORTH	1901178	ACTIVE	168.56	165.58	-2.98
SOUTH	1902806	ACTIVE			
INDUSTRY WATERWORKS SYSTEM, CITY OF					
01	1902581	INACTIVE	168.03	166.41	-1.62
03	8000078	STANDBY			
04	8000096	STANDBY			
02	1902582	INACTIVE	168.03	166.42	-1.61
05	8000097	ACTIVE			
LA PUENTE VALLEY COUNTY WATER DISTRICT					
02	1901460	ACTIVE	163.30	160.79	-2.51

APPENDIX B

SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
04	8000062	STANDBY			
03	1902859	ACTIVE	156.89	154.64	-2.25
05	NA	ACTIVE			
LOS ANGELES, COUNTY OF					
KEY WELL	3030F	MONITORING	175.40	173.69	-1.71
WHI 1	1902579	INACTIVE	165.64	162.11	-3.53
02	1902580	DESTROYED	168.20	164.49	-3.71
03A	8000150	DESTROYED	160.64	157.52	-3.12
04	1902664	DESTROYED	157.79	154.80	-2.99
05	1902665	DESTROYED	155.59	152.74	-2.85
06	1902666	DESTROYED	156.29	153.50	-2.79
SF 1	8000070	ACTIVE	188.15	190.42	2.27
BIG RED	8000088	INACTIVE	170.22	166.78	-3.44
NEW LAKE	8000089	INACTIVE	165.11	161.72	-3.39
MILLERCOORS LLC (MILLER BREWERIES WEST, L.P./MILLER BREWING COMPANY)					
01	8000075	ACTIVE	197.73	198.87	1.14
02	8000076	INACTIVE	198.32	199.08	0.76
MONROVIA, CITY OF					
02	1900418	ACTIVE	166.95	165.72	-1.23
03	1900419	ACTIVE			
04	1900420	ACTIVE	170.36	169.35	-1.01
05	1940104	ACTIVE	168.61	167.49	-1.12
06	8000171	ACTIVE	167.60	166.39	-1.21
MONROVIA NURSERY					
DIV 4	1902456	DESTROYED	493.16	498.41	5.25
MONTEREY PARK, CITY OF					
01	1900453	ACTIVE	141.85	140.22	-1.63
03	1900455	INACTIVE	136.74	135.20	-1.54
05	1900457	ACTIVE	129.50	127.93	-1.57
06	1900458	INACTIVE	138.11	136.40	-1.71
07	1902372	INACTIVE	154.02	151.37	-2.65
08	1902373	INACTIVE	155.59	152.78	-2.81
09	1902690	ACTIVE	153.67	150.96	-2.71
10	1902818	ACTIVE	123.30	122.21	-1.09
12	1903033	ACTIVE	152.13	149.45	-2.68
14	1903092	INACTIVE	150.28	148.04	-2.24
FERN	8000126	ACTIVE	135.70	134.03	-1.67

APPENDIX B

SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
15	8000196	ACTIVE	155.31	152.42	-2.89
OWL ROCK PRODUCTS COMPANY					
NA	1902241	INACTIVE	175.39	175.01	-0.38
NA	1903119	INACTIVE	571.14	602.92	31.78
POLOPOLUS ET AL.					
01	1902169	INACTIVE	175.47	174.91	-0.56
RURBAN HOMES MUTUAL WATER COMPANY					
NORTH 1	1900120	ACTIVE	169.21	166.19	-3.02
SOUTH 2	1900121	ACTIVE			
SAN GABRIEL COUNTRY CLUB					
01	1900547	INACTIVE	125.55	123.77	-1.78
02	1902979	ACTIVE			
SAN GABRIEL COUNTY WATER DISTRICT					
05 BRA	1901669	INACTIVE	143.63	142.22	-1.41
07	1901671	ACTIVE	118.91	117.14	-1.77
08	1901672	INACTIVE	128.75	126.06	-2.69
09	1902785	ACTIVE	131.35	129.61	-1.74
10	1902786	INACTIVE	136.40	134.80	-1.60
11	8000067	ACTIVE	136.95	135.66	-1.29
12	8000123	ACTIVE	137.17	135.91	-1.26
14	8000133	ACTIVE	129.50	128.96	-0.54
SAN GABRIEL VALLEY WATER COMPANY					
G4A	1900725	ACTIVE	146.45	144.90	-1.55
B1	1902635	INACTIVE	172.54	169.64	-2.90
B5A	1900718	INACTIVE	163.71	161.94	-1.77
B5B	1900719	ACTIVE			
B5C	8000112	INACTIVE			
B5D	8000160	ACTIVE	165.22	163.38	-1.84
B5E	NA	ACTIVE	163.54	161.80	-1.74
B25A	8000187	ACTIVE	130.31	127.07	-3.24
B25B	8000188	ACTIVE			
B26A	8000189	ACTIVE	152.45	148.88	-3.57
B26B	8000190	ACTIVE			
8A	1900736	INACTIVE	156.23	153.32	-2.91
8B	1900746	ACTIVE			
8C	1900747	ACTIVE			
8E	8000113	ACTIVE			
8D	1903103	ACTIVE	155.91	153.04	-2.87
8F	8000169	ACTIVE			
1B	1900729	ACTIVE	160.69	157.57	-3.12

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SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
1C	1902946	ACTIVE			
1D	8000102	ACTIVE			
1E	8000172	ACTIVE			
2C	1900749	DESTROYED	159.03	156.34	-2.69
2D	1902857	ACTIVE			
2E	8000065	ACTIVE			
2F	8000197	ACTIVE			
11A	1900739	ACTIVE	166.43	164.27	-2.16
11B	1900745	ACTIVE			
11C	1902713	ACTIVE	169.34	167.08	-2.26
B4B	1902858	INACTIVE	159.36	155.95	-3.41
B4C	1902947	INACTIVE			
B6C	1903093	ACTIVE	165.97	163.22	-2.75
B6D	8000098	ACTIVE			
B7C	8000068	ACTIVE	175.55	176.01	0.46
B7E	8000122	ACTIVE			
B2	1902525	INACTIVE	172.64	169.57	-3.07
B11A	1901439	INACTIVE	167.85	167.42	-0.43
B11B	8000108	ACTIVE			
B11C	NA	PLANNED			
B9B	8000099	ACTIVE	173.79	173.08	-0.71
B24A	8000203	ACTIVE	186.60	187.27	0.67
B24B	8000204	ACTIVE			
SIERRA LA VERNE COUNTRY CLUB					
01	8000124	ACTIVE	1054.11	1055.44	1.33
02	8000125	INACTIVE	1062.35	1066.91	4.56
SONOCO PRODUCTS COMPANY					
01	1912786	ACTIVE	168.12	166.30	-1.82
02	1902971	ACTIVE			
SOUTH PASADENA, CITY OF					
GRAV 2	1901679	ACTIVE	137.38	135.38	-2.00
WIL 2	1901681	INACTIVE	124.85	122.22	-2.63
WIL 3	1901682	ACTIVE	123.13	120.53	-2.60
WIL 4	1903086	ACTIVE			
SOUTHERN CALIFORNIA EDISON COMPANY					
110RH	8000046	INACTIVE	174.88	173.85	-1.03
MURAT	8000047	INACTIVE	172.67	169.68	-2.99
2EB76	1900343	INACTIVE	144.31	143.03	-1.28
STERLING MUTUAL WATER COMPANY					
NEW SO.	8000132	ACTIVE	166.62	163.57	-3.05
NORTH	1902096	ACTIVE			
SUBURBAN WATER SYSTEMS					
114W-1	1901613	INACTIVE	209.16	209.98	0.82

APPENDIX B

SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
121W-1	8000181	ACTIVE	188.19	188.12	-0.07
125W-2	8000087	INACTIVE	238.92	238.42	-0.50
126W-2	8000092	INACTIVE	242.97	242.96	-0.01
139W-2	1901599	INACTIVE	179.63	179.06	-0.57
139W-4	8000069	INACTIVE			
139W-5	8000095	INACTIVE	179.41	178.79	-0.62
139W-6	8000152	INACTIVE			
140W-3	1903067	STANDBY	170.28	168.88	-1.40
140W-4	8000093	INACTIVE			
140W-5	8000145	ACTIVE			
142W-2	8000183	ACTIVE	183.30	183.31	0.01
147W-3	8000077	ACTIVE	153.99	153.86	-0.13
151W-2	8000207	ACTIVE	183.42	183.53	0.11
155W-1	1902819	INACTIVE	263.08	262.31	-0.77
201W-2	1901430	DESTROYED	163.26	159.90	-3.36
201W-9	8000208	ACTIVE	163.63	160.34	-3.29
201W-4	1901433	DESTROYED			
201W-5	1901432	DESTROYED	166.57	163.36	-3.21
201W-6	1901434	DESTROYED	166.66	163.36	-3.30
201W-7	8000195	ACTIVE	161.45	158.08	-3.37
201W-8	8000198	ACTIVE	163.24	159.90	-3.34
201W-10	8000210	ACTIVE	166.04	162.66	-3.38
SUNNY SLOPE WATER COMPANY					
08	1900026	ACTIVE	137.93	136.43	-1.50
09	1902792	ACTIVE			
10	8000048	INACTIVE	148.76	146.88	-1.88
13	8000157	ACTIVE	140.25	138.58	-1.67
TYLER NURSERY					
NA	8000049	INACTIVE	169.28	165.46	-3.82
UNITED CONCRETE PIPE CORPORATION					
NA	8000067	INACTIVE	172.16	171.99	-0.17

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SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
UNITED ROCK PRODUCTS CORPORATION					
IRW-1	1900106	ACTIVE	176.67	176.45	-0.22
IRW-2	1903062	ACTIVE	177.31	177.02	-0.29
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY					
MW4-1	NA	MONITORING	165.87	162.69	-3.18
MW4-2	NA	MONITORING	166.80	163.66	-3.14
MW4-3	NA	MONITORING	165.54	162.37	-3.17
MW4-4	NA	MONITORING	168.38	166.46	-1.92
MW4-5	NA	MONITORING	168.65	166.68	-1.97
MW4-6	NA	MONITORING	168.90	166.89	-2.01
MW4-7	NA	MONITORING	165.79	162.38	-3.41
MW4-8	NA	MONITORING	167.55	163.81	-3.74
MW4-9	NA	MONITORING	168.31	164.70	-3.61
MW4-10	NA	MONITORING	171.46	168.08	-3.38
MW4-11	NA	MONITORING	173.39	170.64	-2.75
MW5-1	NA	MONITORING	178.57	178.33	-0.24
MW5-3	NA	MONITORING	184.73	187.10	2.37
MW5-5	NA	MONITORING	172.56	169.47	-3.09
MW5-8	NA	MONITORING	173.95	171.08	-2.87
MW5-11	NA	MONITORING	187.08	189.60	2.52
MW5-13	NA	MONITORING	202.07	203.76	1.69
MW5-15	NA	MONITORING	175.87	173.71	-2.16
MW5-17	NA	MONITORING	191.73	194.13	2.40
MW5-18	NA	MONITORING	190.67	193.22	2.55
MW5-19	NA	MONITORING	166.90	165.07	-1.83
MW5-20	NA	MONITORING	167.87	164.97	-2.90
MW5-22	NA	MONITORING	167.51	165.68	-1.83
MW5-23	NA	MONITORING	161.84	159.04	-2.80
MW6-1	NA	MONITORING	178.20	177.29	-0.91
MW6-2	NA	MONITORING	172.98	170.92	-2.06
MW6-4	NA	MONITORING	217.78	219.21	1.43
MW6-5	NA	MONITORING	219.05	219.96	0.91
MW6-6	NA	MONITORING	246.56	246.61	0.05
MW6-7	NA	MONITORING	293.80	292.93	-0.87
MW6-8	NA	MONITORING	351.41	352.02	0.61

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SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
EW4-3	NA	REMEDIAL	166.63	163.39	-3.24
EW4-4	NA	REMEDIAL	166.51	163.41	-3.10
EW4-5	8000200	REMEDIAL	164.76	161.60	-3.16
EW4-9	NA	REMEDIAL			
EW4-6	8000201	REMEDIAL	164.86	161.64	-3.22
EW4-10	NA	REMEDIAL			
EW4-7	8000202	REMEDIAL	166.83	163.78	-3.05
EW4-8	NA	REMEDIAL	166.67	163.47	-3.20
VALENCIA HEIGHTS WATER COMPANY					
01	8000051	INACTIVE	256.50	257.05	0.55
02	8000052	INACTIVE			
06	8000180	ACTIVE			
04	8000054	INACTIVE	236.87	240.21	3.34
05	8000120	ACTIVE	275.84	276.19	0.35
07	8000211	ACTIVE			
VALLEY COUNTY WATER DISTRICT					
E MAINE	1900027	ACTIVE	171.25	171.08	-0.17
W MAINE	1900028	ACTIVE			
MORADA	1900029	INACTIVE	195.04	197.66	2.62
E NIXON (JOAN)	1900032	ACTIVE	168.63	168.38	-0.25
W NIXON (JOAN)	1902356	ACTIVE			
ARROW	1900034	INACTIVE	176.47	177.79	1.32
LANTE (SA1-3)	8000060	ACTIVE			
PALM	8000039	INACTIVE	175.08	172.73	-2.35
B DALTON	1900035	INACTIVE	177.51	176.18	-1.33
PADDY LN	1900031	INACTIVE	172.50	169.73	-2.77
SA1-1	8000185	ACTIVE	178.86	180.57	1.71
SA1-2	8000186	ACTIVE	178.25	179.16	0.91
VALLEY VIEW MUTUAL WATER COMPANY					
01	1900363	ACTIVE	173.87	171.94	-1.93
02	1900364	ACTIVE			
VULCAN MATERIALS COMPANY (CALMAT COMPANY)					
DUR E	1902920	ACTIVE	173.87	171.94	-1.93
DUR W	8000063	ACTIVE			
REL 1	1903088	ACTIVE	206.98	206.57	-0.41

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SIMULATED CHANGES IN GROUNDWATER ELEVATION AT WELLS OR WELLFIELDS IN MAIN SAN GABRIEL BASIN

WELL OR WELLFIELD	RECORDATION NUMBER	WELL STATUS	SIMULATED ELEVATION (1)		CHANGE (2) (FEET)
			2014-15	2019-20	
WHITTIER, CITY OF					
13	1901749	ACTIVE	165.46	161.96	-3.50
15	8000071	ACTIVE	163.63	160.16	-3.47
16	8000110	ACTIVE	162.52	159.09	-3.43
17	8000135	INACTIVE			
18	8000136	INACTIVE	164.22	160.83	-3.39
WOODLAND, RICHARD					
01	1902949	INACTIVE	167.81	166.18	-1.63
02	1902950	INACTIVE			
WORKMAN MILL INVESTMENT COMPANY (RINCON DITCH COMPANY)					
04	1902790	ACTIVE	167.69	164.54	-3.15
WORKMAN MILL INVESTMENT COMPANY (RINCON IRRIGATION COMPANY)					
02	1900095	INACTIVE	168.13	164.98	-3.15
WORKMAN MILL INVESTMENT COMPANY (ROSE HILLS MEMORIAL PARK)					
03	1900052	ACTIVE	167.77	164.61	-3.16
01	1900094	INACTIVE	168.78	165.70	-3.08
				AVERAGE CHANGE	**0.43**

(1) SIMULATED ELEVATION IN FEET ABOVE MEAN SEA LEVEL
(2) DIFFERENCE BETWEEN 2018-19 AND 2013-14 SIMULATED ELEVATIONS

APPENDIX C.

Highlights of Volatile Organic Compounds and Nitrate Concentrations and Wells Vulnerable to Contamination

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
ADAMS RANCH MUTUAL WATER COMPANY								
01	MUNICIPAL	INACTIVE	TCE	2.2	05/88	ND	02/97	
			NO3	97.0	04/92	38.9	02/97	
			CLO4	NA	NA	NA	NA	
02	MUNICIPAL	INACTIVE	TCE	3.5	08/86	2.5	09/86	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
03	MUNICIPAL	ACTIVE	TCE	22.0	05/15	14.0	05/15	VULNERABLE
			PCE	10.0	05/15	6.6	05/15	(VOCS) (1)
			NO3	21.0	03/04	20.0	05/15	
			CLO4	ND	08/08	ND	07/14	
			AS	ND	05/03	ND	05/15	
			CR6	1.1	08/13	1.1	08/13	
ALHAMBRA, CITY OF								
07	MUNICIPAL	ACTIVE	TCE	13.4	08/91	6.4	04/15	VULNERABLE
			PCE	0.8	04/07	ND	04/15	(VOCS AND NO3) (1)
			C-1,2-DCE	1.6	02/05	0.7	04/15	
			CTC	0.6	02/85	ND	01/15	
			NO3	53.2	07/93	41.0	04/15	
			CLO4	2.4	10/07	ND	04/14	
			AS	0.7	07/96	ND	07/10	
			CR6	9.0	07/01	6.4	09/13	
09	MUNICIPAL	ACTIVE	TCE	21.1	08/08	1.7	04/15	VULNERABLE
			C-1,2-DCE	2.3	10/07	ND	01/15	(VOCS, NO3, AND CLO4)
			CF	1.6	04/11	ND	01/15	
			NO3	59	02/15	57	05/15	
			CLO4	4.7	02/14	ND	05/15	
			AS	0.9	07/96	ND	02/14	
			CR6	5.7	12/05	3.2	09/13	
10	IRRIGATION	ACTIVE	TCE	30.1	02/09	22.0	10/10	
			C-1,2-DCE	5.8	03/05	ND	10/10	
			1,1-DCE	0.5	03/05	ND	10/10	
			NO3	56.3	01/07	55.0	10/10	
			CLO4	ND	08/97	ND	08/97	
11	MUNICIPAL	ACTIVE	PCE	4.7	05/12	2.5	05/15	VULNERABLE
			TCE	4.2	05/89	ND	05/15	(VOCS AND NO3) (1)
			C-1,2-DCE	1.5	04/08	ND	07/14	
			NO3	48.0	10/12	40	05/15	
			CLO4	ND	08/97	ND	04/15	
			AS	0.8	07/96	ND	04/15	
			CR6	7.7	06/01	5.4	09/13	
12	MUNICIPAL	ACTIVE	TCE	39.4	08/08	21	04/15	VULNERABLE
			PCE	1.7	01/14	1.2	01/15	(VOCS AND NO3) (1)
			C-1,2-DCE	40	06/15	40	06/15	
			1,1-DCE	0.8	09/08	0.5	04/15	
			T-1,2-DCE	0.9	09/08	0.6	04/15	
			NO3	42	01/14	35	04/15	
			CLO4	ND	08/08	ND	04/14	
			AS	ND	08/89	ND	07/14	
			CR6	3.6	09/13	3.6	09/13	
13	MUNICIPAL	INACTIVE	TCE	0.5	08/07	ND	04/14	
			NO3	59.0	07/13	59.0	07/13	
			CLO4	ND	03/97	ND	01/14	
			AS	8.0	06/78	ND	11/10	
			CR6	7.1	08/01	4.6	09/13	
14	MUNICIPAL	ACTIVE	TCE	2.4	08/08	0.6	05/15	VULNERABLE
			NO3	46.0	08/12	16	05/15	(NO3)
			CLO4	ND	08/97	ND	04/15	
			AS	0.6	07/96	ND	11/10	
			CR6	5.8	06/01	4.0	09/13	
15	MUNICIPAL	ACTIVE	PCE	0.8	10/14	0.8	10/14	VULNERABLE
			NO3	28.0	10/12	15	05/15	(NO3)
			CLO4	ND	08/97	ND	04/15	
			AS	1.5	07/96	ND	04/10	

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CR6	4.1	12/00	2.3	09/13	
GARF	MUNICIPAL	INACTIVE	TCE	11.0	08/82	ND	09/93	
			PCE	0.5	11/87	ND	09/93	
			CTC	0.1	04/80	ND	09/93	
			1,1,2,2-PCA	1.0	11/87	ND	09/93	
			NO3	68.1	08/89	53.6	09/93	
			CLO4	NA	NA	NA	NA	
			AS	ND	06/80	ND	08/92	
LON 1	MUNICIPAL	ACTIVE	PCE	0.3	07/81	ND	05/15	VULNERABLE
			NO3	33.0	09/11	25	05/15	(NO3 AND CLO4)
			CLO4	5.0	12/97	ND	04/15	
			AS	2.4	07/95	ND	07/10	
			CR6	7.2	06/01	5.0	09/13	
LON 2	MUNICIPAL	ACTIVE	PCE	1.3	06/10	ND	05/15	VULNERABLE
			MC	4.3	05/87	ND	04/15	(VOCS, NO3, AND CLO4)
			NO3	50.4	04/86	22	05/15	
			CLO4	5.6	07/97	ND	04/15	
			AS	0.8	07/96	ND	04/14	
			CR6	9.5	06/01	6.6	10/14	
MOEL (8)	MUNICIPAL	ACTIVE	TCE	23.0	07/14	15.0	05/15	VULNERABLE
			PCE	1.6	07/08	ND	04/15	(VOCS AND NO3) (1)
			C-1,2-DCE	2.3	01/14	1.7	04/15	
			NO3	76.0	07/08	56.0	05/15	
			CLO4	ND	12/99	ND	04/15	
			AS	0.9	07/96	ND	07/14	
			CR6	6.6	10/14	6.6	10/14	
AMARILLO MUTUAL WATER COMPANY								
01	MUNICIPAL	ACTIVE	PCE	5.5	10/99	4.6	05/15	VULNERABLE
			TCE	1.3	11/14	1.0	05/15	(VOCS AND NO3)
			CTC	0.1	08/82	ND	08/14	
			MC	3.2	06/89	ND	08/14	
			NO3	27.4	10/99	22	05/15	
			CLO4	ND	08/97	ND	11/14	
			AS	0.5	07/96	ND	08/10	
			CR6	7.3	11/00	4.3	08/13	
02	MUNICIPAL	ACTIVE	PCE	5.7	02/02	2.8	05/15	VULNERABLE
			TCE	1.5	01/99	0.5	05/15	(VOCS AND NO3)
			MC	2.0	06/89	ND	08/14	
			NO3	29.9	02/96	18	05/15	
			CLO4	ND	08/97	ND	11/14	
			AS	0.4	07/96	ND	08/13	
			CR6	6.9	08/13	6.9	08/13	
ANDERSON FAMILY MARITAL TRUST								
01	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
ARCADIA, CITY OF								
BAL 1	MUNICIPAL	DESTROYED	VOCS	ND	09/98	ND	09/98	
			NO3	52.0	04/78	3.0	09/98	
			CLO4	NA	NA	NA	NA	
BAL 2	MUNICIPAL	INACTIVE	VOCS	ND	05/89	ND	06/09	
			NO3	33.4	05/08	28.0	06/09	
			CLO4	ND	08/97	ND	07/08	
			AS	0.7	08/96	ND	03/09	
			CR6	11.1	06/01	11.1	06/01	
CAM REAL 1	MUNICIPAL	DESTROYED	VOCS	ND	01/85	ND	05/92	
			NO3	28.1	05/91	22.4	08/92	
			CLO4	NA	NA	NA	NA	
			AS	ND	03/09	ND	08/92	
CAM REAL 2	MUNICIPAL	DESTROYED	VOCS	ND	05/89	ND	06/98	
			NO3	58.0	05/92	39.0	05/98	
			CLO4	ND	08/97	ND	12/97	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			AS	0.4	08/96	ND	06/98	
CAM REAL 3	MUNICIPAL	ACTIVE	VOCS	ND	03/11	ND	10/14	
			NO3	17.0	01/15	17.0	01/15	
			CLO4	ND	03/11	ND	07/14	
			AS	ND	03/10	ND	06/14	
			CR6	6.4	09/13	6.4	09/13	
L OAK 1	MUNICIPAL	ACTIVE	PCE	1.4	01/08	ND	04/15	VULNERABLE
			TCE	6.0	02/15	4.6	05/15	(VOCS AND NO3)
			NO3	31	05/15	31	05/15	
			CLO4	ND	08/97	ND	07/14	
			AS	0.6	08/96	ND	06/14	
			CR6	2.4	06/01	2.2	09/13	
LGY	MUNICIPAL	DESTROYED	CF	1.0	01/08	1.0	01/08	
			NO3	104.0	01/08	104.0	01/08	
			CLO4	6.0	01/08	6.0	01/08	
LGY 3	MUNICIPAL	ACTIVE	VOCS	ND	06/11	ND	10/14	
			NO3	9.3	01/15	9.3	01/15	
			CLO4	ND	06/11	ND	07/14	
			AS	ND	03/11	ND	01/14	
			CR6	6.6	09/13	6.6	09/13	
LON 1	MUNICIPAL	ACTIVE	TCE	30.0	07/87	ND	05/15	VULNERABLE
			PCE	2.7	07/87	ND	05/15	(VOCS AND NO3) (1)
			1,1-DCE	4.1	06/87	ND	05/15	
			1,2-DCA	1.4	07/87	ND	05/15	
			1,1,1-TCA	4.6	07/87	ND	04/15	
			MC	25.0	09/87	ND	04/15	
			NO3	54	12/14	52	05/15	
			CLO4	ND	12/97	ND	07/14	
			AS	ND	04/85	ND	06/14	
			CR6	1.9	11/00	1.5	09/13	
LON 2	MUNICIPAL	ACTIVE	TCE	62.0	01/85	ND	05/15	VULNERABLE
			PCE	7.7	01/82	ND	05/15	(VOCS AND NO3) (1)
			CTC	2.6	09/87	ND	04/15	
			1,1-DCE	0.9	05/87	ND	05/15	
			1,1,1-TCA	12.0	01/85	ND	04/15	
			NO3	109.1	05/85	55	05/15	
			CLO4	ND	07/97	ND	07/14	
			AS	0.7	08/96	ND	06/14	
			CR6	4.4	11/00	2.6	09/13	
PECK 1	MUNICIPAL	ACTIVE	VOCS	ND	05/89	ND	04/15	
			NO3	11.0	08/09	ND	04/15	
			CLO4	ND	08/97	ND	07/14	
			AS	2.4	09/94	ND	06/14	
			CR6	1.0	11/00	0.7	09/13	
ST JO 1	MUNICIPAL	DESTROYED	TCE	5.4	01/02	4.8	02/02	
			PCE	2.7	08/91	2.2	02/02	
			NO3	60.0	06/96	46.0	06/02	
			CLO4	1.0	08/97	ND	01/02	
			AS	0.3	08/96	ND	06/01	
ST JO 2	MUNICIPAL	ACTIVE	TCE	2.4	12/09	0.8	05/15	VULNERABLE
			PCE	7.7	12/09	5.2	05/15	(VOCS, NO3, AND CLO4)
			NO3	51.0	12/04	47	05/15	
			CLO4	8.6	06/02	ND	07/14	
			AS	ND	06/02	ND	06/14	
			CR6	3.2	11/02	2.4	09/13	
ATTALLA, MARY L.								
NA	IRRIGATION	INACTIVE	VOCS	ND	09/96	ND	04/98	
			NO3	19.4	04/98	19.4	04/98	
			CLO4	ND	04/98	ND	04/98	
AZUSA ASSOCIATES LLC								
DALTON	IRRIGATION	DESTROYED	VOCS	ND	03/98	ND	03/98	
			NO3	4.7	03/98	4.7	03/98	
			CLO4	ND	03/98	ND	03/98	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
AZUSA, CITY OF								
AVWC 01	MUNICIPAL	DESTROYED	VOCS	ND	09/97	ND	09/97	
			NO3	55.0	08/87	32.1	09/97	
			CLO4	5.6	09/97	5.6	09/97	
AVWC 02	MUNICIPAL	DESTROYED	VOCS	ND	01/98	ND	01/98	
			NO3	43.1	01/98	43.1	01/98	
			CLO4	6.9	01/98	6.9	01/98	
AVWC 07	MUNICIPAL	DESTROYED	TCE	4.5	01/80	ND	03/85	
			NO3	107.0	02/77	39.4	12/85	
			CLO4	NA	NA	NA	NA	
GENESIS 1	MUNICIPAL	DESTROYED	MTBE	1.2	11/98	1.1	11/98	
(OLD 04)			NO3	126.6	06/87	109.8	11/98	
			CLO4	7.2	11/98	7.2	11/98	
			AS	5.0	08/79	ND	02/88	
GENESIS 2	MUNICIPAL	INACTIVE	TCE	250.0	12/79	3.7	02/08	
(OLD 05)			PCE	95.0	04/80	1.0	02/08	
			1,1-DCE	18.0	02/08	18.0	02/08	
			CF	2.6	02/08	2.6	02/08	
			1,1,1-TCA	2.5	02/08	2.5	02/08	
			NO3	105.5	02/93	15.9	02/08	
			CLO4	ND	11/98	ND	02/08	
			AS	ND	12/89	ND	02/08	
GENESIS 3	MUNICIPAL	DESTROYED	PCE	3.5	03/97	ND	03/97	
(OLD 06)			TCE	0.1	01/80	ND	03/97	
			NO3	112.9	06/86	ND	04/01	
			CLO4	NA	NA	NA	NA	
01	MUNICIPAL	ACTIVE	VOCS	ND	06/87	ND	11/14	
(OLD 07)			NO3	4.5	07/97	2.3	08/14	
			CLO4	ND	07/97	ND	08/14	
			AS	5.1	08/95	2.1	08/10	
			CR6	1.0	11/00	0.2	08/13	
02	MUNICIPAL	ACTIVE	VOCS	ND	06/89	ND	09/14	
(01 NORTH)			NO3	5.5	03/92	ND	09/14	
			CLO4	ND	07/97	ND	09/14	
			AS	4.3	07/96	2.9	09/14	
			CR6	1.0	11/00	0.1	08/13	
03	MUNICIPAL	ACTIVE	VOCS	ND	06/87	ND	08/14	
(OLD 08)			NO3	4.4	03/95	ND	08/14	
			CLO4	ND	07/97	ND	08/14	
			AS	5.0	08/06	3.4	08/09	
			CR6	1.0	11/00	0.1	08/13	
04	MUNICIPAL	ACTIVE	VOCS	ND	06/88	ND	08/14	
(02 SOUTH)			NO3	5.5	06/89	ND	08/14	
			CLO4	ND	07/97	ND	08/14	
			AS	5.0	08/05	2.8	08/14	
			CR6	1.0	11/00	0.1	08/13	
05	MUNICIPAL	ACTIVE	TCE	1.0	12/80	ND	08/14	VULNERABLE
(OLD 01)			PCE	0.3	12/80	ND	08/14	(NO3)
			CF	3.5	08/14	3.5	08/14	
			NO3	22.9	07/95	3.7	08/14	
			CLO4	ND	07/97	ND	08/14	
			AS	2.6	07/95	ND	08/10	
			CR6	1.0	11/00	0.2	08/13	
06	MUNICIPAL	ACTIVE	VOCS	ND	03/85	ND	08/14	
(OLD 03)			NO3	14.2	03/95	ND	08/14	
			CLO4	ND	07/97	ND	08/14	
			AS	3.5	07/95	ND	08/10	
			CR6	1.0	11/00	0.3	08/13	
07	MUNICIPAL	ACTIVE	VOCS	ND	06/88	ND	08/14	VULNERABLE
(AVWC 05)			NO3	24.7	04/95	2.2	08/14	(NO3)
			CLO4	ND	06/97	ND	08/14	
			AS	3.5	08/14	3.5	08/14	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CR6	1.0	11/00	0.3	08/13	
08	MUNICIPAL	ACTIVE	TCE	0.8	03/94	ND	08/14	
(AVWC 04)			CF	0.5	08/04	ND	08/14	
			NO3	12.1	09/94	2.5	08/14	
			CLO4	ND	07/97	ND	08/14	
			AS	4.2	07/95	ND	08/10	
			CR6	1.0	11/00	0.2	08/13	
09	MUNICIPAL	INACTIVE	PCE	7.4	12/87	0.6	01/99	
(AVWC 06)			NO3	117.7	12/89	84.0	01/99	
			CLO4	NA	NA	NA	NA	
			AS	ND	02/87	ND	01/99	
10	MUNICIPAL	ACTIVE	PCE	1.0	05/15	0.99	05/15	VULNERABLE
(AVWC 08)			CF	1.4	03/94	ND	11/14	(NO3 AND CLO4)
			NO3	66.0	05/08	51	05/15	
			CLO4	12.6	08/05	5.9	05/15	
			AS	1.8	07/96	ND	11/09	
			CR6	2.4	11/00	2.2	08/13	
11	MUNICIPAL	ACTIVE	VOCS	ND	06/02	ND	08/14	
			NO3	3.7	08/08	ND	10/14	
			CLO4	ND	06/02	ND	08/14	
			AS	4.0	08/05	2.5	08/14	
			CR6	0.2	08/13	0.2	08/13	
12	MUNICIPAL	ACTIVE	VOCS	ND	06/02	ND	08/14	
			NO3	3.9	08/08	2.1	10/14	
			CLO4	ND	06/02	ND	08/14	
			AS	4.0	08/05	2.9	08/14	
			CR6	0.5	08/13	0.5	08/13	
B & B RED-I-MIX CONCRETE INC.								
03	INDUSTRIAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
BANKS, GALE & VICKI								
NA	IRRIGATION	ACTIVE	VOCS	ND	08/96	ND	10/10	
			NO3	20.7	10/98	17.0	10/10	
			CLO4	ND	09/97	ND	09/97	
BASELINE WATER COMPANY								
01	IRRIGATION	DESTROYED	VOCS	ND	02/98	ND	02/98	
			NO3	99.7	02/98	99.7	02/98	
			CLO4	12.9	02/98	12.9	02/98	
02	IRRIGATION	DESTROYED	VOCS	ND	11/98	ND	11/98	
			NO3	74.3	11/98	74.3	11/98	
			CLO4	10.6	11/98	10.6	11/98	
03	IRRIGATION	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
BEVERLY ACRES MUTUAL WATER USERS ASSOCIATION								
ROSE HILLS	MUNICIPAL	DESTROYED	TCE	8.4	10/88	2.5	03/93	
			PCE	6.0	10/88	2.8	03/93	
			C-1,2-DCE	8.0	08/86	2.4	03/93	
			NO3	22.5	08/86	14.6	09/90	
			CLO4	NA	NA	NA	NA	
			AS	ND	09/89	ND	08/91	
BIRENBAUM, MAX								
NA	NON-POTABLE	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
BOTELLO WATER COMPANY								

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
NA	MUNICIPAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
BURBANK DEVELOPMENT COMPANY								
BURB	NON-POTABLE	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
CALIFORNIA-AMERICAN WATER COMPANY/DUARTE SYSTEM								
B V	MUNICIPAL	STANDBY	VOCS	ND	02/85	ND	06/14	
			NO3	3.9	10/10	2.3	12/13	
			CLO4	ND	06/97	ND	09/13	
			AS	6.0	07/93	2.2	10/10	
			CR6	1.0	12/00	0.5	03/13	
B V 2	MUNICIPAL	ACTIVE	VOCS	ND	3/12	ND	12/14	
			NO3	4.1	12/14	4.1	12/14	
			CLO4	ND	09/12	ND	09/14	
			AS	ND	12/14	ND	12/14	
			CR6	1.0	04/11	0.3	09/13	
BACON	MUNICIPAL	ACTIVE	BF	2.9	09/13	1.1	09/14	
			DBCM	2.5	09/13	1.2	09/14	
			MC	0.6	06/89	ND	09/14	
			NO3	10.0	10/81	3.5	12/14	
			CLO4	ND	06/97	ND	09/14	
			AS	6.0	09/93	ND	06/14	
			CR6	0.4	06/11	0.3	03/13	
CR HV	MUNICIPAL	ACTIVE	VOCS	ND	06/88	ND	09/14	
			NO3	8.5	12/13	4.4	12/14	
			CLO4	ND	06/97	ND	09/14	
			AS	3.0	09/04	ND	06/14	
			CR6	1.0	12/00	0.2	03/13	
ENCANTO	MUNICIPAL	ACTIVE	VOCS	ND	12/92	ND	12/14	
			NO3	11.3	12/92	3.4	12/14	
			CLO4	ND	06/97	ND	09/14	
			AS	4.6	08/95	3.0	06/14	
			CR6	1.0	12/00	0.2	03/13	
FISH C	MUNICIPAL	ACTIVE	VOCS	ND	02/85	ND	03/14	
			NO3	6.7	11/94	2.5	12/13	
			CLO4	ND	06/97	ND	09/14	
			AS	13.0	09/80	ND	10/10	
			CR6	1.0	12/00	0.1	03/13	
LAS L	MUNICIPAL	DESTROYED	VOCS	ND	02/85	ND	06/91	
			NO3	12.1	08/80	4.1	09/91	
			CLO4	NA	NA	NA	NA	
			AS	18.0	06/78	ND	11/94	
LAS L2	MUNICIPAL	ACTIVE	TCE	1.6	08/96	ND	09/14	
			NO3	16.6	12/92	5.3	12/14	
			CLO4	ND	06/97	ND	09/14	
			AS	3.1	08/95	ND	06/14	
			CR6	1.0	06/01	0.3	03/13	
MT AVE	MUNICIPAL	INACTIVE	TCE	16.5	07/87	ND	09/93	
			PCE	1.0	08/82	ND	09/93	
			1,1,1-TCA	8.4	04/85	ND	09/93	
			1,1-DCE	3.4	07/87	ND	09/93	
			T-1,2-DCE	2.0	04/85	ND	09/93	
			NO3	65.0	05/89	10.1	09/93	
			CLO4	NA	NA	NA	NA	
			AS	ND	05/89	ND	05/89	
STA FE	MUNICIPAL	ACTIVE	TCE	3.3	04/84	ND	09/14	VULNERABLE
			CF	0.5	07/87	ND	09/14	(VOCS AND NO3)
			MC	0.5	09/08	ND	09/14	
			NO3	59.0	01/80	3.5	12/14	
			CLO4	ND	06/97	ND	09/14	
			AS	3.0	08/79	ND	06/14	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CR6	1.0	12/00	0.7	03/13	
WILEY	MUNICIPAL	ACTIVE	CF	4.2	09/01	ND	09/14	
			NO3	11.0	03/81	3.8	03/15	
			CLO4	ND	06/97	ND	09/14	
			AS	2.0	09/09	ND	06/14	
			CR6	1.0	12/00	0.2	03/13	
CALIFORNIA-AMERICAN WATER COMPANY/SAN MARINO SYSTEM								
BR 1	MUNICIPAL	INACTIVE	CTC	0.5	12/96	0.5	12/96	
			TCE	27.0	07/93	27.0	12/96	
			PCE	9.0	07/93	7.7	12/96	
			NO3	31.4	12/96	31.4	12/96	
			CLO4	NA	NA	NA	NA	
			AS	1.0	03/81	ND	10/81	
BR 2	MUNICIPAL	INACTIVE	TCE	17.0	12/96	17.0	12/96	
			PCE	6.4	12/96	6.4	12/96	
			NO3	25.3	07/93	25.1	12/96	
			CLO4	NA	NA	NA	NA	
			AS	ND	03/81	ND	10/81	
DELMAR	MUNICIPAL	ACTIVE	VOCS	ND	06/88	ND	05/15	
			NO3	19.9	06/14	16.6	05/15	
			CLO4	ND	06/97	ND	05/15	
			AS	5.0	07/96	2.0	05/15	
			CR6	5.5	05/15	5.5	05/15	
GRAND	MUNICIPAL	ACTIVE	TCE	4.8	03/07	1.6	05/15	VULNERABLE
			PCE	2.1	12/08	0.70	05/15	(VOCS)
			NO3	10.9	09/03	7.8	05/15	
			CLO4	ND	08/97	ND	05/15	
			AS	0.4	07/96	ND	05/15	
			CR6	10.0	06/01	9.8	04/15	
GUESS	MUNICIPAL	INACTIVE	TCE	5.2	09/99	5.2	12/01	
			PCE	5.4	12/01	5.4	12/01	
			NO3	20.0	05/01	19.0	09/01	
			CLO4	ND	08/97	ND	03/00	
			AS	0.4	07/96	ND	02/01	
			CR6	7.8	10/00	4.8	06/01	
HALL	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
HALL 2	MUNICIPAL	ACTIVE	VOCS	ND	03/01	ND	05/15	VULNERABLE
			NO3	23.6	04/01	12.2	05/15	(NO3)
			CLO4	ND	03/00	ND	05/15	
			AS	ND	09/01	ND	05/15	
			CR6	9.6	12/01	9.1	05/15	
HOWLAND	MUNICIPAL	ACTIVE	TCE	6.9	07/89	ND	05/15	VULNERABLE
			PCE	3.6	03/01	ND	05/15	(VOCS)
			C-1,2-DCE	3.3	11/87	ND	05/15	
			MC	7.5	05/87	ND	05/15	
			NO3	12.4	09/91	5.6	05/15	
			CLO4	ND	08/97	ND	05/15	
			AS	0.7	07/96	ND	05/15	
			CR6	6.6	10/00	6.3	05/15	
IVAR 1	MUNICIPAL	DESTROYED	PCE	7.4	06/99	6.2	06/00	
			TCE	1.7	06/99	ND	06/00	
			NO3	29.2	09/94	26.0	09/01	
			CLO4	ND	08/97	ND	03/01	
			AS	0.5	10/96	0.5	10/96	
IVAR 2	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	24.0	12/84	24.0	12/84	
			CLO4	NA	NA	NA	NA	
			AS	ND	10/81	ND	10/81	
LONGDEN	MUNICIPAL	ACTIVE	PCE	10.9	05/15	10.4	05/15	VULNERABLE
			NO3	69.6	03/08	66.1	05/15	(VOCS, NO3, AND CLO4)
			CLO4	5.1	10/09	4.9	05/15	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			AS	4.6	06/01	ND	05/15	
			CR6	4.3	05/15	4.3	05/15	
MAR 1	MUNICIPAL	DESTROYED	VOCS	ND	01/85	ND	01/85	
			NO3	89.0	03/79	39.0	01/84	
			CLO4	NA	NA	NA	NA	
			AS	2.0	03/81	ND	10/81	
MAR 2	MUNICIPAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	33.0	01/84	33.0	01/84	
			CLO4	NA	NA	NA	NA	
			AS	1.0	03/81	ND	10/81	
MAR 3	MUNICIPAL	ACTIVE	VOCS	ND	01/85	ND	05/15	
			NO3	9.7	01/01	7.94	05/15	
			CLO4	ND	06/97	ND	05/15	
			AS	1.0	05/00	ND	05/15	
			CR6	8.9	06/01	8.63	05/15	
MIVW 1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	31.0	03/01	31.0	03/01	
			CLO4	NA	NA	NA	NA	
MIVW 2	MUNICIPAL	ACTIVE	VOCS	ND	07/87	ND	05/15	
			NO3	23.4	09/13	23.4	05/15	
			CLO4	ND	06/97	ND	05/15	
			AS	0.6	07/96	ND	05/15	
			CR6	10.1	12/00	10.1	05/15	
RIC 1	MUNICIPAL	INACTIVE	VOCS	ND	02/85	ND	12/90	
			NO3	23.4	08/89	11.8	11/94	
			CLO4	NA	NA	NA	NA	
			AS	ND	09/80	ND	11/94	
RIC 2	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
ROANOKE	MUNICIPAL	INACTIVE	TCE	5.0	06/00	4.7	12/00	
			PCE	1.2	04/90	ND	09/00	
			C-1,2-DCE	0.5	09/00	ND	12/00	
			NO3	33.0	05/89	29.2	12/00	
			CLO4	5.6	06/97	ND	03/00	
			AS	0.8	07/96	ND	02/01	
			CR6	5.0	10/00	4.9	06/01	
ROSEMEAD	MUNICIPAL	ACTIVE	TCE	6.1	03/12	3.8	05/14	VULNERABLE
			PCE	3.4	03/09	ND	05/14	(VOCS AND NO3)
			NO3	38.0	12/13	29.3	05/14	
			CLO4	ND	08/97	ND	05/14	
			AS	0.4	07/96	ND	05/14	
			CR6	11.0	10/00	5.2	06/11	
CALIFORNIA COUNTRY CLUB								
ARTES	IRRIGATION	STANDBY	VOCS	ND	05/87	ND	10/10	VULNERABLE
			NO3	29.0	10/10	29.0	10/10	(NO3)
			CLO4	NA	NA	NA	NA	
CLUB	IRRIGATION	INACTIVE	PCE	189.0	11/87	189.0	11/87	
			1,1,2,2-PCA	24.0	11/87	24.0	11/87	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
SYCAMORE	IRRIGATION	STANDBY	PCE	7.1	09/02	0.6	10/10	VULNERABLE
			TCE	0.7	09/01	ND	10/10	(VOCS AND NO3)
			NO3	128.0	10/07	19.0	10/10	
			CLO4	ND	02/98	ND	02/98	
CALIFORNIA DOMESTIC WATER COMPANY								
01-E	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
02	MUNICIPAL	ACTIVE	CTC	0.7	09/96	ND	05/15	VULNERABLE

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			PCE	3.7	09/12	ND	05/15	(VOCS, NO3, AND CLO4)
			TCE	4.0	10/99	ND	05/15	
			NO3	27	02/15	20	05/15	
			CLO4	5.6	10/99	ND	05/15	
			AS	7.4	12/11	2.0	05/15	
			CR6	2.4	11/00	2.2	08/13	
03	MUNICIPAL	ACTIVE	CTC	5.3	02/01	1.5	05/15	VULNERABLE
			PCE	32.0	11/12	17.0	05/15	(VOCS, NO3 AND CLO4) (1,4)
			TCE	43.0	10/13	30.0	05/15	
			1,1-DCE	6.4	01/14	3.9	04/15	
			C-1,2-DCE	4.2	04/13	2.4	04/15	
			CF	0.7	08/04	ND	04/14	
			NO3	47.6	01/07	27.0	05/15	
			CLO4	12.0	12/12	12.0	05/15	
			AS	3.3	12/11	ND	05/15	
			CR6	3.3	11/00	2.0	08/13	
05	MUNICIPAL	DESTROYED	PCE	2.0	02/85	ND	12/90	
			NO3	13.0	03/84	13.0	03/84	
			CLO4	NA	NA	NA	NA	
			AS	40.0	06/78	ND	03/84	
05A	MUNICIPAL	ACTIVE	CTC	1.9	08/96	0.6	05/15	VULNERABLE
			PCE	14.6	10/08	7.6	05/15	(VOCS AND NO3) (1)
			TCE	17.8	10/08	7.1	05/15	
			1,1-DCE	2.7	10/08	1.4	04/15	
			C-1,2-DCE	1.6	10/08	0.88	04/15	
			NO3	29.0	04/01	9.6	05/15	
			CLO4	ND	06/97	ND	05/15	
			AS	3.8	08/95	ND	05/15	
			CR6	1.6	11/00	1.4	08/13	
06	MUNICIPAL	ACTIVE	CTC	3.5	12/06	ND	05/15	VULNERABLE
			PCE	39.0	10/14	20.0	05/15	(VOCS, NO3, AND CLO4) (1)
			TCE	44.0	10/14	17.0	05/15	
			1,1-DCE	6.2	10/14	6.2	04/15	
			C-1,2-DCE	4.5	10/14	4.5	04/15	
			NO3	34.0	04/11	29.0	05/15	
			CLO4	5.8	12/12	5.1	05/15	
			AS	3.2	04/04	ND	05/15	
			CR6	1.9	11/00	1.5	08/13	
08	MUNICIPAL	ACTIVE	PCE	9.8	02/09	1.3	05/15	VULNERABLE
			TCE	12.0	02/09	ND	05/15	(VOCS, NO3, AND CLO4)
			CTC	1.1	09/93	ND	05/15	
			NO3	24.0	08/02	12.0	05/15	
			CLO4	5.6	08/02	ND	05/15	
			AS	6.0	09/94	ND	05/15	
			CR6	3.2	11/00	2.5	08/13	
13-N	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
14	MUNICIPAL	ACTIVE	CTC	4.4	10/07	ND	05/15	VULNERABLE
			PCE	16.0	11/12	3.3	05/15	(VOCS, NO3, AND CLO4)
			TCE	20.0	11/12	4.3	05/15	
			1,2-DCA	1.0	06/08	ND	05/15	
			C-1,2-DCE	1.6	10/12	ND	05/15	
			1,1-DCE	1.9	10/12	ND	05/15	
			CF	1.3	06/08	ND	01/15	
			NO3	75.0	12/14	67.0	05/15	
			CLO4	16.0	12/12	14.0	05/15	
			AS	4.5	04/01	ND	05/15	
			CR6	3.7	11/00	2.8	08/13	
CEDAR AVENUE MUTUAL WATER COMPANY								
01 SOUTH	MUNICIPAL	DESTROYED	PCE	2.2	09/90	ND	06/94	
			NO3	26.8	08/93	8.9	06/94	
			CLO4	NA	NA	NA	NA	
			AS	NA	09/89	ND	08/93	
02 NORTH	MUNICIPAL	DESTROYED	PCE	0.8	04/92	ND	06/94	
			NO3	20.0	01/86	7.4	08/93	

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CLO4	NA	NA	NA	NA	
			AS	ND	09/89	ND	09/92	
CEMEX CONSTRUCTION MATERIALS L.P. (AZ TWO)								
02	INDUSTRIAL	DESTROYED	PCE	700.0	01/85	2.8	09/03	
			TCE	940.0	04/85	6.3	09/03	
			CTC	2.2	09/02	ND	09/03	
			1,1-DCE	350.0	01/87	7.2	09/03	
			1,1-DCA	1.0	08/01	ND	09/03	
			1,1,1-TCA	430.0	01/87	3.6	09/03	
			VC	19.0	12/87	ND	09/03	
			NO3	79.0	09/02	73.1	09/03	
			CLO4	4.2	06/97	ND	09/98	
CHAMPION MUTUAL WATER COMPANY								
01	MUNICIPAL	INACTIVE	PCE	3.0	09/86	ND	06/98	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
02	MUNICIPAL	INACTIVE	PCE	0.6	06/88	ND	09/13	VULNERABLE
			NO3	28.0	09/10	22.0	06/14	(NO3)
			CLO4	ND	09/97	ND	09/13	
			AS	3.6	08/98	2.4	09/13	
			CR6	1.0	06/01	0.7	09/13	
03	MUNICIPAL	INACTIVE	PCE	1.3	09/96	ND	12/14	VULNERABLE
			FREON 113	18.0	03/07	ND	12/14	(NO3)
			NO3	24.0	03/09	18.0	03/15	
			CLO4	ND	03/98	ND	12/14	
			AS	13.2	05/98	2.8	03/15	
			CR6	1.0	06/01	ND	09/14	
CHEVRON USA INC.								
TEMP 1	NON-POTABLE	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
CITRUS VALLEY MEDICAL CENTER, QUEEN OF THE VALLEY CAMPUS								
01	NON-POTABLE	ACTIVE	VOCS	ND	09/96	ND	10/10	VULNERABLE
			NO3	104.8	02/98	83.0	10/10	(NO3, CLO4)
			CLO4	24.0	02/98	24.0	02/98	
CLAYTON MANUFACTURING COMPANY								
02	INDUSTRIAL	DESTROYED	TCE	150.0	08/01	47.0	09/03	
			PCE	30.0	08/01	ND	09/03	
			1,1-DCE	10.0	08/01	1.7	09/03	
			C-1,2-DCE	1.7	08/01	ND	09/03	
			1,1-DCA	15.0	08/01	ND	09/03	
			1,2-DCA	13.0	08/01	ND	09/03	
			1,1,1-TCA	1.1	08/01	ND	09/03	
			NO3	87.0	08/01	39.7	09/03	
			CLO4	4.0	09/97	4.0	09/97	
COINER, JAMES W., DBA COINER NURSERY								
03	NON-POTABLE	INACTIVE	PCE	293.5	02/98	170.0	10/01	
			TCE	10.2	11/87	3.4	10/01	
			CTC	1.6	08/87	1.6	10/01	
			1,1-DCE	6.7	02/98	4.6	10/01	
			C-1,2-DCE	6.8	07/96	2.7	10/01	
			1,1,1-TCA	22.0	02/98	12.0	10/01	
			NO3	67.0	10/01	44.7	09/07	
			CLO4	9.0	02/98	ND	09/98	
05R	NON-POTABLE	ACTIVE	PCE	7.7	02/98	3.6	10/10	VULNERABLE
			TCE	1.6	10/01	ND	10/10	(VOCS, NO3, AND CLO4)
			CTC	2.7	07/96	ND	10/10	
			1,1-DCE	5.5	10/01	1.3	10/10	
			CF	6.7	02/98	1.1	10/10	
			NO3	110.0	10/09	72.0	10/10	
			CLO4	9.0	02/98	4.0	09/98	

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HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
CORCORAN BROTHERS								
01	NON-POTABLE	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
COUNTY SANITATION DISTRICT NO. 18								
E08A	REMEDIAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
E09A	REMEDIAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
E10A	REMEDIAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
E11A	REMEDIAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
EX1	REMEDIAL	ACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
EX2	REMEDIAL	ACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
EX3	REMEDIAL	ACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
EX4	REMEDIAL	ACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
LE1	REMEDIAL	INACTIVE	TCE	4.2	06/86	3.7	09/86	
			PCE	0.8	09/86	0.8	09/86	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
LE2	REMEDIAL	INACTIVE	TCE	0.1	06/86	ND	09/86	
			PCE	NA	06/86	ND	09/86	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
LE3	REMEDIAL	INACTIVE	TCE	1.5	06/86	1.2	09/86	
			PCE	1.6	06/86	0.8	09/86	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
LE4	REMEDIAL	INACTIVE	TCE	5.1	09/86	5.1	09/86	
			PCE	2.0	09/86	2.0	09/86	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
COVINA, CITY OF								
01	MUNICIPAL	INACTIVE	PCE	0.6	01/99	0.6	01/99	
			NO3	120.0	01/99	120.0	01/99	
			CLO4	NA	NA	NA	NA	
02 (GRAND)	MUNICIPAL	INACTIVE	VOCS	ND	06/88	ND	09/98	
			NO3	116.0	08/89	103.0	04/99	
			CLO4	23.0	09/97	22.0	09/98	
			AS	3.3	08/97	3.3	08/97	
03	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	72.0	10/73	72.0	10/73	
			CLO4	NA	NA	NA	NA	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
COVINA IRRIGATING COMPANY								
BAL 1	MUNICIPAL	ACTIVE	TCE	200.0	07/80	ND	10/13	VULNERABLE
			PCE	7.6	07/80	ND	10/13	(VOCS AND NO3) (5)
			1,1-DCE	0.5	10/06	ND	10/13	
			MC	0.9	10/06	ND	10/13	
			NO3	35.5	12/89	3.9	09/14	
			CLO4	1.5	10/06	ND	09/14	
			AS	4.7	12/89	3.5	01/14	
			CR6	1.0	10/00	0.2	07/13	
BAL 2	MUNICIPAL	ACTIVE	TCE	195.0	06/80	ND	10/14	VULNERABLE
			PCE	7.9	06/80	ND	10/14	(VOCS, NO3 AND CLO4) (5)
			1,1-DCE	0.8	07/07	ND	04/15	
			NO3	47.0	03/10	19.0	05/15	
			CLO4	5.5	03/09	ND	05/15	
			AS	4.0	08/76	3.4	07/14	
			CR6	1.0	10/00	0.5	07/13	
BAL 3	MUNICIPAL	ACTIVE	TCE	225.0	01/80	ND	10/14	VULNERABLE
			PCE	10.0	02/85	ND	10/14	(VOCS, NO3 AND CLO4) (5)
			CTC	3.0	04/85	ND	10/14	
			1,1-DCA	4.0	04/85	ND	10/14	
			1,2-DCA	3.7	02/85	ND	10/14	
			1,1-DCE	2.1	04/85	ND	10/14	
			T-1,2-DCE	2.9	02/85	ND	10/14	
			1,1,1-TCA	5.2	04/85	ND	10/14	
			NO3	57.3	08/89	24.0	05/15	
			CLO4	5.6	09/08	ND	05/15	
			AS	3.0	10/96	3.0	10/14	
			CR6	1.0	11/00	0.8	07/13	
CONTR	MUNICIPAL	INACTIVE	PCE	1.4	12/92	1.3	03/94	
			NO3	125.3	12/89	108.0	03/94	
			CLO4	NA	NA	NA	NA	
			AS	ND	12/89	ND	12/92	
VALEN	MUNICIPAL	INACTIVE	PCE	2.4	08/85	0.6	09/97	
			NO3	73.0	06/81	69.3	09/97	
			CLO4	6.4	09/97	6.4	09/97	
CREVOLIN, A.J.								
NA	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
CROWN CITY PLATING COMPANY								
01	INDUSTRIAL	DESTROYED	TCE	1.2	09/04	1.2	09/04	
			T-1,2-DCE	1.4	05/87	ND	09/04	
			NO3	7.4	09/04	3.4	09/08	
			CLO4	ND	09/97	ND	10/07	
DAVIDSON OPTRONICS INC.								
NA	INDUSTRIAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
DAWES, MARY K.								
04	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
DEL RIO MUTUAL WATER COMPANY								
BURKETT	MUNICIPAL	ACTIVE	TCE	2.2	06/90	ND	09/14	VULNERABLE
			PCE	3.7	03/97	ND	09/14	(VOCS AND NO3)
			NO3	31.0	12/03	7.1	02/15	
			CLO4	ND	09/97	ND	02/15	
			AS	2.6	03/02	ND	02/15	
			CR6	3.4	07/01	0.7	09/13	
KLING	MUNICIPAL	INACTIVE	PCE	1.3	08/86	ND	02/89	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
DRIFTWOOD DAIRY								
01	INDUSTRIAL	ACTIVE	PCE	13.9	06/98	13.9	06/98	VULNERABLE
			1,1,1-TCA	0.3	03/93	ND	06/98	(VOCS AND NO3)
			NO3	65.1	03/93	46.8	06/98	
			CLO4	ND	06/98	ND	06/98	
DUNNING, GEORGE								
1910	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
EAST PASADENA WATER COMPANY, LTD.								
09	MUNICIPAL	ACTIVE	VOCS	ND	06/88	ND	07/14	
			NO3	6.4	09/12	5.4	03/15	
			CLO4	ND	07/97	ND	03/15	
			AS	0.9	08/96	ND	03/15	
			CR6	9.4	07/01	8.4	10/14	
11	MUNICIPAL	ACTIVE	VOCS	ND	12/11	ND	04/15	
			NO3	3.1	06/13	ND	03/15	
			CLO4	ND	12/11	ND	03/15	
			AS	ND	05/14	ND	03/15	
			CR6	5.9	10/14	5.9	10/14	
EL MONTE, CITY OF								
02A	MUNICIPAL	ACTIVE	PCE	13.0	03/98	4.0	05/15	VULNERABLE
			TCE	5.3	01/95	1.2	05/15	(VOCS AND NO3) (1)
			NO3	31.2	06/12	9.5	04/15	
			CLO4	ND	07/97	ND	07/14	
			AS	10.0	03/73	ND	07/14	
			CR6	2.0	12/00	1.9	07/13	
03	MUNICIPAL	STANDBY	PCE	23.6	12/00	15.0	06/13	VULNERABLE
			1,1,1-TCA	1.0	11/93	ND	07/12	(VOCS AND NO3) (3)
			NO3	71.6	08/89	48.5	06/13	
			CLO4	ND	07/97	ND	07/12	
			AS	10.0	03/73	ND	09/10	
			CR6	2.4	07/13	2.4	07/13	
04	MUNICIPAL	STANDBY	PCE	16.2	03/84	0.6	01/08	VULNERABLE
			TCE	7.8	02/80	ND	12/07	(VOCS AND NO3)
			NO3	58.0	11/14	58.0	11/14	
			CLO4	ND	07/97	ND	07/03	
			AS	10.0	03/73	ND	12/07	
			CR6	2.8	07/01	1.2	11/14	
05	MUNICIPAL	DESTROYED	TCE	150.0	07/93	70.0	12/96	
			PCE	51.0	07/93	32.0	12/96	
			CTC	4.3	07/93	1.4	12/96	
			NO3	53.9	12/96	26.3	06/99	
			CLO4	5.9	06/97	5.9	06/97	
			AS	10.0	04/73	10.0	04/73	
10	MUNICIPAL	ACTIVE	TCE	7.2	09/81	ND	05/15	VULNERABLE
			PCE	17.7	12/93	2.3	05/15	(VOCS AND NO3) (1)
			NO3	32.0	01/13	15.0	04/15	
			CLO4	ND	06/97	ND	07/14	
			AS	20.0	03/73	ND	04/14	
			CR6	1.5	03/02	1.3	07/13	
11	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	21.6	07/79	21.6	07/79	
			CLO4	NA	NA	NA	NA	
			AS	20.0	03/73	3.0	08/79	
12	MUNICIPAL	ACTIVE	TCE	53.2	06/92	31.0	01/14	VULNERABLE
			PCE	21.0	01/11	15.0	01/14	(VOCS AND NO3) (1)
			CTC	1.0	06/92	ND	01/14	
			NO3	41.0	06/05	26.0	01/14	

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CLO4	ND	06/97	ND	07/13	
			AS	ND	05/84	ND	07/11	
			CR6	4.1	07/01	3.7	07/13	
13	MUNICIPAL	ACTIVE	PCE	4.7	01/15	2.9	04/15	VULNERABLE
			TCE	6.7	01/15	3.4	04/15	(VOCS) (3)
			NO3	18.0	07/12	14.3	03/15	
			CLO4	ND	07/97	ND	07/14	
			AS	1.3	08/96	ND	07/10	
			CR6	3.7	07/13	3.7	07/13	
MT VW	IRRIGATION	DESTROYED	PCE	2.1	08/85	ND	01/01	
			TCE	2.0	01/85	ND	01/01	
			NO3	30.0	02/87	10.0	01/01	
			CLO4	ND	09/97	ND	11/97	
			AS	ND	02/84	ND	02/84	
EL MONTE CEMETERY ASSOCIATION								
NA	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
FRUIT STREET WATER COMPANY								
NA	IRRIGATION	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
GATES, JAMES RICHARD								
GATES 1	IRRIGATION	ACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
GIFFORD, BROOKS JR.								
01	NA	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
GLENDORA, CITY OF								
01-E	MUNICIPAL	DESTROYED	TCE	0.8	12/80	ND	09/07	
			NO3	38.1	10/88	35.0	08/08	
			CLO4	ND	06/97	ND	03/03	
			AS	2.8	07/98	ND	03/08	
			CR6	1.0	05/01	1.0	05/01	
02-E	MUNICIPAL	ACTIVE	VOCS	ND	03/85	ND	03/15	VULNERABLE
			NO3	70.0	05/78	7.9	05/15	(NO3)
			CLO4	ND	07/97	ND	03/15	
			AS	0.7	08/96	ND	09/10	
			CR6	1.0	11/00	0.4	09/13	
03-G	MUNICIPAL	INACTIVE	TCE	0.5	12/79	ND	05/97	
			PCE	0.5	05/97	0.5	05/97	
			NO3	162.4	08/83	111.0	08/99	
			CLO4	NA	NA	NA	NA	
04-E	MUNICIPAL	INACTIVE	TCE	0.7	08/80	ND	08/91	
			PCE	0.1	07/81	ND	08/91	
			NO3	126.0	06/83	56.8	08/91	
			CLO4	NA	NA	NA	NA	
			AS	ND	07/74	ND	07/74	
05-E	MUNICIPAL	ACTIVE	VOCS	ND	02/95	ND	09/14	
			NO3	3.2	05/95	2.0	06/14	
			CLO4	ND	07/97	ND	09/14	
			AS	5.3	04/98	2.6	06/10	
			CR6	1.0	11/00	0.2	09/13	
07-G	MUNICIPAL	INACTIVE	TCE	302.0	01/81	ND	04/98	
			PCE	25.0	01/81	1.9	04/98	
			1,1-DCE	435.0	05/84	ND	04/98	
			C-1,2-DCE	21.0	05/82	ND	04/98	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			1,1-DCA	5.0	05/84	ND	04/98	
			1,2-DCA	12.1	12/93	ND	04/98	
			1,1,1-TCA	3200.0	05/84	64.0	04/98	
			NO3	106.0	04/98	75.9	04/98	
			CLO4	5.3	04/98	5.3	04/98	
			AS	ND	07/74	ND	08/95	
08-E	MUNICIPAL	ACTIVE	MC	0.7	08/02	ND	03/15	
			NO3	6.6	08/86	ND	11/14	
			CLO4	ND	07/97	ND	09/14	
			AS	3.2	08/96	ND	09/14	
			CR6	1.0	11/00	0.2	09/13	
09-E	MUNICIPAL	ACTIVE	VOCS	ND	05/89	ND	09/14	
			NO3	4.1	08/96	ND	09/14	
			CLO4	ND	07/97	ND	09/14	
			AS	2.5	05/98	ND	09/14	
			CR6	1.0	11/00	0.1	09/13	
10-E	MUNICIPAL	ACTIVE	CF	1.9	07/97	ND	03/15	VULNERABLE
			NO3	78.0	05/77	35.0	05/15	(NO3)
			CLO4	ND	07/97	ND	03/15	
			AS	7.0	08/79	ND	03/14	
			CR6	1.0	11/00	0.9	09/13	
11-E	MUNICIPAL	ACTIVE	VOCS	ND	05/82	ND	09/14	VULNERABLE
			NO3	117.5	08/73	39.0	05/15	(NO3, AND CLO4)
			CLO4	4.9	12/10	ND	03/15	
			AS	3.2	07/98	ND	09/10	
			CR6	1.4	09/13	1.4	09/13	
12-G	MUNICIPAL	ACTIVE	TCE	0.9	12/80	ND	09/14	
			MC	2.2	05/89	ND	09/14	
			NO3	4.7	07/98	ND	11/14	
			CLO4	ND	06/97	ND	09/14	
			AS	4.4	07/97	2.3	09/09	
			CR6	1.0	11/00	0.2	09/13	
13-E	MUNICIPAL	ACTIVE	BF	0.7	06/04	ND	03/14	VULNERABLE
			NO3	29.0	12/09	16.0	05/15	(NO3)
			CLO4	ND	06/04	ND	09/14	
			AS	ND	06/07	ND	06/10	
			CR6	0.6	09/13	0.6	09/13	
GOEDERT, LILLIAN								
GOEDERT	IRRIGATION	DESTROYED	VOCS	ND	06/98	ND	06/98	
			NO3	7.0	06/98	7.0	06/98	
			CLO4	ND	06/98	ND	06/98	
GOLDEN STATE WATER COMPANY/SAN DIMAS DISTRICT								
ART-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	60.0	10/74	60.0	10/74	
			CLO4	NA	NA	NA	NA	
			AS	ND	07/74	ND	07/74	
ART-2	MUNICIPAL	DESTROYED	VOCS	ND	06/89	ND	05/07	
			NO3	26.2	08/07	9.4	09/07	
			CLO4	ND	08/97	ND	09/07	
			AS	0.8	08/96	ND	05/07	
ART-3	MUNICIPAL	ACTIVE	VOCS	ND	05/89	ND	05/14	VULNERABLE
			NO3	140.0	05/14	140.0	05/14	(NO3 AND CLO4) (4)
			CLO4	21.0	05/14	21.0	05/14	
			AS	0.7	08/96	ND	05/10	
			CR6	1.0	07/01	1.0	07/01	
BAS-3	MUNICIPAL	ACTIVE	VOCS	ND	06/89	ND	05/15	VULNERABLE
			NO3	120	01/15	110	05/15	(NO3 AND CLO4) (4)
			CLO4	21.0	10/14	18.0	05/15	
			AS	4.0	08/76	ND	05/10	
			CR6	1.7	11/14	1.7	11/14	
BAS-4	MUNICIPAL	ACTIVE	VOCS	ND	03/85	ND	05/14	VULNERABLE
			NO3	110.0	01/13	74.0	07/14	(NO3 AND CLO4) (4)

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CLO4	23.0	03/13	15.0	07/14	
			AS	1.0	08/96	ND	05/10	
			CR6	1.8	12/00	1.7	07/01	
CITY	MUNICIPAL	INACTIVE	VOCS	ND	06/88	ND	05/08	VULNERABLE
			NO3	44.7	09/93	31.0	11/08	(NO3)
			CLO4	ND	08/97	ND	08/08	
			AS	0.7	08/96	ND	08/06	
			CR6	0.2	12/00	ND	07/01	
COL-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	93.0	09/75	10.0	10/76	
			CLO4	NA	NA	NA	NA	
COL-2	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	117.5	10/76	117.5	10/76	
			CLO4	NA	NA	NA	NA	
			AS	18.0	06/78	18.0	06/78	
COL-4	MUNICIPAL	ACTIVE	CF	7.5	09/97	ND	11/14	VULNERABLE
			NO3	64.0	03/83	39.0	05/15	(NO3)
			CLO4	2.9	04/11	ND	05/15	
			AS	0.7	08/96	ND	02/14	
			CR6	1.0	07/01	ND	11/14	
COL-5	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
COL-6	MUNICIPAL	INACTIVE	PCE	7.2	07/85	ND	02/11	
			CF	0.6	09/97	ND	08/10	
			NO3	56.0	06/85	36.0	03/11	
			CLO4	2.1	03/11	2.1	03/11	
			AS	4.0	08/76	ND	05/10	
			CR6	1.0	07/01	1.0	07/01	
COL-7	MUNICIPAL	DESTROYED	PCE	22.0	12/87	3.1	11/99	
			TCE	9.9	01/80	ND	09/99	
			1,1-DCE	1.1	03/85	ND	09/99	
			1,1,1-TCA	1.7	07/85	ND	09/99	
			NO3	118.0	05/79	68.1	01/00	
			CLO4	4.2	01/02	4.2	01/02	
			AS	0.9	08/96	ND	01/00	
COL-8	MUNICIPAL	INACTIVE	PCE	0.2	09/80	ND	12/96	
			NO3	120.0	06/83	50.8	12/96	
			CLO4	NA	NA	NA	NA	
			AS	6.0	08/79	ND	03/85	
HIGHWAY	MUNICIPAL	ACTIVE	TCE	0.6	12/80	ND	05/14	VULNERABLE
			PCE	0.1	12/80	ND	05/14	(NO3 AND CLO4) (4)
			NO3	53.0	02/15	53.0	02/15	
			CLO4	8.0	10/03	7.5	02/15	
			AS	0.8	08/96	ND	05/10	
			CR6	1.0	07/01	ND	11/14	
HIGHWAY 2	MUNICIPAL	ACTIVE	CF	1.4	10/10	ND	02/14	VULNERABLE
			NO3	26.0	11/14	26.0	05/15	(NO3)
			CLO4	ND	10/10	ND	05/15	
			AS	ND	10/10	ND	10/10	
			CR6	1.7	10/10	ND	11/14	
L HILL 2	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
MALON	MUNICIPAL	ACTIVE	CF	1.7	08/96	ND	05/14	VULNERABLE
			NO3	42.0	09/87	27.0	05/15	(NO3)
			CLO4	ND	08/97	ND	08/14	
			AS	0.7	08/96	ND	08/09	
			CR6	1.0	07/01	ND	11/14	
GOLDEN STATE WATER COMPANY/SAN GABRIEL VALLEY DISTRICT (SOUTH ARCADIA)								
AZU 1	MUNICIPAL	DESTROYED	TCE	15.0	07/93	0.6	01/95	
			PCE	1.9	07/93	ND	01/95	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			NO3	72.9	12/90	35.0	07/02	
			CLO4	NA	NA	NA	10/02	
			AS	0.6	08/96	0.6	08/96	
EARL 1	MUNICIPAL	INACTIVE	PCE	6.0	09/03	6.0	09/03	
			NO3	7.2	08/03	7.1	09/03	
			CLO4	ND	08/97	ND	08/03	
			AS	0.5	08/96	ND	07/01	
ENC 1	MUNICIPAL	ACTIVE	TCE	21.0	04/03	2.9	05/15	VULNERABLE
			PCE	3.5	04/03	0.75	05/15	(VOCS, NO3 AND CLO4) (1)
			CF	0.9	08/00	ND	11/14	
			NO3	77.6	08/91	12.0	05/15	
			CLO4	5.7	02/13	ND	05/15	
			AS	ND	07/89	ND	02/10	
			CR6	8.2	07/01	7.5	11/14	
ENC 2	MUNICIPAL	ACTIVE	TCE	29.1	02/01	14.0	05/15	VULNERABLE
			PCE	6.4	02/15	5.1	05/15	(VOCS) (1)
			NO3	21.0	02/09	17.0	05/15	
			CLO4	1.5	03/10	ND	05/15	
			AS	0.7	08/96	ND	08/14	
			CR6	7.2	02/01	7.0	11/14	
ENC 3	MUNICIPAL	ACTIVE	TCE	17.0	02/14	12.0	05/15	VULNERABLE
			PCE	6.7	02/14	3.1	05/15	(VOCS AND NO3) (1)
			NO3	43.2	07/93	15.0	05/15	
			CLO4	1.9	03/10	ND	05/15	
			AS	16.3	07/90	ND	08/14	
			CR6	8.0	09/01	7.1	11/14	
FAR 1	MUNICIPAL	ACTIVE	TCE	11.9	10/80	1.9	05/15	VULNERABLE
			PCE	3.1	10/87	ND	02/15	(VOCS)
			NO3	13.0	07/89	9.4	05/15	
			CLO4	ND	08/97	ND	06/14	
			AS	2.7	08/97	ND	05/10	
			CR6	1.0	02/01	ND	11/14	
FAR 2	MUNICIPAL	ACTIVE	TCE	12.9	07/80	ND	05/15	VULNERABLE
			PCE	2.6	10/87	ND	08/14	(VOCS)
			NO3	12.2	07/90	3.9	08/14	
			CLO4	ND	08/97	ND	08/14	
			AS	0.9	08/96	ND	08/14	
			CR6	1.9	11/14	1.9	11/14	
GAR 1	MUNICIPAL	INACTIVE	CF	0.8	08/99	ND	07/03	
			PCE	4.5	10/03	4.5	10/03	
			NO3	8.3	08/03	7.7	09/03	
			CLO4	ND	08/97	ND	08/03	
			AS	0.5	08/96	ND	08/03	
GAR 2	MUNICIPAL	INACTIVE	PCE	12.0	07/03	11.0	08/03	
			TCE	2.2	08/03	2.2	08/03	
			NO3	7.3	08/97	4.6	07/02	
			CLO4	ND	08/97	ND	08/03	
			AS	0.5	08/96	ND	08/00	
GID 1	MUNICIPAL	DESTROYED	TCE	6.6	04/85	4.1	09/93	
			PCE	0.9	09/93	0.9	09/93	
			NO3	40.6	09/93	40.6	09/93	
			CLO4	NA	NA	NA	NA	
GID 2	MUNICIPAL	DESTROYED	TCE	86.0	05/87	5.2	09/93	
			PCE	20.0	05/87	1.5	09/93	
			CTC	3.0	05/87	ND	09/93	
			NO3	45.8	09/93	45.8	09/93	
			CLO4	NA	NA	NA	NA	
GRA 1	MUNICIPAL	INACTIVE	TCE	33.0	09/88	25.4	11/94	
			PCE	2.5	11/93	0.6	11/94	
			NO3	86.8	08/89	44.4	07/95	
			CLO4	NA	NA	NA	NA	
			AS	18.0	06/78	ND	08/94	
GRA 2	MUNICIPAL	INACTIVE	TCE	31.3	08/89	24.6	08/94	
			PCE	3.3	09/94	3.3	09/94	

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			1,1-DCE	4.8	08/94	4.8	08/94	
			NO3	82.1	07/90	44.2	07/95	
			CLO4	NA	NA	NA	NA	
			AS	ND	01/89	ND	08/94	
JEF 1	MUNICIPAL	INACTIVE	TCE	340.0	01/80	98.0	01/85	
			PCE	23.0	03/81	8.0	01/85	
			1,1,1-TCA	31.0	01/85	31.0	01/85	
			MC	10.0	01/85	10.0	01/85	
			NO3	52.0	07/83	48.7	03/86	
			CLO4	NA	NA	NA	NA	
JEF 2	MUNICIPAL	DESTROYED	TCE	260.0	01/80	140.0	01/85	
			PCE	15.0	03/81	6.0	01/85	
			1,1-DCE	20.0	01/85	20.0	01/85	
			1,1,1-TCA	54.0	01/85	54.0	01/85	
			MC	6.0	01/85	6.0	01/85	
			NO3	68.0	06/77	61.0	06/79	
			CLO4	NA	NA	NA	NA	
JEF 3	MUNICIPAL	INACTIVE	TCE	121.0	02/81	4.9	08/92	
			PCE	12.0	03/81	0.6	08/92	
			1,1,1-TCA	29.0	04/85	ND	08/92	
			T-1,2-DCE	2.4	04/85	ND	08/92	
			NO3	52.0	12/84	23.5	08/92	
			CLO4	NA	NA	NA	NA	
			AS	ND	12/84	ND	08/86	
JEF 4	MUNICIPAL	ACTIVE	VOCS	ND	08/89	ND	08/14	
			NO3	14.7	07/89	3.3	08/14	
			CLO4	ND	08/97	ND	08/14	
			AS	0.7	08/96	ND	08/09	
			CR6	1.3	07/01	ND	11/14	
PER 1	MUNICIPAL	ACTIVE	TCE	25.8	10/80	0.61	05/15	VULNERABLE
			PCE	6.8	07/87	ND	05/15	(VOCS AND NO3)
			NO3	38.0	12/11	13.0	05/15	
			CLO4	ND	08/97	ND	11/14	
			AS	0.9	08/96	ND	08/09	
			CR6	5.2	07/01	4.4	11/14	
S G 1	MUNICIPAL	ACTIVE	PCE	46.0	04/06	6.6	05/15	VULNERABLE
			TCE	6.8	12/03	ND	05/15	(VOCS, NO3 AND CLO4) (1)
			C-1,2-DCE	1.8	11/04	ND	05/15	
			1,1-DCA	1.8	06/04	ND	05/15	
			1,1-DCE	0.7	11/04	ND	05/15	
			FREON 11	1.2	08/03	ND	08/14	
			NO3	27.0	04/02	12.0	05/15	
			CLO4	8.1	08/03	ND	05/15	
			AS	2.7	08/94	ND	08/13	
			CR6	5.9	12/01	5.2	11/14	
S G 2	MUNICIPAL	ACTIVE	PCE	28.0	05/11	1.3	05/15	VULNERABLE
			TCE	3.6	06/99	ND	05/15	(VOCS, NO3 AND CLO4) (1)
			1,1-DCE	0.7	04/11	ND	05/15	
			C-1,2-DCE	1.2	02/01	ND	05/15	
			NO3	53.1	10/05	44.0	05/15	
			CLO4	7.0	02/03	ND	05/15	
			AS	0.8	08/96	ND	09/12	
			CR6	7.7	11/14	7.7	11/14	
SAX 1	MUNICIPAL	DESTROYED	PCE	1.4	04/97	0.9	12/97	
			MC	2.2	04/89	ND	08/97	
			NO3	33.1	10/97	33.1	10/97	
			CLO4	ND	08/97	ND	12/97	
			AS	0.3	08/96	0.3	08/96	
SAX 3	MUNICIPAL	ACTIVE	VOCS	ND	04/89	ND	08/14	VULNERABLE
			NO3	27.3	11/96	4.3	08/14	(NO3)
			CLO4	ND	08/97	ND	08/14	
			AS	0.4	08/96	ND	08/10	
			CR6	5.0	11/14	5.0	11/14	
SAX 4	MINICIPAL	ACTIVE	VOCS	ND	03/92	ND	08/14	
			NO3	11.9	08/99	6.3	08/14	
			CLO4	ND	08/97	ND	08/14	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			AS	5.2	12/09	4.6	08/10	
			CR6	4.8	11/14	4.8	11/14	
GREEN, WALTER								
NA	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
NA	NON-POTABLE	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
HALL (W.E.) COMPANY								
NA	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
HANSEN, ALICE								
2946C	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
HANSON AGGREGATES WEST, INC.								
DUA 1	INDUSTRIAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
EL 1	INDUSTRIAL	ACTIVE	VOCS	ND	05/98	ND	09/02	
			NO3	17.0	02/93	2.2	09/02	
			CLO4	ND	03/98	ND	03/98	
EL 3	INDUSTRIAL	ACTIVE	VOCS	ND	06/98	ND	09/02	
			NO3	22.0	05/93	2.8	09/02	
			CLO4	ND	03/98	ND	03/98	
EL 4	INDUSTRIAL	ACTIVE	VOCS	ND	12/87	ND	09/02	
			NO3	6.3	06/98	ND	09/02	
			CLO4	NA	NA	NA	NA	
KIN 1	INDUSTRIAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
HARTLEY, DAVID								
NA	DOMESTIC	INACTIVE	VOCS	ND	10/95	ND	10/95	
			NO3	111.0	01/96	75.0	04/96	
			CLO4	NA	NA	NA	NA	
HEMLOCK MUTUAL WATER COMPANY								
NORTH	MUNICIPAL	ACTIVE	PCE	51.7	04/82	ND	09/14	VULNERABLE
			TCE	0.7	12/87	ND	09/14	(VOCS) (1)
			NO3	18.9	12/06	4.6	12/14	
			CLO4	ND	09/97	ND	09/14	
			AS	2.7	12/08	ND	12/14	
			CR6	1.0	12/00	0.5	09/13	
SOUTH	MUNICIPAL	ACTIVE	PCE	210.0	12/87	ND	03/15	VULNERABLE
			TCE	0.9	04/89	ND	09/14	(VOCS AND NO3) (1)
			NO3	32.7	12/94	2.4	03/15	
			CLO4	ND	09/97	ND	09/14	
			AS	2.1	08/96	ND	12/14	
			CR6	1.1	12/00	0.6	09/13	
INDUSTRY WATERWORKS SYSTEM, CITY OF								
01	MUNICIPAL	INACTIVE	TCE	40.0	01/80	1.7	10/92	
			PCE	9.0	04/80	5.0	10/92	
			CTC	5.7	10/92	5.7	10/92	
			1,1-DCE	15.3	10/92	15.3	10/92	
			1,2-DCA	0.6	10/92	0.6	10/92	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			NO3	60.2	10/92	60.2	10/92	
			CLO4	NA	NA	NA	NA	
			AS	ND	01/80	ND	01/80	
02	MUNICIPAL	INACTIVE	TCE	19.0	01/80	2.3	04/81	
			PCE	10.0	04/81	10.0	04/81	
			NO3	55.5	02/86	55.5	02/86	
			CLO4	100.0	04/99	100.0	04/99	
			AS	ND	01/80	ND	01/80	
03	MUNICIPAL	INACTIVE	PCE	2.6	09/80	1.6	07/06	VULNERABLE
			TCE	12.0	07/06	12.0	07/06	(VOCS, NO3, AND CLO4)
			CTC	0.5	07/06	0.5	07/06	
			1,2-DCA	0.5	07/06	0.5	07/06	
			BDCM	0.6	07/03	ND	07/06	
			BF	0.5	07/03	ND	07/06	
			CF	0.9	09/02	0.6	07/06	
			NO3	31.1	08/00	ND	07/06	
			CLO4	120.0	04/99	ND	07/06	
			AS	5.4	07/95	ND	08/04	
			CR6	6.9	11/00	6.9	11/00	
04	MUNICIPAL	INACTIVE	PCE	2.4	08/01	0.5	07/06	VULNERABLE
			TCE	8.0	11/01	1.7	07/06	(VOCS, NO3, AND CLO4)
			1,1-DCE	0.9	09/02	0.6	07/06	
			1,2-DCA	1.0	11/01	ND	07/06	
			CTC	0.7	11/01	ND	07/05	
			MC	0.9	06/89	ND	07/05	
			NO3	42.0	06/02	33.0	04/07	
			CLO4	14.8	06/01	6.5	01/06	
			AS	6.9	07/95	2.8	08/01	
			CR6	8.9	11/00	8.4	06/01	
05	MUNICIPAL	ACTIVE	PCE	8.2	10/12	6.3	05/15	VULNERABLE
			TCE	6.8	04/96	2.8	05/15	(VOCS, NO3, AND CLO4) (1,4)
			1,2-DCA	0.7	09/02	ND	05/15	
			1,1-DCE	1.5	09/12	1.4	05/15	
			CF	0.6	01/07	ND	06/13	
			NO3	31.0	06/13	29.0	05/15	
			CLO4	11.0	04/04	ND	05/15	
			AS	6.8	07/95	ND	03/15	
			CR6	8.3	05/11	8.3	05/11	
05TH AVE	MUNICIPAL	DESTROYED	TCE	0.3	12/80	0.3	12/80	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
KNIGHT, KATHRYN M.								
NA	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
LANDEROS, JOHN								
NA	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
LA PUENTE VALLEY COUNTY WATER DISTRICT								
01	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
02	MUNICIPAL	ACTIVE	TCE	120.0	12/12	52.0	05/15	VULNERABLE
			PCE	6.6	03/00	3.4	05/15	(VOCS, NO3, AND CLO4) (1,4)
			CTC	8.5	12/02	3.0	05/15	
			1,1-DCA	2.1	11/03	0.6	05/15	
			1,2-DCA	6.1	03/00	2.4	05/15	
			1,1-DCE	1.6	12/00	ND	05/15	
			C-1,2-DCE	1.9	04/10	1.2	05/15	
			CF	2.8	04/10	2.2	12/14	
			NO3	33.0	09/14	15.0	05/15	
			CLO4	183.0	02/98	45.0	05/15	
			AS	1.9	04/06	ND	06/10	

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CR6	3.7	04/06	2.7	03/14	
03	MUNICIPAL	ACTIVE	TCE	72.0	03/11	0.63	05/15	VULNERABLE
			PCE	6.3	04/85	ND	05/15	(VOCS, NO3, AND CLO4) (1,4)
			CTC	8.5	11/04	ND	05/15	
			1,1-DCE	0.9	10/95	ND	05/15	
			1,2-DCA	6.7	02/99	ND	05/15	
			C-1,2-DCE	1.4	01/97	ND	05/15	
			1,1-DCA	0.5	09/01	ND	05/15	
			CF	1.9	03/11	ND	06/14	
			NO3	95.0	01/80	37.0	05/15	
			CLO4	174.0	02/98	8.2	05/15	
			AS	2.1	08/04	ND	09/10	
			CR6	4.3	06/01	3.7	03/14	
04	MUNICIPAL	INACTIVE	TCE	84.3	03/00	46.0	04/04	VULNERABLE
			PCE	6.6	03/00	2.9	04/04	(VOCS, NO3, AND CLO4) (1,4)
			CTC	7.6	04/95	1.9	04/04	
			1,1-DCA	0.7	04/04	0.7	04/04	
			1,2-DCA	8.1	03/00	4.4	04/04	
			1,1-DCE	1.3	04/97	0.5	04/04	
			C-1,2-DCE	15.6	11/98	1.7	04/04	
			CF	2.3	04/04	2.3	04/04	
			NO3	24.9	04/95	18.1	04/04	
			CLO4	159.0	06/97	71.2	04/04	
			AS	2.3	09/94	ND	11/98	
			CR6	4.3	11/00	4.3	11/00	
05	MUNICIPAL	ACTIVE	TCE	43.0	03/08	14.0	05/15	VULNERABLE
			PCE	3.8	03/08	1.1	05/15	(VOCS, NO3, AND CLO4) (1,4)
			CTC	2.3	03/08	0.6	05/15	
			1,1-DCA	0.5	03/08	ND	05/15	
			1,2-DCA	2.7	03/08	0.5	05/15	
			1,1-DCE	0.5	03/08	ND	05/15	
			C-1,2-DCE	0.8	11/08	ND	05/15	
			CF	1.7	03/08	ND	12/14	
			NO3	33.0	02/15	31.0	05/15	
			CLO4	65.0	03/08	17.0	05/15	
			AS	1.1	03/08	ND	03/09	
			CR6	3.1	05/11	3.0	11/14	
LA VERNE, CITY OF								
SNIDO	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
W15-L	MUNICUPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
W24-L	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
LEE, PAUL								
01	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
02	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
03	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
04	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
LOS ANGELES, COUNTY OF								
02	NON POTABLE	DESTROYED	PCE	6.6	09/04	6.6	09/04	
			TCE	1.3	09/04	1.3	09/04	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			1,2-DCA	0.5	01/96	ND	09/04	
			NO3	10.7	09/04	10.7	09/04	
			CLO4	ND	08/97	ND	08/97	
03	IRRIGATION	DESTROYED	PCE	2.1	06/94	2.1	06/94	
			TCE	0.7	06/94	0.7	06/94	
			NO3	4.8	06/94	4.8	06/94	
			CLO4	NA	NA	NA	NA	
03A	IRRIGATION	DESTROYED	PCE	2.5	11/99	ND	10/08	
			NO3	2.1	08/96	ND	10/08	
			CLO4	ND	08/97	ND	08/97	
04	IRRIGATION	DESTROYED	1,1,1-TCA	0.7	05/87	ND	11/87	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
05	IRRIGATION	DESTROYED	PCE	39.0	09/03	35.7	10/08	
			TCE	1.3	09/03	ND	10/08	
			NO3	18.0	09/03	14.0	10/08	
			CLO4	ND	08/97	ND	08/97	
06	IRRIGATION	DESTROYED	PCE	7.4	08/96	2.8	11/99	
			TCE	8.3	08/96	2.9	11/99	
			1,1-DCA	2.0	08/96	ND	11/99	
			1,1-DCE	1.4	08/96	ND	11/99	
			C-1,2-DCE	4.5	08/96	0.8	11/99	
			NO3	11.6	08/96	8.4	11/99	
			CLO4	NA	NA	NA	NA	
600	IRRIGATION	INACTIVE	VOCS	ND	07/98	ND	07/98	
			NO3	4.8	07/98	4.8	07/98	
			CLO4	ND	07/98	ND	07/98	
BIG RED	NON POTABLE	INACTIVE	1,2-DCA	0.6	01/96	ND	10/09	
			NO3	12.0	09/02	ND	10/09	
			CLO4	ND	08/97	ND	08/97	
NEW LAKE	NON POTABLE	INACTIVE	PCE	19.7	02/00	ND	11/10	
			TCE	0.9	02/00	ND	11/10	
			CF	2.6	11/10	2.6	11/10	
			NO3	22.0	02/00	18.0	11/10	
			CLO4	ND	08/97	ND	08/97	
SF 1	NON POTABLE	ACTIVE	TCE	4.3	09/04	ND	10/10	VULNERABLE
			PCE	7.6	09/04	ND	10/10	(VOCS)
			VC	1.4	12/87	ND	10/10	
			NO3	16.0	09/02	6.3	10/10	
			CLO4	ND	06/97	ND	05/10	
WHI 1	NON POTABLE	INACTIVE	PCE	3.8	09/04	1.4	11/10	
			TCE	1.0	09/04	ND	11/10	
			NO3	7.7	10/09	5.1	11/10	
			CLO4	ND	08/97	ND	08/97	
LOS FLORES MUTUAL WATER COMPANY								
HI 1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
LO 1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
LOUCKS, DAVID								
NA	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
MAECHTLEN ESTATE								
M-N	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
OLD60	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
SNIDO	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
MANNING BROTHERS ROCK AND SAND COMPANY								
36230	INDUSTRIAL	DESTROYED	TCE	520.0	12/79	100.0	01/80	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
MAPLE WATER COMPANY								
01	MUNICIPAL	DESTROYED	VOCS	ND	06/89	ND	07/96	
			NO3	68.0	09/94	55.5	07/96	
			CLO4	NA	NA	NA	NA	
			AS	1.3	07/96	1.3	07/96	
02	MUNICIPAL	DESTROYED	VOCS	ND	06/89	ND	07/96	
			NO3	62.7	11/89	55.3	07/96	
			CLO4	NA	NA	NA	NA	
			AS	1.3	07/96	1.3	07/96	
MARTINEZ, FRANCES M.								
NA	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA								
02	NON-POTABLE	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
03	NON-POTABLE	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
MILLERCOORS LLC (MILLER BREWERIES WEST, L.P. /MILLER BREWING COMPANY)								
01	INDUSTRIAL	ACTIVE	VOCS	ND	01/92	ND	10/09	
			NO3	9.8	01/93	4.3	10/09	
			CLO4	ND	06/97	ND	06/08	
			AS	3.9	06/08	3.9	06/08	
02	INDUSTRIAL	ACTIVE	VOCS	ND	01/92	ND	03/15	
(NW WELL)			NO3	14.0	10/92	3.4	06/14	
			CLO4	ND	06/97	ND	06/14	
			AS	3.5	05/08	3.3	06/13	
			CR6	ND	12/14	ND	12/14	
N BREWER	INDUSTRIAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
MONROVIA, CITY OF								
01	MUNICIPAL	DESTROYED	TCE	46.8	11/92	12.0	04/02	
			PCE	3.9	03/81	0.8	04/02	
			1,1-DCE	1.2	08/96	0.9	04/02	
			1,1,1-TCA	2.1	08/87	ND	07/01	
			CF	3.2	07/01	3.2	07/01	
			NO3	78.0	02/01	60.0	03/02	
			CLO4	11.1	02/01	8.4	04/02	
			AS	2.5	10/00	2.5	10/00	
02	MUNICIPAL	ACTIVE	TCE	167.0	08/82	4.3	05/15	VULNERABLE
			PCE	11.0	08/82	ND	05/15	(VOCS, NO3 AND CLO4) (1)
			1,1,1-TCA	7.1	02/87	ND	07/14	
			1,1-DCE	3.4	06/87	ND	04/15	
			1,2-DCA	1.5	02/87	ND	07/14	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CF	2.2	07/07	1.3	07/14	
			NO3	65.6	12/91	61.0	05/15	
			CLO4	6.9	04/15	6.4	05/15	
			AS	0.9	08/96	ND	04/10	
			CR6	3.6	07/01	3.6	08/13	
03	MUNICIPAL	ACTIVE	TCE	18.0	08/82	3.3	05/15	VULNERABLE
			PCE	17.0	08/82	ND	05/15	(VOCS AND NO3) (1)
			1,1-DCE	0.8	12/08	ND	04/15	
			CF	1.8	07/08	ND	07/14	
			NO3	49.6	05/76	21.0	05/15	
			CLO4	ND	08/97	ND	05/15	
			AS	3.6	08/97	ND	04/10	
			CR6	5.8	08/13	5.8	08/13	
04	MUNICIPAL	ACTIVE	TCE	6.5	02/91	2.1	05/15	VULNERABLE
			PCE	1.0	02/91	0.5	05/15	(VOCS AND NO3) (1)
			1,1-DCE	1.1	01/05	ND	04/15	
			MC	2.5	05/89	ND	07/14	
			CF	0.7	07/02	ND	07/14	
			NO3	28.8	06/91	15.0	05/15	
			CLO4	ND	08/97	ND	05/15	
			AS	3.8	08/97	ND	04/10	
			CR6	1.1	07/01	0.5	08/13	
05	MUNICIPAL	ACTIVE	TCE	5.1	01/91	4.5	05/15	VULNERABLE
			PCE	1.0	10/02	0.6	05/15	(VOCS AND NO3) (1)
			1,1-DCE	1.0	10/02	ND	04/15	
			MC	4.9	05/89	ND	07/14	
			CF	1.2	07/02	ND	07/14	
			NO3	29.4	01/91	17.0	05/15	
			CLO4	ND	08/97	ND	05/15	
			AS	1.0	08/96	ND	04/10	
			CR6	1.4	07/01	0.6	08/13	
06	MUNICIPAL	ACTIVE	TCE	23.0	04/14	9.6	05/15	VULNERABLE
			PCE	2.3	01/10	1.7	05/15	(VOCS, NO3 AND CLO4) (1)
			1,1-DCE	0.8	10/07	0.6	04/15	
			CF	1.0	08/04	ND	07/14	
			NO3	42.0	06/14	32.0	05/15	
			CLO4	4.9	06/14	ND	07/14	
			AS	ND	10/99	ND	04/10	
			CR6	2.1	08/13	2.1	08/13	
MONROVIA NURSERY								
DIV 4	IRRIGATION	DESTROYED	VOCS	ND	08/96	ND	02/07	
			NO3	213.0	09/04	202.0	02/07	
			CLO4	ND	02/98	ND	02/98	
DIV 8	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
MONTEREY PARK, CITY OF								
01	MUNICIPAL	ACTIVE	PCE	64.1	12/08	8.1	05/15	VULNERABLE
			TCE	4.1	05/04	1.3	05/15	(VOCS, NO3 AND CLO4) (1)
			1,1-DCE	0.6	05/04	ND	05/15	
			1,1-DCA	1.0	05/04	ND	05/15	
			C-1,2-DCE	1.0	03/04	ND	05/15	
			NO3	24.0	12/12	21.0	05/15	
			CLO4	4.7	05/04	ND	05/15	
			AS	0.5	07/96	ND	05/15	
			CR6	6.2	11/00	3.4	11/14	
02	MUNICIPAL	DESTROYED	PCE	6.4	04/98	6.4	04/98	
			NO3	18.3	07/95	13.0	07/97	
			CLO4	3.0	07/97	ND	03/98	
			AS	0.4	07/96	0.4	07/96	
03	MUNICIPAL	INACTIVE	PCE	25.0	08/11	22.0	05/12	VULNERABLE
			TCE	2.7	05/04	1.3	05/12	(VOCS AND CLO4) (1)
			C-1,2-DCE	0.8	05/04	ND	05/12	
			NO3	13.3	07/97	5.5	05/12	
			CLO4	4.2	05/04	ND	08/11	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			AS	12.9	08/89	4.1	08/11	
			CR6	3.2	05/04	2.5	01/10	
04	MUNICIPAL	DESTROYED	PCE	0.4	01/80	ND	11/87	
			NO3	6.2	09/87	6.2	09/87	
			CLO4	NA	NA	NA	NA	
05	MUNICIPAL	ACTIVE	PCE	40.0	06/13	27.0	05/15	VULNERABLE
			TCE	7.0	01/92	0.9	05/15	(VOCS, NO3 AND CLO4) (1,4)
			C-1,2-DCE	2.0	11/01	ND	05/15	
			1,1-DCA	1.1	11/01	ND	05/15	
			1,1-DCE	0.7	11/01	ND	05/15	
			NO3	26.0	12/14	23.0	05/15	
			CLO4	6.5	02/01	ND	05/15	
			AS	1.5	10/12	1.5	10/12	
			CR6	4.6	01/10	4.6	11/14	
06	MUNICIPAL	INACTIVE	PCE	13.6	03/01	3.1	05/05	
			TCE	6.4	05/89	3.1	05/05	
			C-1,2-DCE	1.3	01/99	1.2	05/05	
			1,1-DCA	0.8	11/01	0.6	05/05	
			NO3	30.0	06/03	24.7	05/05	
			CLO4	5.9	04/02	5.9	04/02	
			AS	2.2	09/00	ND	08/02	
			CR6	4.1	11/00	3.4	05/01	
07	MUNICIPAL	INACTIVE	PCE	6.0	09/10	6.0	09/10	
			CF	3.6	07/98	ND	08/10	
			NO3	12.8	08/89	2.7	08/10	
			CLO4	ND	08/97	ND	08/10	
			AS	28.4	07/96	2.1	08/09	
			CR6	5.3	02/07	5.1	01/10	
08	MUNICIPAL	INACTIVE	PCE	2.5	02/05	1.9	03/09	
			NO3	17.0	08/05	ND	11/08	
			CLO4	ND	08/97	ND	11/08	
			AS	45.0	03/09	45.0	03/09	
			CR6	6.7	12/01	6.7	12/01	
09	MUNICIPAL	ACTIVE	PCE	13.0	05/15	11.0	05/15	VULNERABLE
			TCE	1.3	04/97	ND	05/15	(VOCS) (1,4)
			NO3	18.0	07/12	2.3	05/15	
			CLO4	ND	08/97	ND	05/15	
			AS	15.0	06/07	8.9	05/15	
			CR6	3.4	11/00	2.6	11/14	
10	MUNICIPAL	ACTIVE	PCE	17.0	02/12	8.4	05/15	VULNERABLE
			TCE	2.6	05/04	0.79	05/15	(VOCS, NO3 AND CLO4) (1)
			C-1,2-DCE	0.8	05/04	ND	05/15	
			NO3	27.1	08/07	20.0	05/15	
			CLO4	4.3	05/04	ND	05/15	
			AS	6.7	07/98	2.2	05/15	
			CR6	6.6	11/00	5.7	11/14	
12	MUNICIPAL	ACTIVE	PCE	85.0	05/02	38.0	05/15	VULNERABLE
			TCE	5.4	10/95	2.9	05/15	(VOCS, NO3 AND CLO4) (1,4)
			1,1-DCA	1.3	05/12	0.8	05/15	
			1,1-DCE	0.5	05/12	ND	05/15	
			C-1,2-DCE	1.4	05/12	1.1	05/15	
			NO3	27.2	08/07	14.0	05/15	
			CLO4	15.0	09/97	ND	05/15	
			AS	ND	04/81	ND	05/15	
			CR6	4.6	02/07	3.7	11/14	
14	MUNICIPAL	INACTIVE	PCE	2.2	05/02	0.7	05/06	
			TCE	2.9	11/02	1.5	05/06	
			1,1-DCA	0.8	08/02	ND	05/06	
			C-1,2-DCE	1.0	11/02	ND	05/06	
			NO3	10.0	10/06	10.0	10/06	
			CLO4	ND	08/97	ND	05/03	
			AS	41.0	08/05	39.0	03/06	
			CR6	1.0	11/00	1.0	05/01	
15	MUNICIPAL	ACTIVE	PCE	190.0	02/12	76.0	04/15	VULNERABLE
			TCE	3.6	03/15	2.2	04/15	(VOCS AND NO3) (1,4)
			NO3	23.0	11/08	15.0	04/15	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CLO4	2.4	07/06	ND	04/15	
			AS	ND	09/06	ND	04/15	
			CR6	2.9	02/07	2.8	11/14	
FERN	MUNICIPAL	ACTIVE	PCE	12.0	08/10	2.7	05/15	VULNERABLE
			TCE	2.3	08/02	ND	05/15	(VOCS)
			C-1,2-DCE	0.7	03/04	ND	05/15	
			NO3	6.5	03/04	ND	05/15	
			CLO4	2.0	08/97	ND	05/15	
			AS	15.0	04/15	14.0	05/15	
			CR6	1.5	11/00	0.2	08/13	
NAMIMATSU FARMS								
NA	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
OWL ROCK PRODUCTS COMPANY								
NA	INDUSTRIAL	INACTIVE	VOCS	ND	05/87	ND	10/09	
			NO3	8.7	08/89	ND	10/09	
			CLO4	NA	NA	NA	NA	
NA	INDUSTRIAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
NA	INDUSTRIAL	INACTIVE	VOCS	ND	10/02	ND	11/04	
			NO3	ND	10/02	ND	11/04	
			CLO4	NA	NA	NA	NA	
PICO COUNTY WATER DISTRICT								
NA	MUNICIPAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
POLOPOLUS ET AL.								
01	IRRIGATION	INACTIVE	PCE	330.0	10/96	270.0	03/98	
			TCE	498.9	09/92	180.0	03/98	
			1,1-DCA	22.0	03/98	22.0	03/98	
			1,2-DCA	1.2	06/96	0.9	03/98	
			1,1-DCE	115.3	09/92	22.0	03/98	
			T-1,2-DCE	1.5	06/87	ND	03/98	
			1,1,1-TCA	53.0	09/92	12.0	03/98	
			CTC	0.8	06/96	0.6	03/98	
			NO3	50.8	07/91	29.7	03/98	
			CLO4	ND	03/98	ND	03/98	
RICHWOOD MUTUAL WATER COMPANY								
NORTH 2	MUNICIPAL	DESTROYED	PCE	93.0	05/83	4.0	12/93	
			TCE	3.0	03/81	ND	05/92	
			CTC	0.2	10/80	ND	05/92	
			NO3	25.0	02/84	19.7	06/99	
			CLO4	NA	NA	NA	NA	
			AS	ND	06/90	ND	09/92	
SOUTH 1	MUNICIPAL	DESTROYED	PCE	96.0	05/83	3.4	12/93	
			TCE	0.7	12/82	ND	05/92	
			NO3	28.6	06/99	28.6	06/99	
			CLO4	NA	NA	NA	NA	
			AS	ND	06/90	ND	09/92	
ROY, RUTH								
NA	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
RURBAN HOMES MUTUAL WATER COMPANY								
NORTH 1	MUNICIPAL	ACTIVE	PCE	16.0	11/80	ND	03/15	VULNERABLE
			1,1-DCE	0.9	09/08	ND	03/15	(VOCS AND NO3)

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CF	0.8	02/02	ND	09/14	
			FREON 11	13.3	05/04	ND	03/15	
			FREON 113	64.4	05/04	ND	03/15	
			NO3	30.0	03/01	16.0	09/14	
			CLO4	ND	09/97	ND	09/14	
			AS	3.0	08/03	2.3	09/12	
			CR6	1.0	06/01	0.9	09/13	
SOUTH 2	MUNICIPAL	INACTIVE	PCE	24.3	02/81	ND	03/13	VULNERABLE
			1,1-DCE	1.7	10/08	ND	03/13	(VOCS AND NO3)
			CF	3.8	02/02	ND	09/12	
			FREON 11	14.1	05/04	ND	03/13	
			FREON 113	54.2	05/04	ND	03/13	
			MC	1.1	08/02	ND	09/12	
			NO3	38.2	03/07	21.0	03/13	
			CLO4	ND	09/97	ND	06/11	
			AS	3.0	08/03	2.1	09/12	
			CR6	1.0	06/01	ND	12/01	
SAN GABRIEL COUNTRY CLUB								
01	IRRIGATION	INACTIVE	VOCS	ND	05/85	ND	08/05	
			NO3	67.0	07/96	54.0	08/05	
			CLO4	8.5	07/97	5.4	08/05	
02	IRRIGATION	ACTIVE	VOCS	ND	05/87	ND	08/05	VULNERABLE
			NO3	23.0	10/02	20.3	08/05	(NO3)
			CLO4	1.4	12/97	1.1	08/05	
SAN GABRIEL COUNTY WATER DISTRICT								
05 BRA	MUNICIPAL	INACTIVE	TCE	0.9	01/97	ND	03/01	
			PCE	1.9	02/99	1.0	03/01	
			NO3	83.9	08/89	70.7	03/01	
			CLO4	ND	09/97	ND	09/00	
			AS	0.6	08/96	ND	08/98	
			CR6	7.0	12/00	7.0	12/00	
06 BRA	MUNICIPAL	DESTROYED	VOCS	ND	02/99	ND	02/99	
			NO3	108.9	08/72	57.6	03/00	
			CLO4	3.0	02/99	3.0	02/99	
07	MUNICIPAL	DESTROYED	VOCS	ND	09/89	ND	10/11	
			NO3	48.0	03/03	35.0	10/11	
			CLO4	5.6	03/03	ND	10/11	
			AS	1.3	08/96	ND	07/09	
			CR6	4.5	07/01	4.5	07/01	
08	MUNICIPAL	INACTIVE	VOCS	ND	01/90	ND	03/91	
			NO3	76.0	01/82	23.4	08/93	
			CLO4	NA	NA	NA	NA	
			AS	ND	06/78	ND	08/90	
09	MUNICIPAL	ACTIVE	PCE	2.1	07/14	1.7	01/15	VULNERABLE
			NO3	51.0	03/03	23.0	05/15	(NO3)
			CLO4	ND	09/97	ND	07/14	
			AS	ND	09/89	ND	07/09	
			CR6	8.1	12/02	5.9	08/13	
10	MUNICIPAL	INACTIVE	PCE	18.0	08/93	1.9	11/98	
			NO3	50.0	05/89	31.0	11/98	
			CLO4	5.5	11/98	5.5	11/98	
			AS	ND	06/78	ND	11/98	
11	MUNICIPAL	ACTIVE	PCE	2.6	01/15	2.6	01/15	VULNERABLE
			TCE	0.7	04/12	ND	01/15	(NO3)
			NO3	42.0	01/15	29.0	05/15	
			CLO4	ND	09/97	ND	07/14	
			AS	ND	06/78	ND	07/06	
			CR6	25.0	12/00	5.5	08/13	
12	MUNICIPAL	ACTIVE	TCE	0.8	09/02	ND	01/15	
			PCE	0.6	10/10	0.6	01/15	
			MC	0.6	05/90	ND	07/14	
			NO3	7.9	09/14	7.0	05/15	
			CLO4	ND	09/97	ND	07/14	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			AS	7.0	10/96	3.9	10/14	
			CR6	7.6	07/01	5.0	08/13	
14	MUNICIPAL	ACTIVE	PCE	0.6	09/02	ND	07/14	
			NO3	5.5	09/14	4.0	05/15	
			CLO4	ND	09/97	ND	07/14	
			AS	3.1	07/08	2.7	07/14	
			CR6	4.6	07/01	1.9	08/13	
15	MUNICIPAL	ACTIVE	PCE	1.0	04/15	1.0	04/15	VULNERABLE
			NO3	30.0	02/15	26.0	05/15	(NO3)
			CLO4	ND	12/14	ND	12/14	
			AS	ND	06/14	ND	06/14	
			CR6	3.6	11/14	3.6	11/14	
SAN GABRIEL VALLEY WATER COMPANY								
1B	MUNICIPAL	ACTIVE	PCE	46.0	04/81	ND	05/15	VULNERABLE
			TCE	1.8	02/80	ND	08/14	(VOCS)
			MC	7.1	04/87	ND	08/14	
			FREON 113	22.3	08/08	ND	05/15	
			NO3	22.4	05/08	16.0	05/15	
			CLO4	ND	08/97	ND	08/14	
			AS	2.9	07/96	2.3	08/14	
			CR6	1.0	05/14	1.0	05/14	
1C	MUNICIPAL	ACTIVE	VOCS	ND	07/98	ND	08/14	
			NO3	8.3	08/11	5.4	08/14	
			CLO4	ND	10/99	ND	08/14	
			AS	2.6	09/94	2.4	08/09	
			CR6	1.0	05/01	0.6	08/13	
1D	MUNICIPAL	ACTIVE	VOCS	ND	07/98	ND	08/14	
			NO3	5.0	07/89	3.3	11/14	
			CLO4	ND	08/97	ND	08/14	
			AS	2.0	11/06	ND	11/12	
			CR6	1.0	05/01	0.7	08/13	
1E	MUNICIPAL	ACTIVE	PCE	0.7	09/02	ND	05/15	VULNERABLE
			NO3	4.5	11/13	4.4	11/14	(CLO4)
			CLO4	5.0	06/00	ND	08/14	
			AS	2.7	11/08	2.0	11/14	
			CR6	1.0	05/01	0.7	08/13	
2C	MUNICIPAL	DESTROYED	TCE	15.2	12/80	ND	11/05	
			PCE	3.0	10/87	ND	11/05	
			NO3	16.4	08/04	5.2	08/05	
			CLO4	ND	08/97	ND	02/03	
			AS	ND	07/89	ND	08/05	
2D	MUNICIPAL	ACTIVE	TCE	25.0	12/80	ND	05/15	VULNERABLE
			PCE	0.7	01/88	ND	09/14	(VOCS)
			NO3	8.2	07/86	4.9	09/14	
			CLO4	ND	08/97	ND	09/14	
			AS	ND	07/89	ND	09/14	
			CR6	1.7	05/01	1.2	05/11	
2E	MUNICIPAL	ACTIVE	TCE	18.0	01/80	ND	05/15	VULNERABLE
			PCE	2.2	05/15	2.2	05/15	(VOCS)
			NO3	13.0	08/09	7.7	08/14	
			CLO4	ND	08/97	ND	08/14	
			AS	ND	07/89	ND	08/14	
			CR6	2.8	06/01	1.9	05/11	
2F	MUNICIPAL	ACTIVE	TCE	1.3	02/15	ND	05/15	
			NO3	5.3	08/10	4.0	08/14	
			CLO4	ND	09/06	ND	08/14	
			AS	0.7	03/06	ND	08/09	
			CR6	1.8	02/07	1.0	05/11	
8A	MUNICIPAL	INACTIVE	PCE	0.6	11/87	ND	02/97	
			NO3	40.2	02/97	40.2	02/97	
			CLO4	NA	NA	NA	NA	
			AS	ND	07/89	ND	07/89	
8B	MUNICIPAL	ACTIVE	PCE	220.0	02/09	110.0	05/15	VULNERABLE

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			TCE	1.1	11/10	0.9	05/15	(VOCS, NO3, AND CLO4)
			NO3	23.0	08/08	19.0	04/15	
			CLO4	3.0	08/97	ND	05/15	
			AS	0.4	07/96	ND	08/09	
			CR6	2.9	11/02	2.3	05/11	
8C	MUNICIPAL	ACTIVE	PCE	170.0	05/09	97.0	05/15	VULNERABLE
			TCE	0.8	05/09	0.7	05/15	(VOCS AND CLO4) (1,5)
			NO3	20.0	07/98	10.0	04/15	
			CLO4	4.0	03/08	ND	05/15	
			AS	0.5	07/96	ND	08/09	
			CR6	3.0	05/11	3.0	05/11	
8D	MUNICIPAL	ACTIVE	PCE	110.0	11/12	74.0	05/15	VULNERABLE
			TCE	0.9	02/14	0.7	05/15	(VOCS AND NO3) (1,5)
			C-1,2 DCE	0.8	05/04	ND	05/15	
			CTC	0.6	06/88	ND	05/15	
			NO3	29.0	06/09	20.0	05/15	
			CLO4	2.3	03/08	ND	05/15	
			AS	29.5	09/94	ND	05/14	
			CR6	3.3	11/00	2.7	05/11	
8E	MUNICIPAL	ACTIVE	PCE	10.0	03/03	ND	05/15	VULNERABLE
			NO3	7.2	07/01	ND	04/15	(VOCS) (1,5)
			CLO4	ND	08/97	ND	05/15	
			AS	2.8	08/95	ND	08/10	
			CR6	4.2	05/11	4.2	05/11	
8F	MUNICIPAL	ACTIVE	VOCS	ND	10/98	ND	05/15	
			NO3	19.0	11/10	ND	04/15	
			CLO4	ND	01/99	ND	05/15	
			AS	2.2	11/01	ND	11/10	
			CR6	6.1	11/00	5.8	05/11	
11A	MUNICIPAL	ACTIVE	PCE	1.5	02/08	ND	05/15	
			NO3	14.7	07/89	ND	11/14	
			CLO4	ND	08/97	ND	08/14	
			AS	3.9	07/96	2.9	08/09	
			CR6	6.8	05/01	5.8	05/11	
11B	MUNICIPAL	ACTIVE	PCE	17.8	04/90	ND	05/15	VULNERABLE
			TCE	4.0	04/90	ND	05/15	(VOCS) (1)
			1,1-DCE	0.2	04/89	ND	11/14	
			C-1,2-DCE	3.0	04/89	ND	05/15	
			NO3	18.3	08/06	6.7	11/14	
			CLO4	ND	06/97	ND	08/14	
			AS	4.8	09/94	2.5	11/09	
			CR6	6.1	11/00	5.3	05/11	
11C	MUNICIPAL	ACTIVE	PCE	4.1	12/91	ND	05/15	VULNERABLE
			TCE	0.6	12/91	ND	03/15	(VOCS)
			1,1-DCE	1.1	08/08	ND	08/14	
			C-1,2-DCE	2.5	03/92	ND	05/15	
			NO3	12.0	08/06	7.2	09/14	
			CLO4	ND	08/97	ND	08/14	
			AS	7.5	07/96	3.0	08/09	
			CR6	4.8	05/01	2.8	05/11	
B1	MUNICIPAL	INACTIVE	TCE	12.0	04/85	ND	08/06	
			PCE	7.3	05/88	ND	08/06	
			C-1,2-DCE	7.2	12/92	ND	08/06	
			1,1-DCE	2.1	08/89	ND	08/06	
			NO3	17.4	02/87	3.5	03/05	
			CLO4	ND	08/97	ND	02/03	
			AS	2.8	07/96	2.3	02/05	
B2	MUNICIPAL	INACTIVE	TCE	17.0	03/80	ND	11/98	
			PCE	15.8	06/80	0.7	11/98	
			CTC	1.7	05/82	ND	11/98	
			1,2-DCA	7.7	07/82	ND	11/98	
			1,1,1-TCA	7.6	07/82	ND	11/98	
			C-1,2-DCE	2.6	08/93	ND	11/98	
			NO3	8.7	11/98	8.7	11/98	
			CLO4	ND	11/98	ND	11/98	
B4B	MUNICIPAL	INACTIVE	TCE	25.2	02/08	25.2	02/08	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			PCE	43.0	11/07	5.8	02/08	
			CTC	10.0	11/03	6.6	02/08	
			1,2-DCA	1.0	09/07	0.5	02/08	
			1,1-DCE	3.2	11/07	2.3	02/08	
			C-1,2-DCE	4.2	11/07	2.7	02/08	
			NO3	13.1	11/07	13.1	11/07	
			CLO4	24.5	04/08	24.5	04/08	
			AS	6.3	08/95	2.0	02/08	
			CR6	4.1	05/01	4.1	05/01	
B4C	MUNICIPAL	INACTIVE	CTC	22.3	02/01	14.0	08/01	
			TCE	15.5	02/01	9.3	08/01	
			PCE	3.4	02/01	2.2	08/01	
			1,1-DCE	2.3	09/01	2.3	09/01	
			C-1,2-DCE	2.4	09/01	2.4	09/01	
			NO3	14.2	02/01	14.2	02/01	
			CLO4	6.0	06/00	ND	07/00	
			AS	5.8	08/95	ND	03/99	
			CR6	3.3	05/01	3.3	05/01	
B5A	MUNICIPAL	INACTIVE	PCE	17.5	03/91	ND	11/05	
			TCE	5.2	03/98	ND	11/05	
			1,1-DCE	2.5	03/85	ND	08/05	
			CTC	1.1	12/91	ND	11/05	
			1,1,1-TCA	3.7	03/90	ND	08/05	
			CF	1.4	08/01	1.1	08/05	
			NO3	46.1	07/96	25.3	11/05	
			CLO4	14.0	06/97	4.0	08/05	
			AS	2.8	07/96	2.0	08/05	
			CR6	6.4	11/00	6.2	05/01	
B5B	MUNICIPAL	ACTIVE	TCE	5.8	02/97	2.2	05/15	VULNERABLE
			PCE	3.9	02/09	2.3	05/15	(VOCS, NO3, AND CL04) (1,4)
			CTC	2.3	02/85	ND	05/15	
			1,2-DCA	0.6	09/07	ND	05/15	
			CF	2.4	01/07	ND	08/13	
			NO3	56.0	12/12	47.0	05/15	
			CLO4	12.0	06/97	8.2	05/15	
			AS	ND	07/89	ND	08/10	
			CR6	6.1	02/09	5.2	05/11	
B5C	MUNICIPAL	INACTIVE	VOCS	ND	05/89	ND	08/07	
			NO3	3.8	05/07	3.8	05/07	
			CLO4	ND	06/97	ND	03/08	
			AS	5.8	08/95	2.0	08/07	
			CR6	5.8	05/01	5.8	05/01	
B5D	MUNICIPAL	ACTIVE	CTC	1.0	04/13	0.9	05/15	VULNERABLE
			NO3	4.9	08/08	3.7	05/15	(VOCS) (1,4)
			CLO4	ND	12/97	ND	05/15	
			AS	2.4	09/10	2.4	09/10	
			CR6	4.6	05/01	2.6	05/11	
B5E	MUNICIPAL	ACTIVE	TCE	20.0	11/12	14.0	05/15	VULNERABLE
			PCE	3.7	03/15	2.8	05/15	(VOCS, NO3, AND CLO4) (1,4)
			CTC	5.2	05/07	2.3	05/15	
			CF	3.9	01/07	ND	08/14	
			NO3	23.0	08/07	20.0	05/15	
			CLO4	21.0	11/14	16.0	05/15	
			AS	3.0	08/07	2.5	08/10	
			CR6	7.0	02/09	5.9	05/11	
B6B	MUNICIPAL	DESTROYED	TCE	111.0	02/85	35.8	09/92	
			PCE	6.4	10/81	4.3	09/92	
			CTC	17.0	02/85	5.0	09/92	
			1,1-DCE	1.1	04/85	0.5	09/92	
			1,1-DCA	0.6	09/92	0.6	09/92	
			1,2-DCA	8.3	09/92	8.3	09/92	
			NO3	85.4	02/91	57.2	09/92	
			CLO4	NA	NA	NA	NA	
B6C	MUNICIPAL	ACTIVE	TCE	84.0	03/88	1.7	05/15	VULNERABLE
			PCE	12.0	11/81	ND	05/15	(VOCS, NO3, AND CLO4) (1,4)
			CTC	13.0	02/85	ND	05/15	
			1,2-DCA	9.0	05/88	ND	05/15	
			1,1-DCE	1.5	06/94	ND	05/15	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			C-1,2-DCE	6.2	04/88	ND	05/15	
			CF	1.7	04/04	ND	05/13	
			NO3	93.0	09/11	93.0	05/15	
			CLO4	370.0	11/05	19.0	05/15	
			AS	3.7	07/96	2.2	08/14	
			CR6	3.9	03/10	2.3	10/14	
B6D	MUNICIPAL	ACTIVE	TCE	140.0	05/11	8.3	05/15	VULNERABLE
			PCE	7.1	05/09	0.8	05/15	(VOCS, NO3, AND CLO4) (1,4)
			CTC	14.0	05/11	ND	05/15	
			1,1-DCA	1.1	05/09	ND	05/15	
			1,2-DCA	3.7	05/11	ND	05/15	
			1,1-DCE	1.0	08/08	ND	05/15	
			C-1,2-DCE	2.8	05/09	ND	05/15	
			CF	2.9	05/09	1.8	05/13	
			NO3	29.0	05/15	29.0	05/15	
			CLO4	390.0	11/05	8.1	05/15	
			AS	3.1	07/96	ND	08/14	
			CR6	2.9	10/14	2.9	10/14	
B7B	MUNICIPAL	DESTROYED	TCE	2.4	03/85	2.4	03/85	
			PCE	1.4	03/85	1.2	03/85	
			NO3	12.4	08/87	12.4	08/87	
			CLO4	NA	NA	NA	NA	
B7C	MUNICIPAL	ACTIVE	TCE	15.0	11/10	4.8	11/14	VULNERABLE
			PCE	35.0	03/03	15.0	11/14	(VOCS AND NO3) (1)
			1,1-DCE	6.7	12/89	2.9	11/14	
			C-1,2-DCE	4.7	12/93	0.9	11/14	
			CTC	0.6	02/89	ND	08/14	
			NO3	28.4	08/92	15.0	08/14	
			CLO4	ND	06/97	ND	08/14	
			AS	2.0	08/05	ND	08/14	
			CR6	5.0	05/01	3.5	05/11	
B7D	MUNICIPAL	INACTIVE	PCE	5.3	07/87	3.5	09/87	
			TCE	3.9	07/87	3.3	09/87	
			1,1-DCE	5.3	05/87	5.0	09/87	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
B7E	MUNICIPAL	ACTIVE	VOCS	ND	08/90	ND	08/14	
			NO3	16.0	11/08	2.8	05/15	
			CLO4	ND	06/97	ND	08/14	
			AS	4.6	03/97	3.1	05/15	
			CR6	3.4	05/01	3.0	05/11	
B8	MUNICIPAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
B9	MUNICIPAL	INACTIVE	TCE	37.0	02/85	34.7	01/87	
			PCE	4.9	01/87	4.9	01/87	
			CTC	8.3	01/87	8.3	01/87	
			NO3	84.7	02/86	68.1	02/87	
			CLO4	NA	NA	NA	NA	
B9B	MUNICIPAL	ACTIVE	VOCS	ND	06/87	ND	08/14	
			NO3	4.5	06/87	3.2	09/14	
			CLO4	1.2	03/08	ND	08/14	
			AS	3.5	08/95	ND	08/10	
			CR6	9.8	05/01	8.0	05/11	
B11A	MUNICIPAL	INACTIVE	TCE	9.8	08/01	5.8	08/04	
			PCE	21.7	05/92	8.5	08/04	
			1,1-DCE	14.0	08/01	2.8	08/04	
			CTC	0.9	01/88	ND	08/04	
			C-1,2-DCE	1.5	08/01	0.6	09/04	
			1,1-DCA	1.0	08/01	ND	08/04	
			NO3	37.7	03/00	36.5	08/04	
			CLO4	8.0	12/97	ND	08/04	
			AS	2.7	07/96	ND	09/02	
			CR6	10.0	06/01	10.0	06/01	
B11B	MUNICIPAL	ACTIVE	TCE	33.0	11/14	6.1	05/15	VULNERABLE
			PCE	34.5	06/92	4.9	05/15	(VOCS, NO3, AND CLO4) (1)

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			1,1-DCE	64.0	11/14	7.0	05/15	
			1,1-DCA	4.7	11/14	0.7	05/15	
			1,1,1-TCA	2.9	10/88	ND	08/14	
			C-1,2-DCE	5.1	11/14	0.9	05/15	
			NO3	46.0	11/14	19.0	05/15	
			CLO4	7.0	06/00	ND	01/15	
			AS	2.2	07/96	ND	08/14	
			CR6	10.3	05/01	8.9	05/11	
B24A	MUNICIPAL	ACTIVE	VOCS	ND	01/07	ND	05/15	
			NO3	13.0	02/15	13.0	02/15	
			CLO4	ND	01/07	ND	04/15	
			AS	2.3	09/14	2.3	09/14	
			CR6	1.2	08/13	1.2	08/13	
B24B	MUNICIPAL	ACTIVE	PCE	2.1	05/07	ND	05/15	
			TCE	0.7	05/07	ND	05/15	
			NO3	15.0	02/14	6.3	02/15	
			CLO4	ND	01/07	ND	04/15	
			AS	2.2	02/10	2.2	02/10	
			CR6	3.3	08/13	3.3	08/13	
B25A (SA3-1S)	MUNICIPAL	ACTIVE	TCE	60.3	02/08	49.0	05/15	VULNERABLE (VOCS, NO3, AND CLO4) (1,4)
			PCE	35.0	08/13	27.0	05/15	
			CTC	5.9	10/07	1.8	05/15	
			1,2-DCA	1.4	10/07	1.1	05/15	
			1,1-DCE	6.6	02/08	4.3	05/15	
			C-1,2-DCE	6.3	08/07	4.5	05/15	
			CF	2.0	08/14	1.8	11/14	
			NO3	78.0	05/09	57.0	05/15	
			CLO4	43.0	08/13	41.0	05/15	
			AS	3.2	03/10	3.2	03/10	
			CR6	3.2	08/14	3.2	08/14	
B25B (SA3-1D)	MUNICIPAL	ACTIVE	TCE	29.0	03/15	26.0	05/15	VULNERABLE (VOCs, NO3, AND CLO4) (1,4)
			PCE	9.1	02/15	8.5	05/15	
			CTC	10.0	09/04	5.5	05/15	
			1,1-DCA	1.2	10/07	ND	05/15	
			1,1-DCE	4.8	08/14	2.1	05/15	
			C-1,2-DCE	2.6	02/15	2.4	05/15	
			NO3	27.0	05/09	8.8	05/15	
			CLO4	15.0	05/15	15.0	05/15	
			AS	3.0	03/06	ND	03/10	
			CR6	2.4	08/06	2.3	08/14	
B26A (SA3-2S)	MUNICIPAL	ACTIVE	TCE	57.0	05/09	30.0	05/15	VULNERABLE (VOCs, NO3, AND CLO4) (1,4)
			PCE	6.8	12/10	2.4	05/15	
			CTC	5.4	12/10	1.3	05/15	
			1,1-DCA	0.8	05/09	ND	05/15	
			1,2-DCA	4.3	11/04	1.6	05/15	
			1,1-DCE	2.0	12/10	ND	05/15	
			C-1,2-DCE	3.3	05/06	1.2	05/15	
			CF	3.1	07/06	1.3	05/14	
			NO3	70.0	05/14	57.0	05/15	
			CLO4	87.0	07/06	40.0	05/15	
			AS	3.0	03/06	2.1	02/15	
			CR6	4.2	08/14	4.2	08/14	
B26B (SA3-2D)	MUNICIPAL	ACTIVE	TCE	70.0	03/15	65.0	05/15	VULNERABLE (VOCs, NO3, AND CLO4) (1,4)
			PCE	2.3	05/14	1.8	05/15	
			CTC	16.6	02/09	11.0	05/15	
			1,2-DCA	2.4	08/14	2.2	05/15	
			CF	2.0	05/14	2.0	05/14	
			NO3	16.0	05/14	15.0	05/15	
			CLO4	59.0	08/13	57.0	05/15	
			AS	2.9	11/04	2.1	02/15	
			CR6	3.7	02/06	3.1	08/14	
EW4-5	MUNICIPAL	INACTIVE	PCE	29.0	10/06	22.0	12/11	VULNERABLE (VOCS) (1)
			TCE	4.1	10/06	1.6	12/11	
			NO3	16.0	12/05	13.0	11/11	
			CLO4	ND	12/05	ND	11/11	
			AS	1.1	08/09	1.1	08/09	
EW4-6	MUNICIPAL	INACTIVE	PCE	8.1	06/06	4.7	12/11	VULNERABLE

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			TCE	1.1	10/06	0.7	12/11	(VOCS) (1)
			NO3	15.0	11/06	15.0	11/11	
			CLO4	ND	05/06	ND	11/11	
			AS	1.0	08/09	1.0	08/09	
EW4-7	MUNICIPAL	INACTIVE	PCE	8.2	01/06	2.0	12/11	VULNERABLE
			TCE	1.8	02/06	ND	12/11	(VOCS) (1)
			NO3	18.0	01/06	13.0	11/11	
			CLO4	ND	12/05	ND	11/11	
			AS	1.8	08/09	1.8	08/09	
G4A	MUNICIPAL	ACTIVE	PCE	9.4	05/14	5.7	05/15	VULNERABLE
			TCE	1.3	11/97	ND	05/15	(VOCS AND NO3) (1)
			NO3	28.0	05/14	23.0	05/15	
			CLO4	1.0	03/08	ND	02/15	
			AS	0.5	07/96	ND	11/09	
			CR6	4.4	11/00	3.9	08/14	
SIERRA LA VERNE COUNTRY CLUB								
01	IRRIGATION	ACTIVE	VOCS	ND	08/96	ND	10/07	
			NO3	10.5	05/99	ND	10/07	
			CLO4	ND	03/98	ND	03/98	
02	IRRIGATION	INACTIVE	MC	0.5	10/08	ND	10/10	
			NO3	17.4	08/96	ND	10/10	
			CLO4	28.0	03/98	ND	04/98	
SLOAN RANCHES								
01	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
02	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
SONOCO PRODUCTS COMPANY								
01	INDUSTRIAL	ACTIVE	TCE	28.6	12/99	0.6	12/05	VULNERABLE
			PCE	8.5	12/99	ND	12/05	(VOCS AND NO3)
			1,1-DCE	113.0	12/99	1.0	12/05	
			1,1,1-TCA	71.8	12/99	ND	12/05	
			CTC	1.2	07/96	ND	12/05	
			CF	1.4	07/04	0.6	12/05	
			NO3	72.8	12/05	72.8	12/05	
			CLO4	ND	06/98	ND	07/04	
02	INDUSTRIAL	ACTIVE	CTC	0.9	11/87	ND	12/05	VULNERABLE
			1,1,1-TCA	2.0	11/87	ND	12/05	(VOCS, NO3, AND CLO4)
			1,1-DCE	5.9	02/98	1.0	12/05	
			PCE	1.8	10/03	0.6	12/05	
			TCE	16.0	10/03	1.0	12/05	
			CF	1.4	09/02	1.2	12/05	
			NO3	74.5	12/05	74.5	12/05	
			CLO4	10.0	02/98	ND	07/04	
SOUTH COVINA WATER SERVICE								
102W-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
SOUTHERN CALIFORNIA EDISON COMPANY								
110RH	NON-POTABLE	INACTIVE	VOCS	ND	08/89	ND	02/07	
			NO3	8.9	02/07	8.9	02/07	
			CLO4	ND	11/97	ND	11/97	
			AS	ND	08/98	ND	08/98	
1EB86	NON-POTABLE	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
2EB76	IRRIGATION	DESTROYED	PCE	4.3	09/04	4.1	02/07	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			TCE	1.3	09/04	0.7	02/07	
			NO3	51.4	09/98	26.5	02/07	
			CLO4	2.0	11/97	2.0	11/97	
38EIS	NON-POTABLE	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
38W	NON-POTABLE	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
MURAT	IRRIGATION	DESTROYED	PCE	4.1	09/02	0.6	10/08	
			TCE	0.9	09/02	ND	10/08	
			NO3	26.9	09/04	14.0	10/08	
			CLO4	ND	04/98	ND	04/98	
			AS	ND	04/98	ND	04/98	
SOUTH PASADENA, CITY OF								
GRAV 2	MUNICIPAL	ACTIVE	PCE	16.0	07/08	9.0	05/15	VULNERABLE
			CTC	0.9	07/08	0.5	05/15	(VOCS, NO3, CLO4)
			NO3	58.2	04/87	49.0	05/15	
			CLO4	6.9	02/03	4.1	05/15	
			AS	0.7	07/96	ND	08/09	
			CR6	4.0	06/01	2.4	08/13	
WIL 2	MUNICIPAL	INACTIVE	PCE	23.0	01/88	9.1	03/01	
			TCE	4.6	03/00	4.6	03/01	
			NO3	86.8	03/00	77.9	02/01	
			CLO4	5.0	07/97	ND	12/99	
			AS	0.6	07/96	ND	08/99	
WIL 3	MUNICIPAL	ACTIVE	PCE	9.5	08/94	2.4	05/15	VULNERABLE
			TCE	1.9	04/13	1.7	05/15	(VOCS AND NO3)
			NO3	66.0	01/83	25.0	05/15	
			CLO4	ND	07/97	ND	05/15	
			AS	2.2	08/01	ND	08/10	
			CR6	3.0	08/13	3.0	08/13	
WIL 4	MUNICIPAL	ACTIVE	PCE	8.1	06/00	1.8	05/15	VULNERABLE
			TCE	2.1	05/07	0.86	05/15	(VOCS AND NO3)
			NO3	30.0	02/03	25.0	11/14	
			CLO4	ND	07/97	ND	05/15	
			AS	2.0	02/03	ND	05/15	
			CR6	3.9	06/01	3.5	08/13	
SPEEDWAY 605 INC.								
NA	NON-POTABLE	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
STERLING MUTUAL WATER COMPANY								
NEW SO.	MUNICIPAL	ACTIVE	VOCS	ND	06/91	ND	07/14	VULNERABLE
			NO3	35.0	02/10	19.0	07/14	(NO3)
			CLO4	ND	10/97	ND	07/14	
			AS	2.9	12/00	2.7	07/14	
			CR6	1.0	06/01	0.6	08/13	
NORTH	MUNICIPAL	ACTIVE	VOCS	ND	06/88	ND	07/14	VULNERABLE
			NO3	43.4	02/07	23.0	02/15	(NO3)
			CLO4	ND	09/97	ND	07/14	
			AS	4.6	08/95	2.9	05/14	
			CR6	1.0	06/01	0.8	08/13	
SOUTH	MUNICIPAL	DESTROYED	VOCS	ND	01/85	ND	06/91	
			NO3	16.2	03/91	14.0	05/12	
			CLO4	NA	NA	NA	NA	
			AS	2.6	08/11	2.6	08/11	
SUBURBAN WATER SYSTEMS								
101W-1	MUNICIPAL	DESTROYED	TCE	1.5	07/87	ND	08/89	
			NO3	54.2	08/89	54.2	08/89	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CLO4	NA	NA	NA	NA	
			AS	ND	02/88	ND	08/89	
102W-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
102W-2	MUNICIPAL	DESTROYED	TCE	2.0	01/80	ND	06/85	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
103W-1	MUNICIPAL	DESTROYED	TCE	2.5	06/80	ND	07/82	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
105W-1	MUNICIPAL	DESTROYED	PCE	1.4	01/96	1.4	01/96	
			NO3	46.2	04/95	46.2	04/95	
			CLO4	NA	NA	NA	NA	
			AS	ND	06/88	ND	06/94	
106W-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
111W-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	82.5	03/73	82.5	03/73	
			CLO4	NA	NA	NA	NA	
112W-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	99.2	07/69	99.2	07/69	
			CLO4	NA	NA	NA	NA	
113W-1	MUNICIPAL	DESTROYED	TCE	0.7	02/80	0.5	03/85	
			NO3	85.0	10/85	67.8	02/88	
			CLO4	NA	NA	NA	NA	
114W-1	MUNICIPAL	INACTIVE	TCE	2.9	01/80	ND	07/95	
			PCE	0.5	12/93	ND	07/95	
			NO3	46.7	08/91	39.8	04/95	
			CLO4	NA	NA	NA	NA	
			AS	ND	11/88	ND	11/94	
117W-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
120W-1	MUNICIPAL	DESTROYED	TCE	0.3	07/82	ND	08/96	
			NO3	66.0	07/88	60.5	08/96	
			CLO4	NA	NA	NA	NA	
121W-1	MUNICIPAL	ACTIVE	VOCS	ND	10/02	ND	06/13	VULNERABLE
			NO3	25.0	12/14	25.0	12/14	(NO3 AND CLO4)
			CLO4	8.5	12/14	8.5	12/14	
			AS	1.6	02/04	ND	08/14	
			CR6	9.6	02/05	6.4	04/13	
122W-1	MUNICIPAL	DESTROYED	TCE	2.6	08/96	2.6	08/96	
			NO3	90.0	05/86	60.7	08/96	
			CLO4	NA	NA	NA	NA	
			AS	3.0	08/79	ND	05/85	
123W-1	MUNICIPAL	DESTROYED	TCE	26.8	04/81	ND	08/96	
			PCE	33.0	04/81	ND	08/96	
			NO3	47.0	05/76	4.0	08/96	
			CLO4	NA	NA	NA	NA	
124W-1	MUNICIPAL	DESTROYED	TCE	0.5	06/83	ND	08/89	
			NO3	60.0	09/84	53.6	08/89	
			CLO4	NA	NA	NA	NA	
			AS	ND	06/80	ND	08/89	
125W-1	MUNICIPAL	DESTROYED	VOCS	ND	01/80	ND	09/81	
			NO3	30.0	05/76	21.0	05/79	
			CLO4	NA	NA	NA	NA	
125W-2	MUNICIPAL	INACTIVE	VOCS	ND	03/83	ND	07/95	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			NO3	50.0	08/87	40.6	03/95	
			CLO4	NA	NA	NA	NA	
			AS	ND	05/88	ND	08/94	
126W-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	18.0	05/75	18.0	05/75	
			CLO4	NA	NA	NA	NA	
126W-2	MUNICIPAL	INACTIVE	VOCS	ND	03/85	ND	08/00	
			NO3	38.8	07/91	34.9	03/01	
			CLO4	4.8	07/97	ND	01/98	
			AS	1.3	07/96	ND	08/00	
131W-1	MUNICIPAL	DESTROYED	TCE	56.0	10/93	56.0	10/93	
			PCE	227.0	04/80	52.0	10/93	
			CTC	2.7	10/93	2.7	10/93	
			1,1-DCE	40.0	10/93	40.0	10/93	
			1,1,1-TCA	5.3	10/93	5.3	10/93	
			NO3	62.0	09/81	55.3	10/93	
			CLO4	NA	NA	NA	NA	
133W-1	MUNICIPAL	DESTROYED	TCE	0.5	07/87	ND	08/89	
			CTC	0.5	08/89	0.5	08/89	
			NO3	49.1	08/89	47.8	09/89	
			CLO4	NA	NA	NA	NA	
			AS	ND	04/81	ND	08/89	
134W-1	MUNICIPAL	DESTROYED	TCE	56.0	10/93	56.0	10/93	
			PCE	0.1	12/80	ND	10/93	
			1,1-DCE	8.6	10/93	8.6	10/93	
			1,1,1-TCA	13.2	03/83	ND	10/93	
			NO3	43.0	06/87	40.9	10/93	
			CLO4	NA	NA	NA	NA	
			AS	ND	03/88	ND	07/89	
135W-1	MUNICIPAL	DESTROYED	TCE	0.8	03/85	0.3	05/85	
			NO3	59.0	02/86	47.5	09/86	
			CLO4	NA	NA	NA	NA	
136W-1	MUNICIPAL	DESTROYED	PCE	335.0	03/80	66.0	10/93	
			TCE	53.0	03/80	9.1	10/93	
			CTC	2.4	10/93	2.4	10/93	
			1,1-DCE	15.0	10/93	15.0	10/93	
			NO3	48.0	01/77	37.6	10/93	
			CLO4	NA	NA	NA	NA	
			AS	5.0	08/79	5.0	08/79	
139W-1	MUNICIPAL	DESTROYED	TCE	34.8	06/81	ND	01/97	
			PCE	5.0	02/88	ND	01/97	
			CTC	0.8	09/80	ND	07/96	
			NO3	99.2	05/94	92.9	07/96	
			CLO4	NA	NA	NA	NA	
			AS	3.6	07/95	2.6	07/96	
139W-2	MUNICIPAL	INACTIVE	TCE	18.7	09/80	ND	05/10	
			PCE	12.1	03/80	ND	05/10	
			CTC	0.8	09/80	ND	05/10	
			CF	0.6	10/08	ND	05/10	
			NO3	103.5	10/08	58.5	05/10	
			CLO4	34.0	10/08	15.0	05/10	
			AS	3.2	07/95	2.6	08/01	
139W-4	MUNICIPAL	STANDBY	TCE	4.7	04/97	ND	11/11	VULNERABLE
			MC	0.7	09/07	ND	11/11	(VOCS)
			NO3	52.0	11/11	50.0	12/14	
			CLO4	12.0	12/03	11.0	12/14	
			AS	1.5	07/96	ND	12/14	
			CR6	4.1	11/00	3.5	12/14	
139W-5	MUNICIPAL	INACTIVE	TCE	19.0	08/01	19.0	08/01	
			PCE	10.8	05/99	0.7	08/01	
			CTC	1.0	08/01	1.0	08/01	
			1,2-DCA	1.0	02/00	ND	08/01	
			MC	2.4	09/97	ND	08/01	
			NO3	36.5	06/01	36.5	10/09	
			CLO4	12.0	09/97	12.0	10/09	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			AS	1.6	07/96	ND	08/01	
139W-6	MUNICIPAL	INACTIVE	TCE	51.2	02/01	ND	05/10	
			PCE	2.8	02/01	ND	05/10	
			CTC	1.9	02/01	ND	05/10	
			1,2-DCA	1.6	02/01	ND	05/10	
			NO3	42.8	10/08	36.5	05/10	
			CLO4	35.4	11/00	2.0	05/10	
			AS	2.7	05/96	ND	05/99	
140W-1	MUNICIPAL	DESTROYED	TCE	1.0	01/80	1.0	01/80	
			NO3	86.9	04/73	68.0	05/75	
			CLO4	NA	NA	NA	NA	
			AS	ND	01/02	ND	01/02	
140W-3	MUNICIPAL	STANDBY	TCE	13.6	03/80	ND	12/11	VULNERABLE
			PCE	1.0	06/88	ND	12/11	(VOCS, NO3, AND CLO4)
			CTC	1.0	09/81	ND	12/11	
			1,1-DCE	1.1	10/09	ND	12/11	
			NO3	78.0	03/85	48.0	12/14	
			CLO4	16.0	12/05	5.9	12/14	
			AS	4.0	08/76	2.5	12/14	
			CR6	12.7	06/01	8.7	12/14	
140W-4	MUNICIPAL	INACTIVE	TCE	7.0	01/96	1.5	11/06	
			NO3	36.4	10/03	36.3	12/04	
			CLO4	12.6	10/03	11.6	12/04	
			AS	2.4	07/95	ND	12/04	
140W-5	MUNICIPAL	ACTIVE	TCE	21.0	02/91	3.7	05/15	VULNERABLE
			PCE	1.0	06/07	ND	05/15	(VOCS, NO3, CLO4)
			NO3	36.0	02/14	15.0	04/15	
			CLO4	15.0	10/12	8.2	05/15	
			AS	1.9	07/96	ND	11/09	
			CR6	9.8	02/05	6.8	04/13	
142W-1	MUNICIPAL	DESTROYED	VOCS	ND	02/80	ND	07/82	
			NO3	74.0	06/81	74.0	06/81	
			CLO4	NA	NA	NA	NA	
142W-2	MUNICIPAL	ACTIVE	VOCS	ND	03/04	ND	06/13	VULNERABLE
			NO3	15.0	03/14	13.0	12/14	(CLO4)
			CLO4	3.6	10/09	ND	12/14	
			AS	1.6	07/04	ND	02/12	
			CR6	12.0	02/05	6.8	04/13	
147W-1	MUNICIPAL	DESTROYED	TCE	23.0	03/85	23.0	03/85	
			PCE	1.2	03/85	1.2	03/85	
			NO3	100.0	03/85	100.0	03/85	
			CLO4	NA	NA	NA	NA	
147W-2	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	54.0	09/74	54.0	09/74	
			CLO4	NA	NA	NA	NA	
147W-3	MUNICIPAL	ACTIVE	TCE	4.1	01/92	2.4	05/15	VULNERABLE
			PCE	4.4	04/89	1.5	05/15	(VOCS AND CLO4)
			1,1-DCE	8.9	01/89	2.6	05/15	
			1,1-DCA	4.8	05/89	ND	05/15	
			NO3	19.8	09/88	9.0	05/15	
			CLO4	3.0	04/10	ND	05/15	
			AS	1.8	07/04	ND	08/14	
			CR6	13.0	04/05	9.6	04/13	
148W-1	MUNICIPAL	DESTROYED	TCE	0.8	06/80	ND	04/97	
			NO3	47.0	02/76	34.8	04/97	
			CLO4	NA	NA	NA	NA	
			AS	26.0	06/78	26.0	06/78	
149W-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
150W-1	MUNICIPAL	DESTROYED	TCE	6.0	09/81	ND	08/93	
			NO3	53.0	03/86	13.4	08/94	
			CLO4	NA	NA	NA	NA	

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			AS	ND	07/89	ND	08/94	
151W-1	MUNICIPAL	DESTROYED	VOCS	ND	01/80	ND	03/98	
			NO3	116.0	03/98	116.0	03/98	
			CLO4	21.6	03/98	21.6	03/98	
			AS	7.0	08/79	7.0	08/79	
151W-2	MUNICIPAL	ACTIVE	TCE	0.9	10/12	ND	05/15	
			NO3	8.6	05/15	3.1	05/15	
			CLO4	1.5	03/12	ND	05/15	
			AS	1.3	12/06	1.3	12/06	
			CR6	12.0	04/05	8.1	04/13	
152W-1	MUNICIPAL	DESTROYED	TCE	12.8	11/82	8.0	03/85	
			PCE	0.8	11/82	0.3	03/85	
			NO3	43.4	05/86	43.4	05/86	
			CLO4	NA	NA	NA	NA	
153W-1	MUNICIPAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
154W-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	81.0	05/79	81.0	05/79	
			CLO4	NA	NA	NA	NA	
155W-1	MUNICIPAL	INACTIVE	PCE	190.0	11/80	90.0	11/98	
			TCE	50.0	07/81	24.0	11/98	
			CTC	19.0	02/82	ND	11/98	
			1,1-DCE	16.0	03/85	13.0	11/98	
			NO3	60.0	11/80	49.8	11/98	
			CLO4	5.4	11/98	5.4	11/98	
			AS	4.0	08/76	ND	03/85	
155W-2	MUNICIPAL	DESTROYED	PCE	190.0	09/93	76.0	11/98	
			TCE	39.0	04/80	22.0	11/98	
			1,1-DCE	21.0	09/93	11.0	11/98	
			1,1-DCA	3.0	09/93	1.4	11/98	
			C-1,2-DCE	16.0	03/85	1.8	11/98	
			NO3	49.0	11/98	49.0	11/98	
			CLO4	4.3	11/98	ND	11/98	
157W-1	MUNICIPAL	DESTROYED	TCE	12.2	02/80	ND	03/85	
			NO3	58.0	02/86	58.0	02/86	
			CLO4	NA	NA	NA	NA	
201W-1	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
201W-2	MUNICIPAL	DESTROYED	TCE	6.8	04/89	1.7	08/06	
			PCE	3.9	09/88	1.4	08/06	
			1,1-DCE	3.2	08/89	ND	08/06	
			C-1,2-DCE	6.1	02/91	4.3	08/06	
			NO3	6.8	08/94	6.3	08/06	
			CLO4	ND	08/97	ND	09/03	
			AS	8.5	08/97	3.0	08/06	
201W-3	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
201W-4	MUNICIPAL	STANDBY	TCE	6.4	09/89	ND	02/09	
			PCE	4.1	09/88	ND	02/09	
			1,1-DCE	2.0	07/88	ND	02/09	
			C-1,2-DCE	5.2	05/97	ND	02/09	
			BF	4.7	11/07	2.2	02/09	
			DBCM	1.9	11/07	1.0	02/09	
			NO3	21.0	11/14	21.0	11/14	
			CLO4	ND	06/97	ND	07/14	
			AS	4.0	08/97	ND	06/14	
			CR6	1.9	05/01	ND	11/14	
201W-5	MUNICIPAL	DESTROYED	TCE	6.4	09/89	ND	03/08	
			PCE	3.8	09/89	ND	03/08	
			1,1-DCE	2.9	09/88	ND	03/08	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			C-1,2-DCE	4.9	08/88	ND	03/08	
			BDCM	1.7	11/07	ND	03/08	
			BF	6.4	11/07	0.6	03/08	
			DBCM	4.6	11/07	ND	03/08	
			NO3	12.0	08/94	12.0	08/07	
			CLO4	ND	06/97	ND	06/03	
			AS	8.9	09/89	4.0	09/05	
201W-6	MUNICIPAL	DESTROYED	TCE	3.9	05/88	ND	09/05	
			PCE	3.3	05/88	ND	09/05	
			1,1-DCE	3.2	09/88	ND	09/05	
			C-1,2-DCE	8.7	05/88	ND	09/05	
			NO3	20.0	06/85	7.7	05/05	
			CLO4	ND	06/97	ND	06/03	
			AS	9.2	08/95	2.0	09/04	
201W-7	MUNICIPAL	ACTIVE	PCE	0.6	08/08	ND	05/15	
			C-1,2-DCE	0.9	08/08	ND	05/15	
			NO3	14.0	08/09	12.0	08/14	
			CLO4	ND	08/08	ND	08/14	
			AS	2.0	08/08	ND	08/14	
			CR6	0.8	04/13	0.8	04/13	
201W-8	MUNICIPAL	ACTIVE	TCE	0.5	05/07	ND	05/15	
			C-1,2-DCE	1.1	05/07	ND	05/15	
			EBZ	0.8	07/06	ND	05/15	
			NO3	11.0	08/11	7.1	08/14	
			CLO4	2.1	07/06	ND	08/14	
			AS	2.7	08/09	2.7	08/09	
			CR6	1.1	05/07	0.9	04/13	
201W-9	MUNICIPAL	ACTIVE	PCE	0.9	04/12	ND	12/14	
			NO3	19.0	02/15	19.0	02/15	
			CLO4	ND	03/08	ND	08/14	
			AS	1.5	05/07	ND	02/14	
			CR6	0.6	04/13	0.6	04/13	
201W-10	MUNICIPAL	ACTIVE	TCE	1.4	09/07	ND	05/15	
			PCE	1.3	09/07	ND	05/15	
			C-1,2-DCE	3.0	09/07	ND	05/15	
			NO3	5.1	42138	5.1	05/15	
			CLO4	ND	09/07	ND	05/15	
			AS	2.1	09/07	ND	05/15	
			CR6	0.3	09/07	0.3	09/07	
202W-1	MUNICIPAL	DESTROYED	TCE	4.3	09/81	ND	01/89	
			PCE	15.0	10/88	12.1	01/89	
			NO3	24.0	07/87	23.0	10/88	
			CLO4	NA	NA	NA	NA	
			AS	ND	09/88	ND	09/88	
SUNNY SLOPE WATER COMPANY								
08	MUNICIPAL	ACTIVE	VOCS	ND	01/87	ND	03/15	VULNERABLE
			NO3	24.0	09/94	14.0	05/15	(NO3)
			CLO4	ND	07/97	ND	09/14	
			AS	ND	09/89	ND	09/14	
			CR6	7.1	12/00	5.2	09/13	
09	MUNICIPAL	ACTIVE	VOCS	ND	01/85	ND	03/15	VULNERABLE
			NO3	36.0	06/03	28.0	05/15	(NO3)
			CLO4	ND	07/97	ND	09/14	
			AS	3.6	08/96	ND	09/09	
			CR6	4.5	07/01	4.3	09/13	
10	MUNICIPAL	INACTIVE	VOCS	ND	01/85	ND	08/96	
			NO3	63.6	12/94	50.9	08/96	
			CLO4	NA	NA	NA	NA	
			AS	0.7	08/96	0.7	08/96	
13	MUNICIPAL	ACTIVE	VOCS	ND	08/96	ND	09/13	
			NO3	7.2	09/09	6.3	08/14	
			CLO4	ND	07/97	ND	09/13	
			AS	ND	08/96	ND	09/11	
			CR6	9.9	07/01	7.9	09/13	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
TAYLOR HERB GARDEN								
NA	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
TEXACO INC.								
14	INDUSTRIAL	DESTROYED	PCE	40.0	07/01	2.8	09/03	
			TCE	5.0	05/85	ND	09/03	
			1,2-DCA	0.6	01/96	ND	09/03	
			MC	4.6	04/87	ND	09/03	
			NO3	33.0	07/01	6.4	09/03	
			CLO4	ND	09/97	ND	09/97	
THOMPSON, EARL W.								
01	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
TOMOVICH (NICK) & SON								
NA	DOMESTIC	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
TYLER NURSERY								
NA	IRRIGATION	INACTIVE	TCE	12.9	12/99	1.2	09/04	
			PCE	44.6	12/99	1.2	09/04	
			1,1-DCE	0.6	09/02	ND	09/04	
			1,1-DCA	0.9	09/02	ND	09/04	
			C-1,2-DCE	8.7	09/02	ND	09/04	
			NO3	31.0	09/02	ND	09/04	
			CLO4	NA	NA	NA	NA	
UNITED CONCRETE PIPE CORPORATION								
NA	INDUSTRIAL	INACTIVE	VOCS	ND	08/89	ND	10/08	
			NO3	4.3	08/89	4.3	08/89	
			CLO4	NA	NA	NA	NA	
UNITED ROCK PRODUCTS CORPORATION								
IRW-1	INDUSTRIAL	ACTIVE	VOCS	ND	08/89	ND	10/09	
			NO3	6.4	07/96	2.5	10/09	
			CLO4	ND	02/98	ND	02/98	
			AS	ND	04/98	ND	04/98	
IRW-2	INDUSTRIAL	ACTIVE	VOCS	ND	07/96	ND	11/05	
			NO3	4.5	10/04	2.6	11/05	
			CLO4	ND	02/98	ND	02/98	
SIERRA	INDUSTRIAL	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
VALENCIA HEIGHTS WATER COMPANY								
01	MUNICIPAL	INACTIVE	MC	0.7	06/89	ND	07/09	
			NO3	46.5	04/99	32.6	07/07	
			CLO4	8.5	08/00	ND	07/09	
			AS	0.7	08/96	ND	07/07	
02	MUNICIPAL	INACTIVE	TCE	0.2	01/80	ND	07/08	
			NO3	53.7	07/97	27.0	07/06	
			CLO4	8.0	10/98	4.2	07/08	
			AS	0.9	08/96	ND	07/06	
03A	MUNICIPAL	INACTIVE	VOCS	ND	03/85	ND	03/92	
			NO3	34.8	09/89	12.1	08/92	
			CLO4	NA	NA	NA	NA	

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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
04	MUNICIPAL	INACTIVE	PCE	1.0	09/99	ND	09/01	
			NO3	90.0	11/97	78.0	03/02	
			CLO4	32.6	11/00	28.0	03/02	
			AS	2.2	07/00	ND	08/00	
			CR6	5.0	11/00	5.0	11/00	
05	MUNICIPAL	ACTIVE	VOCS	ND	06/90	ND	07/14	VULNERABLE
			NO3	42.0	08/12	37.0	05/15	(NO3 AND CLO4)
			CLO4	7.2	11/00	ND	05/15	
			AS	0.9	08/96	ND	08/12	
			CR6	1.7	08/13	1.7	08/13	
06	MUNICIPAL	ACTIVE	CF	13.0	12/02	ND	07/14	VULNERABLE
			NO3	49.3	06/04	44.0	05/15	(NO3 AND CLO4)
			CLO4	8.9	01/07	5.4	05/15	
			AS	ND	12/02	ND	10/14	
			CR6	8.0	12/02	2.2	08/13	
07	MUNICIPAL	ACTIVE	VOCS	ND	05/08	ND	07/14	VULNERABLE
			NO3	32.0	08/12	29.0	05/15	(NO3 AND CLO4)
			CLO4	5.4	10/12	ND	05/15	
			AS	ND	12/09	ND	08/12	
			CR6	1.2	08/13	1.2	08/13	
VALLEY COUNTY WATER DISTRICT								
ARROW	MUNICIPAL	INACTIVE	TCE	700.0	07/82	600.0	12/96	
			PCE	980.0	12/96	980.0	12/96	
			1,1-DCE	64.0	12/96	64.0	12/96	
			C-1,2-DCE	59.0	12/96	59.0	12/96	
			CTC	14.5	09/92	8.0	12/96	
			1,2-DCA	9.0	02/92	7.3	12/96	
			1,1,1-TCA	45.0	12/96	45.0	12/96	
			1,1-DCA	2.9	02/95	2.7	12/96	
			NO3	26.4	08/96	26.4	08/96	
			CLO4	NA	NA	NA	NA	
			AS	1.5	08/96	1.5	08/96	
B DALTON	MUNICIPAL	INACTIVE	TCE	137.0	04/85	ND	05/11	
			PCE	8.0	04/85	ND	05/11	
			1,1-DCA	0.9	05/96	ND	05/11	
			C-1,2-DCE	2.0	11/95	ND	05/11	
			CTC	9.9	04/85	ND	05/11	
			1,2-DCA	11.0	12/98	ND	05/11	
			NO3	72.0	10/09	72.0	05/11	
			CLO4	99.1	12/98	11.0	05/11	
			AS	5.0	11/95	2.7	09/07	
E NIXON (E JOAN)	MUNICIPAL	ACTIVE	TCE	7.0	11/08	1.7	10/14	VULNERABLE
			PCE	11.0	10/04	4.3	10/14	(VOCS) (1)
			1,1-DCE	1.3	10/04	ND	10/14	
			C-1,2-DCE	1.7	10/04	ND	10/14	
			NO3	13.6	02/05	8.4	10/14	
			CLO4	ND	05/97	ND	10/14	
			AS	3.0	08/06	2.0	10/12	
			CR6	1.0	05/01	0.3	08/13	
E MAINE	MUNICIPAL	ACTIVE	TCE	36.0	10/04	0.82	05/15	VULNERABLE
			PCE	110.0	10/04	1.7	05/15	(VOCs AND CLO4) (1)
			1,1-DCE	10.1	02/91	ND	05/15	
			1,2-DCA	1.4	10/04	ND	05/15	
			1,1,1-TCA	9.1	02/91	ND	05/15	
			C-1,2-DCE	13.0	06/03	ND	05/15	
			CF	1.1	10/04	ND	11/14	
			NO3	21.0	02/11	10.0	05/15	
			CLO4	7.8	10/04	ND	05/15	
			AS	4.4	08/89	2.0	03/15	
			CR6	1.0	05/01	0.4	08/13	
LANTE (SA1-3)	MUNICIPAL	ACTIVE	TCE	1315.0	04/98	15.0	05/15	VULNERABLE
			PCE	1200.0	11/96	36.0	05/15	(VOCS, NO3, AND CLO4) (1,4)
			1,1-DCE	110.0	11/96	3.4	05/15	
			C-1,2-DCE	90.0	11/96	0.9	05/15	
			T-1,2-DCE	110.0	04/85	ND	05/15	
			1,1-DCA	18.0	08/04	ND	05/15	
			1,2-DCA	12.5	01/92	ND	05/15	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CTC	17.6	01/92	ND	05/15	
			1,1,1-TCA	170.0	04/85	ND	05/15	
			MC	24.4	05/87	ND	05/15	
			CF	3.2	05/06	1.1	08/14	
			o-DCB	0.6	08/04	ND	05/15	
			p-DCB	3.1	08/04	ND	05/15	
			NO3	45.0	05/15	43.0	05/15	
			CLO4	94.0	04/98	7.4	05/15	
			AS	2.4	01/05	ND	04/15	
			CR6	18.0	01/05	2.3	08/13	
MORADA	MUNICIPAL	INACTIVE	TCE	770.0	03/80	ND	05/11	
			PCE	100.0	02/85	2.2	05/11	
			CTC	29.0	04/84	ND	05/11	
			1,1-DCE	2.5	04/88	ND	05/11	
			1,1-DCA	8.5	02/85	ND	05/11	
			1,2-DCA	0.7	04/88	ND	05/11	
			C-1,2-DCE	8.1	08/95	ND	05/11	
			CF	1.7	10/08	ND	05/11	
			NO3	110.8	11/90	85.5	05/11	
			CLO4	21.0	02/04	11.0	05/11	
			AS	3.6	08/95	3.6	08/95	
PADDY LN	MUNICIPAL	INACTIVE	TCE	166.0	04/94	29.0	05/11	
			PCE	42.0	11/93	3.5	05/11	
			CF	4.9	05/10	1.8	05/11	
			CTC	15.0	12/87	1.0	05/11	
			1,1-DCE	17.2	11/93	1.6	05/11	
			C-1,2-DCE	23.8	11/93	1.9	05/11	
			1,2-DCA	6.6	02/04	2.6	05/11	
			NO3	63.0	05/10	39.6	05/11	
			CLO4	154.0	02/98	38.0	05/11	
			AS	ND	06/80	ND	11/94	
PALM	MUNICIPAL	INACTIVE	CTC	48.0	07/82	0.8	02/04	
			TCE	56.0	02/04	56.0	02/04	
			PCE	51.0	02/04	51.0	02/04	
			CF	0.7	02/04	0.7	02/04	
			C-1,2-DCE	7.1	02/04	7.1	02/04	
			1,1,1-TCA	1.8	02/04	1.8	02/04	
			NO3	11.0	12/94	10.0	02/04	
			CLO4	5.6	02/04	5.6	02/04	
			AS	ND	10/87	ND	11/92	
W NIXON (W JOAN)	MUNICIPAL	ACTIVE	TCE	4.0	11/04	1.4	05/15	VULNERABLE (VOCS) (1)
			PCE	8.0	11/04	3.4	05/15	
			MC	1.6	05/89	ND	05/15	
			NO3	8.5	08/13	8.0	05/15	
			CLO4	ND	05/97	ND	05/15	
			AS	3.1	08/95	ND	03/15	
			CR6	1.0	05/01	0.3	08/13	
W MAINE	MUNICIPAL	ACTIVE	TCE	47.3	02/91	1.9	05/15	VULNERABLE (VOCS AND CLO4) (1)
			PCE	70.0	02/03	3.7	05/15	
			1,1-DCE	14.2	02/91	ND	05/15	
			1,2-DCA	0.8	08/04	ND	05/15	
			1,1,1-TCA	10.6	02/91	ND	05/15	
			C-1,2-DCE	9.0	02/03	ND	05/15	
			NO3	20.8	05/90	9.9	05/15	
			CLO4	6.3	10/04	ND	05/15	
			AS	2.6	07/96	2.1	03/15	
			CR6	1.0	05/01	0.4	08/13	
SA1-1	MUNICIPAL	ACTIVE	TCE	34.0	07/05	ND	05/15	VULNERABLE (VOCS, NO3, AND CLO4) (1,4)
			PCE	47.0	04/07	1.3	05/15	
			1,1-DCA	11.0	07/05	ND	04/15	
			1,1-DCE	110.0	07/05	ND	04/15	
			1,2-DCA	1.0	07/05	ND	04/15	
			C-1,2-DCE	4.1	07/05	ND	04/15	
			1,1,1-TCA	6.0	05/06	ND	04/15	
			CF	1.6	12/04	ND	11/14	
			MC	2.2	04/07	ND	04/15	
			FREON 11	5.8	02/12	ND	04/15	
			NO3	87.0	01/05	63.0	04/15	
			CLO4	17.0	01/05	7.6	04/15	
			AS	1.3	06/03	ND	02/15	

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
			CR6	2.4	03/06	1.7	11/14	
SA1-2	MUNICIPAL	STANDBY	TCE	25.0	04/06	2.0	12/09	VULNERABLE
			PCE	37.0	05/06	4.8	12/09	(VOCS, NO3, AND CLO4) (1,4)
			1,1-DCA	8.7	07/05	ND	12/09	
			1,1-DCE	62.0	04/06	1.2	12/09	
			1,2-DCA	1.0	07/05	ND	12/09	
			C-1,2-DCE	6.2	07/05	ND	12/09	
			1,1,1-TCA	2.2	05/06	ND	12/09	
			CF	1.3	05/06	ND	12/09	
			NO3	72.0	03/05	72.0	05/12	
			CLO4	15.0	03/05	11.0	12/09	
			AS	2.0	03/06	ND	02/09	
			CR6	2.6	03/06	2.0	09/07	
VALLEY VIEW MUTUAL WATER COMPANY								
01	MUNICIPAL	ACTIVE	VOCS	ND	06/89	ND	09/10	
			NO3	6.4	09/09	5.7	09/10	
			CLO4	ND	08/97	ND	09/10	
			AS	3.0	09/07	ND	09/10	
			CR6	1.0	11/00	1.0	05/01	
02	MUNICIPAL	ACTIVE	VOCS	ND	06/88	ND	09/14	
			NO3	7.7	09/09	6.5	09/14	
			CLO4	ND	08/97	ND	09/14	
			AS	2.0	09/96	ND	12/10	
			CR6	2.5	05/01	0.6	09/13	
03	MUNICIPAL	INACTIVE	TCE	1.3	01/80	ND	03/98	
			NO3	26.9	03/98	26.9	03/98	
			CLO4	18.6	03/98	18.6	03/98	
VIA TRUST								
01	NON-POTABLE	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
VULCAN MATERIALS COMPANY (CALMAT COMPANY)								
DUR E	INDUSTRIAL	ACTIVE	TCE	32.0	11/04	ND	10/10	VULNERABLE
			PCE	27.0	11/04	0.9	10/10	(VOCS)
			1,1-DCE	5.3	11/04	ND	10/10	
			C-1,2-DCE	2.8	11/04	ND	10/10	
			1,1,1-TCA	0.7	11/04	ND	10/10	
			CF	0.7	11/04	ND	10/10	
			MC	1.1	10/06	ND	10/10	
			NO3	16.2	10/04	7.2	10/10	
			CLO4	ND	04/98	ND	10/08	
			AS	ND	04/98	ND	04/98	
DUR W	INDUSTRIAL	ACTIVE	PCE	0.8	02/07	ND	10/09	
			NO3	16.0	07/01	14.0	10/09	
			CLO4	4.0	05/98	4.0	05/98	
			AS	2.9	05/98	2.9	05/98	
REL 1	INDUSTRIAL	ACTIVE	VOCS	ND	05/94	ND	10/10	
			NO3	6.5	09/02	ND	10/10	
			CLO4	ND	05/98	ND	05/98	
			AS	4.8	05/94	3.5	07/94	
WADE, RICHARD I.								
NA	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
WEST COVINA VENTURE LIMITED								
NA	NA	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
WHITTIER, CITY OF								

APPENDIX C
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WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
09	MUNICIPAL	DESTROYED	TCE	1.4	04/85	ND	08/89	
			PCE	1.9	10/88	0.6	08/89	
			NO3	8.8	08/89	8.8	08/89	
			CLO4	NA	NA	NA	NA	
			AS	ND	07/74	ND	08/89	
10	MUNICIPAL	DESTROYED	VOCS	NA	NA	NA	NA	
			NO3	6.6	01/74	6.6	01/74	
			CLO4	NA	NA	NA	NA	
11	MUNICIPAL	DESTROYED	VOCS	ND	06/87	ND	11/90	
			NO3	10.1	01/90	10.1	01/90	
			CLO4	NA	NA	NA	NA	
			AS	ND	04/80	ND	08/89	
12	MUNICIPAL	INACTIVE	TCE	1.5	07/88	1.5	07/88	
			PCE	0.7	07/88	0.7	07/88	
			NO3	10.0	12/84	8.5	12/85	
			CLO4	NA	NA	NA	NA	
13	MUNICIPAL	ACTIVE	PCE	4.9	11/87	ND	03/15	VULNERABLE
			TCE	1.1	06/87	ND	03/15	(VOCS) (3)
			MTBE	6.4	03/02	ND	03/15	
			NO3	17.0	03/11	11.0	05/15	
			CLO4	ND	08/97	ND	09/14	
			AS	4.1	03/02	ND	03/14	
			CR6	1.0	05/01	0.2	09/13	
15	MUNICIPAL	ACTIVE	PCE	9.4	03/03	ND	05/15	VULNERABLE
			TCE	0.7	09/04	ND	05/15	(VOCS) (3)
			C-1,2-DCE	2.5	12/93	ND	03/15	
			NO3	13.0	08/89	6.0	09/14	
			CLO4	ND	08/97	ND	09/14	
			AS	3.5	03/02	ND	09/10	
			CR6	2.2	10/00	0.4	09/13	
16	MUNICIPAL	ACTIVE	PCE	3.4	12/02	0.92	05/15	VULNERABLE
			TCE	1.4	01/97	ND	05/15	(VOCS) (3)
			C-1,2-DCE	2.5	10/96	ND	03/15	
			NO3	11.0	03/11	6.0	03/15	
			CLO4	ND	08/97	ND	09/14	
			AS	5.8	03/02	ND	03/14	
			CR6	2.5	05/01	1.6	09/13	
17	MUNICIPAL	INACTIVE	PCE	12.0	12/02	3.3	09/08	
			TCE	2.2	05/92	0.5	09/08	
			C-1,2-DCE	1.2	04/95	ND	09/08	
			NO3	13.0	03/03	9.1	03/08	
			CLO4	ND	08/97	ND	09/08	
			AS	3.4	03/02	ND	03/06	
			CR6	1.6	10/00	1.6	05/01	
18	MUNICIPAL	ACTIVE	PCE	9.2	09/08	3.4	05/15	VULNERABLE
			TCE	2.4	11/95	0.8	05/15	(VOCS AND NO3)
			C-1,2-DCE	0.7	10/96	ND	03/15	
			NO3	14.7	03/05	11.0	03/15	
			CLO4	ND	08/97	ND	09/14	
			AS	4.1	03/02	ND	03/15	
			CR6	1.0	10/00	0.8	09/13	
WILMOTT, ERMA M.								
01	DOMESTIC	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
WOODLAND, RICHARD								
01	NON-POTABLE	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
02	NON-POTABLE	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	

APPENDIX C
HIGHLIGHTS OF VOLATILE ORGANIC COMPOUNDS, NITRATE, AND PERCHLORATE CONCENTRATIONS AND WELLS VULNERABLE TO CONTAMINATION (AS OF MAY 31, 2015)

WELL NAME	USAGE	STATUS	CONCENTRATION (NO3 IN MG/L, OTHERS IN UG/L)					REMARKS
			CONTAMINANT OF CONCERN	HISTORIC HIGH		MOST RECENT		
				VALUE	DATE	VALUE	DATE	
WORKMAN MILL INVESTMENT COMPANY (ROSE HILLS MEMORIAL PARK)								
04	IRRIGATION	ACTIVE	PCE	5.3	08/87	ND	10/09	VULNERABLE
			TCE	11.0	04/85	ND	10/09	(VOCS AND NO3)
			1,1-DCE	14.0	04/85	ND	10/09	
			1,1,1-TCA	3.3	04/85	ND	10/09	
			NO3	52.8	02/07	43.0	10/10	
			CLO4	ND	06/98	ND	06/98	
01	IRRIGATION	INACTIVE	VOCS	NA	NA	NA	NA	
			NO3	NA	NA	NA	NA	
			CLO4	NA	NA	NA	NA	
02	IRRIGATION	INACTIVE	PCE	8.6	04/85	ND	10/04	
			TCE	11.0	04/85	ND	10/04	
			NO3	91.4	10/04	91.4	10/04	
			CLO4	ND	06/98	ND	06/98	
01	IRRIGATION	INACTIVE	TCE	6.1	04/87	ND	10/10	
			PCE	6.4	11/87	1.1	10/10	
			1,2-DCA	0.8	01/96	ND	10/10	
			1,1-DCE	1.0	04/87	ND	10/10	
			C-1,2-DCE	2.6	05/85	ND	10/10	
			NO3	45.2	02/98	31.0	10/10	
			CLO4	ND	02/98	ND	02/98	
			AS	3.0	06/95	2.1	06/96	
03	IRRIGATION	ACTIVE	TCE	21.0	05/85	ND	09/05	VULNERABLE
			PCE	7.4	05/85	ND	09/05	(VOCS AND NO3)
			1,1-DCE	2.7	05/85	ND	09/05	
			C-1,2-DCE	28.0	05/85	ND	09/05	
			1,1-DCA	1.1	05/85	ND	09/05	
			1,1,1-TCA	7.5	05/85	ND	09/05	
			NO3	46.4	08/00	25.7	09/05	
			CLO4	ND	02/98	ND	02/98	

NOTES

CONTAMINANT	MAXIMUM CONTAMINANT LEVEL	REPORTING LIMIT
1,1-Dichloroethane (1,1-DCA)	5 micrograms per liter (ug/L)	0.5 ug/L
1,1-Dichloroethylene (1,1-DCE)	6 ug/L	0.5 ug/L
1,1,1-Trichloroethane (1,1,1-TCA)	200 ug/L	0.5 ug/L
1,1,2,2-Tetrachloroethane (1,1,2,2-PCA)	1 ug/L	0.5 ug/L
1,2-Dichloroethane (1,2-DCA)	0.5 ug/L	0.5 ug/L
Arsenic (AS)	10 ug/L	2.0 ug/L
Bromodichloromethane	80 ug/L	0.5 ug/L
Bromoform (BF)	80 ug/L	0.5 ug/L
Chloroform (CF)	80 ug/L	0.5 ug/L
Perchlorate (CLO4)	6 ug/L	4.0 ug/L
Carbon Tetrachloride (CTC)	0.5 ug/L	0.5 ug/L
Cis-1,2-Dichloroethylene (c-1,2-DCE)	6 ug/L	0.5 ug/L
Hexavalent Chromium (CR6)	10 ug/L	1.0 ug/L
Dibromochloromethane	80 ug/L	0.5 ug/L
Ethylbenzene	300 ug/L	0.5 ug/L
Trichlorofluoromethane (Freon 11)	150 ug/L	5.0 ug/L
Trichlorotrifluoroethane (Freon 113)	1200 ug/L	10.0 ug/L
Methylene Chloride (MC)	5 ug/L	0.5 ug/L
Methyl Tert-Butyl Ether (MTBE)	13 ug/L	3.0 ug/L
Nitrate as Nitrate (NO3)	45 milligrams per liter (mg/L)	2.0 mg/L
1,2-Dichlorobenzene (1,2-DCB)	600 ug/L	0.5 ug/L
1,4-Dichlorobenzene (1,4-DCB)	5 ug/L	0.5 ug/L
Tetrachloroethylene (PCE)	5 ug/L	0.5 ug/L
Trichloroethylene (TCE)	5 ug/L	0.5 ug/L
Trans-1,2-Dichloroethylene (t-1,2-DCE)	10 ug/L	0.5 ug/L
Vinyl Chloride (VC)	0.5 ug/L	0.5 ug/L

REMARKS

(1)	Existing VOC treatment
(2)	VOC treatment under construction
(3)	VOC treatment proposed
(4)	Existing CLO4 treatment
(5)	CLO4 treatment proposed
NA	Not Available
ND	Not Detected above Reporting Limit
NL	Notification Level
VOCS	Volatile Organic Compounds

APPENDIX D.

Potential Sites for Aquifer Performance Tests

APPENDIX D

POTENTIAL SITES FOR AQUIFER PERFORMANCE TESTS

NAME	RECORD.	USAGE	STATUS	PERF. (1)	FUNCTION	REMARKS
ALHAMBRA, CITY OF						
LON 1	1902789	MUNICIPAL	ACTIVE	411-800	MONITORING	
LON 2	1900017	MUNICIPAL	ACTIVE	296-563	PUMPING	
AZUSA, CITY OF						
NO. 12	8000179	MUNICIPAL	ACTIVE	206-311	PUMPING	
NO. 11	8000178	MUNICIPAL	ACTIVE	200-320	MONITORING	
CALIFORNIA AMERICAN WATER COMPANY/DUARTE						
B V	1900035	MUNICIPAL	ACTIVE	300-580	PUMPING	
B V 2	8000216	MUNICIPAL	ACTIVE	300-700	MONITORING	
CALIFORNIA DOMESTIC WATER COMPANY						
05A	8000100	MUNICIPAL	ACTIVE	?-920	PUMPING	
06	1902967	MUNICIPAL	ACTIVE	200-800	MONITORING	
CHAMPION MUTUAL WATER COMPANY						
01	1900908	MUNICIPAL	INACTIVE	100-130	MONITORING	
02	1902816	MUNICIPAL	ACTIVE	152-265	PUMPING	
03	8000121	MUNICIPAL	ACTIVE	107-299	MONITORING	
GLENDORA, CITY OF						
05-E	8000149	MUNICIPAL	ACTIVE	150-400	PUMPING	
NA	1903119	INDUSTRIAL	INACTIVE	?-220	MONITORING	OWL ROCK PRODUCTS WELL
GOLDEN STATE WATER COMPANY (SOUTHERN CALIFORNIA WATER COMPANY)/SAN DIMAS DISTRICT						
COL-4	1902268	MUNICIPAL	INACTIVE	122-190	PUMPING	
COL-6	1902270	MUNICIPAL	INACTIVE	?-414	MONITORING	
GOLDEN STATE WATER COMPANY (SOUTHERN CALIFORNIA WATER COMPANY)/SAN GABRIEL VALLEY DISTRICT						
FAR 1	1902034	MUNICIPAL	ACTIVE	274-455	PUMPING	
FAR 2	1902948	MUNICIPAL	ACTIVE	229-600	MONITORING	
SG 1	1900510	MUNICIPAL	ACTIVE	190-411	MONITORING	
SG 2	1900511	MUNICIPAL	ACTIVE	209-393	PUMPING	
RURBAN HOMES MUTUAL WATER COMPANY						
NORTH 1	1900120	MUNICIPAL	ACTIVE	140-190	MONITORING	
SOUTH 2	1900121	MUNICIPAL	ACTIVE	125-165	PUMPING	
SAN GABRIEL COUNTY WATER DISTRICT						
05 BRA	1901669	MUNICIPAL	INACTIVE	450-800	MONITORING	
11	8000067	MUNICIPAL	ACTIVE	350-800	PUMPING	
12	8000123	MUNICIPAL	ACTIVE	470-1320	MONITORING	
SAN GABRIEL VALLEY WATER COMPANY						
B24A	8000203	MUNICIPAL	ACTIVE	600-1150	PUMPING	
B24B	8000204	MUNICIPAL	ACTIVE	600-1150	MONITORING	

APPENDIX D

POTENTIAL SITES FOR AQUIFER PERFORMANCE TESTS

NAME	RECORD.	USAGE	STATUS	PERF. (1)	FUNCTION	REMARKS
SUBURBAN WATER SYSTEMS						
201W-9	8000208	MUNICIPAL	ACTIVE	260-650	PUMPING	
201W-7	8000195	MUNICIPAL	ACTIVE	200-650	MONITORING	
201W-8	8000198	MUNICIPAL	ACTIVE	200-650	MONITORING	
201W-10	8000210	MUNICIPAL	ACTIVE	NA	MONITORING	
VALLEY COUNTY WATER DISTRICT						
E NIXON (JOANBRIDGE)	1900032	MUNICIPAL	ACTIVE	300-586	MONITORING	ALTERNATE FOR MAINE SITE
W NIXON (JOANBRIDGE)	1902356	MUNICIPAL	ACTIVE	300-584	PUMPING	
E MAINE	1900027	MUNICIPAL	ACTIVE	250-580	PUMPING	ALTERNATE FOR NIXON SITE
W MAINE	1900028	MUNICIPAL	ACTIVE	250-580	MONITORING	
VALLEY VIEW MUTUAL WATER COMPANY						
01	1900363	MUNICIPAL	ACTIVE	300-585	MONITORING	
02	1900364	MUNICIPAL	ACTIVE	300-535	PUMPING	
03	1900365	MUNICIPAL	INACTIVE	100-200	MONITORING	
VULCAN MATERIALS COMPANY (CALMAT COMPANY)						
DUR E	1902920	INDUSTRIAL	ACTIVE	238-484	PUMPING	
DUR W	8000063	INDUSTRIAL	ACTIVE	?-525	MONITORING	
WORKMAN MILL INVESTMENT COMPANY (ROSE HILLS MEMORIAL PARK)						
01	1900094	IRRIGATION	INACTIVE	137-264	PUMPING	
ROSE HILLS	8000004	MUNICIPAL	INACTIVE	?-200	MONITORING	BEVERLY ACRES MWC

NOTES

NA: NOT AVAILABLE
RECORD.: RECORDATION NUMBER
PERF.: PERFORATION INTERVAL
(1) TOP OF THE TOP INTERVAL - BOTTOM OF THE BOTTOM INTERVAL (DEPTH BELOW GROUND SURFACE IN FEET)

APPENDIX E.

Summary of Treatment Facility Activity in the Main San Gabriel Basin

APPENDIX E

SUMMARY OF TREATMENT FACILITY ACTIVITY
IN THE MAIN SAN GABRIEL BASIN
AS OF JUNE 30, 2015

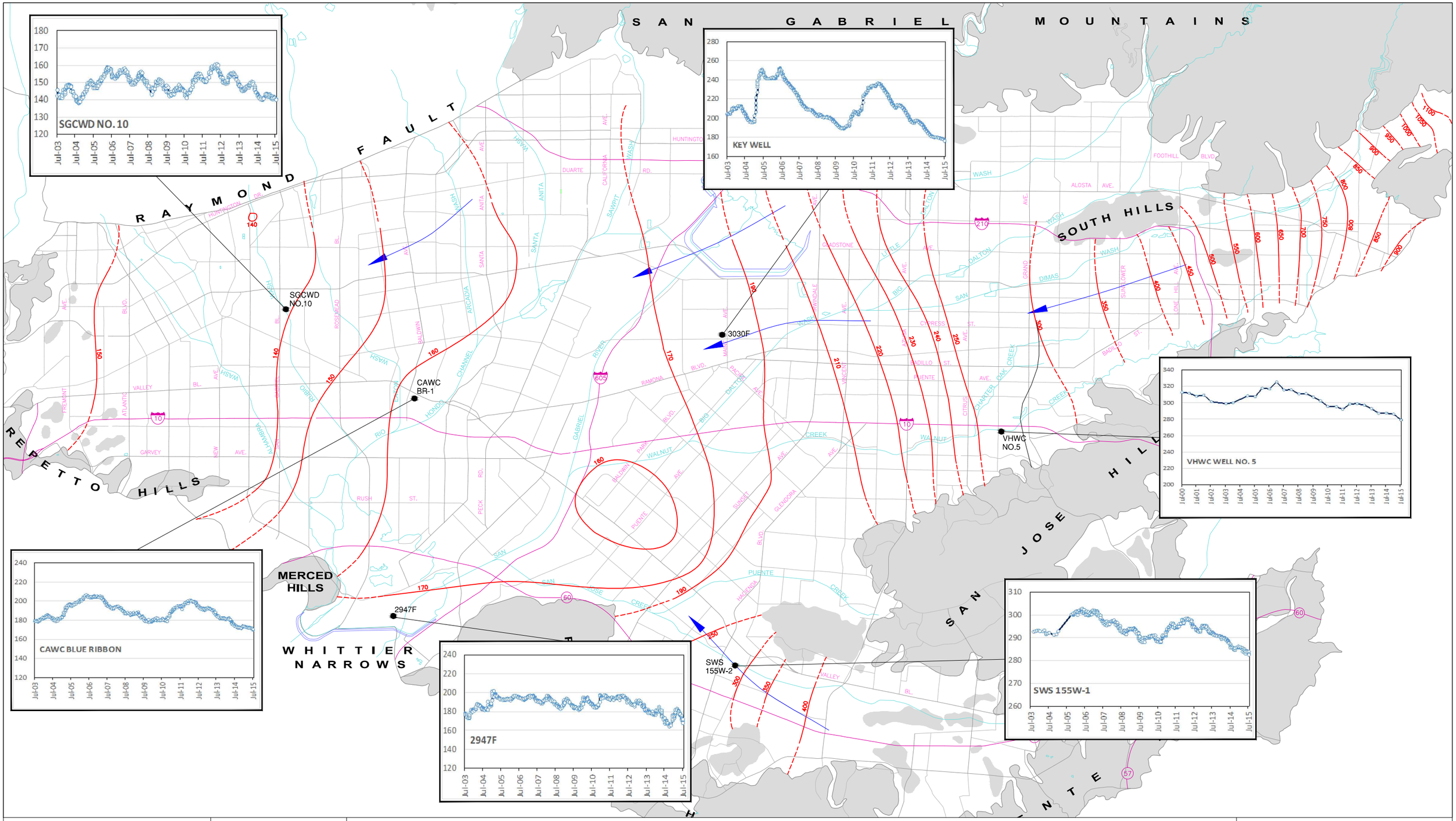
Operable Unit	Treatment Facility Owner	Treatment Facility(s)	Start Date 1/	Total Water Treated: Fiscal Year 2013-14 (Acre-feet)	Total Water Treated: Accum. Total (Acre-feet)	Total Contaminants Removed: Fiscal Year 2013-14 (Pounds)	Total Contaminants Removed: Accum. Total (Pounds)
AREA 3							
	ALHAMBRA, CITY OF	Well No. 7	July 2001	—	7,582.35	—	130.1
		Well No. 7, 8, 11 & 12	April 2009	2,464.00	22,280.80	105.1	711.4
BPOU							
	LA PUENTE VALLEY COUNTY WATER DISTRICT	Well No. 2, 3 & 4	August 1992	—	11,493.13	—	826.9
		Well No. 2, 3 & 5 (BPOU)	January 2000	3,262.23	49,536.43	332.8	10,268.5
	SAN GABRIEL VALLEY WATER COMPANY	Well B6C	April 1994	—	5,194.17	—	856.2
		Well B6D	April 1994	—	14,526.27	—	421.7
		Plant B5 (BPOU)	January 2007	9,702.41	86,482.83	391.9	3,662.4
		Plant B6 (BPOU)	September 2004	9,645.67	81,463.99	1433.7	16,774.7
	VALLEY COUNTY WATER DISTRICT	Lante	June 1984	—	7,719.61	—	10,356.7
		Lante, SA1-1 & SA1-2 (BPOU)	December 2004	4,408.36	62,470.56	508.2	39,643.6
EMOU							
	ADAMS RANCH MUTUAL WATER COMPANY	Well No. 3	November 2003	55.59	844.37	3.4	30.3
	HERMETIC SEAL CORPORATION	Hermetic Seal	May 2012	50.31	205.75	4.3	18.1
	GOLDEN STATE WATER COMPANY (SGV)	Encinita No. 1, 2 & 3	April 1998	1,844.08	23,173.48	51.8	546.7
PVOU							
	BDP - CARRIER	Carrier	April 1988	100.16	6,600.73	7.9	2,828.9
SEMOU							
	MONTEREY PARK, CITY OF	Well No. 5	September 1999	1,169.44	16,677.09	97.7	1,244.7
		Well No. 9 & 12, 15	April 2002	5,157.76	61,292.54	947.8	10,078.0
	SAN GABRIEL VALLEY WATER COMPANY	Well 8B, 8C, 8D & 8E	August 2002	2,900.44	37,163.39	709.4	4,869.1
	GOLDEN STATE WATER COMPANY (SGV)	San Gabriel No.1 & 2	November 2001	2,011.97	16,262.27	32.5	505.3
WNOU							
	EPA	WNOU (Shallow Zone)	December 1999	—	30,065.52	—	1,618.9
	SAN GABRIEL VALLEY WATER COMPANY	WNOU (Intermediate Zone) 2/	December 2005	2,279.71	43,919.16	71.2	1,691.4
PRODUCER FACILITY							
	ARCADIA, CITY OF	Longden 1 & 2	January 1985	1,003.12	69,817.73	6.1	738.4
	BOZUNG	Well B36, F38, F39 & BC34 3/	October 1994	—	233.00	—	131.3
	CALIFORNIA DOMESTIC WATER COMPANY	Well No. 3, Well No. 5A, & Well No. 6	September 1993 April 1997	14,682.74	314,186.76	1228.0	13,951.2
	EL MONTE, CITY OF	Well No. 12	February 1997	0.00	15,570.96	0.0	1,000.5
		Well No. 10	May 2004	253.91	6,380.82	0.0	43.4
		Well No. 2A	July 1999	486.15	7,449.64	5.0	115.8
	EPA	Richwood (North Well) 4/	April 1990	—	451.98	—	5.8
		Richwood (South Well) 4/	April 1990				
	GOLDEN STATE WATER COMPANY (SD)	Art 2 & 3, Base 3 & 4, Hwy 1	May 2005	604.34	16,118.77	25.8	288.1
	HEMLOCK MUTUAL WATER COMPANY	Hemlock (North Well) 4/	April 1986	—	2,553.65	—	44.6
		Hemlock (South Well) 4/	April 1986				
	MONROVIA, CITY OF	Wells No. 2 & 6	March 1996	2,053.17	41,121.02	74.2	770.4
		Wells No. 3, 4 & 5	October 2007	1,681.01	13,479.09	18.5	103.9
	MONTEREY PARK, CITY OF	Well No. 1, 3, 10 & Fern	June 2004	2,577.49	24,993.68	67.7	1,621.1
	SAN GABRIEL VALLEY WATER COMPANY	Well 11B	March 1991	1,201.17	44,878.99	1.1	319.7
		Well B11B	March 1993	875.23	45,546.11	58.1	3,068.0
		Well B7C	March 1993	551.25	46,711.28	27.5	1,824.2
		Well B4B & B4C	January 1999	—	24,093.04	—	1,233.5
		Well G4A	December 2005	215.51	3,808.40	4.0	59.3
	SUBURBAN WATER SYSTEMS	Well No. 140W-4 5/	May 2001	—	2,247.59	—	16.2
	VALLEY COUNTY WATER DISTRICT	Maine East & West	June 1990	2,826.94	46,707.19	20.1	1,735.3
		Nixon East & West 5/	January 2004	4,265.31	38,031.88	41.4	229.3
	WATER QUALITY AUTHORITY	Arrow (Project No. 1) 5/	February 1992	—	7,250.41	—	17,423.0
		Big Dalton (Project No. 2)	March 1997	—	1,229.02	—	82.5
		Whitmore Street	January 2008	23.11	268.54	10.6	155.7
		SEMOU	July 1999	—	3,885.19	—	1,558.5
			TOTAL	78,352.58	1,361,969.18	6,285.7	153,603.2

Footnotes:
1/ From date of beginning of operation.
2/ Previously operated by City of Whittier from December 2005 to May 2013.
3/ Treatment facility has been permanently dismantled.
4/ Wells destroyed in June 1999.
5/ Wellfield no longer pumps to treatment facility.

APPENDIX F.

Simulated Basin Groundwater Contours 2014-15 and 2019-20 (Figures 16 and 17)

FIGURE 16



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FAX: (626) 331-7065

2171 E Francisco Blvd., Suite K
San Rafael California 94901

2651 W Guadalupe Rd., Suite A209
Mesa Arizona 85202

N

APPROXIMATE SCALE
4,000' 0 4,000'

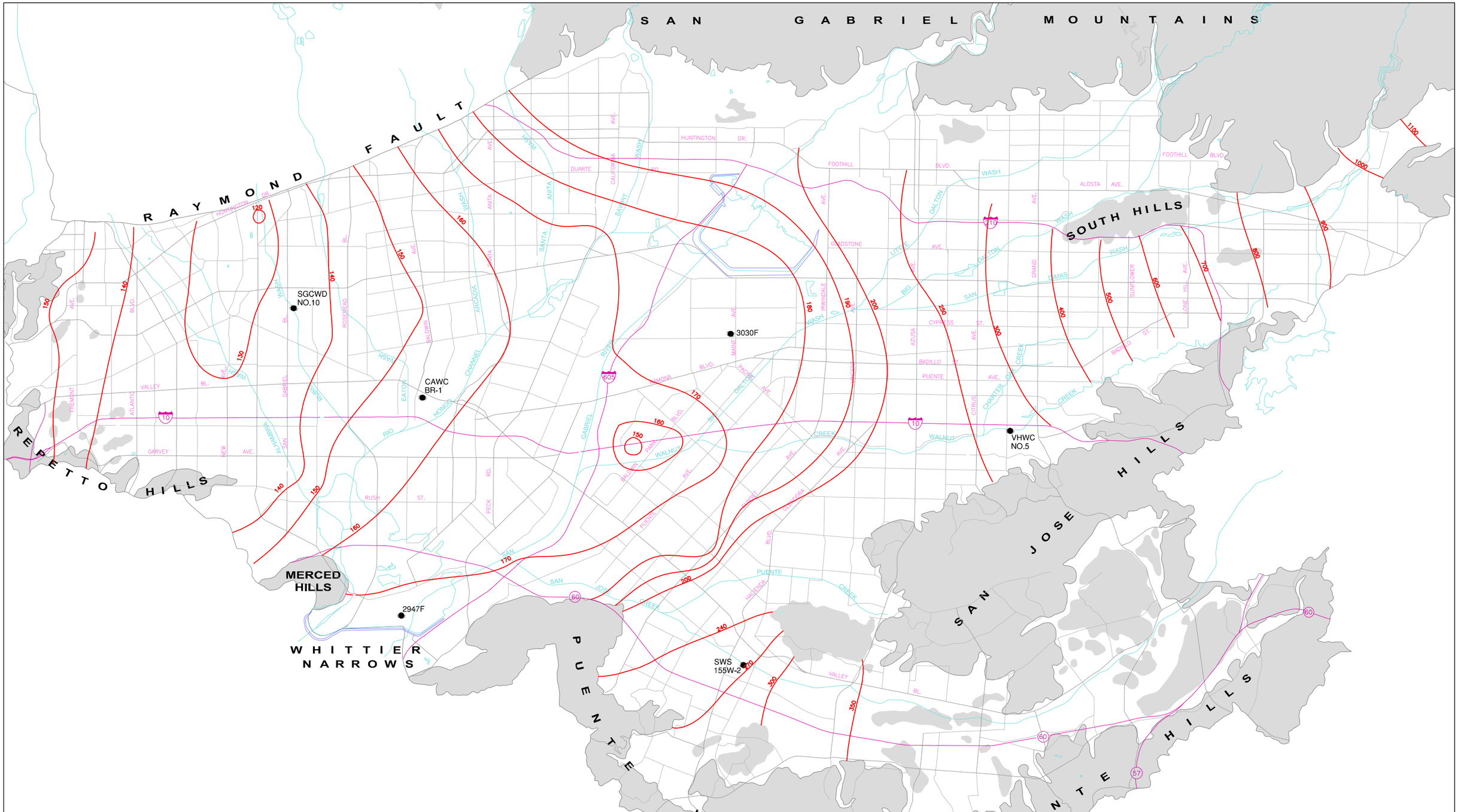
MAIN SAN GABRIEL BASIN WATERMASTER

SIMULATED 2015-16 BASIN GROUNDWATER CONTOURS

MainSanGabrielBasin WATERMASTER

J:\1205\1205-61\1516Plan\Model\FINAL Contours Surface SG P001 100515.dwg
D:\JOBS\1205-61(13-14).CTB

FIGURE 17



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2171 E Francisco Blvd., Suite K
San Rafael California 94901

2651 W Guadalupe Rd., Suite A209
Mesa Arizona 85202

N

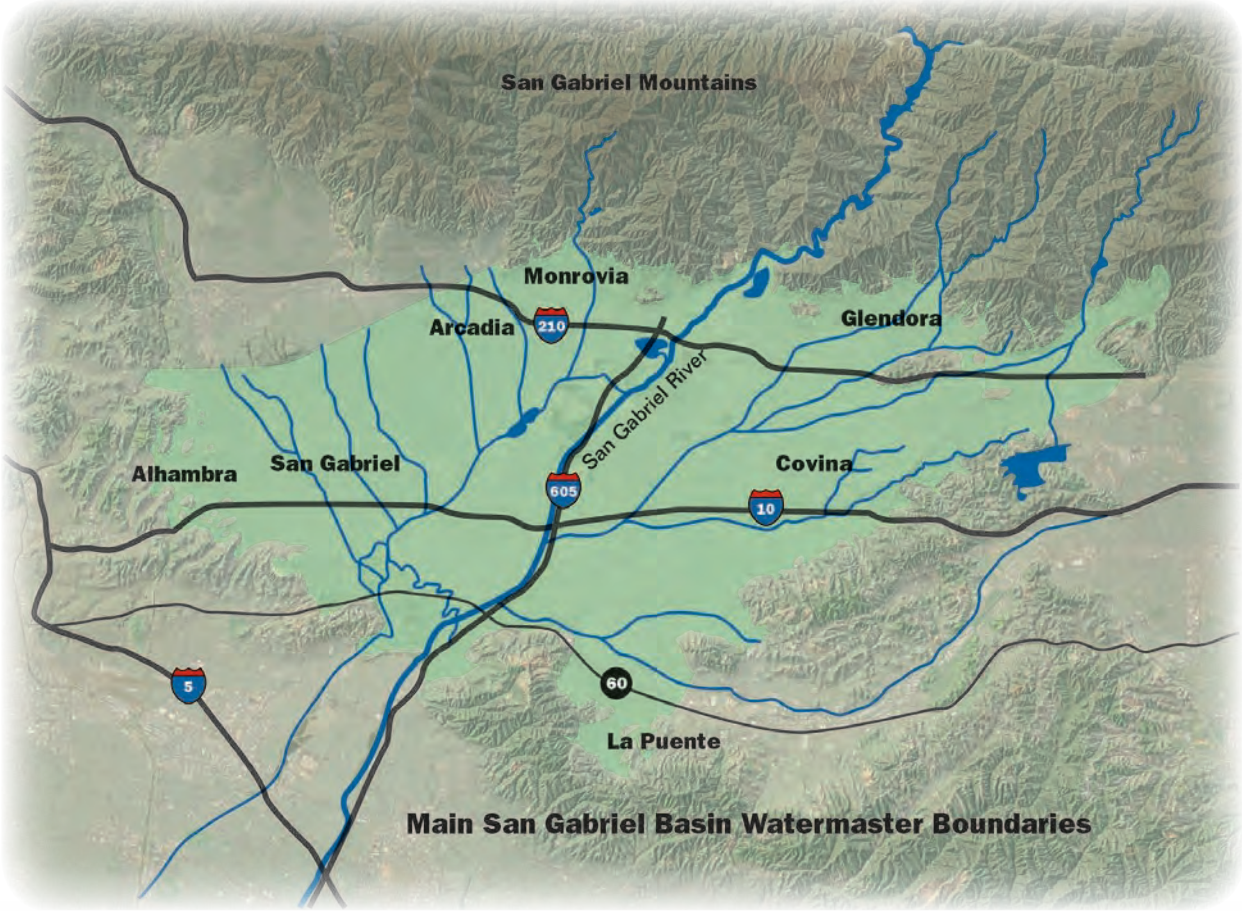
APPROXIMATE SCALE
4,000' 0 4,000'

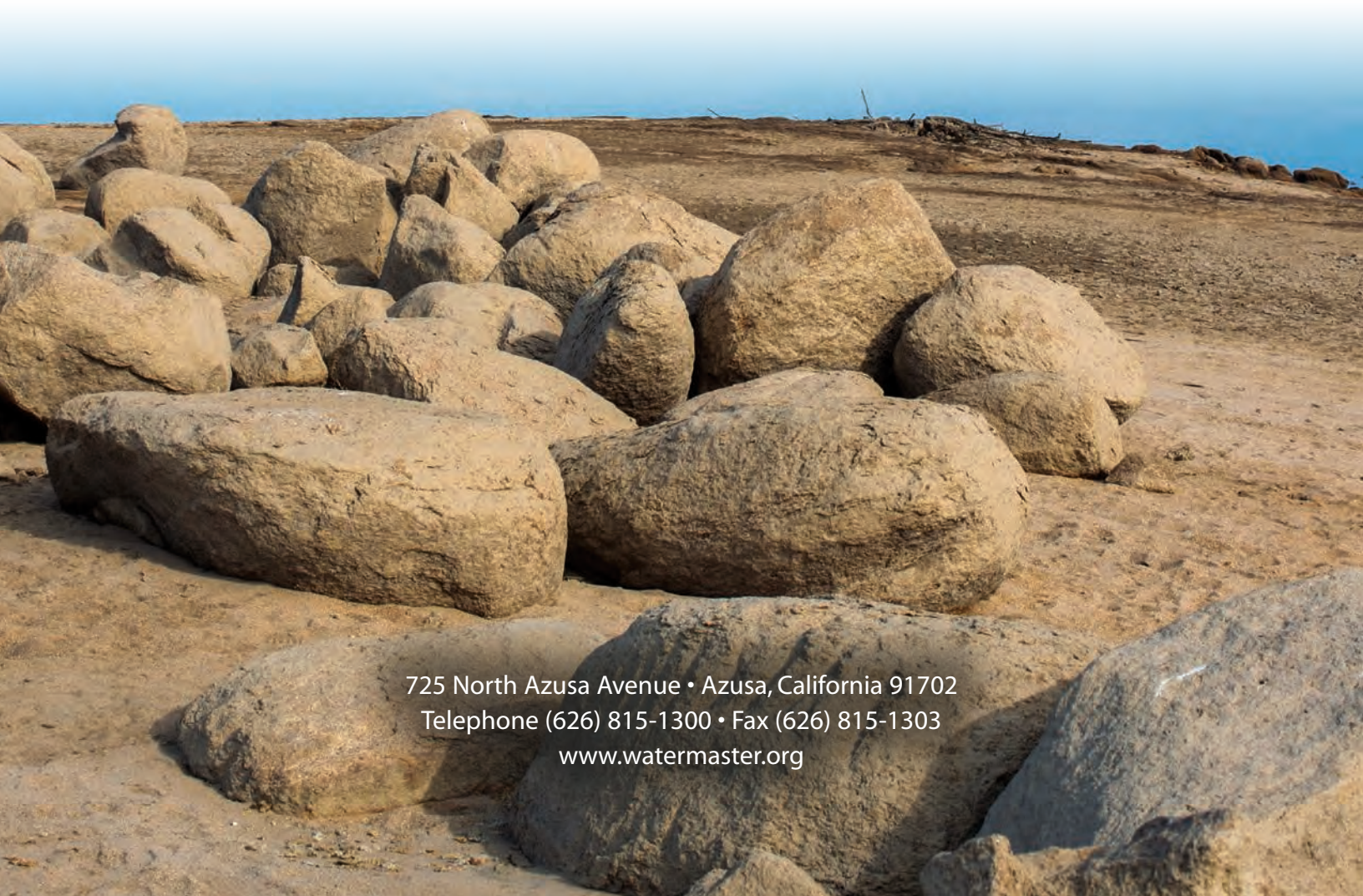
MAIN SAN GABRIEL BASIN WATERMASTER

SIMULATED 2019-20 BASIN GROUNDWATER CONTOURS

MainSanGabrielBasin WATERMASTER

J:\1205\1205-61\1516Plan\Model\FINAL Contours Surface SG P006 100215.dwg
D:\JOBS\1205-61(13-14).CTB





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APPENDIX M

RAYMOND BASIN JUDGMENT

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Special Counsel for Plaintiff

SUPERIOR COURT OF CALIFORNIA, COUNTY OF LOS ANGELES

CITY OF PASADENA, a municipal corporation, Plaintiff, vs. CITY OF ALHAMBRA, a municipal corporation, et al., Defendants.	NO. Pasadena C-1323 JUDGMENT (As Modified and Restated March 26, 1984)

The above-entitled action was brought by plaintiff, City of Pasadena, a municipal corporation, against City of Alhambra, a municipal corporation, City of Monrovia, a municipal corporation, City of Arcadia, a municipal corporation, City of Sierra Madre, a municipal corporation, City of South Pasadena, a municipal corporation, La Canada Irrigation District, San Gabriel County Water District, Lincoln Avenue Water Company, a corporation, The Las Flores Water Company, a corporation, Rubio Canon Land and Water Association, a corporation, Valley Water Company, a corporation, Flintridge Mutual Water Company, a corporation, California-Michigan Land and Water Company, a cor-

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poration, Mira Loma Mutal Water Company, a corporation, El Campo Mutual Water Company, a corporation, Sunnyslope Water Company, a corporation, California Water and Telephone Company, a corporation, Crown City Ice Company, a corporation, Rancho Santa Anita, Inc., a corporation, Royal Laundry and Dry Cleaning Company, a corporation, Alice H. Graves, A. V. Wagner, Eugene E. Bean, Fred M. Wilcox, and Charles Hueston Hastings, Defendants, for the purpose of quieting the title of said plaintiff as against said defendants to the alleged prior and paramount right of said plaintiff to take, divert and use the waters within the area involved in the issues of the action situate in the County of Los Angeles, State of California, and to enjoin each defendant found to own a right to take or divert water from the Raymond Basin from taking therefrom, in any year, water in such volume as, when added to the amount which the other parties shall be adjudged and decreed to be entitled to take and divert, would result in a total annual diversion from said basin in excess of the average annual supply of water thereto; and on July 13, 1939, the above-entitled Court having issued its order directing said plaintiff to bring in and make parties to said action Ross M. Lockhard, Pasadena Cemetery Association, a corporation, Altadena Golf Club, a corporation, Henry E. Huntington Library and Art Gallery, a corporation, Bradbury Estate Company, a corporation, and East Pasadena Water Company, Ltd., a corporation, and said Court on the 8th day of November, 1939, having made its order declaring void the order to bring in new parties made July 13, 1939, insofar as East Pasadena Water Company, Ltd., is concerned, and said defendant having been dismissed from

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this action; and

All said parties defendant having been duly served personally with summons and a copy of the complaint, and the issues having been joined; defendant Ross M. Lockhard having answered by his true name Ross M. Lockhart; and Robert A. Millikan, Archer Milton Huntington, Herbert Hoover, William B. Munro and Edwin P. Hubbell, Trustees of the Henry E. Huntington Library and Art Gallery answering for defendant Henry E. Huntington Library and Art Gallery, a corporation; defendants Bradbury Estate Company, a corporation, and Eugene E. Bean having disclaimed any right, title, interest or estate in and to the properties involved in this action, Charles Hueston Hastings, having answered by his true name Charles Heuston Hastings, and since the commencement of this action said defendant Charles Heuston Hastings having died and Ernest Crawford May as Executor of the Last Will and Testament of Charles Heuston Hastings, deceased, having been substituted for said decedent, and A. V. Wagner having answered and having asserted and claimed a right to water on his own behalf and on behalf of others claiming under and through him, and Canyon Mutual Water Company, a corporation, sued herein as Doe Corporation No. 1, having answered under its true name, and defendant Alice H. Graves having died since the commencement of this action, and Alice Graves Stewart and Katharine Graves Armstrong and Francis P. Graves being the heirs at law of said Alice H. Graves, deceased, and being the residuary legatees under the Last Will and Testament of Alice H. Graves, deceased, and having been substituted by stipulation as parties defendant for said

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Alice H. Graves, and plaintiff since the commencement of this action having acquired the water rights owned and claimed by Jacob Bean Securities Company, a corporation, Alice Graves Stewart, Katharine Graves Armstrong and Francis P. Graves, exclusive of the rights of the last named individuals which are hereinafter set forth and defined, and plaintiff having duly filed its supplemental complaint with respect thereto, and the defendant City of Arcadia, since the commencement of this action, having acquired all water rights involved herein of the Rancho Santa Anita, Inc., a corporation, and said defendants having duly filed their supplemental answer with respect thereto, and First Trust and Savings Bank of Pasadena, a corporation, answering as successor in interest to defendant Altadena Golf Club, defendant Sunnyslope Water Company, a corporation, having stipulated that its true name is Sunny Slope Water Company, Chesley E. Osborn and Kathleen M. Osborn having been substituted as parties defendant in the place and stead of defendant Fred M. Wilcox, and Dell A. Schweitzer, executor of the estate of Fred M. Wilcox, deceased; motion of defendant City of South Pasadena for permission to file its amended answer disclaiming any interest or estate in the water and/or water rights in the Raymond Basin as described in plaintiff's complaint, having been granted, and said defendant, City of South Pasadena, having been dismissed from this action, subject to the obligation of said defendant to pay certain costs, plaintiff and certain defendants having jointly filed herein their motion that reference should be made to the Division of Water Resources, Department of Public

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Works, State of California, as referee; after hearing thereon, following notice duly served on all defendants not parties to said motion, said Division of Water Resources having been appointed referee herein to investigate all of the physical facts involved herein, and seasonably to report to the Court thereon, and the said referee having filed its report herein and the objections thereto filed with it, a stipulation in writing having been entered into on the 29th day of September, 1943 by and between the attorneys for certain parties, to wit: City of Alhambra, City of Arcadia, California Water and Telephone Company, Canyon Mutual Water Company, Crown City Ice Company, El Campo Mutual Water Company, First Trust and Savings Bank of Pasadena, Flintridge Mutual Water Company, Francis P. Graves, Alice Graves Stewart and Katharine Graves Armstrong, being the heirs of Alice H. Graves, deceased, and being the residuary legatees under the Last Will and Testament of Alice H. Graves, deceased, Las Flores Water Company, Lincoln Avenue Water Company, Ross M. Lockhart, Ernest Crawford May, as Executor of the Last Will and Testament of Charles Heuston Hastings, deceased, Robert A. Millikan, Archer Milton Huntington, Herbert Hoover, William B. Munro and Edwin P. Hubbell, Trustees of the Henry E. Huntington Library and Art Gallery, Mira Loma Mutual Water Company, City of Monrovia, Chesley E. Osborn and Kathleen M. Osborn, Pasadena Cemetery Association, City of Pasadena, Royal Laundry and Dry Cleaning Company, Rubio Canon Land and Water Association, San Gabriel County Water District, City of Sierra Madre, Sunny Slope Water Company, Valley Water Company, A. V. Wagner and those

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claiming under and through him, and said stipulation having been filed herein on the 24th day of November, 1943, requesting that a certain judgment be entered herein as between said parties, and stipulating that the amount of water pumped or otherwise taken by non-parties to this action in the Western Unit of the Raymond Basin Area as described in Paragraph I of the proposed judgment attached to said stipulation was 340 acre feet per year and that the amount of water pumped or otherwise taken by non-parties to this action in the Eastern Unit of said Raymond Basin Area was 109 acre feet per year, and the Court on November 24, 1943 having made its order making each and all of the terms and provisions of said proposed judgment immediately effective as to said stipulating parties, and on April 5, 1944 the Court having made its order appointing and authorizing the Division of Water Resources of the Department of Public Works of the State of California to act and serve herein as Watermaster in accordance with the provisions of the proposed judgment attached thereto and made a part thereof, and a stipulation between said stipulating parties and the defendant La Canada Irrigation District making the defendant La Canada Irrigation District a party to said stipulation for said judgment and order having been filed in this Court on April 28, 1944, and this Court on April 28, 1944 having ordered that during the pendency of this litigation or until further order of this Court the said defendant La Canada Irrigation District be made a party to the stipulation for judgment and order entered into on the 29th day of September, 1943 and filed on the 24th day of

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November, 1943, and all objections and exceptions to the Report of Referee, except those of defendant California-Michigan Land and Water Company, having been withdrawn, and defendant Flintridge Mutual Water Company having assigned all its water rights involved herein to defendant Valley Water Company,

This cause came on regularly for hearing of the objections and exceptions of defendant California-Michigan Land and Water Company filed to the Report of Referee and the further trial of the cause between said defendant and the other parties on the 18th day of May, 1944 before the Honorable Frank C. Collier, judge presiding in Department Pasadena A of the above-entitled Court, the Court sitting without a jury; said hearing and trial were held on the following dates in the year 1944, to wit: May 18, May 19, May 23, May 24, May 25, May 31, June 1, June 2, June 6, June 7, June 8, July 20, August 7 and August 8. A. E. Chandler, Esq., Special Counsel, and Harold P. Huls, Esq., City Attorney, appearing as attorneys for plaintiff; Messrs. Goodspeed, McGuire, Harris & Pfaff by Richard C. Goodspeed, Esq., J. Donald McGuire, Esq., and Paul Vallee, Esq., appearing as attorneys for defendant California-Michigan Land and Water Company; Emmett A. Tompkins, Esq., City Attorney, and Kenneth K. Wright, Esq., appearing as attorneys for defendant City of Alhambra; Paul F. Garber, Esq., City Attorney, and Kenneth K. Wright, Esq., appearing as attorneys for defendant City of Monrovia; Kenneth K. Wright, Esq., appearing as attorney for defendant Ross M. Lockhart; Kenneth K. Wright, Esq., appearing

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as attorney for defendant Flintridge Mutual Water Company; Kenneth K. Wright, Esq., appearing as attorney for defendant Valley Water Company; John C. Packard, Esq. and Kenneth K. Wright, Esq., appearing as attorneys for defendant El Campo Mutual Water Company; Messrs. Derthick, Cusack and Ganahl by W. J. Cusack, Esq., and Kenneth K. Wright, Esq., appearing as attorneys for defendant Crown City Ice Company; Messrs. Dunn & Sturgeon by Walter F. Dunn, Esq., Messrs. Chandler & Wright by Howard W. Wright, Esq., and Kenneth K. Wright, Esq., appearing as attorneys for defendants Francis Graves, Alice Graves Stewart and Katharine Graves Armstrong; Messrs. Bailie, Turner & Lake by Norman A. Bailie, Messrs. Cruickshank, Brooke & Dunlap by Robert H. Dunlap, Esq., and Kenneth K. Wright, Esq., appearing as attorneys for defendant Ernest Crawford May, as Executor of the Last Will and Testament of Charles Heuston Hastings, deceased; Messrs. Gibson, Dunn & Crutcher by Ira C. Powers, Esq., and Kenneth K. Wright, Esq., appearing as attorneys for defendants Robert A. Millikan, Archer Milton Huntington, Herbert Hoover, William B. Munro and Edwin P. Hubbell, trustees of the Henry E. Huntington Library and Art Gallery; Messrs. Anderson and Anderson by Trent G. Anderson, Esq., and Kenneth K. Wright, Esq., appearing as attorneys for defendant Rubio Canon Land and Water Association; Frank P. Doherty, Esq., and Kenneth K. Wright, Esq., appearing as attorneys for defendant La Canada Irrigation District; Messrs. Boyle, Holmes & Garrett by John W. Holmes, Esq., and Kenneth K. Wright, Esq., appearing as attorneys for defendant First Trust and Savings Bank of Pasadena; Walter F.

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Dunn, Esq., City Attorney, and Kenneth K. Wright, Esq., appearing as attorneys for defendant City of Sierra Madre; Wilton W. Webster, Esq., and Kenneth K. Wright, Esq., appearing as attorneys for defendant Royal Laundry and Dry Cleaning Company; Messrs. Bacigalupi, Elkus & Salinger by Claude Rosenberg, Esq., and Kenneth K. Wright, Esq., appearing as attorneys for defendant California Water and Telephone Company; Kenneth K. Wright, Esq., appearing as attorney for defendant San Gabriel Valley Water Company; Messrs. Merriam, Rinehart & Merriam by Ralph T. Merriam, Esq., appearing as attorneys for defendant Pasadena Cemetery Association; Frederick G. Stoehr, Esq., appearing as attorney for defendant A. V. Wagner; Messrs. Potter and Potter, by Bernard Potter, Esq., appearing as attorneys for defendant Mira Loma Mutual Water Company; Gerald E. Kerrin, Esq. and James C. Bone, Esq., City Attorney, appearing as attorneys for defendant City of Arcadia; Laurence B. Martin, Esq., appearing as attorney for defendant Sunny Slope Water Company; Robert E. Moore, Esq., appearing as attorney for defendant Lincoln Avenue Water Company; Messrs. Hahn and Hahn by Edwin F. Hahn, Esq., appearing as attorneys for defendant The Las Flores Water Company; Messrs. Hahn and Hahn by Edwin F. Hahn, Esq., appearing as attorneys for defendants Chesley E. Osborn and Kathleen M. Osborn; and Messrs. Hahn and Hahn by Edwin F. Hahn, Esq., appearing as attorneys for defendant Canyon Mutual Water Company, and

All objections and exceptions to the Report of Referee filed by defendant California-Michigan Land and Water Company having been overruled by the Court with the exception

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of objection 18 which was withdrawn by said defendant, and

Certain stipulations having been entered into by and between the parties and evidence both oral and documentary having been introduced and the cause having been submitted to the Court for its decision upon briefs, and briefs for the respective parties having been filed and considered, the Court, being fully advised in the premises, and having made its findings of fact and conclusions of law, and

The Court, by reason of the stipulation aforesaid and the findings of fact and conclusions of law, having rendered its Judgment on December 23, 1944, and such Judgment having been entered in Book 1491, page 84, on December 26, 1944, and

Pursuant to its reservation of jurisdiction in this case, and pursuant to appropriate motions, the Court having modified the Judgment on April 29, 1955; on January 17, 1974; and on June 24, 1974, and

Plaintiff having moved the Court for an order further modifying and restating the Judgment as modified, such motion having come on regularly for hearing on the 16th day of March, 1984, in Department A of the Northeast District of this Court, the Honorable Robert M. Olson, Judge, presiding; and notice of such motion having been duly served on all defendants and interested parties; and no objections to the granting of the motion having been filed or made at the hearing; and good cause having been shown, and the Court having therefore granted the motion, pursuant to the continuing jurisdiction of the Court,

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IT IS HEREBY ORDERED, ADJUDGED AND DECREED that the Judgment in this case be modified and restated (including all transfers of rights and prior modifications which remain valid) as follows:

I

There exists in the County of Los Angeles, State of California, a field of groundwater, known and hereinafter referred to as the Raymond Basin Area, and subdivisions thereof herein designated the Eastern Unit and the Western Unit which are shown on the map attached hereto and hereby made a part hereof.

Under existing conditions, the safe yield of said Eastern Unit is 5,290 acre feet per year, and the safe yield of said Western Unit is 25,480 acre feet per year.

The amount of water pumped or otherwise taken by non-parties to this action in said Western Unit is less than 100 acre feet per year, and the amount of water pumped or otherwise taken by non-parties to this action in said Eastern Unit is zero acre feet per year.

The parties hereto pumping from wells or otherwise taking water for beneficial use from the ground in said subdivisions of said Raymond Basin Area are as shown in the table in Paragraph IV hereof.

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II

As to those parties hereto who are taking or diverting water for beneficial use from any source contributing to the supply of water in the ground in said Raymond Basin Area, each of said parties has the right as against all parties other than the defendant California-Michigan Land and Water Company, no determination as to the existence of such right being made as against it, to continue to divert from such source for such use an amount of water measured by the maximum capacity of its diversion works and other facilities as the same existed at any time within five (5) years prior to October 1, 1937. That said maximum capacities of the said works and facilities of each of said parties in cubic feet per second are as follows:

La Canada Irrigation District (Snover Canyon)	1.20
Las Flores Water Company	0.50
Lincoln Avenue Water Company	6.59
Lockhart, Ross M.	1.20
May, Ernest Crawford, as Executor of the Last Will and Testament of Charles Heuston Hastings, deceased	0.26
Mira Loma Mutual Water company	0.81
Pasadena Cemetery Association	0.02
Pasadena, City of	
Arroyo Seco Including Millard Canyon	25.00
Eaton Canyon	8.90
Rubio Canon Land and Water Association	2.20
Sierra Madre, City of	6.00

Each of said parties, and each of their agents, employees, attorneys, and any and all persons acting by, through, or under them, or any of them, are and each of them is hereby forever enjoined and restrained from increasing its taking or diversion from such source beyond the amount of

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such taking or diversion as measured by said maximum capacity of its diversion works and other facilities.

Each of the said parties, and their successors in interest, having diversion rights as set forth above in the Western Unit of the Raymond Basin Area shall have the right in its discretion to spread the surface water diverted pursuant to its respective right, and to recapture eighty percent (80%) thereof by pumping, subject to and upon the following terms and conditions.

(1) The water shall be spread for percolation into the underground in the existing water conservation facilities of the Los Angeles County Flood Control District, or in such additional spreading grounds as the parties may acquire or construct, or in any natural stream channels leading to such existing or future spreading grounds, provided that all such spreading locations shall be located within the Monk Hill Basin or Pasadena Subarea hydrologic subdivisions of the Western Unit of the Raymond Basin Area.

(2) A metering device, or devices, shall be installed and maintained by each diverting party at such party's expense to measure all amounts of water diverted by such party for spreading purposes. Such metering facilities, and the continued accuracy thereof, shall be subject to the approval of the Watermaster and the Los Angeles County Flood Control District, and all such measurements shall be available to them. The Watermaster, with such assistance as the Los Angeles County Flood Control District may provide, shall determine and account for all water diverted for spreading, the amount of water spread

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and available for recapture, and the amount so recaptured, and shall include such determinations and accounting in its reports.

(3) In the event that the capacity of any of the spreading grounds of the Los Angeles County Flood Control District is fully utilized for the conservation of natural flows, and water diverted for spreading in such facilities cannot be percolated into the Basin and escapes therefrom, such quantity of water shall be subtracted from the amount diverted for spreading to determine the amount available for recapture. Such losses shall be divided among the parties diverting water for such spreading in proportion to the amounts diverted at the time the loss occurs.

(4) Each such party shall have the right to pump from any wells in the Monk Hill Basin an amount of water equal to eighty percent (80%) of the amount which it has diverted for such spreading therein and which is available for recapture, and the right to pump from any wells in the Pasadena Subarea an amount of water equal to eighty percent (80%) of the amount which it has diverted for such spreading therein and which is available for recapture. Such amounts pumped shall be in addition to the respective Decreed Rights of the parties as provided in the Judgment herein, as modified on April 29, 1955, and in addition to the amounts which can be pumped or otherwise taken under the provisions of Paragraph V hereof. Any amounts recaptured under the terms of this Paragraph shall be pumped in such a manner as not to injure other parties having rights under this Judgment. The effect of such pumping shall be monitored by the Watermaster, and the Watermaster shall report any such injury to the Court

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for appropriate action.

(5) Any additional amounts allowed to be taken as provided in subparagraph (4) above shall be pumped by the end of the next accounting year utilized by the Watermaster following such diversions for spreading. If such pumping does not occur within this period of time, the right to take such amount of water shall be lost.

(6) For accounting purposes, the first water taken from the Western Unit of the Raymond Basin Area during any accounting year, by any party having made diversions for spreading purposes during the previous accounting year, shall be considered by the Watermaster as water pumped pursuant to subparagraph (4) above, unless such water was pumped during the same accounting year in which it was diverted and spread.

(7) The rights provided in subparagraph (4) above shall apply to all water diverted for spreading as required herein after May 1, 1973.

(8) The right to divert for spreading and recapture is an alternative, in whole or in part, to the right to make direct use of such diversions, and does not preclude the direct use of such water, provided that the total amount of water diverted, either for spreading or direct use, does not exceed the respective rights of the parties set forth above.

(9) These provisions concerning the right to spread and recapture by pumping remain subject to the continuing jurisdiction of the Court. Any additional costs incurred by the Watermaster in making determinations, accountings, reports, and monitoring of pumping as required in connection with such

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spreading and recapture of water shall be paid by the parties diverting water for spreading in proportion to the amount of water which each party diverts for such purpose. Such costs shall be included as part "C" of the Watermaster's Annual Budget.

III

Each and all of the rights of the parties hereto to pump water from wells or otherwise take water from the ground in said Raymond Basin Area are of equal priority and of the same legal force and effect.

IV

Subject to the provisions of Paragraphs V, VI and XXI hereof, each party hereto is the owner of the right to pump water from wells or otherwise take water from the ground in each of said units in the amount set forth opposite the name of each party in the following table, which said right, for convenience, is designated the "present unadjusted right":

PRESENT UNADJUSTED RIGHTS TO TAKE
WATER IN RAYMOND BASIN AREA

Eastern Unit	Acre Feet Per Year
Arcadia, City of	2,527
Sierra Madre, City of	1,264

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Western Unit

Alhambra, City of	1,042
Arcadia, City of (including, as successor, the rights of the City of Monrovia)	2,141
California American Water Company (as successor to the California Water and Telephone Company, and including, as successor, the rights of the El Campo Mutual Water Company)	2,324
Crown City Ice Company	0
East Pasadena Water Company (as successor to the California-Michigan Land and Water Company)	521
Henry E. Huntington Library and Art Gallery (as successor to Robert A. Millikan, et al., Trustees of the Henry E. Huntington Library and Art Gallery)	265
Kinneloa Irrigation District (as successor to the rights of Francis P. Graves, et al.; Ross M. Lockhart; A. V. Wagner; Mira Loma Mutual Water Company; Canyon Mutual Water Company; and Chesley E. and Kathleen M. Osborn)	522
La Canada Irrigation District	101
Las Flores Water Company	252
Lincoln Avenue Water Company	573
May, Ernest Crawford, as Executor of the Last Will and Testament of Charles Heuston Hastings, deceased	0
Milum Textile Services Company (as successor to Royal Laundry and Dry Cleaning Company)	111
Pasadena Cemetery Association	92
Pasadena, City of (including, as successor, the rights of the First Trust and Savings Bank of Pasadena)	12,946

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Rubio Canon Land and Water Association	1,234
San Gabriel County Water District	1,103
Sunny Slope Water Company	1,575
Valley Water Company (including, as successor, the rights of the Flintridge Mutual Water Company)	806

The total of said rights in the Eastern Unit is 3,791 acre feet per year, and the total of said rights in the Western Unit is 25,608 acre feet per year.

V

In order to maintain and protect the supply of water in the ground in said Raymond Basin Area, it is necessary that the respective parties to this action be limited in the exercise of their respective present unadjusted rights, and the right, so limited, in acre feet per year, of each party to pump water from wells or otherwise take water from the ground, in the Western Unit, is as set forth in the table at the end of this Paragraph V, and in the Eastern Unit as set forth in Paragraph VI hereof. Said right, for convenience, is designated the "decreed right." In said Western Unit the amount of the decreed right of each party hereby is determined by reducing the present unadjusted right of each party as tabulated in Paragraph IV hereof, in the proportion that the safe yield of said unit, less the water taken therein by non-parties hereto, bears to the aggregate of such rights of the parties hereto in said unit. Each of said parties and

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each of their agents, employees, attorneys, and any and all persons acting by, through, or under them, are and each of them is, subject to the terms of Paragraph XXI hereof, hereby forever enjoined and restrained on and after July 1, 1944, as to all parties other than California-Michigan Land and Water Company, and on and after July 1, 1945 as to said California-Michigan Land and Water Company, from pumping or otherwise taking from the ground in said Western Unit more water than its decreed right in this Paragraph determined; provided that a party may exceed its decreed right to the extent that it has acquired and exercises the decreed right of any other party, or as may become necessary in the case of an emergency or temporarily for other reasonable cause as determined by the Watermaster, taking into account the basin supply, quality conditions, the impact on other parties, and subject to such conditions as the Watermaster may impose, including whether or not such excess extractions must be made up in future years; and provided, however, that any of the parties to this action may take in any twelve-month period beginning July 1 for its own beneficial use, and for the release of water for use by other parties or persons pursuant to and in accordance with the Raymond Basin Area Water Exchange Agreement for 1943 and amendment thereto, hereinafter referred to, attached hereto and hereby made a part hereof, an amount not exceeding one hundred ten percent (110%) of its decreed right as fixed herein, plus any amount of allowable underpumping as hereinafter provided. Any such extractions in excess of a party's decreed right (not including any emergency or temporary

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extractions authorized by the Watermaster) shall be made up in the following year, and the amount of water which a party may take under its decreed right in that year shall be reduced by an equivalent amount. If a party in any twelve-month period, beginning July 1, takes less than its decreed right, or less than the amount allowed after reduction for any excess extractions, the amount of such underpumping, but not exceeding ten percent (10%) of its decreed right or such additional amount as the Watermaster may allow for an emergency or other reasonable cause, may be carried over and taken during the next succeeding year. The yearly period from July 1 to June 30 hereby is adopted and shall be used in the administration and enforcement of this Judgment.

DECREED RIGHTS TO TAKE WATER FROM THE GROUND
IN SAID WESTERN UNIT IN ACRE FEET PER YEAR

	Acre Feet Per Year
Alhambra, City of	1,031
Arcadia, City of (including, as successor, the rights of the City of Monrovia)	2,118
California American Water Company (as successor to the California Water and Telephone Company, and including, as successor, the rights of the El Campo Mutual Water Company)	2,299
East Pasadena Water Company (as successor to the California-Michigan Land and Water Company)	515
Henry E. Huntington Library and Art Gallery (as successor to Robert A. Millikan, et al., Trustees of the Henry E. Huntington Library and Art Gallery)	262

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Kinneloa Irrigation District (as successor to the rights of Francis P. Graves, et al.; Ross M. Lockhart; A. V. Wagner; Mira Loma Mutual Water Company; Canyon Mutual Water Company; and Chesley E. and Kathleen M. Osborn)	516
La Canada Irrigation District	100
Las Flores Water Company	249
Lincoln Avenue Water Company	567
Milum Textile Services Company (as successor to Royal Laundry and Dry Cleaning Company)	110
Pasadena Cemetery Association	91
Pasadena, City of (including, as successor, the rights of the First Trust and Savings Bank of Pasadena)	12,807
Rubio Canon Land and Water Association	1,221
San Gabriel County Water District	1,091
Sunny Slope Water Company	1,558
Valley Water Company (including, as successor, the rights of the Flintridge Mutual Water Company)	797
Total Western Unit	25,332

VI

The decreed right of each party hereto in said Eastern Unit is as follows:

City of Arcadia, 3,526 acre feet per year;

City of Sierra Madre, 1,764 acre feet per year.

Each of said parties, and each of their agents, employees, attorneys and any and all persons acting by, through, or under them, are and each of them is subject to

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the terms of Paragraph XXI hereof, hereby forever enjoined and restrained on and after July 1, 1944, as follows:

(1) From pumping or otherwise taking from the ground in said Eastern Unit more water than its decreed right in this Paragraph determined; provided that a party may exceed its decreed right to the extent that it has acquired and exercises the decreed right of any other party, or as may become necessary in the case of an emergency or temporarily for other reasonable cause as determined by the Watermaster, taking into account the basin supply, quality condition, the impact on other parties, and subject to such conditions as the Watermaster may impose, including whether or not such excess extractions must be made up in future years; and provided, however, that any of the parties to this action may take in any twelve-month period beginning July 1 for its own beneficial use, and for the release of water for use by other parties or persons pursuant to and in accordance with the Raymond Basin Area Water Exchange Agreement for 1943 and amendment thereto, hereinafter referred to, attached hereto and hereby made a part hereof, an amount not exceeding one hundred ten percent (110%) of its decreed right as fixed herein, plus any amount of allowable underpumping as hereinafter provided. Any such extractions in excess of a party's decreed right (not including any emergency or temporary extractions authorized by the Watermaster) shall be made up in the following year, and the amount of water which a party may take under its decreed right in that year shall be reduced by an equivalent amount. If a party in any twelve-month

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period, beginning July 1, takes less than its decreed right, or less than the amount allowed after reduction for any excess extractions, the amount of such underpumping, but not exceeding ten percent (10%) of its decreed right or such additional amount as the Watermaster may allow for an emergency or other reasonable cause, may be carried over and taken during the next succeeding year.

(2) From pumping or otherwise taking water from the ground in said Eastern Unit in any year within one-half mile of its western boundary in an amount which, in addition to other extractions, would be in excess of the average amount pumped or taken in said one-half mile zone during the period 1927-28 to 1937-38, to wit: 88 acre feet per annum, the half mile being measured along a perpendicular erected on the boundary between said unit and said Western Unit as shown on the map attached hereto.

(3) From pumping or otherwise taking water from the ground in said Eastern Unit in any year in excess of the average amount pumped or taken therein during the period 1927-28 to 1937-38, to wit: 3,261 acre feet per annum, during any year in which static groundwater level measurements, made at the time of maximum high water table in the spring season of each year, show that the average water table elevation in the area between Foothill Boulevard and Raymond Fault and between a line 300 feet west of Rosemead Boulevard and a line 100 feet east of Michillinde Avenue, less any increase in such elevation that is attributable to any groundwater storage program, is higher than that at the Arcadia group of

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wells designated as such on said map attached hereto and located west of the intersection of Orange Grove and Santa Anita Avenues in the City of Arcadia, this limitation to apply only when the water table elevation at said group is less than 500 feet above sea level, United States Geological Survey datum.

VII

There is now and, so long as the requirements in subparagraphs 2 and 3 of Paragraph VI hereof are fulfilled and maintained, there will be no material movement of water across the boundary between the Western Unit and the Eastern Unit.

VIII

Nothing in this Judgment contained shall be deemed to modify the rights as between the defendants City of Sierra Madre and City of Arcadia as set forth in that certain Judgment entitled "The City of Sierra Madre, a municipal corporation, et al., vs. The City of Arcadia, a municipal corporation," No. 209747 in the Superior Court of the State of California, in and for the County of Los Angeles, entered on the 22nd day of April, 1930, but in the exercise of such rights each of said parties shall be subject to the express provisions of Paragraph VI hereof.

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IX

A Watermaster shall be appointed by this Court to serve at the pleasure of the Court to administer and enforce the provisions of this Judgment, the Raymond Basin Area Water Exchange Agreement of 1943 and amendment thereto, attached hereto and made a part hereof, and the instructions and orders of this Court, and if any such provisions, instructions or orders of the Court, or any order, rule or direction of such Watermaster, made in accordance with and for the enforcement of this Judgment and said Agreement and amendment thereto, shall have been disobeyed or disregarded, said Watermaster hereby is empowered and authorized to report promptly to the Court such fact and the circumstances connected therewith and leading thereto.

A violation of any provision of this Judgment, or attached Agreement and amendment thereto, or order, instruction, rule or direction of the Court or of the Watermaster, shall be punished in such manner as the Court may direct.

The compensation of said Watermaster shall be fixed by an order or orders which the Court hereafter from time to time may make.

X

There is hereby established a Raymond Basin Management Board (sometimes hereafter called "Board") which shall be the Watermaster. The Board shall have all of the rights,

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and shall carry out all of the responsibilities, of the Watermaster as provided in this Judgment. In addition, in order to implement sound water management practices within the framework of the rights of the parties as determined herein, the Board shall have the powers set forth in Paragraph XII.

XI

The Board shall be organized and constituted as follows:

(1) Each party holding a decreed right of 1,000 acre feet or more shall appoint one member to the Board.

(2) The parties within each subarea, namely, Monk Hill Subarea, Pasadena Subarea, and the Eastern Unit, who each hold decreed rights of less than 1,000 acre feet shall together appoint a member from each respective subarea. The appointment for each subarea shall be by majority vote, with each such party having one vote.

(3) No party shall have the right to appoint, or to participate in the appointment of, more than one member to the Board.

(4) Board members shall have broad engineering or management experience in the operation of a water utility or groundwater basin.

(5) Each member shall be appointed for a term of one year, or until replaced. Members shall serve at the pleasure of the appointing party, parties or body. No member

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shall be appointed by or represent more than one party or group of parties. The Board shall select its own officers. A quorum of the Board shall consist of six members, and the Board may act by a majority of those members present at a meeting. The Board shall meet at least quarterly, and all parties to the action may attend. Minutes of the Board meetings shall be kept and sent to all parties in the action. The Board shall have the power to adopt such by-laws, rules and regulations, not inconsistent with the terms of this Judgment, as may be necessary for its own organization and operation.

XII

The powers and responsibilities of the Raymond Basin Management Board, as Watermaster and otherwise, shall be exercised with a view toward protecting the long-term quantity and quality of the groundwater supply; utilizing the groundwater storage capacity of the basin for the maximum advantage of the parties, without however causing significant adverse impact upon any party; integrating to the extent feasible the use of surface and groundwater supplies so as to reduce costs, improve reliability of supply, and to protect against drought; and to encourage the parties to cooperate in the utilization of their respective water rights and water systems for the mutual good. The Board shall have power:

(1) To contract with the California Department of Water Resources, or with any other competent person or firm,

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to perform all or part of the Watermaster functions.

(2) To determine the amount of storage capacity that is available in the basin from time to time for groundwater storage programs.

(3) To allocate such storage capacity among the parties, and to provide for its use and the recapture of equivalent amounts of stored water. The Board may approve, condition or disapprove proposed water storage programs, and imported, nontributary water shall not be stored in the basin without the Board's approval. Approved programs shall include provisions for the duration of allowed storage of water, for determination of losses, for the rates and places of recapture, and for such other conditions as may be necessary to prevent operational problems for other parties, including degradation of water quality.

(4) To control the direct recharge into the basin of imported, non-tributary water.

(5) To issue such rules and regulations as may be necessary in order to account properly for sales, leases, exchanges or other transfers among the parties of decreed rights and the use of water. The Board shall attempt to facilitate, not restrict, such transfers, including efforts to develop agreements for the production and distribution of water through facilities of other parties where such practices promote efficiency and sound water management. This policy shall extend to the use of stored water where consistent with the policies of The Metropolitan Water District of Southern California with respect to the use of supplemental water

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which it provides.

(6) To conduct studies or undertake other activities for the common benefit of the parties in the operation of the Raymond Basin Area; to obtain engineering, legal and other professional services in such connection; and, in addition to the Watermaster budget procedures, to assess the parties in an equitable manner and as may be necessary to pay the costs of the Board's operations, which assessments shall be paid by the parties. Payment shall be enforced in the same manner as provided in Paragraph XV for the annual budget, although the actual apportionment of costs may differ from the method provided in Paragraph XV. All actions of the Board, including any assessments imposed, shall be subject to review by the Court, pursuant to the procedures of Paragraph XVII.

XIII

Each party hereto at its own expense shall:

(1) Measure and keep records of all its diversions from any source contributing to the supply of water in the ground, of its importations of water, and of its production of water from the ground in the Raymond Basin Area, subject to the approval of the Watermaster as to equipment and methods;

(2) Measure and keep records of its production and distribution in such manner as to show its use in, transfers within, and exports of water from the Raymond Basin Area, or any subdivision thereof, as required by the Watermaster;

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(3) Measure and record the depth to the water table in all wells owned or operated by it within the Raymond Basin Area once a month, or as required by the Watermaster.

Any party owning any facilities for the diversion from any source contributing to the supply of the water in the ground in the Raymond Basin Area, or for pumping or otherwise taking water from the ground in said area, at its own expense shall install and at all times maintain in good working order reliable measuring devices and facilities for testing said devices and shall keep records of its diversions and production through the use of such devices and facilities as may be required by the Watermaster; that upon failure of any such party to install such devices and facilities on or before such day as the Watermaster shall fix, after due notice from the Watermaster so to do, the Watermaster shall give the Court notice of such failure for proper action in the premises.

XIV

In addition to other duties herein provided, the Watermaster shall:

(1) Supervise the collection, assembly and presentation of the records and other data required of the parties; such records and other data to be open to inspection by any party or its representative during normal business hours.

(2) Require all parties hereto to operate their respective wells in a manner which will accomplish the stated

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purposes of said Agreement and amendment thereto, and will effectuate this Judgment without placing undue burden on any party; study separately pumping patterns in the Monk Hill Basin, Pasadena Subarea, and the Eastern Unit, and report recommendations thereon not less than twice each year; such report shall recognize the right of each party to pump its decreed right, but shall include recommendations as to whether more or less water should be pumped from individual wells; such recommendations shall be calculated to minimize interference among parties, to conserve energy, expense and local water supplies, and to provide for the most efficient and equitable use of groundwater in the Raymond Basin Area; such recommendations shall be advisory only, and shall not be binding upon the parties unless confirmed by order of this Court.

(3) Establish an ongoing program to monitor water quality in the Raymond Basin Area.

(4) Prepare a tentative annual budget for the fiscal year commencing July 1, separately stating the anticipated expense for administering the provisions of said Agreement and amendment thereto for the release and receipt of water, and the anticipated expense of the administration of the other provisions of said Agreement and amendment thereto and of enforcing this Judgment. The Watermaster shall serve said tentative budget upon each of the parties on or before May 1 of each year. If any party has any objection to said tentative budget, or any suggestions with respect thereto, it shall present the same in writing within ten (10) days after

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service thereof upon it. Thereafter, the Watermaster shall prepare a final budget and serve the same upon each party. If any party objects to said final budget it may make written objection thereto by filing its objection with this Court within fifteen (15) days after service of the same upon it, after first having served such objection upon each party hereto, and shall bring such objection on for hearing before this Court within fifteen (15) days after such filing, or at such time as the Court may direct.

If no objection to said budget be made as herein provided, it shall be the annual budget for the particular year involved. If objection to such budget be filed with this Court as herein provided, then the annual budget shall be determined by the order of this Court.

(5) Make an annual report on or before September 1 of each year to the parties hereto of the scope of the Watermaster's work during the preceding fiscal year and a statement of receipts and expenditures in appropriate detail, segregated as to the items attributable to the administration of the provisions of said Agreement and amendment thereto respecting the release and receipt of water, and as to the items attributable to the administration of the other provisions of said Agreement and amendment thereto and to the enforcement of this Judgment.

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XV

The cost of enforcing this Judgment or any order or direction of this Court or of the Watermaster (other than those with respect to the release and receipt of water in accordance with the provisions of said Agreement and amendment thereto) shall be borne by the parties in proportion to their respective decreed rights as determined in Paragraphs V and VI of this Judgment, and the Watermaster shall assess such cost to each party accordingly.

Payment thereof shall be made by each party within thirty (30) days after the annual budget shall have become final and the service on such party by the Watermaster of a statement of the amount due. If payment be not made within said thirty (30) days, such payment shall be delinquent and the Watermaster shall add a penalty of ten percent (10%) thereof to said statement, and the amount of said statement plus said penalty thereupon shall be due and payable. Payment required of any party hereunder or under the terms of said Agreement and amendment thereto may be enforced by execution issued out of this Court or as may be provided by any order hereinafter made by this Court. All payments and penalties received by the Watermaster, except payments received on account of the release and receipt of water, shall be deposited by the Watermaster in a fund which shall be designated "The Watermaster Service Fund" and shall be expended for the administration of the Agreement and amendment thereto and the enforcement of this Judgment in accordance with the annual

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budgets herein provided for. Any money remaining at the end of any year shall be available for use the following year for such Watermaster service. Money collected or received by the Watermaster in connection with the release and receipt of water under the provisions of said Agreement and amendment thereto shall be deposited by him in a special deposit fund and paid out by him in accordance with the provisions of said Agreement and amendment thereto.

XVI

Any Watermaster ceasing to perform Watermaster service hereunder immediately upon such cessation shall deposit with the clerk of this Court all funds in his possession collected from the parties in accordance with this Judgment or said Agreement and amendment thereto, and forthwith shall serve upon the parties hereto and file with this Court his final account and report, and shall deliver to his successor, or as the Court may direct, all property and all records or certified copies thereof.

XVII

Any party having objection to any determination or finding made by the Watermaster, other than as provided in subparagraph (4) of Paragraph XIV hereof, may make the same in writing to the Watermaster within thirty (30) days after the making of such determination or finding after first

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having served a copy of such objection upon each party, and within thirty (30) days thereafter the Watermaster shall consider said objection and shall amend or affirm his finding or determination; any party objecting thereto within thirty (30) days thereafter may file its objections with this Court, bringing the same on for hearing before said Court within sixty (60) days thereafter, or at such time as the Court may direct, after first having served said objection upon each party. The Court may affirm, modify, amend or overrule any such finding or determination of the Watermaster.

XVIII

Within thirty (30) days after the appointment of the Watermaster, each of the parties shall file with the Watermaster and serve on each party the name and address of the person to whom any notice, demand, request, objection or the submission of any budget and the annual report is to be made or given, and each of said parties may change the name and address of said person from time to time by filing said changed name and address with the Watermaster and by serving a copy thereof upon each of the parties hereto.

Any notice, demand, request, objection or the submission of a budget and the annual report required or authorized by this Judgment or said Agreement and amendment thereto to be given or made to or served upon any party or the Watermaster, shall be delivered or mailed by registered mail postage prepaid to the person so designated at the

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address last filed with the Watermaster. Such service by mailing shall be complete at the time of the deposit in the United States mail.

Notice of any other motion or proceeding herein may also be given by service upon the person and at the address filed with the Watermaster, in the manner designated in this Paragraph, provided that certified or registered mail may be used. If any party or successor in interest has failed to make such filing with the Watermaster, notice may be mailed to the address which the Watermaster uses for such party or successor.

XIX

The agreement entered into by certain parties, entitled "Raymond Basin Area Water Exchange Agreement of 1943" and amendment thereto, a copy of which is attached hereto,, and each and all of its terms and provisions be, and the same is and are hereby fully approved, and said Agreement and amendment thereto is hereby expressly made a part of this Judgment to the same purpose and effect as though said Agreement and amendment thereto were at this point fully herein written and set forth at length; provided, however, that California-Michigan Land and Water Company, Sunny Slope Water Company, and Ernest Crawford May, as Executor of the Last Will and Testament of Charles Heuston Hastings, deceased, who are not parties to said Agreement or amendment thereto, shall not be bound by nor required to perform any of the provisions

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thereof, nor pay any part of the cost of administering or enforcing said Agreement or amendment thereto; that the power of the Court is hereby expressly made to underlie all of the terms and provisions of said Agreement and amendment thereto and the enforcement thereof, and that the parties thereto, and each thereof, are hereby ordered to perform fully said Agreement and amendment thereto and all of its said terms and provisions.

No taking of water by any party under the provisions of said Agreement and amendment thereto concerning the release and receipt of water in any amount in excess of its decreed right to pump or otherwise take water from the ground in the Raymond Basin Area shall constitute a taking adverse to any other party; nor shall any party have the right to plead the statute of limitations or an estoppel against any other party by reason of its said taking of water in the Raymond Basin Area pursuant to a request for the release of water; nor shall such release of water by any party constitute a forfeiture or abandonment by such party of any part of its decreed right to water; nor shall such release in any wise constitute a waiver of such right, although such water, when released under the terms of said Agreement and amendment thereto, may be devoted to the public use of others; nor shall such release of water by any such party in any wise obligate any party so releasing to continue to release or furnish water to any other party or its successor in interest, or to the public generally, or to any part thereof, otherwise than as provided in Article IV of said Agreement and amendment thereto.

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XX

In the event any party shall serve upon the parties and file with the Watermaster and with the Court a declaration of forfeiture or abandonment of its decreed right, or any part thereof, said party shall be relieved of the payment of further costs of administering the provisions of said Agreement and amendment thereto and enforcing this Judgment applicable to the right so forfeited or abandoned; provided that said relief from said further costs shall not become effective until the beginning of the next fiscal year for which a budget has not become final; and provided that said party making such forfeiture or abandonment shall pay to the Watermaster its proportion of such costs to the effective date of such relief from costs. The amount of water so abandoned or forfeited shall be available immediately for use by the parties in the proportions set forth in Paragraphs V and VI hereof, pending the time that any review shall have been made as provided for in Paragraph XXI hereof.

XXI

The Court hereby reserves jurisdiction and authority upon application of any party hereto, or upon its own motion, to review (1) its determination of the safe yield of either or both of said units of the Raymond Basin Area, or (2) the rights, in the aggregate, of all of the parties in either or both of said units as affected by the abandonment or forfeiture

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of any right, in whole or in part, decreed herein, and by the abandonment or forfeiture of any right by any other person or entity, and, in the event material change be found or any such abandonment or forfeiture be established, to adjudge that the decreed right of each party to pump or otherwise take water from the ground in the Raymond Basin Area shall be changed proportionately in the same manner as originally fixed herein; provided, however, that notice of such review shall be served on all parties at least thirty (30) days prior thereto and that the review of its determination of the safe yield of either or both of said units of the Raymond Basin Area shall be had not more frequently than at five (5) year intervals after the date hereof. Except as provided herein, and except as rights decreed herein may be abandoned or forfeited by nonuser, in whole or in part, each and every right decreed herein hereby is fixed as of the date hereof.

XXII

The Court hereby reserves jurisdiction and authority at any time, upon application of any party, the Watermaster, or upon its own motion, to make such modifications of, or such additions to, the provisions of this Judgment, or to make such further order or orders, as may be necessary or desirable for the adequate enforcement, protection or preservation of the rights of the respective parties as declared in this Judgment or as provided in said Agreement and amendment thereto. The Court further reserves jurisdiction to make any

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other and/or additional orders of sufficient kind and nature to protect the waters in said Raymond Basin Area or any portion thereof from contamination of the groundwater supply from cesspool effluent or surface waters.

XXIII

The defendant California-Michigan Land and Water Company is entitled to become a party to the Raymond Basin Area Water Exchange Agreement of 1934 and thereby become entitled to receive water upon the same terms and conditions provided in said Agreement with respect to the several parties thereto.

XXIV

The defendant Bradbury Estate Company, a corporation, and Eugene E. Bean be and they hereby are dismissed without costs.

XXV

None of the parties is entitled to recover its costs as against any other party.

DATED: March 26, 1984

/s/ Robert M. Olson
JUDGE OF THE SUPERIOR COURT

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APPENDIX N

“DRAFT CITY OF ARCADIA RECYCLED WATER FEASIBILITY STUDY” NOVEMBER 2006

DRAFT

City of Arcadia
Recycled Water Feasibility Study

November 2006

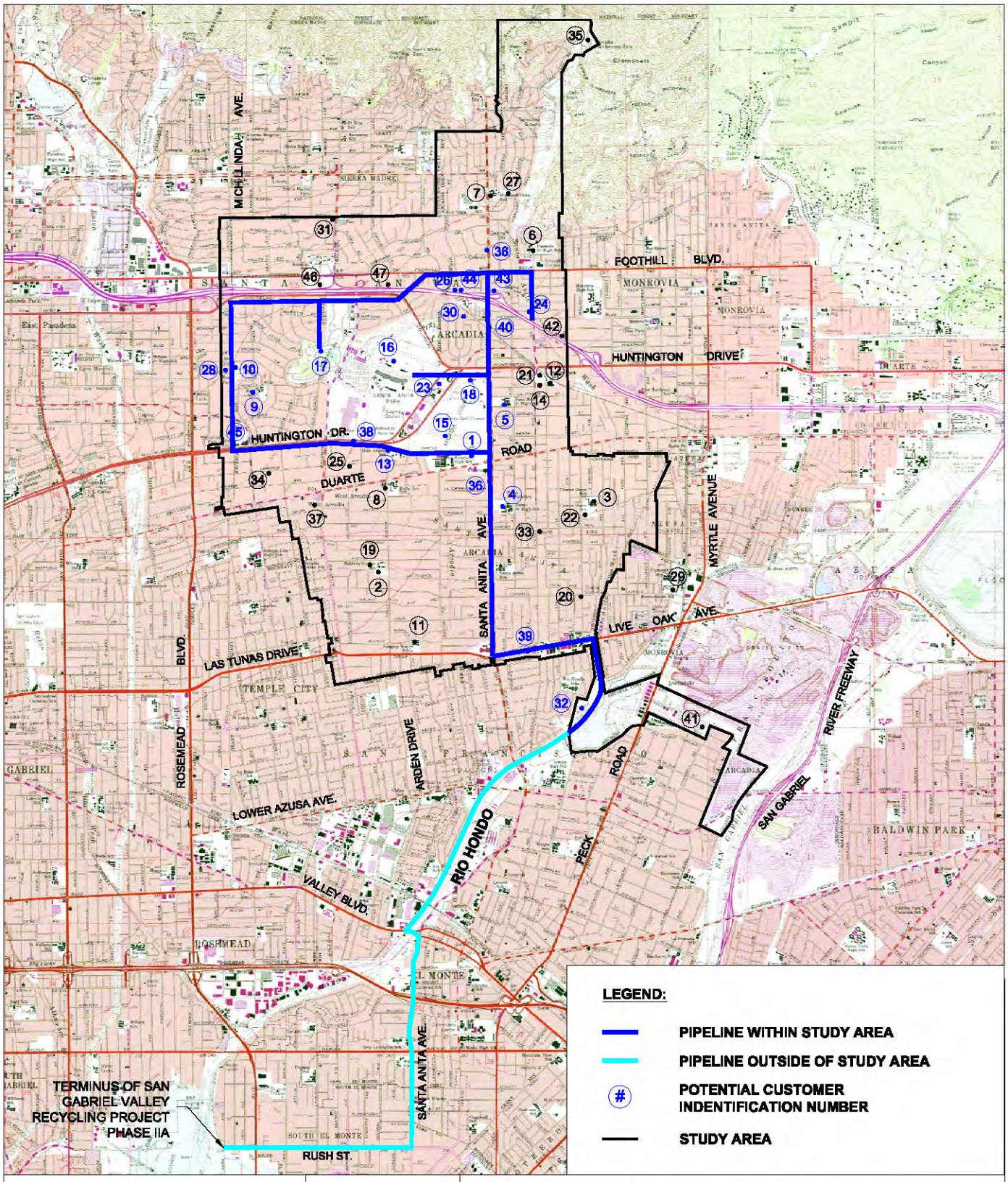
Prepared for:

City of Arcadia

Stetson Engineers Inc.

861 Village Oaks Drive, Covina, California 91724
Phone: (626) 967-6202, Fax: (626) 331-7065

Covina, CA San Rafael, CA Mesa, AZ



STETSON ENGINEERS INC.
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TEL: (626) 967-6202
FAX: (626) 331-7065

2171 E Francisco Blvd., Suite K
San Rafael California 94901

2651 W Guadalupe Rd., Suite A209
Mesa Arizona 85202

APPROXIMATE SCALE
3,000' 0 3,000'

CITY OF ARCADIA
RECYCLED WATER FEASIBILITY STUDY

POTENTIAL RECYCLED WATER PIPELINE ROUTE
POTENTIAL USERS

F:\JOBS\2050\REPORT\FINAL DRAFT\FIGURES\FIGURE EXECUTIVE SUMMARY.dwg
F:\JOBS\1205\1205-16-6.PCP

Proposed Recycled Water Users Within City Of Arcadia

Demand No.	Customer Name	Address	Water Demand /1 (AFY)	Recycled Water Deamnd /2				
				Annual Average (AFY)	Average Day (MGD)	Max Day Demand (MGD)	Max Peak Hour Demand (MGD)	Max Peak Hour Demand (GPM)
1	Arcadia High	180 Campus Dr.	46	27	0.025	0.061	0.184	**128**
2	Baldwin Stocker Elementary	422 W Lemon Ave.	5	3	0.003	0.007	0.020	**14**
3	Camino Grove School	700 Camino Grove	6	3	0.003	0.008	0.023	**16**
4	Dana Middle School	1401 S. First Ave.	9	6	0.005	0.012	0.037	**26**
5	First Ave Middle School	301 S. First Ave.	12	7	0.006	0.015	0.046	**32**
6	Foothills Middle School	171 E. Sycamore Ave.	5	3	0.003	0.007	0.020	**14**
7	Highland Oaks Elementary	10 Virginia Dr.	3	2	0.002	0.005	0.014	**10**
8	Holly Ave Elementary	360 W. Duarte Rd.	14	8	0.008	0.019	0.057	**39**
9	Hugo Reid Elementary	1000 Hugo Reid Dr.	1	1	0.001	0.001	0.004	**3**
10	Hugo Reid Primary	1000 Hugo Reid Dr.	4	2	0.002	0.005	0.015	**10**
11	Longley Way Elementary	2601 S. Longley Wy.	7	4	0.004	0.010	0.029	**20**
12	Rancho High/Serendipity School	120 - 150 S. Third Ave.	5	3	0.002	0.006	0.018	**13**
13	Holly Angels School	Campus Dr. & Holly Ave.	2	1	0.001	0.002	0.007	**5**
14	Serendipity School (Part of No. 12)	120 - 150 S. Third Ave.	0	0	0.000	0.000	0.000	**0**
15	Santa Anita Golf Course	405 S. Santa Anita Ave.	156	109	0.097	0.243	0.730	**507**
16	Santa Anita Park (Race Track)	285 W. Huntington Dr.	162	121	0.108	0.271	0.812	**564**
17	LA County & State Arboretum	S. Baldwin Ave.	93	79	0.070	0.176	0.528	**367**
18	Arcadia County Park	78 W Huntington Dr.	125	106	0.095	0.237	0.712	**495**
19	Baldwin Stocker Park	422 W. Lemon Ave.	5	5	0.004	0.010	0.031	**22**
20	Bicentennial Park	526 E. Longden Ave.	1	1	0.001	0.003	0.008	**6**
21	Bonita Park	207 Bonita St.	0	0	0.000	0.000	0.001	**0**
22	Camino Grove Park	1420 S. Sixth Ave.	2	2	0.002	0.004	0.012	**8**
23	Civic Center Athletic Field	240 W. Huntington Dr.	8	7	0.006	0.016	0.048	**33**
24	Eisenhower Memorial Park	601 N. Second Ave.	20	17	0.015	0.037	0.112	**78**
25	Fairview Avenue Park	542 Fairview Ave.	3	3	0.002	0.006	0.018	**12**
26	Forest Avenue Park	132 W. Forest Ave.	1	1	0.001	0.003	0.008	**6**
27	Highland Oaks Park	10 W. Virginia Rd.	6	5	0.004	0.011	0.032	**22**
28	Hugo Reid Park	1153 De Anza Pl.	10	9	0.008	0.019	0.057	**40**
29	Longden Avenue Park	1179 E. Longden Ave.	0	0	0.000	0.000	0.000	**0**
30	Newcastle Park	143 W. Colorado Blvd.	8	7	0.006	0.016	0.047	**33**
31	Orange Grove Park	670 W. Orange Grove Ave.	0	0	0.000	0.001	0.002	**1**
32	Par-3 Golf Course	620 E. Live Oak Ave.	44	31	0.028	0.069	0.207	**144**
33	Tierra Verde Park	200 E. Camino Real Ave.	7	6	0.006	0.014	0.042	**29**
34	Tripolis Friendship Park	1003 S. Golden West Ave.	3	2	0.002	0.005	0.015	**11**
35	Wilderness Park	2240 N. Highland Oaks Dr.	8	7	0.006	0.016	0.047	**33**
36	Santa Anita Median	105 N Santa Anita Ave.	47	47	0.042	0.104	0.313	**218**
37	Baldwin Median	460 N Baldwin Ave.	15	15	0.013	0.033	0.098	**68**
38	Hungtington Median	32 E Huntington Dr.	17	17	0.015	0.038	0.115	**80**
39	Live Oak Median	43 E Live Oak Ave.	5	5	0.005	0.011	0.034	**24**
40	Fashing Car Wash	425 N Santa Anita Ave.	37	24	0.021	0.053	0.160	**111**
41	Calco Farms	11921 Goldring Rd.	15	12	0.011	0.028	0.084	**58**
42	Caltrans	223 N Fifth Avenue	4	4	0.003	0.009	0.026	**18**
43	Caltrans	4 E Forest Ave	12	12	0.011	0.027	0.082	**57**
44	Caltrans	170 W Forest Ave	7	7	0.007	0.017	0.050	**35**
45	Caltrans	900 N Michillinda Ave	1	1	0.001	0.001	0.004	**3**
46	Caltrans	1015 N Old Ranch Road	1	1	0.001	0.003	0.010	**7**
47	Caltrans	1009 San Carlos Road	5	5	0.005	0.012	0.036	**25**
		Total	948	740	0.661	1.652	4.956	**3,442**
Hi-Lited Totals (Customers Along Proposed Recycled Water Pipeline Route)				644	0.575	1.438	4.315	**2,996**

/1 Values shown are actual metered usage Jan. 1999 and Jan. 2004. Supplied by City Of Arcadia staff.

/2 Demand Reduction Factors: Schools 40%, Golf Courses 30%, Parks 15%, Arboretum 15%, Race Track 25%, Car Wash 35%, and Calco Farms 15%. Medians and Caltrans not reduced. Maximum Day Demand = 2.5 X Average Day Demand. Maximum Peak Hour Demand = 3 X Maximum Day Demand

APPENDIX O

CITY OF ARCADIA RESOLUTION 7044

RESOLUTION NO. 7044

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ARCADIA ENACTING AND IMPLEMENTING PHASE I OF THE CITY'S WATER CONSERVATION PLAN (AS SET FORTH IN ARCADIA MUNICIPAL CODE SECTION 7553 ET SEQ.)

WHEREAS, the City of Arcadia (the "City") serves more than 3,000 customers and is an "urban water supplier" as defined in Water Code section 10617. The City is subject to the Urban Water Management Planning Act, Water Code Division 6, Part 2.6; and

WHEREAS, pursuant to the Urban Water Management Planning Act, the City has prepared an Urban Water Management Plan ("UWMP"), which includes the City's Water Shortage Contingency Plan ("WSCP") as set forth in City Ordinance section 7553 et seq.; and

WHEREAS, the City's WSCP contains eight mandatory water conservation phases, all of which contain certain irrigation restrictions; and

WHEREAS, the City Council may set any water conservation phase in the WSCP by resolution; and

WHEREAS, on January 17, 2014, Governor Edmund G. Brown, Jr. declared a drought state of emergency; and

WHEREAS, Water Code section 1058.5 grants the State Water Resources Control Board ("SWRCB") the authority to adopt emergency regulations in years when the Governor has issued a proclamation of emergency based upon drought conditions or when in response to drought conditions that exist, or are threatened, in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years; and

WHEREAS, on April 25, 2014, the Governor signed an Executive Order directing the SWRCB to adopt emergency regulations as it deems necessary pursuant to Water Code

section 1058.5, to ensure that urban water suppliers implement drought response plans to limit outdoor irrigation and other wasteful water practices; and

WHEREAS, on July 15, 2014, the SWRCB formally adopted Emergency Regulations for Statewide Urban Water Conservation ("Emergency Regulations") to enact emergency regulations for urban water suppliers effective August 1, 2014, and expiring 270 days therefrom, unless the SWRCB determines that it is no longer necessary due to changed conditions, or unless the SWRCB renews the regulations due to continued drought conditions as described in Water Code section 1058.5; and

WHEREAS, the SWRCB Emergency Regulations prohibit certain types of water use, order all urban water suppliers to implement mandatory conservation measures, and order water suppliers to provide monthly data on water production; and

WHEREAS, the SWRCB Emergency Regulations further mandate that each urban water supplier shall implement all requirements and actions of the stage of its water shortage contingency plan that imposes mandatory restrictions on outdoor irrigation.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ARCADIA, CALIFORNIA, DOES HEREBY RESOLVE AS FOLLOWS:

SECTION 1. The City Council has determined that certain water conservation methods are warranted in order to preserve existing water supplies in the event that the City may be unable to meet future water demands should drought conditions continue, and hereby declares that Phase I of its Water Shortage Contingency Plan, as set forth in City Ordinance section 7553.7.1, is hereby implemented.

SECTION 2. This Resolution shall take effect immediately and shall expire 270 days from August 1, 2014, unless the SWRCB determines that its Emergency Regulations are no longer necessary due to changed conditions, or unless the SWRCB renews the Emergency Regulations due to continued drought conditions as described in Water Code section 1058.5.

SECTION 3. CEQA. The City has determined that the approval Resolution and the implementation of Phase I of its Water Shortage Contingency Plan is a ministerial action, required by the SWRCB Emergency Regulations and therefore the City has no discretion with regard to implementing Phase I of its Water Shortage Contingency Plan and the adoption of this Resolution is exempt from the California Environmental Quality Act ("CEQA"), pursuant to State CEQA Guidelines Section 15268 and California Public Resources Code Section 21080(b)(1).

SECTION 4. The City Council through this Resolution authorizes the City Manager or his designee to implement Phase I of its Water Shortage Contingency Plan.

SECTION 5. The City Council hereby directs staff to file a Notice of Exemption with the County Clerk of the Los Angeles within five (5) working days following the adoption of this Resolution.

SECTION 6. The custodian of the record of proceedings for this action shall be the City Clerk, or his/her designee, whose offices are located at City of Arcadia at 240 W. Huntington Drive, Arcadia, California 91007.

[SIGNATURES ON THE NEXT PAGE]

SECTION 7. The City Clerk shall certify to the adoption of this Resolution.

Passed, approved and adopted this _____ day of _____, 2014.

_____
Mayor of the City of Arcadia

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

Stephen P. Deitsch

_____
Stephen P. Deitsch
City Attorney

APPENDIX P

CITY OF ARCADIA WATER CONSERVATION ORDINANCE 2327

ORDINANCE NO. 2327

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF ARCADIA, CALIFORNIA, AMENDING SECTION 7553.7.1 OF CHAPTER 5, ARTICLE VII OF THE ARCADIA MUNICIPAL CODE CONCERNING OUTDOOR IRRIGATION AND PROHIBITED WATER USES

WHEREAS, on January 17, 2014, Governor Edmund G. Brown Jr. declared a drought State of Emergency to exist in California due to severe drought conditions; and

WHEREAS, on July 15, 2014, California's State Water Resources Control Board (the "State Board") adopted emergency drought regulations to support water conservation that was set to expire on April 25, 2015; and

WHEREAS, the State Board has found that drought conditions are continuing; and

WHEREAS, the State Board adopted a resolution on March 17, 2015, to renew the 2014 emergency drought regulations, to require urban water suppliers to implement certain additional water conservation measures, and to prohibit certain water uses by end-users; and

WHEREAS, the newly adopted State Board regulations require that the City of Arcadia (the "City") restrict the number of days per week potable water can be used for outdoor irrigation or to obtain the State Board's approval to implement an alternate water shortage contingency plan that includes allocation-based rate structures that will achieve a level of conservation superior to limiting outdoor irrigation to two days per week; and

WHEREAS, the Arcadia Municipal Code does not currently restrict the number of days per week water can be used for outdoor irrigation; and

WHEREAS, the Arcadia Municipal Code does not prohibit certain water uses by end-users that are prohibited under the new State Board drought regulations; and

WHEREAS, because of the drought conditions prevailing in the City and in the areas of this State and elsewhere from which the City obtains its water supplies, the City Council recognizes the need to implement additional water conservation measures to prevent waste, and to prevent unreasonable use or unreasonable method of use of water, in the interest of the people of the City and for purposes of the public welfare.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ARCADIA, CALIFORNIA, DOES ORDAIN AS FOLLOWS:

[Deleted text is highlighted in ~~strikethrough~~ and added text is highlighted in underline]

SECTION 1. Section 7553.7.1 of Division 3, Part 5, Chapter 5 of Article VII of the Arcadia Municipal Code is hereby amended to read as follows:

"(a) There shall be no hose washing of sidewalks, walkways, driveways, or parking areas.

(b) There shall be no hose washing of a motor vehicle, except where the hose is fitted with a shut-off nozzle or similar device that causes the hose to cease dispensing water immediately when not in use.

(~~b~~c) No water shall be used to clean, fill or maintain levels in decorative fountains unless such water is part of a recirculating system.

(~~c~~d) No restaurant, hotel, cafe, cafeteria, bar or other public place where food or beverage is served or offered for sale, shall serve drinking water to any customer unless expressly requested by the customer.

(e) No hotel or motel shall launder towels and linens of an occupied guestroom on a daily basis, unless expressly requested by the guest. The hotel or motel shall prominently display a notice in each guestroom of the guest's option not to have towels and linens laundered daily.

(~~d~~f) No customer of the Water Division shall permit water to leak from any facility on his premises.

(~~e~~g) No lawn, landscape, or other turf areas shall be watered or irrigated between the hours of 9:00 a.m. and 6:00 p.m. Pacific time.

(h) No lawn, landscape, or other turf areas shall be watered or irrigated during and within 48 hours after measurable rainfall.

(i) No lawn, landscape, or other turf areas shall be watered or irrigated more than 3 days per week, or such other number of days as the City Council may prescribe by resolution from time to time. The three days per week shall be Tuesday, Thursday, and Saturday or such other days as the City Council may prescribe by resolution from time to time. Notwithstanding the foregoing, upon written application to and approval by the City's Public Works Services Director, an owner of property used primarily for commercial, industrial or institutional purposes may irrigate lawn, landscape or other turf areas of such property such number of days per week as approved by the Public Works Services Director if such owner provides evidence, to the satisfaction of the Public Works Services Director, that the owner has reduced overall bi-monthly water use for such property by at least twenty-five percent (25%) from the same bi-monthly period in 2013, or by such other measurement of reduction adopted by resolution of the City Council from time to time.

(~~f~~j) No lawn, landscape or other turf areas shall be watered in a wasteful manner. For example, in a manner that causes runoff such that water flows onto adjacent property, non-irrigated areas, private and public walkways, roadways, parking lots, or stuctures.

(k) Additional restrictions and conservation measures may be adopted from time to time by resolution of the City Council and shall become effective upon their adoption. Any and all such restrictions and measures shall be subject to all enforcement provisions, including without limitation fines and penalties, as are otherwise applicable to the provisions set forth in this Section 7533.7.I."

SECTION 2. If any section, subsection, subdivision, paragraph, sentence, clause or phrase of this Ordinance or any part thereof is for any reason held to be unconstitutional, such determination shall not affect the validity of the remaining portion of this Ordinance or any part thereof. The City Council of the City of Arcadia hereby declares that it would have passed each section, subsection, subdivision, paragraph, sentence, clause or phrase thereof, irrespective of the fact that any one or more sections, subsections, subdivisions, paragraphs, sentences, clauses or phrases be declared unconstitutional.

SECTION 3. This Ordinance shall take effect immediately upon adoption in accordance with Section 376 of the California Water Code. The City Clerk shall certify to the adoption of this Ordinance and shall cause a copy of the same to be published in a newspaper printed, published, and circulated in the City within ten (10) days after its adoption.

[SIGNATURES ON NEXT PAGE]

Passed, approved and adopted this 21st day of April, 2015.

/s/ John Wuo

Mayor of the City of Arcadia

ATTEST:

/s/ Gene Glasco

City Clerk

APPROVED AS TO FORM:

Stephen P. Deitsch

Stephen P. Deitsch
City Attorney

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS:
CITY OF ARCADIA)

I, GENE GLASCO, City Clerk of the City of Arcadia, hereby certifies that the foregoing Ordinance No. 2327 was passed and adopted by the City Council of the City of Arcadia, signed by the Mayor and attested to by the City Clerk at a regular meeting of said Council held on the 21st day of April, 2015 and that said Ordinance was adopted by the following vote, to wit:

AYES: Council Member Beck, Chandler, Kovacic, Tay and Wuo

NOES: None

ABSENT: None

/s/ Gene Glasco

City Clerk of the City of Arcadia

APPENDIX Q

CITY OF ARCADIA RESOLUTION 7088

RESOLUTION NO. 7088

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ARCADIA, CALIFORNIA, CONCERNING RESTRICTIONS ON OUTDOOR IRRIGATION AND PROHIBITED WATER USES

WHEREAS, on January 17, 2014, Governor Edmund G. Brown Jr. declared a drought State of Emergency to exist in California due to severe drought conditions; and

WHEREAS, on July 15, 2014, California's State Water Resources Control Board (the "State Board") adopted emergency drought regulations to support water conservation that was set to expire on April 25, 2015; and

WHEREAS, the State Board has found that drought conditions are continuing; and

WHEREAS, the State Board adopted a resolution on March 17, 2015, to renew the 2014 emergency drought regulations, to require urban water suppliers to implement certain additional water conservation measures, and to prohibit certain water uses by end-users; and

WHEREAS, the newly adopted State Board regulations require that the City of Arcadia (the "City") restrict the number of days per week potable water can be used for outdoor irrigation or to obtain the State Board's approval to implement an alternate water shortage contingency plan that includes allocation-based rate structures that will achieve a level of conservation superior to limiting outdoor irrigation to two days per week; and

WHEREAS, the Arcadia Municipal Code currently allows outdoor watering of lawn, landscape, or other turf areas 3 days per week, limited to Tuesday, Thursday, and Saturday; and

WHEREAS, because of the drought conditions prevailing in the City and in the areas of this State and elsewhere from which the City obtains its water supplies, the City Council recognizes the need to implement additional water conservation measures to prevent waste, and to prevent unreasonable use or unreasonable method of use of water, in the interest of the people of the City and for purposes of the public welfare; and

WHEREAS, the City adopted Ordinance No. 2327 on April 7, 2015, to include additional new requirements to the City's existing Phase I water use restrictions of the Mandatory Water Conservation Plan; and

WHEREAS, Ordinance No. 2327 provided that additional restrictions and conservation measures may be adopted from time to time by resolution of the City Council and shall become effective upon their adoption.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ARCADIA, CALIFORNIA, DOES HEREBY FIND, DETERMINE AND RESOLVE AS FOLLOWS:

SECTION 1. Notwithstanding subsection (i) of Section 7553.7.1 of Division 3, Part 5, Chapter 5 of Article VII of the Arcadia Municipal Code, no lawn, landscape, or other turf areas shall be watered or irrigated more than 2 days per week, or such other number of days as the City Council may prescribe by resolution from time to time. The two days per week shall be Tuesday and Saturday or such other days as the City Council may prescribe by resolution from time to time. Furthermore, outdoor watering of lawn, landscape or other turf areas shall be limited to no more than 10 minutes per station on each day allowed for such watering. Notwithstanding the foregoing, upon written application to and approval by the City's Public Works Services Director, an

owner of property used primarily for commercial, industrial or institutional purposes may irrigate lawn, landscape or other turf areas of such property such number of days per week as approved by the Public Works Services Director if such owner provides evidence, to the satisfaction of the Public Works Services Director, that the owner has reduced overall bi-monthly water use for such property by at least twenty-five percent (25%) from the same bi-monthly period in 2013, or by such other measurement of reduction adopted by resolution of the City Council from time to time.

SECTION 2. The City Clerk shall certify to the adoption of this Resolution.

Passed, approved and adopted this day of , 2015.

_____
Mayor of the City of Arcadia

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

Stephen P. Deitsch

_____
Stephen P. Deitsch
City Attorney

APPENDIX R

FINAL DRAFT COST OF SERVICE STUDY REPORT, OCTOBER 2015

Carollo Engineers
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Tel 626.535.0180
Fax 626.535.0185
Carollo.com

WATER AND SEWER COST OF SERVICE STUDY

OCTOBER 2015

City of Arcadia

The City of Arcadia is proud to be the sole provider of water and sewer services to more than 50,000 residents. The City owns and operates its water distribution system and the PWSD maintains and operates the system.

ARCADIA

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EXECUTIVE SUMMARY

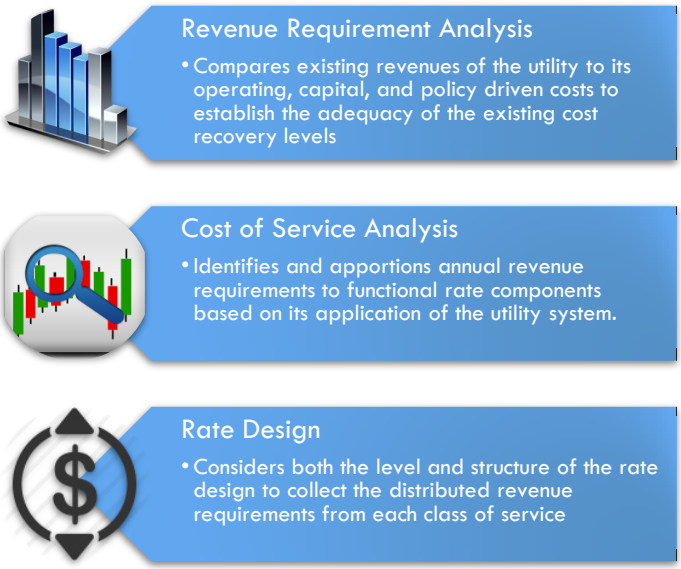
The City of Arcadia (City) retained Carollo Engineers to conduct a water and sewer cost of service study for Fiscal Years 2015/16 through 2019/20. The study included the development of a five-year financial plan and comprehensive cost of service rate analysis, including budget-based water and sewer rate structures. To develop updated user rates, an in-depth study of the each utility's revenue needs, customer usage characteristics, capital improvement program (CIP), and additional future drivers of service costs and revenue was conducted. This report documents the methodology and assumptions used to develop the financial plan, outlines the policy decisions reached, and summarizes the proposed water and sewer rates and the resulting customer impacts.

The projections and forecasts of this analysis are based on reasonable expectations of future events. Should the proposed revenue increases be delayed or postponed, or cost escalation, operating expenditures, or capital needs exceed forecasted levels prior to FY 2019/20, the City might be required to begin a new rate adoption process to increase rates above currently projected levels. The City may similarly be required to begin a new Proposition 218 process if revenues do not materialize as projected.

As of the writing of this report, the State of California is in the third year of one of the most severe droughts on record. This drought has led to significantly decreased operating safe yields in the groundwater supply basins and allotments of water to the water purveyors within the basins, including the City. As a result of this decrease in inexpensive groundwater supplies, the City must rely more heavily on replenishment water purchased from the Metropolitan Water District of Southern California to augment its supplies at a cost of approximately $800 per acre-foot for untreated water. A key component of this rate study is the development of rates that reflect the City's water supply characteristics and the relationship between each customer's bill and the cost of producing, treating, and delivering water.

COST OF SERVICE STUDY

Rate analyses are typically performed periodically so that revenues from rates adequately fund utility operations, maintenance, and capital investments. Additionally, in California, water rates must adhere to the cost of service requirements imposed by California Constitution article XIII D, section 6 (commonly referred to as Proposition 218) and article X, section 2. Proposition 218 requires that property related fees and charges, including water Service Fees and charges, do not exceed the reasonable and proportional cost of providing the service. Article X, section 2 of the State Constitution establishes the need to preserve and conserve the State's water supplies and prevent the unreasonable method of use and the waste of water.

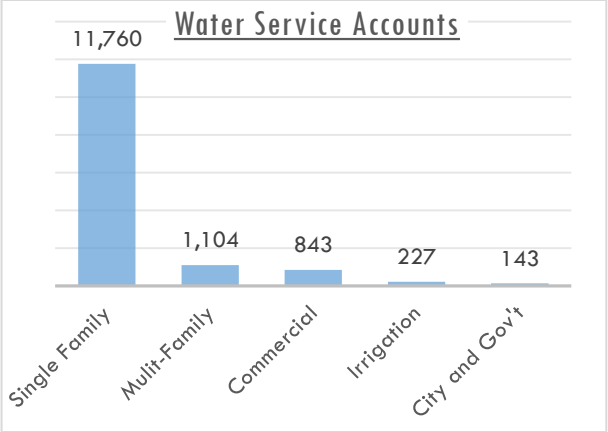


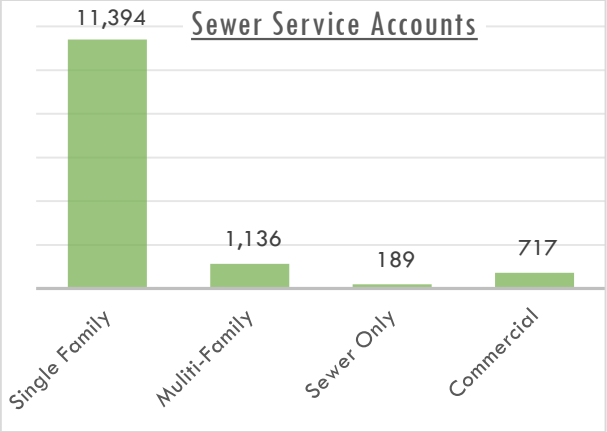
To achieve these requirements, a comprehensive rate study typically consists of the following progression of three interconnected processes.

CITY OVERVIEW

The City operates public water and sewer utilities that are responsible for providing water and sewer services to the City's 57,500 residents, as well as many public and commercial institutions. The water utility currently provides total water deliveries of approximately 6.4 million hundred cubic feet (HCF) per year, or roughly 14,600-acre feet, to the nearly 14,100 water customer accounts. The approximate customer distribution is as follows: 84% single-family residential homes, 8% apartments and condominiums, and 6% commercial and industrial, with the remaining 2% of accounts made up of irrigation, City, and government and institutional accounts. The City's primary water source is the Main San Gabriel Basin, from which over 70 percent of water is produced. The remaining water is pumped from the East and West Raymond Basins.

The sewer utility currently services nearly 13,400 sewer customer accounts. The approximate customer account distribution is as follows: 85% single-family residential homes, 8.5% apartments and condominiums, and 5% commercial and industrial, with the remaining 1.5% of accounts made up sewer only accounts. Sewer only accounts are outside the City's water service area, but are connected to the City's sanitary sewer system. The City's 1,136 multi-family sewer accounts provide sewer service for 8,231 individual dwelling units.

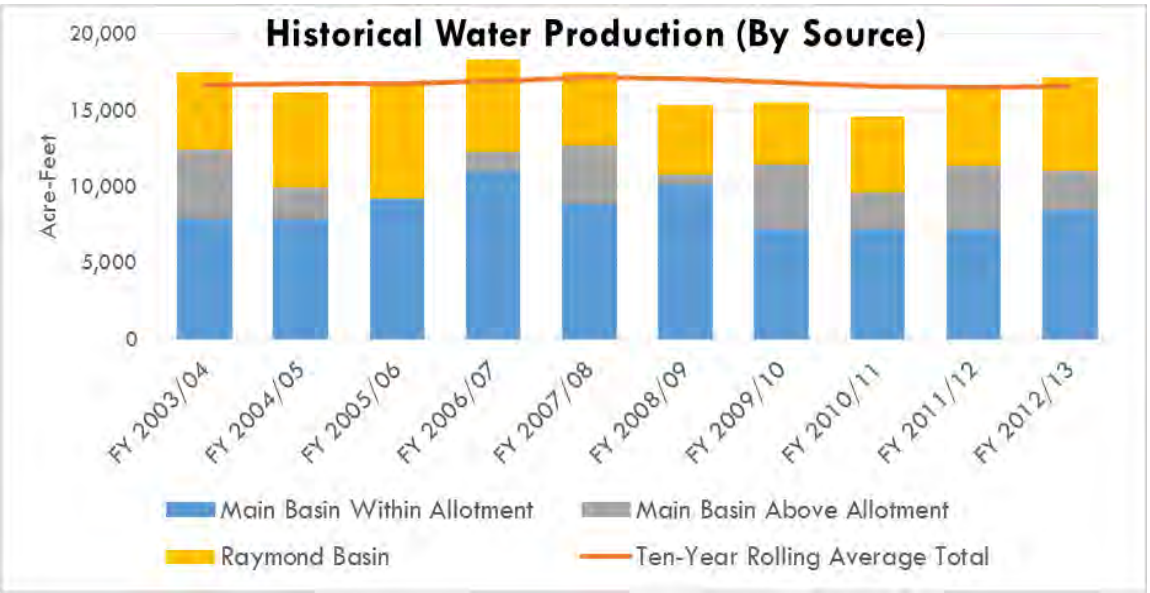




DEMAND ANALYSIS AND REVENUE REQUIREMENTS

In recent years, all of the water provided by the City has been pumped from three ground water basins that underlie or are adjacent to the City: the Main San Gabriel Basin, East Raymond Basin, and West Raymond Basin (the East Raymond Basin and the West Raymond Basin are referred to collectively as the Raymond Basins). Additionally, the City maintains a potable water connection to the Metropolitan Water District of Southern California to provide service, if needed.

The Main San Gabriel Basin is the City's primary source of ground water; historically, approximately 65 percent of the water produced by the City has been sourced from the basin. More recently, supply driven reductions in pumping from the Raymond Basins have increased the share of water pumped from the Main San Gabriel Basin to over 70 percent of total water production. The City's annual pumping allotment from the Main San Gabriel Basin has dropped 17 percent in recent years as the drought has affected the amount of water stored in the basin. Based on discussions with City staff, this analysis has been completed under the conservative assumption that the annual pumping allotment will remain steady.



The northern half of the City overlies the East and West Raymond Basins. Historically, approximately 35 percent the City's annual water production has been pumped from the Raymond Basins. The City's pumping rights were reduced 27% from 2014 in the East Raymond Basin. Additionally, pumping rights for the West Raymond Basin were reduced 30% in the interest of the Basin's sustainability. Due to reductions in annual pumping rights, the annual proportion of water from the Raymond Basins is expected to drop to approximately 23% of total water production. The figure shows historical water production from each source, as well as a ten-year rolling average of total production.

This analysis assumes that there will be no account growth in the water or sanitary sewer systems through the projection period as the City is almost entirely built-out. Additionally it is assumed that any population growth and associated sewer flow growth will not have a significant effect on the City's sewer operations or expenditures.

Water Revenues

The City's primary source of water revenues is user service charges in the form of bimonthly fixed charges per meter and the volumetric charge per unit of water consumed in one-hundred cubic feet (HCF). User service charge revenues make up almost 99% of the total water revenues. There is a fixed and a variable component to the current rate structure. Currently, the fixed rate generates less than 15% of total rate revenue, or about $1.6 million in FY 2012/13. Variable rates generated $9.1 million in revenues in FY 2012/13.

Given the variability of water demands, many agencies are targeting higher fixed revenues to provide greater financial stability and predictability. A low fixed charge, coupled with the fact that the City's commodity (variable) rate component has not kept up with the increasing need for replenishment water, has led to greater cost recovery imbalance. Based on the study projections, the City must increase water revenues annually in order to meet projected revenue needs due to annual increases in expenditures and to fund the CIP. The following table presents a summarized financial forecast for the City's water utility based on an increase in water rates.

	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
PRE RATE INCREASE					
Rate Revenues	$9.43	$10.52	$11.76	$12.28	$13.08
Other Revenues	0.14	0.13	0.13	0.12	0.12
Total Revenues	$9.57	$10.65	$11.89	$12.40	$13.20
EXPENDITURES					
Operating Costs	$8.33	$8.60	$8.88	$9.16	$9.46
Water Supply Costs	3.97	3.76	3.57	3.40	3.51
Rate Funded Capital	0.00	0.00	0.00	0.00	0.00
Policy Expenditures	0.00	0.00	0.00	0.00	0.00
Total Expenditures	$12.30	$12.36	$12.45	$12.57	$12.97
Cash flows (pre rate increase)	($2.73)	($1.71)	($0.56)	($0.17)	$0.23
Rate Revenue Increase	**15%**	**15%**	**7%**	**7%**	**7%**
Month of Adoption	**January**	**July**	**July**	**July**	**July**
Revenues From Rate Increase	$0.71	$1.58	$0.82	$0.86	$0.92
Resulting Cash flows	($2.02)	($0.13)	$0.27	$0.69	$1.15
CONSOLIDATED RESERVES (INCLUDES OPERATING, FACILITIES, AND EQUIPMENT RESERVES)					
Beginning Balance	$26.58	$23.25	$20.98	$17.30	$15.57
Reserves for O&M +/(-)	(2.02)	(0.13)	0.27	0.69	1.15
Reserves for Capital +/(-)	(1.31)	(2.14)	(3.95)	(2.41)	(2.95)
Ending Balance	$23.25	$20.98	$17.30	$15.57	$13.77

Note:

1. All monetary values presented are in millions of dollars.

As of the finalizing of this report, the City is considering deferring the water rate increases scheduled on July 1, 2016 until January 1, 2017 and shifting all subsequent July 1 increases to the following January 1. This shift deviates from Carollo's recommendation and does result in a revenue loss and necessary use of reserves. However, the City believes that despite the significant impact to system revenues with the State mandate curtailments, the rate defer allows utility customers to better manage these increases.

The table below presents a summarized financial forecast that reflects impacts of the shift to January 1 rate increase implementation in each year of the study period. The shift results in a total cash flow shortfall of $2.25 million over the five year study period. Under this strategy, the year-end consolidated fund balance expected to total $11.66 million for FY 2019/20.

	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Total Revenues (Pre Rate Increase)	$9.57	$10.65	$11.89	$12.39	$13.20
Less: Expenditures	(12.30)	(12.36)	(12.45)	(12.57)	(13.06)
Cash flows (pre rate increase)	**($2.73)**	**($1.71)**	**($0.56)**	**($0.18)**	**$0.13**
Rate Revenue Increase	**15%**	**15%**	**7%**	**7%**	**7%**
	January	**January**	**January**	**January**	**January**
Revenues From Rate Increase	$0.71	$0.79	$0.41	$0.43	$0.46
Resulting Cash flows (Use of Reserves)	($2.02)	($0.92)	($0.15)	$0.25	$0.59
Consolidated Reserves (Includes Operating, Facilities, and Equipment Reserves)					
Beginning Balance	$26.58	$23.25	$20.19	$16.09	$13.93
Use of Reserves for O&M	(2.02)	(0.92)	(0.15)	0.25	0.59
Use of Reserves for Capital	(1.31)	(2.14)	(3.95)	(2.41)	(2.86)
Ending Balance	**$23.25**	**$20.19**	**$16.09**	**$13.93**	**$11.66**

Note:

1. All monetary values presented are in millions of dollars.

Sewer Revenues

The City's primary source of sewer revenues is user rates from residential, commercial, and industrial customers, which make up almost 98% of total sewer revenues. Unlike the City's water utility, the sewer utility does not currently hold a large amount of reserves within its operating or capital projects funds. Therefore, almost the entirety of the projected sewer CIP expenditures will need to be funded with revenues from user Service Fees. Funding of the CIP and system replacement projects is the primary driver of the need for sewer rate increases. User Service Fees generated approximately $1.2 million in FY 2012/13. Based on the study projections, the City must increase sewer revenues annually to meet projected revenue needs due to annual increases in expenditures and to fund the CIP.

Increases in operating costs dictate the need for rate increases to a lesser degree. Operating costs are expected to increase in each year as driven by cost inflation. The City has worked to increase operational efficiency in an effort to control operating cost increases. Over the study period, operating costs are expected to increase to a total of approximately $1.4 million. The following table presents a summarized financial forecast for the City's sewer utility.

	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
PRE RATE INCREASE					
User Rate Revenues	$1.22	$1.80	$2.25	$2.38	$2.52
Other Revenues	0.02	0.02	0.02	0.03	0.03
Total Revenues	**$1.24**	**$1.82**	**$2.27**	**$2.41**	**$2.55**
EXPENDITURES					
Operating Costs	$1.20	$1.24	$1.29	$1.34	$1.39
Rate Funded Capital	0.34	0.71	0.89	1.02	1.25
Policy Expenditures	0.00	0.00	0.00	0.00	0.00
Total Expenditures	**$1.54**	**$1.96**	**$2.18**	**$2.36**	**$2.63**
Cash flows (pre rate increase)	($0.30)	($0.14)	$0.10	$0.05	($0.08)
Revenues From Rate Increase	$0.29	$0.45	$0.13	$0.14	$0.15
Resulting Cash flows	($0.01)	$0.31	$0.23	$0.19	$0.07
INCREASE TO BIMONTHLY RATES [1]					
Residential Fixed Charge	*$4.00*	*$3.11*	*$0.94*	*$0.99*	*$1.05*
Commercial Fixed Charge	*$11.96*	*$9.28*	*$2.79*	*$2.96*	*$3.13*
Commercial Variable Charge (per HCF)	*$0.07*	*$0.05*	*$0.02*	*$0.02*	*$0.02*
CONSOLIDATED RESERVES (INCLUDES OPERATING AND CAPITAL FUNDING RESERVES)					
Beginning Balance	$2.35	$1.78	$2.09	$2.14	$2.11
Use of Reserves for O&M	0.00	0.00	0.00	0.00	0.00
Use of Reserves for Capital	(0.58)	0.31	0.05	(0.03)	(0.11)
Ending Balance	$1.78	$2.09	$2.14	$2.11	$2.00

Note:

1. All monetary values presented are in millions of dollars excluding *bimonthly rate increases*.

As of the finalizing of this report, the City is considering deferring the sewer rate increases scheduled on July 1, 2016 until January 1, 2017 and shifting all subsequent July 1 increases to the following January 1. This shift deviates from Carollo's recommendation and does result in a revenue loss and necessary use of reserves. However, the City believes that the rate defer allows utility customers to better manage these increases.

The table below presents a summarized financial forecast that reflects impacts of the shift to January 1 rate increase implementation in each year of the study period. The shift results in a total cash flow shortfall of $0.23 million over the five year study period. Under this strategy, the year-end consolidated fund balance expected to total $1.55 million for FY 2019/20.

	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Total Revenues (Pre Rate Increase)	$1.24	$1.82	$2.27	$2.41	$2.55
Less: Expenditures	(1.54)	(1.96)	(2.36)	(2.58)	(2.81)
Cash flows (pre rate increase)	**($0.30)**	**($0.14)**	**($0.09)**	**($0.17)**	**($0.26)**
Revenues From Rate Increase	$0.29	$0.22	$0.07	$0.07	$0.08
Resulting Cash flows (Use of Reserves)	($0.01)	$0.09	($0.02)	($0.10)	($0.19)
Bimonthly Rate Increases	**January**	**January**	**January**	**January**	**January**
Residential Fixed Charge	$4.00	$3.11	$0.94	$0.99	$1.05
Commercial Fixed Charge	$11.96	$9.28	$2.79	$2.96	$3.13
Commercial Variable Charge (per HCF)	$0.07	$0.05	$0.02	$0.02	$0.02
Consolidated Reserves (Includes Operating, Facilities, and Equipment Reserves)					
Beginning Balance	$2.35	$1.78	$1.86	$1.84	$1.74
Use of Reserves for O&M	0.00	0.00	0.00	0.00	0.00
Use of Reserves for Capital	(0.58)	0.09	(0.02)	(0.10)	(0.19)
Ending Balance	**$1.78**	**$1.86**	**$1.84**	**$1.74**	**$1.55**

Note:

1. All monetary values presented are in millions of dollars excluding *bimonthly rate increases.*

COST OF SERVICE ANALYSIS

After determining the City's revenue requirements, the next step in the analysis is to outline the cost to deliver each unit of water and to serve each customer. This process takes each item in the City's budget and organizes the items collectively based on what function is served. For example, some cost items support the ability to deliver additional, expensive water, while other costs are incurred to provide customer service or to fund sewer activities. Organizing the budget in terms of end function allows direct correlation between the budget item and the rate, coupling the cost incurred by the City and the benefit delivered to the customer or the demand that the customer places on the systems.

The City's water budget was analyzed line-item by line-item and expenditures were distributed among the available functions:

- *Base: Operating and capital costs incurred by the water system to provide a basic level of service to each customer. This category includes the majority of local groundwater supply costs.*
- *Peak: Operating costs incurred to meet peak demands for water in excess of basic demand (base). This category includes the majority of the replenishment water costs, as well as infrastructure costs related to providing the required system over-sizing to meet excess (peak) demands. The conservation program costs are also allocated to the peak component.*
- *Customer: Fixed expenditures that relate to operational support activities including accounting, billing, customer service, and administrative and technical support. These expenditures are essentially common-to-all customers and are reasonably uniform across the different customer classes.*
- *Capacity: Meter and capacity related costs, such as meter maintenance and peaking charges, that are included based on the meter's hydraulic capacity (measured in gallons per minute). Additionally, as the system's facilities are designed to meet peak demand, a portion of the capacity related costs are allocated to Capacity.*

The City's sewer budget was analyzed line-item by line-item and expenditures were distributed between the functions of Customer and Flow.

- *Customer: E*xpenditures are fixed expenditures that relate to operational support activities including accounting, billing, customer service, and administrative and technical support. These expenditures are essentially common-to-all customers and are reasonably uniform across the different customer classes.
- *Flow/Capacity:* Expenditures include those that are incurred based on the actual amount of flow discharged into the system, as well as those associated with potential discharges into the sewer system. These costs include operating and maintaining the sewer system, as well as capital costs, since the system is sized based on flow requirements.

More details about functional allocations and associated costs in Chapter 3 and Chapter 6 of this report.

RESULTS AND RECOMMENDATIONS

Recommended Water Rates

Increases in water supply costs brought on by the ongoing drought have significantly impacted the finances of the City's water utility. Current projections indicate that water supply concerns may not be abated for some time; it is projected that over the next five years the City's ground water allotment will remain below the historic average. Additionally, maintenance of the water system, and inflationary increases to operating and maintenance costs will continue to drive higher expenditures over the next five years and beyond. The proposed water revenue increases are necessary for the City to maintain its high level of service to each of the water customers. The City should continue to evaluate revenue requirements in each year based on financial and operational conditions at that time.

The proposed water rates have been designed to not only provide the revenues necessary to operate the system, but also to help control water supply costs by promoting efficient water usage. The expanded water rate structure aims to enhance customer equity by passing costs on to customers in a manner that truly reflects each customer's usage characteristics and water needs. More specifically, the tiered rate structure has been developed so that the costs of the more expensive imported water supplies are recovered from customers using larger quantities of water and thereby creating greater demands on the water utility's water supplies and system. Absent this higher level of usage, the City would otherwise not need to purchase replenishment water or incur costs related to sizing the system to meet the higher peak demand and conservation costs.

Under the tenets of California Constitution article XIII D, section 6, adoption of the proposed 5-year water rate structure would set the maximum rates that the City could implement in each year. Given the unpredictability of weather patterns and subsequently the basin allotments, the City may realize savings on water supply costs if the allotment is raised above the level analyzed in this study. If such savings are realized, the City could opt to forgo rate increases in any given year, or implement rates lower than the adopted rates. It is important that such decisions be made with careful consideration so that possible revenue shortfalls are avoided.

Based on discussion with City staff and careful review of the cost of service analysis, Carollo recommends that the City implement the following rate design modifications:

- Increase the fixed charge to better reflect how actual costs are incurred. This adjustment helps the City meet its objective of increased revenue stability and predictability.

- Implement a four-tier rate structure for single-family residential customers with seasonally adjusted, meter size specific tier allotments. By defining increased allotments for larger meters, it recognizes the additional capacity purchased at the time of connection. Additionally, adjusting the tier allotments seasonally can help to stabilize revenues and promote efficient water use year round.
- Implement a two-tier rate structure for multi-family customers with water allocations based on the number of dwelling units in each multi-family complex.
- Implement customer class specific uniform rates for other customer classes. Definitions of class specific uniform rates take into account each customer class's usage characteristics and can better distribute costs to individual customers based on those characteristics.

Fixed Charges

A bimonthly fixed charge is a cost recovery mechanism that is generally included in the rate structure to facilitate recovery of fixed expenditures, including meter and customer related costs. As discussed previously, this charge also includes a portion of the capacity related costs to provide a stable source of revenue independent of monthly water demand.

While an increased fixed charge provides a stable source of revenues for the utility, increasing the fixed charge reduces the amount allocated to the commodity rates, and thus reduces incentives for conservation. The proposed revenue adjustments, as a percentage, do not equal or necessarily correlate to an equivalent percentage increase to rates or bimonthly bills. The results of the cost of service analysis and rate redesign will affect users differently based on their meter size and water consumptions habits. The following table identifies the proposed bimonthly fixed charges for the 5-year rate period.

METER SIZE	CURRENT	FY 2015/16 PROPOSED	FY 2016/17 PROPOSED	FY 2017/18 PROPOSED	FY 2018/19 PROPOSED	FY 2019/20 PROPOSED
5/8"	$11.55	$15.61	$20.34	$24.21	$28.46	$30.33
3/4"	12.99	17.27	22.17	26.10	30.41	32.40
1"	14.43	20.58	25.82	29.87	34.30	36.55
1.5"	21.66	28.87	34.97	39.29	44.04	46.93
2"	30.32	38.80	45.94	50.60	55.73	59.39
3"	53.41	62.00	71.55	76.99	83.00	88.45
4"	79.40	95.13	108.13	114.69	121.97	129.97
6"	150.84	194.52	217.87	227.78	238.85	254.53
8"	237.35	310.49	345.90	359.73	375.21	399.85
10"	237.35	476.15	528.80	548.21	570.02	607.45

Single Family Residential

Rates for each single family meter size have been developed with a four-tiered inclining block structure, with tier allotments that vary seasonally. The unit cost per unit (HCF) of water consumed in each tier will remain constant throughout the course of the year. Allotments in excess of Tier 1 will be adjusted seasonally to reflect varying outdoor water usage needs during winter and summer. Seasonal adjustments of the tier structure allow rates to be tailored to consumption patterns and promote year-round efficient water usage. Seasons were determined based on historical consumption patterns as well as long-term weather patterns and the rate structure is designed to

account for winter and summer usage. The following table shows the winter and summer allotments for each of applicable meter size.

BIMONTHLY TIER BREAK POINTS (HCF) - WINTER (NOVEMBER THROUGH APRIL)					
METER SIZE	5/8"	3/4"	1"	1.5"	2"
Tier 1	22	22	22	22	22
Tier 2	28	36	42	46	60
Tier 3	34	46	58	62	86
Tier 4	34+	46+	58+	62+	86+
BIMONTHLY TIER BREAK POINTS (HCF) - SUMMER (MAY THROUGH OCTOBER)					
METER SIZE	5/8"	3/4"	1"	1.5"	2"
Tier 1	22	22	22	22	22
Tier 2	34	48	62	66	94
Tier 3	44	66	92	96	140
Tier 4	44+	66+	92+	96+	140+

The proposed volumetric tiered rates are calculated by adding the base unit cost (Table 4-6) to the corresponding tier's peak rate (Table 4-7). The proposed volumetric rates for single-family residential consumption in each tier are shown in the following table. The proposed rates will apply to all meter sizes in both winter and summer.

CURRENT (ALL USAGE)	PROPOSED	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
$1.40	Tier 1	1.36	1.54	1.62	1.71	1.82
	Tier 2	1.65	1.88	1.98	2.09	2.23
	Tier 3	1.87	2.13	2.26	2.38	2.53
	Tier 4	2.01	2.29	2.42	2.55	2.72

Multi-Family Residential

Due to the high variance in account characteristics among individual customers, traditional tiered rate structures are often not a good fit for multi-family accounts. While multi-family usage is relatively homogeneous per dwelling unit, the number of units per complex varies widely. Relying only on account total information to develop and impose rates would penalize large complexes rather than excessive use or peaking. Therefore, tiered rate structures for multi-family accounts are typically developed based on allotments per dwelling unit rather than allotments per account. Dwelling unit counts for each of the City's multi-family accounts were readily available within the billing system as the City's residential sewer charges are imposed on a per-dwelling unit basis.

Following a detailed usage analysis of consumption per dwelling unit, tiers were developed to reflect the natural break point observed in the customer data. This 12 HCF per dwelling unit breakpoint captures roughly 55 percent of demands in tier 1 with the remaining in tier 2. The proposed volumetric tiered rates are calculated by adding the base unit cost (Table 4-9) to the corresponding tier's peak rates (Table 4-10). The proposed volumetric rates for multi-family residential consumption in each tier are shown in the table below.

CURRENT (ALL USAGE)	PROPOSED	HCF PER DWELLING UNIT	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
$1.40	Tier 1	≤ 12	$1.36	$1.49	$1.53	$1.57	$1.69
	Tier 2	> 12	1.58	1.74	1.78	1.83	1.97

Commercial

Commercial customers use water relatively consistently throughout the course of the year, exhibiting a much lower peak than the other customer classes and the overall system average. Due to the high variance in account characteristics among individual customers, traditional tiered rate structures are often not a good fit for commercial customers. The proposed commercial volumetric rates reflect the lowered peak burden placed on the water system by commercial customers. The proposed rates shown below maintain a uniform rate structure.

CURRENT	PROPOSED FOR	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
$1.40	Commercial	$1.46	$1.60	$1.64	$1.68	$1.81

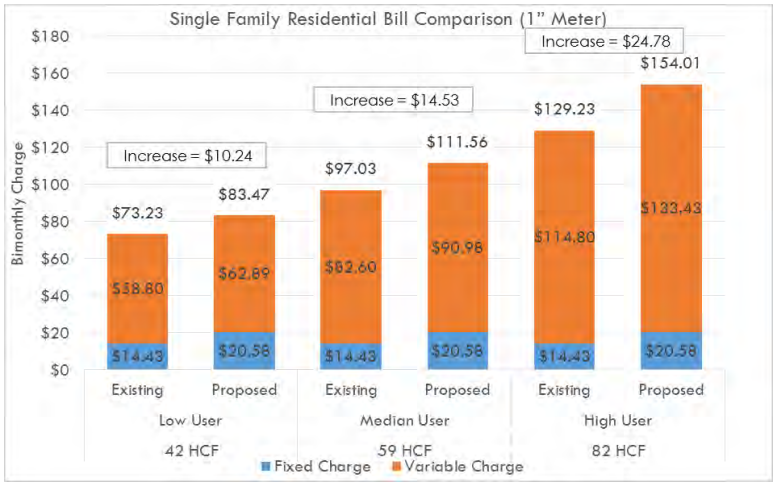
City, Government and Institutional, and Irrigation Rates

City of Arcadia, government and institutional, and irrigation customers follow similar annual consumption patterns. All serve substantial outdoor usage for irrigation, and each exhibit a higher summer peak than the other customers and the overall system average. The proposed rates reflect the increased peak burden placed on the water system by these accounts. As this peak is higher than Commercial accounts, the rate reflects this increased level of service. Like commercial accounts, traditional tiered rate structures are often not applicable to this group of customers. The proposed rates maintain a uniform rate structure, as shown in the following table.

CURRENT	PROPOSED FOR	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
$1.40	City of Arcadia, Government, Institutional, Irrigation	$1.71	$1.88	$1.93	$1.98	$2.13

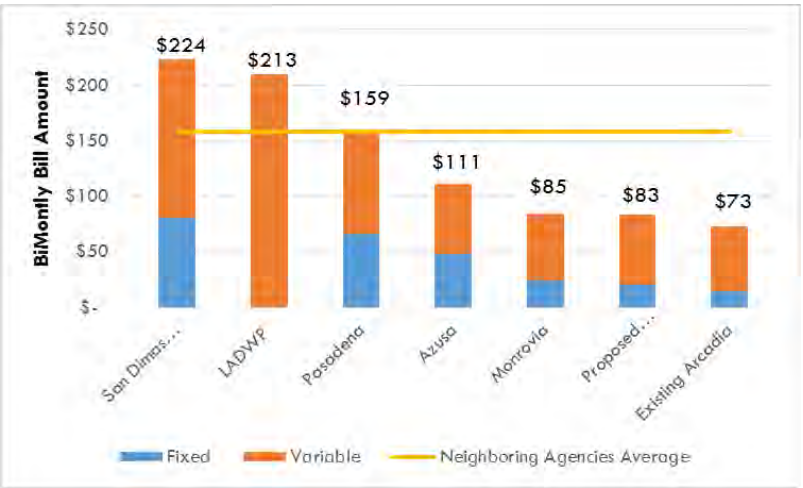
Customer Impacts

The proposed rates will affect each customer differently based on each customer's account and usage characteristics. The following figure shows a graphical representation of the level of rate increases experienced by single-family residential customers with a 1 inch meter, assuming summer allotments. The blue portion of the bar represents the customers fixed charge, while the orange represents the commodity or variable portion of the overall bill. The figure compares the increase in bills for three types of customers: low, median, and high users.



Rate Comparison

Carollo conducted a water rate survey of neighboring and similar utilities. Although utilities are not equal, it is common to examine comparisons between similar or neighboring utilities. Care should be taken in drawing conclusions from such comparisons, as factors including location, source of supply, customer profiles, age of the system, and various operational and capital related needs all play a part in rate structure design. The figure at the left compares a typical single-family residential user (1" meter) with the current rate structure and the proposed rates against five neighboring utilities.



As illustrated, despite the proposed increase and rate structure modifications, water rates are still low relative to neighboring agencies. The existing rate structure reveals a bill less than half that of some neighboring agencies.

Recommended Sewer Rates

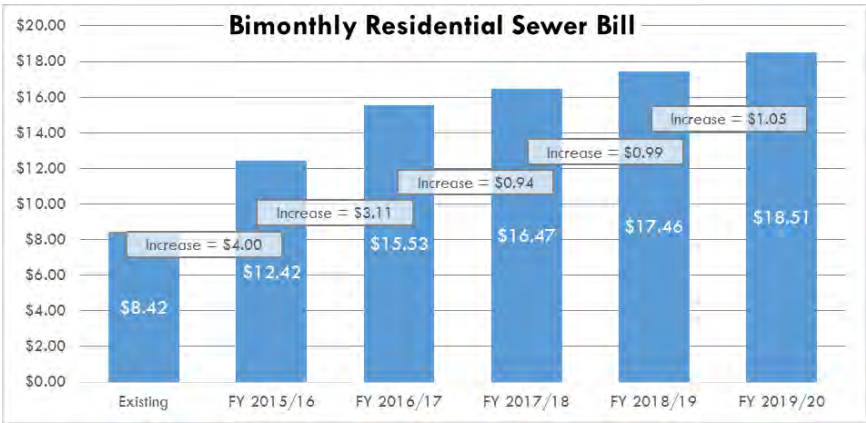
Increases in sewer revenues are needed so that the City can support inflationary increases in operating and maintenance costs increased system reinvestment aimed at maintaining the systems functionality and value. The proposed revenue increases would allow the City to fund ongoing operations, and to achieve a 75 year replacement cycle for the sewer system. The City should continue to evaluate revenue requirements in each year based on financial and operational conditions at that time.

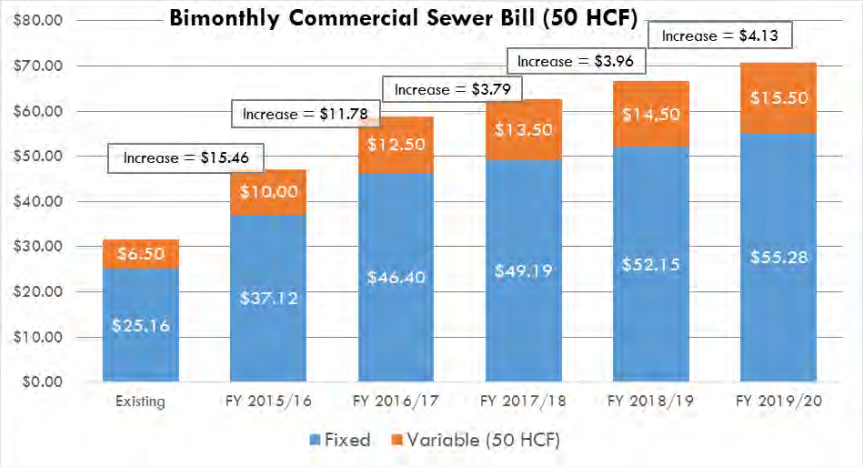
The proposed sewer rates retain the existing sewer rate structure and are increased proportionally in each year to generate the necessary level of revenue. Like the water rates, adoption of the proposed five-year sewer rate structure would set the maximum rates that the City could implement in each year. If the City finds that revenue requirements are less than those projected in this study, the City could, with care, opt to forgo rate increases in any given year, or implement rates lower than the adopted rates.

The results of the cost of service analysis indicate that the current sewer rate structure equitably recovers costs from each customer class. It is recommended that the City retain the current rate structure, and update it to reflect the increased revenue requirements discussed previously. The table below presents the proposed sewer rates.

EXISTING	PROPOSED RATES	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
$8.42	Residential (Fixed, Bimonthly)	$12.42	$15.53	$16.47	$17.46	$18.51
25.16	Commercial (Fixed, Bimonthly)	37.12	46.40	49.19	52.15	55.28
0.13	Commercial (Variable, Per HCF of water used)	0.20	0.25	0.27	0.29	0.31

The figures show the bimonthly bill impacts of the proposed rates for residential and commercial customers. The variable charge for commercial customers has been calculated assuming 50 HCF of water consumption. As sewer demands are not metered, water demands are used as a proxy for flow.





1. INTRODUCTION

The City of Arcadia (City) retained Carollo Engineers to conduct a water and sewer cost of service study (study) for Fiscal Years (FY) 2015/16 through 2019/20. The study included the development of a five-year financial plan and comprehensive cost of service rate analysis, including a budget-based water rate structure.

The City operates public water and sewer utilities that are responsible for providing water and sewer services to the City's 57,500 residents, as well as many public and commercial institutions. The Water Utility currently provides total water deliveries of approximately 6.4 million hundred cubic feet (HCF) per year or roughly 14,600-acre feet.

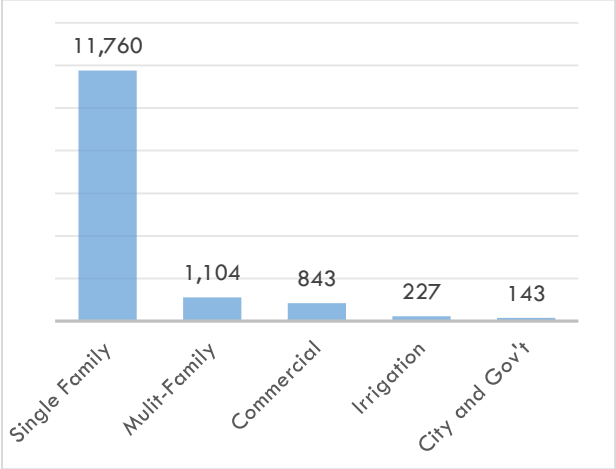
To develop updated user rates, an in-depth study of the each utility's revenue needs, customer usage characteristics, capital improvement program (CIP), and additional future drivers of service costs and revenue was conducted. This report documents the methodology and assumptions used to develop the financial plan, outlines the policy decisions reached, and summarizes the proposed water and sewer rates and the resulting customer impacts.

BACKGROUND

The Water Utility

The water utility prides itself on delivering high quality water, efficiently maintaining its assets, and providing low cost and effective service to its customers. The water utility currently services nearly 14,100 water customer accounts. The approximate customer distribution is as follows: 84% single-family residential homes, 8% apartments and condominiums, and 6% commercial and industrial, with the remaining 2% of accounts made up of irrigation, City, and government and institutional accounts.

FIGURE 1-1 WATER SERVICE ACCOUNTS



The City owns and operates wells in three groundwater basins to provide potable water to its customers. The City's primary water source is the Main San Gabriel Basin (MSGB), from which over 70 percent of water is produced. The remaining water is pumped from the East and West Raymond Basins. As of the writing of this report, the State of California is in the third year of one of the severest droughts on record. This drought has led to significantly decreased operating safe yields in the MSGB and allotments to the water purveyors within the basin, including the City. As a result of this decrease in inexpensive groundwater supplies, the City must rely more heavily on replenishment water purchased from the Metropolitan Water District of Southern California to augment its supplies at a cost of approximately $800 per acre-foot for untreated water. A key component of this rate study is the development of rates that reflect the City's water supply characteristics and the relationship between each customer's bill and the cost of producing, treating, and delivering water.

Current Water Rates and Fees

The City's current rate structure includes two charges: a bimonthly fixed charge per meter; and a uniform rate per hundred HCF of water consumed. The bimonthly fixed charge is imposed based on water meter size (in inches). The City's last water rate adjustment was implemented in July 2013. Table 1-1 summarizes the City's current water rate structure.

TABLE 1-1 EXISTING BIMONTHLY WATER RATE STRUCTURE

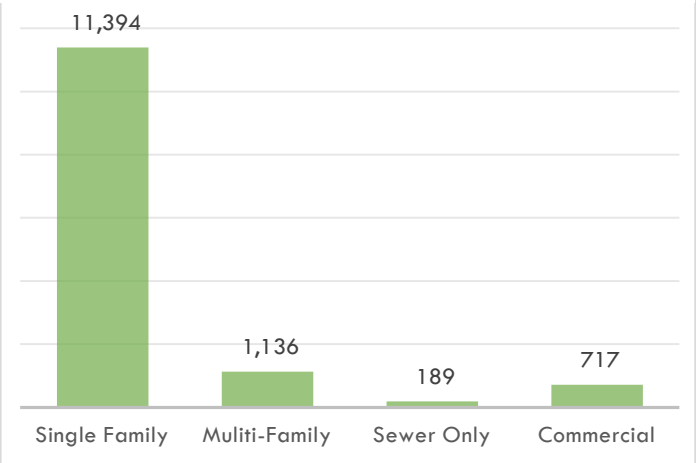
BIMONTHLY FIXED CHARGE (PER METER)		
Meter Size	**City**	**Outside City**
5/8"	$11.55	$17.33
3/4"	12.99	19.48
1"	14.43	21.65
1-1/2"	21.66	32.46
2"	30.32	45.46
3"	53.41	80.13
4"	79.40	119.09
6"	150.84	227.35
8"	237.35	357.26
VARIABLE RATE (PER HCF)		
All users	$1.40	$2.07

In December 2009, the City contracted with a rate consulting firm to conduct a tiered water rate study (2010 Study) to update the uniform rate structure. The proposed rates were intended to enhance water conservation measures and meet new state mandates, while continuing to generate sufficient revenues to fund operating and maintenance and capital expenditures. The 2010 Study was completed in November 2010, and proposed an inclining three-tiered block rate structure for single-family and multi-family accounts. This rate structure was put forth to the City Council for planned adoption in July 2011, but the City Council ultimately declined to implement the tiered rate structure.

The Sewer Utility

The City owns and operates a sanitary sewer system that provides wastewater collection and conveyance for the City's residents and businesses. The sewer utility currently services nearly 13,400 sewer customer accounts. The approximate customer account distribution is as follows: 85 percent single-family residential homes, 8.5 percent apartments and condominiums, and 5 percent commercial and industrial, with the remaining 1.5 percent of accounts made up sewer only accounts. Sewer only accounts are outside the City's water service area, but are connected to the City's sanitary sewer system.

FIGURE 1-2 SEWER SERVICE ACCOUNTS



Each multi-family sewer account provides sewer service for multiple dwelling units. The City's 1,136 multi-family sewer accounts provide sewer service for 8,231 individual dwelling units (DUs).

Current Sewer Rates and Fees

The City's sewer rates were last updated in July of 2013. The sewer rate structure differentiates between residential and commercial accounts. Table 1-2 summarizes the City's current sewer rate structure, which is charged on a bimonthly basis.

TABLE 1-2 EXISTING BIMONTHLY SEWER RATE STRUCTURE

	BIMONTHLY FIXED CHARGE (PER CONNECTION OR DU)	VARIABLE RATE (PER HCF)
Residential	$8.42	N/A
Commercial	$25.16	$0.13

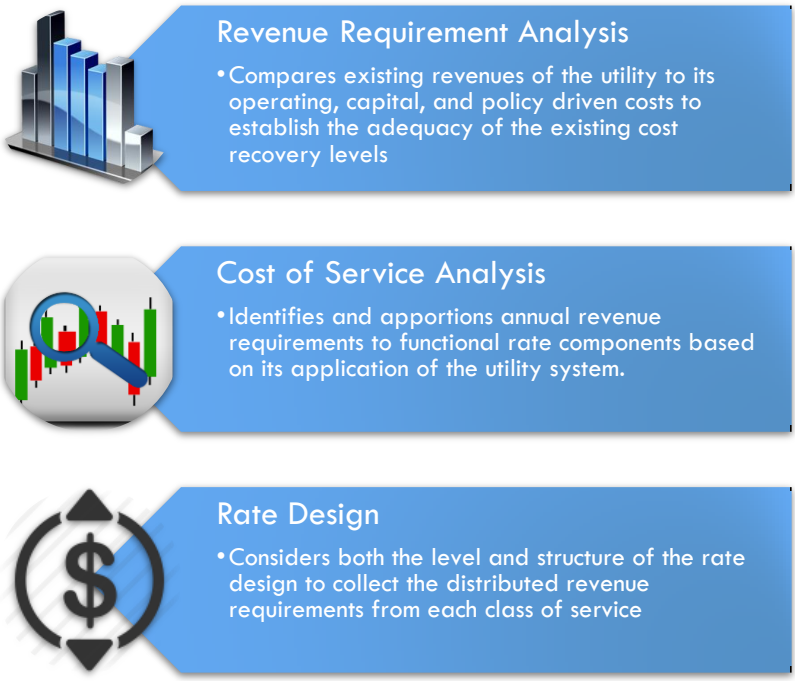
Sewer rates are imposed based on the type of connection serviced by each account.

- **Single-Family Residential** – Single-family residential accounts are charged a flat, bimonthly fee of $8.42 for sewer service.
- **Multi-Family Residential** – Multi-family residential accounts are charged a flat bimonthly fee of $8.42 for each dwelling unit served by the account. For example, a multi-family account serving 10 dwelling unit would pay a bimonthly fee of $84.20 for sewer service.
- **Commercial** – Commercial accounts are charged based on a fixed charge and a variable charge. Each account pays a bimonthly fixed service charge of $25.16 and a variable charge of $0.13 per HCF of water usage.

OVERVIEW OF RATE SETTING PROCESS

Rate analyses are typically performed periodically so that revenues from rates adequately fund utility operations, maintenance, and capital investments. Additionally, in California, water rates must adhere to the cost of service requirements imposed by the State Constitution. California Constitution article XIII D, section 6 (Article XIII D) requires that property related fees and charges, including water rates, do not exceed the reasonable and proportional cost of providing the service. Article X, section 2 of the State Constitution establishes the need to preserve the State's water supplies and discourage the wasteful or unreasonable use or reasonable method of use.

To achieve these requirements, a comprehensive rate study typically consists of the following progression of three interconnected processes.



Within the broader, standard approach and legal requirements, agencies have a reasonable degree of latitude in a cost-of-service application to develop rates that appropriately and adequately reflect the distinct and unique characteristics of a utility and the values of the community.

Project Objectives

The City of Arcadia retained Carollo to perform a water and sewer rate and revenue study to achieve three primary objectives:

- Create cost of service based water and sewer rates that provide sufficient and predictable revenues to adequately fund expenditures and funding of reserves;
- Within the principles of the Constitution, design rates that promote efficient use of water to meet the State's 20x2020 (SB 7x-7) mandate.
- Within the principles of the Constitution, design rates that effectively distribute the cost of water supply based on each customer's usage pattern.

FORWARD-LOOKING STATEMENT

The projections and forecasts of this analysis are based on reasonable expectations of future events. Should the proposed revenue increases be delayed or postponed, or cost escalation, operating expenditures, or capital needs exceed forecasted levels prior to FY 2019/20, the City might be required to begin a new Proposition 218 process to increase rates above currently projected levels in conformance with Article XIII D, section 6. The City might similarly be required to begin a new process to increase its rates in conformance with Article XIII D, should revenues not materialize as projected.

2. WATER REVENUE REQUIREMENTS

The adequacy of the existing rate structure can be measured by comparing revenue requirement projections against revenue projections under existing rates. If revenue projections under existing rates do not meet forecasted requirements, rates need to be adjusted.

The first step in a rate analysis is to prepare a revenue requirements forecast. This analysis has two main purposes – it serves as a means of evaluating the Utility's fiscal health and adequacy of current rate levels, and it sets the basis for near- and long-term rate planning.

The City's FY 2013/14 budget was used as the base year for operations and maintenance (O&M) costs. In addition, the foundation of the analysis is based on relevant financial information provided by the City including: current reserve ending fund balances, the budgeted capital improvement plan expenditures other future expenses, other future revenues, and other miscellaneous financial information.

The revenue requirement forecast is derived from five major cost components: O&M, Annual Debt Service; Policy Requirements & Coverage; Capital Expenditures; and, Offsetting Revenues.

Typically, there are two tests utilized to define the annual revenues necessary to provide both sufficient (1) cash flow and (2) bond coverage. These sufficiency tests are commonly used to determine the amount of annual revenue that must be generated from an agency's rates. Because the City's water and sewer utilities do not have outstanding debt obligations and no future debt is expected, the bond coverage test has not been applied to the revenue requirement calculations.

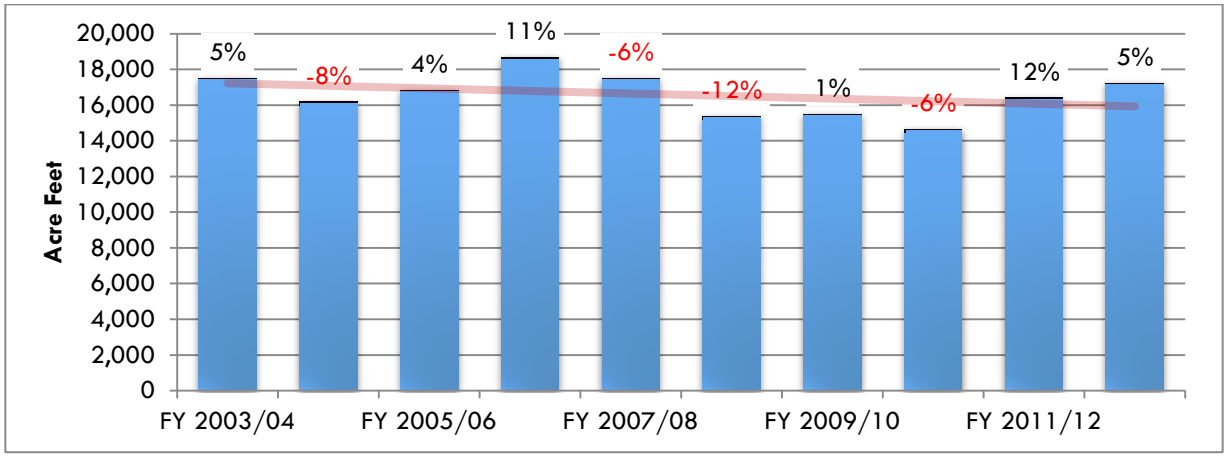
The cash-flow sufficiency test identifies projected cash requirements in each given year necessary to operated, maintain, and improve the utility systems. Cash requirements include O&M expenses, policy-driven additions to reserves, miscellaneous capital outlays, replacement funding, and rate-funded capital expenditures. These expenses are compared to total annual projected revenues. Shortfalls are then used to estimate needed rate increases.

GROWTH AND WATER DEMAND

Water Production and Usage

Water sales are the City's primary source of water revenues as well as a primary driver of water expenditures; thus, it is critical to examine and analyze potential shifts in short and long-term water demands. Carollo evaluated the previous five years of billing data and ten years of water production records to examine historical water demand patterns and potential developing trends. As illustrated in Figure 2-1, the water utility experiences swings from year to year in annual water demands driven primarily by weather conditions.

FIGURE 2-1 ANNUAL CHANGE IN PRODUCTION



From FY 2003/04 through FY 2012/13, overall demand was reduced by 2 percent. Of the years analyzed, the lowest level of water consumption occurred in FY 2010/11 with annual sales in that year of 5.9 million HCF. After that time, usage rebounded by 12 percent FY 2011/12 and 6 percent in FY 2012/13. Annual sales for FY 2012/13 totaled approximately 6.4 million HCF in that year.

Over the planning period of the study, demand is forecasted to fall to 5.1 million HCF by FY 2019/20. This reduction constitutes approximately a 12 percent drop in overall consumption as compared to FY 2010/11, which showed the lowest annual sales of the years analyzed. This conservative forecast is based on the assumption that continued messaging from State and local agencies would result in further usage reductions and that the new rate structure will have the incidental effect of promoting efficient water use through price elasticity. Additionally, the City must meet State mandated water reductions. It is assumed that conservation will begin starting in FY 2015/16, with the adoption of the new water rate structure.

Despite short-term fluctuations and drought impacts, the City must continue to encourage conservation to meet the State's mandated 20 percent conservation by 2020 targets. According to the Utility's latest Urban Water Management Plan, the City's base daily per capita water use is 294 gallons. Based on the 20 percent reduction, the City has a target of 236 gallons per capita per day (GPCD). As of FY 2012/13 the City's actual GPCD was 278, with the analyzed levels of conservation, the City would achieve its conservation goal with consumption projected to be 226 GPCD in FY 2019/20.

Water Customer Classes

The City's water customers are each assigned to one of eight customer classes. Each class was analyzed independently to determine, and account for, distinct consumption patterns. Monthly and seasonal demand patterns were analyzed to establish overall consumption characteristics and each class's use of the system.

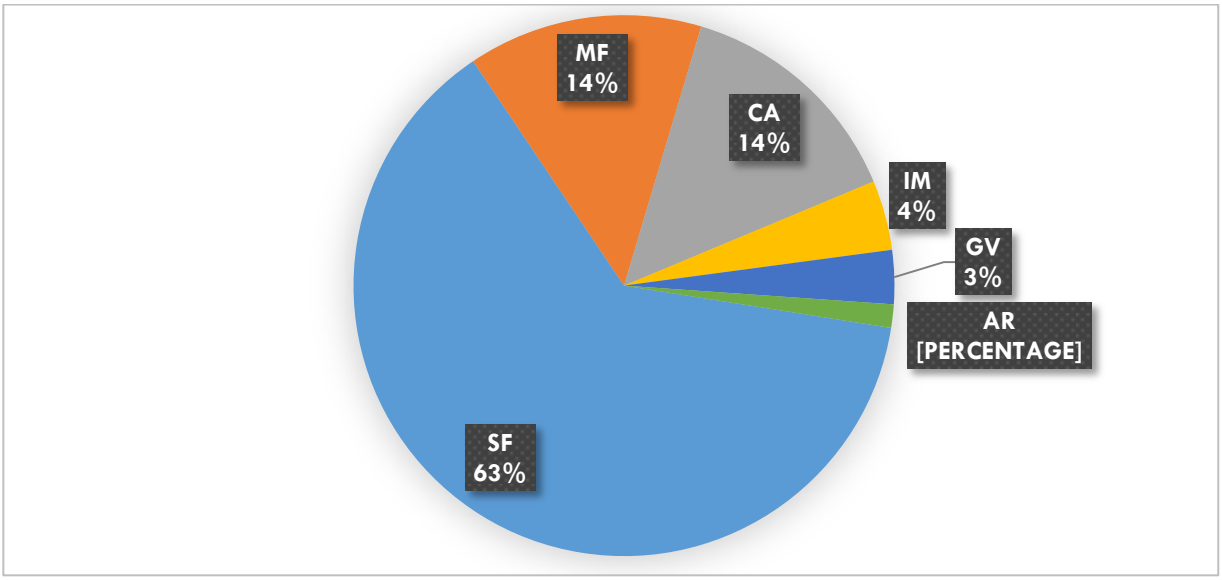
Table 2-1 provides a qualitative summary of each class's consumption characteristics.

TABLE 2-1 SUMMARY OF CONSUMPTION PATTERN CHARACTERISTICS

CUSTOMER CLASS		CONSUMPTION CHARACTERISTICS
Single-Family	SF	Meters typically serve only one residence; consumption peaks in summer months due to increased outdoor usage.
Multi-Family	MF	Each meter serves multiple units; consumption pattern is relatively flat throughout the year due to minimal outdoor use.
Commercial	CA	Meters might serve one or more businesses; consumption is relatively flat throughout the year due to minimal outdoor use.
Irrigation	IM	Used only for outdoor irrigation; consumption peaks heavily in summer. Consumption pattern closely matches GV and AR accounts.
Government and Institutional	GV	Meters may serve both indoor and outdoor usage; consumption peaks heavily in summer due to increased outdoor usage. Consumption pattern closely matches IM and AR accounts.
City of Arcadia	AR	Meters may serve both indoor and outdoor usage; consumption peaks heavily in summer due to increased outdoor usage. This includes one AC account with negligible usage. Consumption pattern closely matches GV and IM accounts.

Figure 2-2 shows the percent of annual consumption from each customer class based on a five-year average of billing records. The percent of consumption from each class has remained constant over the years evaluated (FY 2008/09 through FY 2012/13). Residential accounts (consisting of single and multi-family) are the primary user of water making up roughly 77 percent of annual water sales. The remaining 23 percent is split between commercial, irrigation, government, and institutional, and City of Arcadia accounts. Table 3-5 details each customer classes annual demands.

FIGURE 2-2 PERCENT OF ANNUAL CONSUMPTION PER CUSTOMER CLASS



Population and Account Growth

According to the California Department of Finance, the population of the City was 57,500 as of January 1, 2014. City records indicate that the water utility serves 96 percent of the City's total population, 55,200 residents. This analysis assumes that population growth will not increase water demand as it is expected to be offset by conservation. Additionally, it is assumed that there will be no material account growth through the projection period as the City is almost entirely built-out.

WATER SUPPLY

In recent years, all of the water provided by the City has been pumped from three ground water basins that underlie or are adjacent to the City. They are the Main San Gabriel Basin and the East and West Raymond Basins. Additionally, the City maintains a 20 cubic feet per second potable water connection to the Metropolitan Water District of Southern California (MWD) to provide service if needed.

Main San Gabriel Basin

The Main San Gabriel Basin (MSGB) is a groundwater basin surrounded by the San Gabriel Mountains on the north, the San Jose Hills on the southeast, Puente Hills on the southwest, and the Raymond Fault on the northwest. Approximately 80 municipalities, water districts, and private companies pump groundwater from the MSGB. The Main San Gabriel Basin Watermaster (Watermaster) manages pumping activities from the basin, which includes setting the basin's annual operating safe yield, setting annual allotments for each pumper, managing water replenishment operations, and managing the administration of the basin.

The MSGB is the City's primary source of ground water; historically, approximately 65 percent of the water produced by the City has been sourced from the MSGB. More recently, supply driven reductions in pumping from the East and West Raymond Basins have increased the share of water pumped from the MSGB to over 70 percent of total water production.

The MSGB's operating safe yield (OSY) is the maximum amount of water that can be pumped from the basin without requiring groundwater replenishment from outside sources (primarily untreated water from MWD). The OSY is set by the Watermaster each year based on certain criteria, including groundwater elevations, rainfall, local water in surface reservoirs, local water conserved, and the availability of supplemental water. The ten-year historical average OSY is 196,000 acre-feet (AF), however, the OSY has been reduced in recent years due to the ongoing drought faced by California. The FY 2013/14 and FY 2014/15 OSY's were set at 180,000 and 150,000 AF per year (AFY) respectively. The Watermaster has projected that the OSY will remain below its historical average for the next five years.

The City's annual pumping allotment is set at 4.23099 percent of the MSGB OSY and the City must purchase replenishment water for any pumping above that amount. Water supply costs have become a primary driver of the City's revenue requirements due to lower OSY's that have resulted in increased replenishment water obligations for the City. Based on discussion with City staff, this analysis has been completed under the conservative assumption that the OSY will remain at 150,000 AFY, resulting in annual pumping allotments of 6,348 AFY for the City.

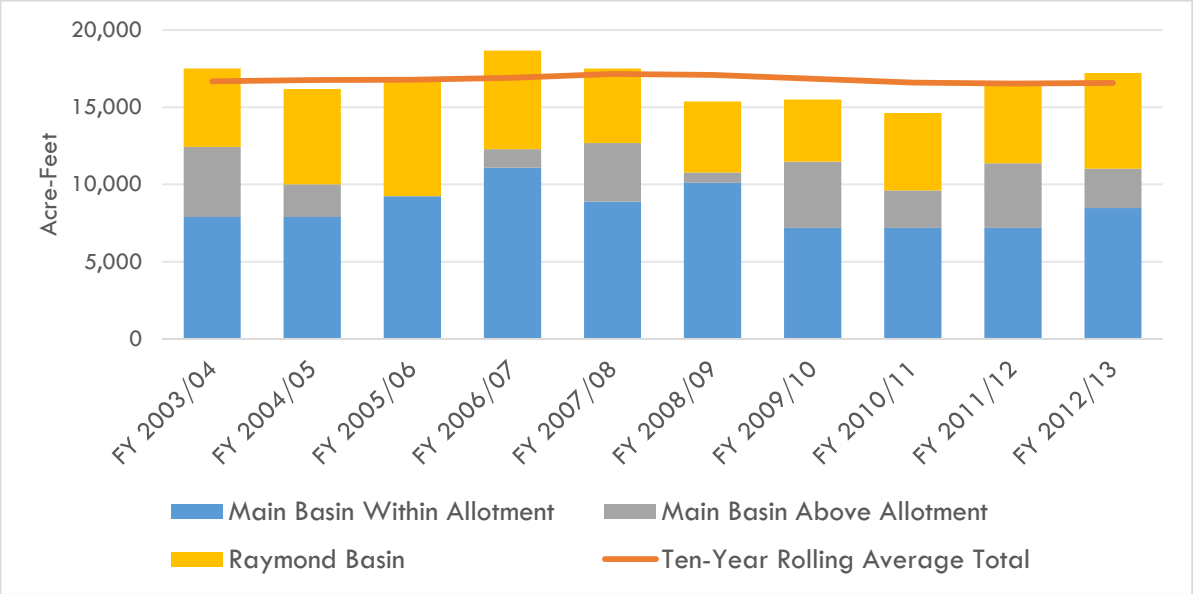
The Raymond Basin

The northern half of the City overlies the East and West Raymond Basins. Historically, approximately 35 percent the City's annual water production has been pumped from the East and West Raymond Basins. The City holds

pumping rights of 3,526 AFY, which was reduced in 2014 to 2,321 in the East Raymond Basin. Prior to FY 2014/15, pumping rights for the West Raymond Basin were set at 2,118 AFY, but were reduced to 1,483 AFY in the interest of the Basin's sustainability. Due to reductions in annual pumping rights, the annual proportion of water from the East and West Raymond Basins is expected to drop to approximately 23 percent of total water production.

Figure 2-3 shows historical water production from each source, as well as a ten-year rolling average of total production.

FIGURE 2-3 HISTORICAL WATER PRODUCTION (BY SOURCE)



Projected Water Production and Costs

Water production and costs have been forecasted based on the demand projection and supply constraints discussed above. These projections assume that production from the East and West Raymond Basins will remain capped at the current annual pumping rights and that all additional water needs will be pumped from the MSGB. Additionally, it is assumed that the MSGB OSY will remain at 150,000 AFY. If more pumping is needed than is allotted from these two supplies, then City will need to purchase additional untreated replenishment water from MWD to meet its total supply needs.

The City's water supply constraints create an environment in which water conservation can substantially lower annual water supply costs. The primary mechanism by which costs can be lowered is by decreasing customer demand. Any supply needs greater than the allotment from the East and West Raymond Basins and MSGB requires the need for replenishment water to be purchased from MWD, which is much more expensive than water produced within the City's allotment. The recent decreases in the City's MSGB allotment, and the Watermaster's expectation that the OSY will remain below the long-term average, have increased the importance of conservation efforts to promote basin sustainability and to control costs. Less demand for water will result in less replenishment water purchased from MWD, leading to lower supply costs.

Table 2-2 below summarizes projected water production and associated costs through FY 2019/20.

TABLE 2-2 PROJECTED WATER PRODUCTION AND COSTS

	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Projected Water Sales (AF)	12,930	12,534	12,191	11,891	11,843
System Losses/ Unaccounted for Water	8.1%	8.1%	8.1%	8.1%	8.1%
Projected Water Production (AF)	14,076	13,645	13,271	12,945	12,893
Change from Previous Year	-4.0%	-3.1%	-2.7%	-2.5%	-0.4%
Main Basin Production (within allotment) (AF)	6,346	6,346	6,346	6,346	6,346
Main Basin Production (above allotment - Replenishment need) (AF)	3,926	3,495	3,121	2,795	2,743
Raymond Basin Production (AF)	3,804	3,804	3,804	3,804	3,804
Replenishment Water Cost	$3,345,571	$3,127,275	$2,932,189	$2,757,557	$2,841,069
All Other Main Basin Costs	458,535	458,231	459,227	461,405	475,380
Raymond Basin Costs	118,576	122,133	125,797	129,571	133,458
MWD Standby Cost	1,742	1,829	1,920	2,017	2,117
CDPH Permit Administration	49,173	50,648	52,167	53,732	55,344
Total Water Supply Costs	$3,973,597	$3,760,116	$3,571,302	$3,404,282	$3,507,369
Cost per AF (no replenishment)	$45	$46	$48	$50	$52
Replenishment Water ($/AF)	$852	$895	$940	$987	$1,036
Blended Cost per AF	$282	$276	$269	$263	$272

Impact of State Mandated Reductions

Under the requirements of the State Water Boards Emergency Regulations, the City must curtail water demands by 36% as compared to the base year of 2013. As of the writing of this study, mandatory curtailments are set to last through February 2016. However, it is likely that the mandate would be extended if the drought persists.

The water consumption and supply projections developed for this analysis are intended to reflect the City's long term usage patterns under the proposed rate structure. As discussed previously, the analysis projects water demands for each customer class using FY 2010/11 demands as a basis, and includes expected conservation driven by continued messaging and price elasticity. The selection of FY 2010/11 as the basis of demand projections coupled with conservation and price elasticity assumptions within the design of the proposed rate has resulted in projected demands for FY 2015/16 that are approximately 18 percent lower that FY 2012/13 demands.

A high level analysis was completed to assess the impact of the state mandated requirements on the revenues and expenditures of the City's water utility. Assuming that all additional conservation to meet the City's 36 percent mandate decreases pumping from the MSGB and therefore lowers the City's need to purchase replenishment water, the mandated conservation will have a net positive impact on the City's cash flow. Under the proposed rates, attainment of the conservation mandate will reduce water rate revenues by about $1.6 million, however the reduction in revenues would be offset by a reduction in water supply costs of over $2 million.

EXISTING OPERATING EXPENDITURES

For sound financial operations of the City's water system, the revenues generated must be sufficient to meet the expenditures or cash obligations of the utility. The revenue needs are defined as the amount of revenues that must be recovered through water rates in order to cover annual expenditures, less any offsetting revenues. Offsetting revenues include interest earnings and other non-operating revenues. Table 2-3 identifies the expenditures and offsetting revenues for FY 2015/16.

TABLE 2-3 OFFSETTING REVENUES & EXPENDITURES

OFFSETTING REVENUES	FY 2015/16	NOTES
Other Charges for Services	$248,580	*Includes engineering services, meter service and inspection fees, and maps and publication fees*
Interest Earnings	117,473	*Includes interest earned on the Facilities Reserve and Equipment Reserve*
Other Revenues	54,366	*Includes rents and royalties, sale of property, and other miscellaneous revenues*
Unrealized Gain/Loss	(281,031)	
Total Offsetting Revenues	**$139,388**	
OPERATING EXPENDITURES		
Water Administration	$3,695,539	*Fund 520-7201*
Water Main and Replacement	1,121,053	*Fund 520-7204*
Water Meter Customer Service	374,816	*Fund 520-7205*
Water Production/Quality	6,915,214	*Fund 520-7206*
Additional Conservation	195,000	*New funding to address the necessary outreach effort (State mandated conservation)*
Total Operating Expenditures	**$12,301,623**	

Notes:

1. Full details provided in Appendix - Table 9-3

Operating Needs

Operating needs are expenditures that the water utility incurs in the day-to-day operations of its systems – e.g., employee salaries and benefits, fuel, chemicals, power and water purchases. Other costs in the operating budget include indirect costs from the City's indirect cost allocation plan.

The Utility's FY 2013/14 operating budget served as the basis for forecasting future operating expenses. The budget was compared to prior year actual financial information to identify any anomalies or one-time expenditures not appropriate for forecasting in future years. City staff also reviewed the budget for costs that may need to be adjusted due to future operational changes. Unless manually calculated, future years were forecasted using escalation factors appropriate for the type of expense. The escalation factors used as the basis for the study forecast are shown in Table 2-4.

TABLE 2-4 COST ESCALATION FACTORS

COST ESCALATOR	DESCRIPTION
Labor Cost Inflation	Given the recent economic climate and disruption to typical wage adjustments, the labor escalator was established based on guidance from staff. Labor rates past 2014 are assumed to increase at 3%.
Utilities	This escalator is applies to costs such as electricity and fuel, that typically exhibit annual increases higher than general inflation, it is set at 5 percent.
General Cost Inflation	This escalator applies to most expenses in the operating expense forecast; it is set at the long-term inflation rate of 3 percent.
Purchased Water Costs	This escalator is applied to replenishment and potable water purchased from MWD, it is set at 5 percent.

Operating expenses are projected to increase to $13.0 million by FY 2019/20, representing a 12 percent overall increase from the FY 2013/14 level of $11.6 million. This total expenditure change represents an average annual increase of 1.7 percent. The projected annual operating expenditures are significantly influenced by the amount of replenishment water purchased in each year. The projected operating expenditures have been developed with the conservation assumptions discussed previously in this report. If conservation does not occur, operating expenditures could be higher than expected. For example, if water consumption remains flat at FY 2013/14 levels, operating expenditures could reach over $16 million by FY 2019/20. Conversely, if the MSGB OSY is raised above 150,000 AFY, operating expenditures could fall, as the need for replenishment water would be diminished. The forecasted expenditures in this study represent the best available information and projections at this point in time. Table 2-5 below show the projected operating expenditures in millions of dollars for each year of the study period. Line-item O&M budget detail is provided in Appendix Table 9-3.

TABLE 2-5 PROJECTED OPERATING EXPENDITURES (IN MILLIONS)

OPERATING EXPENSE ITEM	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Water Administration	$3.70	$3.81	$3.92	$4.04	$4.16
Water Main and Replacement	1.12	1.15	1.19	1.23	1.26
Water Meter Customer Service	0.37	0.39	0.40	0.41	0.42
Water Production/Quality	6.92	6.81	6.73	6.68	6.91
Additional Conservation	0.20	0.20	0.21	0.21	0.22
Total Operating Expenses	**$ 12.30**	**$12.36**	**$ 12.45**	**$ 12.57**	**$ 12.97**

Capital Projects

The CIP includes a variety of capital projects that involve repairing (or replacing) existing water system assets, as well as purchasing or replacing other small equipment. The City's planned CIP expenditures average about $2.3 million per year. Table 2-6 identifies the five-year CIP used in the revenue requirement analysis. Project costs shown in the table have been escalated to the midpoint of construction. Capital expenditures for FY 2019/20 and later have been assumed at a three-year rolling average of expenditures, approximately $3 million per year in escalated dollars.

TABLE 2-6 WATER CAPITAL IMPROVEMENT PLAN (ESCALATED DOLLARS)

	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Annual Meter Replacement Program	$500,000	$500,000	$500,000	$500,000	$500,000	$-
Public Works Facility Improvements	12,000	9,000	9,000	9,000	9,000	-
Median Greenscape Improvements	16,000	16,000	16,000	16,000	16,000	-
SCADA System Upgrades and Computerized Utilities System	30,000	30,000	30,000	30,000	30,000	-
Valve Replacement Program	40,000	40,000	40,000	40,000	40,000	-
Reservoir Roof Repair	280,000	-	-	-	-	-
Well Inspection and Rehabilitation of Longden 1 Well	200,000	-	-	-	-	-
Well Inspection and Rehabilitation of St. Joseph Well	-	200,000	-	-	-	-
Well Inspection and Rehabilitation Program	-	-	200,000	-	200,000	-
Well Inspection and Rehabilitation Program-Longden 2 Well	-	-	-	200,000	-	-
Zone 3 -30-Inch Transmission Main Bypass Valve Replacements	85,000	-	-	-	-	-
Asset and Permit Tracking Management System	100,000	-	-	-	-	-
Coordinated Integrated Monitoring Plan for the Rio Hondo/San Gabriel River Water Quail Group	207,000	-	-	-	-	-
Installation of Andover HVAC Controls	21,000	-	-	-	-	-
water Main Replacement Program	-	300,000	300,000	300,000	300,000	-
Torrey Pines Reservoirs Exterior Coaling	-	62,500	-	-	-	-
City Parking Lot Rehabilitation Program	-	23,700	-	-	-	-
Update Urban Water Management Plan	-	30,000	-	-	-	-
Longden Booster Reconstruction -Design/Construction	-	-	200,000	2,000,000	-	-
Valve Replacement at Santa Anita @ Second Ave and Camino Real	-	-	300,000	-	-	-
Live Oak Reservoir Recoating	-	-	200,000	-	-	-
Reservoir Inlet/Outlet Separation	-	-	200,000	-	-	-
Zone 2 Well -Design	-	-	-	150,000	-	-
Baldwin Booster Station Reconstruction -Design/Construct	-	-	-	460,000	1,300,000	-
Total CIP Expenditures [1]	**$1,491,000**	**$1,211,200**	**$1,995,000**	**$3,705,000**	**$2,395,000**	**$2,954,221**
Equipment Expenditures	$244,800	$100,300	$142,300	$246,000	$19,500	$161,446

Note:

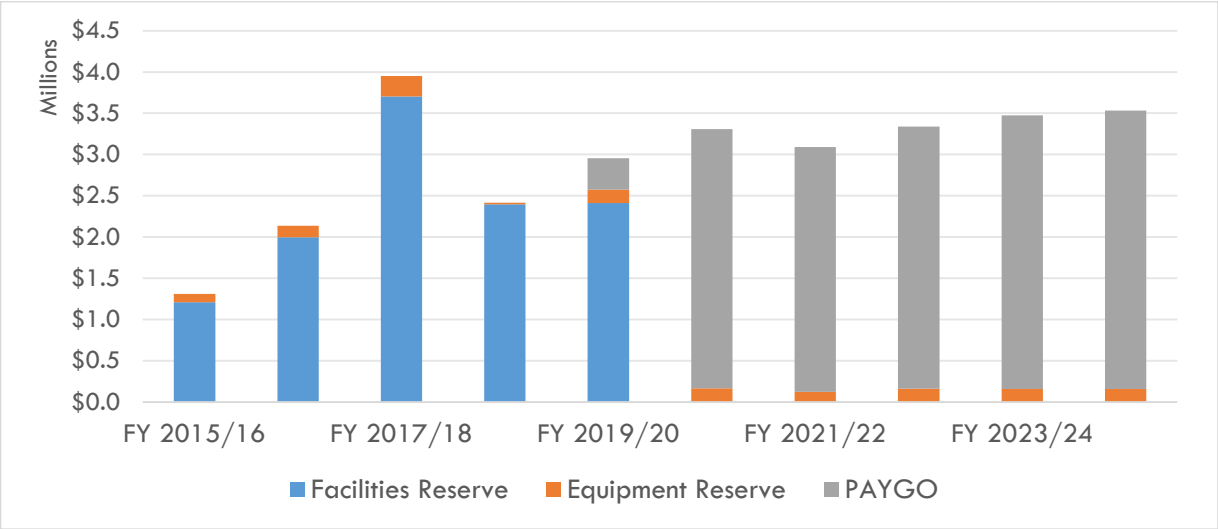
2. Total CIP expenditures for FY 2019/20 onward are based on a 3-year rolling average.

Capital Funding

The CIP will be funded using existing funds held in the City's water Facilities Reserve as well as revenues directly from water Service Fees. Throughout the next five years, the City expects to fund almost all capital expenditures by spending down the Facilities Reserve. All capital projects for FY 2014/15 through FY 2018/19, as well as a portion of FY 2019/20 projects, will be funded using existing reserves. By FY 2019/20, capital projects are forecasted as PAYGO (pay as you go) - funded directly through water Service Fees. At that time, PAYGO funding is expected to become a significant driver of annual revenue needs. City staff has indicated that some of the identified projects in the CIP could be delayed in order to slow the drawdown of the Facilities Reserve, and mitigate potential rate impacts. The City's water utility does not have any outstanding debt obligations. No future debt is expected as the City intends to cash fund all future capital projects.

Figure 2-4 below shows the projected sources of funding for capital projects.

FIGURE 2-4 PROJECTED WATER CIP FUNDING SOURCES



RESERVE NEEDS

In addition to the operating and capital expenses, discussed above, there are also revenue requirements related to maintaining the City's water reserve funds.

Operating Reserve

The revenue requirement analysis targets a total minimum operating fund balance equivalent to 90 days of operating expenses. Ideally, a greater percentage of a water utility's revenues being derived from variable rates (commodity revenues) would correspond to higher operating reserve. The minimum reserve amount is adjusted annually as dictated by changes to the City's operating expenditures.

The City should continue to monitor revenues and reserve levels on an annual basis. The reserve target may also be adjusted further as policy dictates to minimize rates or to smooth future rate increases. Should the water utility reach and maintain desired reserve levels, it is recommended that the City implement a reserve policy to formally define desired funding levels, needs, and uses.

Facilities Reserve

The Facilities Reserve is a capital reserve held by the City that is used to fund capital improvements to the water system and to provide a source of funds for capital projects in the event of an emergency. Historically, the reserve has been maintained at a minimum of $20 million. As a component of this analysis, Carollo worked with City staff to refine the targeted Facility Reserve balance based on system characteristics and revenue needs.

It is good practice to maintain funds to meet unexpected emergency capital outlays. While it would be impractical to reserve against major system-wide failures such as those resulting from a catastrophic earthquake, it is reasonable and prudent to identify and quantify possible failures of individual system components. Emergency capital reserve targets are often set based on a percentage of the physical system's overall value. Currently, the City's targeted emergency capital reserve is based on the direction of the City Council and City Manager. The current target is to have at least $12 million in reserve funds.

EXISTING REVENUES

The City's primary source of water revenues is from water Service Fees in the form of bimonthly fixed charges per meter and the volumetric charge per HCF consumed. These rate revenues make up almost 99 percent of the total water revenues.

As detailed in Table 1-1, there is a fixed and a variable component to the current rate structure. Currently, the fixed rate component generates less than 15% of total rate revenue, or about $1.6 million in FY 2012/13. The variable rate component generated $9.1 million in revenues in FY 2012/13. As a point of comparison, the California Urban Water Conservation Council (CUWCC) Best Management Practices (BMP) 1.4 advises water utilities to target collecting no more than a maximum 30% of its revenue from fixed charges. Given the variability of water demands, many agencies are targeting higher fixed revenues to provide greater financial stability and predictability. The CUWCC has softened its strict stance of 70% variable and now allows the use of the Canadian Model, which considers each agency's unique consumption and conservation levels. Additionally, in July of 2015, the CUWCC added a third alternative based on a scoring matrix that provides further flexibility in an agency's pricing structure.

A low fixed charge coupled with the fact that the City's commodity (variable) rate component has not kept up with the increasing need for replenishment water (driven by lowered OSY in the MSGB) has led to greater cost recovery imbalance.

RECOMMENDED REVENUE REQUIREMENTS

Based on the study projections, the City must increase water revenues annually in order to meet projected revenue needs due to annual increases in expenditures and to fund the CIP. Both the bimonthly fixed charges and the volumetric rates will be increased. Table 2-7 presents a summarized financial forecast for the City's water utility.

Water Supply Costs

The extent of the proposed revenue adjustments is largely contingent upon the amount of replenishment water that the City is required to purchase, which is driven by the OSY and by water demands. Over the course of developing the proposed revenue requirements, multiple rate revenue forecasts were developed based on various reserve levels and MSGB OSY scenarios. The financial forecast and proposed revenue increases are based on the OSY being held at the FY 2014/15 level of 150,000 AFY. If weather and basin conditions lead to the Watermaster increasing the OSY in subsequent years, the City might be able to adopt lower rate increases.

However, if the OSY is decreased further, the City might need to implement higher rate increases, defer capital projects, or further draw down reserves in order to support the cost of replenishment water.

Capital Funding

As noted above, the majority of capital expenditures through FY 2019/20 will be funded with existing reserves. However, the onset of rate funded capital improvements in FY 2019/20 contributes to the need for revenue increases within the next five years. The proposed revenue increases allow the City to build the necessary revenue generation capacity to fund capital projects in the long term.

Operating Costs

Operating costs are expected to increase in each year driven by the inflationary increases discussed previously. The City has worked to increase operational efficiency in an effort to control operating cost increases. Over the study period, operating costs (excluding water supply costs) are expected to increase at an average of 3.4 percent per year, to $9.5 million in FY 2019/20.

Revenue Increases

Increases in water supply costs, and to a lesser extent, capital funding, and operating cost increases, have driven a need for substantial revenue increases. Currently, reserves are being utilized to fund existing shortfalls. Based on discussion with staff and direction from the City Council, the proposed rate revenue increases are set to eliminate the need to use reserves to fund operations. Based on the study projections, the City will need to increase revenues by 15 percent in fiscal years one and two (January 1, 2016 and July 1, 2016). In the following three fiscal years, annual 7 percent increases are forecasted to fund expected operation and capital expenditures. After that time (FY 2020/21 onward), the City will likely require similar level revenue increases based on the current projections of funding requirements. Appendix Table 9-1 provides a full detailing of the financial forecast and impacts of the proposed revenue adjustments.

TABLE 2-7 FINANCIAL FORECAST (IN MILLIONS)

	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
PRE RATE INCREASE					
Rate Revenues	$9.43	$10.52	$11.76	$12.28	$13.08
Other Revenues	0.14	0.13	0.13	0.12	0.12
Total Revenues	$9.57	$10.65	$11.89	$12.40	$13.20
EXPENDITURES					
Operating Costs	$8.33	$8.60	$8.88	$9.16	$9.46
Water Supply Costs	3.97	3.76	3.57	3.40	3.51
Rate Funded Capital	0.00	0.00	0.00	0.00	0.00
Policy Expenditures	0.00	0.00	0.00	0.00	0.00
Total Expenditures	$12.30	$12.36	$12.45	$12.57	$12.97
Cash flows (pre rate increase)	($2.73)	($1.71)	($0.56)	($0.17)	$0.23
Rate Increase	**15%**	**15%**	**7%**	**7%**	**7%**
Month of Adoption	**January**	**July**	**July**	**July**	**July**
Revenues From Rate Increase	$0.71	$1.58	$0.82	$0.86	$0.92
Resulting Cash flows	($2.02)	($0.13)	$0.27	$0.69	$1.15
CONSOLIDATED RESERVES (INCLUDES OPERATING, FACILITIES, AND EQUIPMENT RESERVES)					
Beginning Balance	$26.58	$23.25	$20.98	$17.30	$15.57
Reserves for O&M +/(-)	(2.02)	(0.13)	0.27	0.69	1.15
Reserves for Capital +/(-)	(1.31)	(2.14)	(3.95)	(2.41)	(2.95)
Ending Balance	$23.25	$20.98	$17.30	$15.57	$13.77

As of the finalizing of this report, the City is considering deferring the rate increases scheduled on July 1, 2016 until January 1, 2017 and shifting all subsequent July 1 increases to the following January 1. This shift deviates from Carollo's recommendation and does result in a revenue loss and necessary use of reserves. However, the City believes that despite the significant impact to system revenues with the State mandate curtailments, the rate defer allows utility customers to better manage these increases.

Table 2-8 Financial Forecast - January 1 rate Increases (In Millions) presents a summarized financial forecast that reflects impacts of the shift to January 1 rate increase implementation in each year of the study period. The shift results in a total cash flow shortfall of $2.25 million over the five year study period. Under this strategy, the year-end consolidated fund balance expected to total $11.66 million for FY 2019/20.

TABLE 2-8 FINANCIAL FORECAST - JANUARY 1 RATE INCREASES (IN MILLIONS)

	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Total Revenues (Pre Rate Increase)	$9.57	$10.65	$11.89	$12.39	$13.20
Less: Expenditures	(12.30)	(12.36)	(12.45)	(12.57)	(13.06)
Cash flows (pre rate increase)	**($2.73)**	**($1.71)**	**($0.56)**	**($0.18)**	**$0.13**
Rate Revenue Increase	**15%**	**15%**	**7%**	**7%**	**7%**
	January	**January**	**January**	**January**	**January**
Revenues From Rate Increase	$0.71	$0.79	$0.41	$0.43	$0.46
Resulting Cash flows (Use of Reserves)	($2.02)	($0.92)	($0.15)	$0.25	$0.59
Consolidated Reserves (Includes Operating, Facilities, and Equipment Reserves)					
Beginning Balance	$26.58	$23.25	$20.19	$16.09	$13.93
Use of Reserves for O&M	(2.02)	(0.92)	(0.15)	0.25	0.59
Use of Reserves for Capital	(1.31)	(2.14)	(3.95)	(2.41)	(2.86)
Ending Balance	**$23.25**	**$20.19**	**$16.09**	**$13.93**	**$11.66**

Note:

1. All monetary values presented are in millions of dollars.

3. WATER COST OF SERVICE ANALYSIS

The purpose of a cost-of-service analysis is to provide a rational basis for distributing the full costs of the City of Arcadia's Public Water Utility service to each customer class in proportion to the benefits received from and burdens or demands they place on the system. Carollo developed a detailed cost allocation that serves as the basis for the proposed rate adjustments. This analysis yields an appropriate method for allocating costs, which could be sustained unless substantial changes in cost drivers or customer consumption patterns occur.

The functional allocation assigns annual revenue requirements by major function. The Utility's primary functions are related to base flow, peak flow, customer costs (customer and capacity). These functional cost pools include the rate paid for water supplied by outside agencies, the system's existing operations and maintenance (O&M) expenditures, and rate-funded capital costs. The cost of service analysis has been completed using a five-year average functional allocation based on costs for FY 2015/16 through 2019/20.

The cost of service allocation completed in this study is established on the base-extra capacity method as defined by the American Water Works Association (AWWA). Under the base-extra capacity method, revenue requirements are allocated based on the demand placed on the water system.

FUNCTIONAL COST COMPONENTS

The Utility's budget was analyzed line-item by line-item and expenditures were distributed between the available functions:

- ***Base:*** Operating and capital costs incurred by the water system to provide a basic level of service to each customer. This category includes the majority of local groundwater supply costs.
- ***Peak:*** Operating costs incurred to meet peak demands for water in excess of basic demand (base). This category includes the majority of the replenishment water costs, as well as infrastructure costs related to providing the required system over-sizing to meet excess (peak) demands. The conservation program costs are also allocated to the peak component.
- ***Customer:*** Fixed expenditures that relate to operational support activities including accounting, billing, customer service, and administrative and technical support. These expenditures are essentially common-to-all customers and are reasonably uniform across the different customer classes.
- ***Capacity:*** Meter and capacity related costs, such as meter maintenance and peaking charges, that are included based on the meter's hydraulic capacity (measured in gallons per minute). Additionally, as the system's facilities are designed to meet peak demand, a portion of the capacity related costs are allocated to Capacity.

Table 3-1 below details the overall allocation by expense category and division to each functional component. A table showing the line item detail of the functional allocation is included in Appendix Table 9-7.

TABLE 3-1 FUNCTION ALLOCATION SUMMARY

DIVISION / LINE-ITEM	CUSTOMER	CAPACITY	BASE	PEAK
Water Admin				
Salaries & Wages	100%	0%	0%	0%
Supplies	100%	0%	0%	0%
Operating Expenses	25%	6%	28%	36%
Water Main & Replacement				
Salaries & Wages	0%	50%	50%	0%
Supplies	0%	50%	50%	0%
Operating Expenses	0%	3%	3%	0%
Special Programs	0%	50%	50%	0%
Water Meter Customer Service				
Salaries & Wages	50%	50%	0%	0%
Supplies	50%	50%	0%	0%
Operating Expenses	50%	50%	0%	0%
Special Programs	45%	55%	0%	0%
Water Production / Quality				
Salaries & Wages	0%	0%	82%	18%
Supplies	0%	0%	82%	18%
Operating Expenses	0%	0%	19%	81%
Special Programs	0%	0%	82%	18%
Wells	0%	0%	82%	18%
Facilities	0%	0%	82%	18%

A specific allocation was developed for the City's water supply costs by allocating each of the supply costs shown in Table 2-2 to the functional component of Capacity, Base, and Peak. Water supply costs are a component of the Water Production and Quality - Operating Costs line item in Table 3-1.

The first step in the allocation of supply costs is to define how replenishent water cost are allocated to base and peak. The allocation is developed based on the assumption that all replenishement water costs related to purchasing water to cover annualized winter demand (Base demand) are allocated to the base functional component. Costs for replenishment water purchased to cover incremental summer demand (peak demand above annualized winter) are allocated to the Peak functional component. This methodology results in a replenisment water cost allocation of 7 percent to Base and 93 percent to Peak. Allocating replenishment water costs for incremental summer consumption to the Peak component reflects the condtion that customers with high peaking factors (peak demand above annualized winter) are responsible for the majority of need to purchase replenishment water and therefore relpenishment water costs. Table 3-2 shows the allocation of replenishment water costs to Base and Peak.

TABLE 3-2 REPLENISHMENT WATER COST ALLOCATION

Replenishment Water Allocation

Base Year Total Demand (AF)	13,472	FY 2010/11		
Base Year Winter Demand (AF)	5,211	Annualized Winter (AF)		10,422
Base Year Summer Demand (AF)	8,260	Annualized Summer (AF)		16,521
FY 2015/16 Allocation				
Total Water Produced (AF)		14,076		
Replenishment Water Required		3,926		
Replenishment Water for Peak Demand = Total Produced - Annualized Winter		3,654	93%	Allocation to Peak
Replenishment Water for Base Demand		272	7%	Allocation to Base

After the allocation for replenishment water is developed, the water supply costs can be allocated to Capacity, Base, and Peak on a line item basis. Table 3-3 shows the overall allocation of water supply costs.

TABLE 3-3 WATER SUPPLY COST ALLOCATION

Water Supply Cost Allocation

FY 2015/16 Supply Cost Allocation	FY 2015/16 Cost	Capacity	Base	Peak
Replacement Water Cost	$3,345,571	0%	7%	93%
Administrative Fee - Main Basin	163,466	0%	100%	0%
In-Lieu Fee - Main Basin	22,340	0%	100%	0%
Raymond Basin Annual Charge	118,576	0%	100%	0%
Total San Gabriel Valley Water Association	8,200	0%	100%	0%
Total San Gabriel Vally Water Authority	48,814	0%	100%	0%
Total MWD Standby Cost	1,742	100%	0%	0%
Permit Administration (As Wgt. Avg.)	49,173	0.05%	16%	83.95%
Main Basin Banking Fee (As Wgt. Avg.)	215,715	0.05%	16%	83.95%
Total Supply Costs	**$3,973,597**	**$1,866**	**$635,705**	**$3,336,025**
Percentage Allocation	**100%**	**0.05%**	**16.00%**	**83.95%**

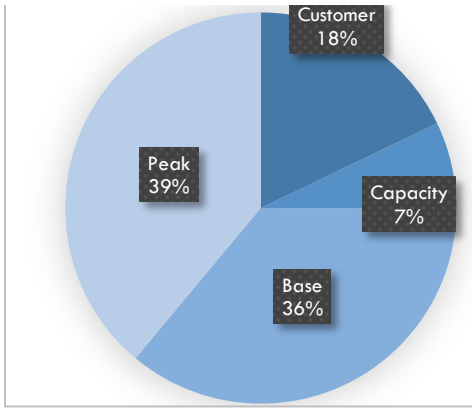
Presented in Figure 3-1 are the results of the functional allocation. The Capacity and Customer components collectively represent approximately 25 percent of the City's costs that will comprise the fixed charge. The remaining 75 percent of costs are allocated to the Base and Peak components and will the basis for the variable rates.

The breakdown between functional categories is important and used to understand how costs are incurred and whether they fluctuate with changes in water sales. For example, administrative or billing costs are considered fixed costs and could be recovered through a fixed charge. Alternatively, purchased water is solely related to how much water sold and therefore could be attributed and recovered via the commodity (variable) portion of the rates.

As discussed earlier, the CUWCC has historically advocated for 30% ceiling to the fixed charge as defined in BMP 1.4. This value is thought to provide sufficient revenue stability (in the form of fixed charges) while still providing adequate conservation incentives. However, many retail agencies have moved to a higher fixed to variable ratio due to revenue fluctuations and need for greater fiscal sustainability.

Based on the results of the functional allocation, the proposed functional allocation falls within the CUWCC recommendation and increases the City's revenue stability. The Utility's existing water revenues were examined to derive the current fixed/variable ratio. The analysis revealed that the existing ratio is heavily weighted to variable (85%), with only 15% of revenues originating from the fixed charge. This existing ratio lends itself to greater revenue vulnerability due to fluctuations in water demands. Should a significant drop in sales occurs, the Utility may not fully cover fixed costs.

FIGURE 3-1 FUNCTION ALLOCATION RESULTS



Given the City's unpredictable water demand (previously illustrated in Figure 2-1) and existing fixed variable allocation, it is recommended that rates be adjusted, increasing the amount of fixed revenue to 25 percent to better align with how costs are incurred. Consistent with the Utility's objectives, this will provide for some additional revenue predictability and stability, while still allocating enough costs to the variable component to encourage conservation. It should be noted, that the adjustment would shift some cost burden to low volume users as a greater percentage of revenues are to be collected through the bimonthly fixed charge. The proposed rates have been developed using a phased approach, in which the shift of costs from the variable to the fixed charge will occur over the 5-year rate period. Additionally, it is recommended that the Utility revisit this discussion as part of each rate setting process.

UNIT COST CALCULATIONS

To allocate costs of service to the different customer classes, unit costs need to be developed for each functional component. The unit costs of service are developed by dividing the total annual costs allocated to each parameter by the total annual service units of the respective component. The Base component is allocated on the total sales volume. The Peaking component cost is based on the system's peak ratio developed from the ratio between annualized winter consumption and annual consumption. For the fixed components, the Customer component unit cost is based on the number of accounts and the Service component is based on equivalent meters.

Billing data analysis has shown that the current rate structure only collects roughly 15 percent of the City's required revenue from fixed charges, despite having significant fixed costs. If the City's expenditures were allocated on a true fixed and variable basis, only the replenishment and pumping costs would be truly variable. The remaining costs are fixed to cover staffing, repair and replacement, and other operational activities. With this understanding, it is recommended that the City gradually increase its revenues collected from fixed charges from 15 percent to the outlined 25 percent. By gradually building to the targeted percentage, the City can prevent possible rate shock to its ratepayers.

Table 3-4 shows the units of service and the associated unit costs for each functional category.

TABLE 3-4 DEVELOPMENT OF UNIT COSTS

UNIT COST CALCULATIONS	CUSTOMER	CAPACITY	BASE	PEAK
Percentage Allocation to Function				
Current (Estimated)	7.5%	7.5%	42.5%	42.5%
FY 2015/16	9.6%	7.4%	41.2%	41.8%
FY 2016/17	11.6%	7.4%	39.9%	41.1%
FY 2017/18	13.7%	7.3%	38.6%	40.4%
FY 2018/19	15.8%	7.2%	37.3%	39.7%
FY 2019/20	17.9%	7.1%	36.1%	38.9%
Revenue Requirement Allocation to Function				
FY 2015/16	$1,038,408	$805,809	$4,470,318	$4,532,939
FY 2016/17	1,408,272	889,672	4,827,580	4,967,199
FY 2017/18	1,726,396	916,861	4,861,654	5,079,600
FY 2018/19	2,074,184	947,584	4,904,981	5,208,287
FY 2019/20	2,210,379	1,009,804	5,227,052	5,550,274
UNITS	ACCOUNTS	METER EQUIVALENTS	HCF	HCF
FY 2015/16	14,077	40,536	5,632,297	5,632,297
FY 2016/17	14,077	40,536	5,459,882	5,459,882
FY 2017/18	14,077	40,536	5,310,210	5,310,210
FY 2018/19	14,077	40,536	5,179,917	5,179,917
FY 2019/20	14,077	40,536	5,158,917	5,158,917
UNIT COSTS	PER ACCOUNT (BIMONTHLY)	PER ME (BIMONTHLY)	PER HCF	PER HCF
FY 2015/16	$12.30	$3.32	$0.79	$0.80
FY 2016/17	16.68	3.66	0.88	0.91
FY 2017/18	20.44	3.77	0.92	0.96
FY 2018/19	24.56	3.90	0.95	1.01
FY 2019/20	26.18	4.16	1.01	1.08

CUSTOMER CLASS ALLOCATION

The unit costs of each component shown in Table 3-4 are applied to each customer classes' projected use, accounts, and meter equivalents to derive customer class allocations. Costs are allocated to each customer class based on its respective peaking factors to reflect its use of the overall system. Consumption data was analyzed by customer

class illustrating how each class utilized the system differently throughout the year. This information is then utilized to allocate the functional costs between individual customer classes.

Table 3-5 shows the annual units by customer class projected for FY 2015/16. The number of accounts and MEs in each customer class is expected to remain constant throughout the study period as no customer growth is expected. Annual usage is projected to decrease for all customer classes due to increased conservation.

TABLE 3-5 CUSTOMER CLASS CHARACTERISTICS – FY 2015/16

CUSTOMER CLASS	ACCOUNTS	MEs	ANNUAL USAGE (HCF)	ANNUALIZED PEAK USAGE (HCF)	PEAKING FACTOR
Single-Family – SF	11,760	29,936	3,467,994	4,353,166	1.26
Multi-Family – MF	1,104	4,449	824,664	897,201	1.09
Commercial – CA	843	3,666	824,222	891,038	1.08
Irrigation – IM	227	1,024	257,959	377,500	1.46
Government and Institutional – GV	24	442	181,863	270,879	1.49
City of Arcadia – AR	119	1,020	75,596	112,298	1.49
Total	**14,077**	**40,536**	5,632,297	6,902,081	1.23

As shown by the peaking factors in Table 3-2, several of the customer classes exhibit similar annual consumption patterns, and therefore place a similar operational burden on the system. Multi-family and Commercial accounts are closely correlated, as are Irrigation, Government and Institutional, and City of Arcadia accounts. The proposed rate structure will group the customer classes accordingly and rates to reflect the difference in peaking.

Table 3-6 shows cost allocation for each customer group based on the forecasted revenue requirement.

TABLE 3-6 FY 2015/16 CUSTOMER CLASS COSTS

CUSTOMER CLASS	CUSTOMER	CAPACITY	BASE	PEAK	TOTAL
Single-Family	$867,491	$595,101	$2,804,935	$2,911,217	$7,178,745
Multi-Family	81,438	88,432	634,560	570,835	1,375,266
CA	62,185	72,867	634,220	566,914	1,336,185
IM, GV, and AR	27,294	49,410	396,602	483,973	957,278
Total	$956,970	$717,377	$3,835,757	$3,962,104	$9,472,208

As indicated by Table 3-5 given the recognition of peaking, a greater share of revenue should be recovered from Single-family customers than under current rates and slightly less should be recovered from other classes, most notably MF and CA (low peaking classes). Additionally, the proposed allocation shift from existing rates corresponds to the increased allocation to the increased fixed charge. As noted previously, the allocation shift will be implemented over the course of the study period.

Table 3-7 presents a comparison of the distribution of projected revenue at current rates and the proposed annual cost of service allocated among customer classes for FY 2015/16 and FY 2019/20, when the shift will be fully implemented.

TABLE 3-7 REVENUE ALLOCATION BY CUSTOMER CLASS

CUSTOMER CLASS	EXISTING ALLOCATION	COST OF SERVICE	DIFFERENCE
FY 2015/16 Allocation By Customer Class			
Single Family	64.9%	66.2%	1.2%
Multi-Family	13.0%	12.7%	-0.3%
CA	13.0%	12.3%	-0.7%
IM, GV, and AR	9.1%	8.8%	-0.2%
Total	**100%**	**100%**	**0%**
FY 2019/20 Allocation By Customer Class			
Single Family	64.9%	67.4%	2.5%
Multi-Family	13.0%	12.3%	-0.7%
CA	13.0%	11.9%	-1.1%
IM, GV, and AR	9.1%	8.4%	-0.7%
Total	**100%**	**100%**	**0%**

TYPES OF COST ALLOCATION

Not only are costs proportionately allocated between customer classes, but it is important to design rates that are proportionate at various demand levels within a customer class. Once the costs are allocated to classes (Table 3-6), the next step is to equitably allocated the variable rate components (base and peak) to users within the group. In meeting Proposition 218 requirements, Carollo analyzed how these services (base and peak) vary between customer classes and within classes. Additionally, the City's water and conservation costs were aligned to promote water use efficiency while placing a greater share of the costs on those customer who proportionately place greater demands on the water system and its water resources.

Water Use Characteristics

As the water utility doesn't have sufficient groundwater to satisfy all demands, water use at inefficient or excessive levels costs the agency significantly more than water used at efficient levels. Under the City's existing structure, the cost of water is blended and the purchase of additional replenishment water increases the cost to all users.

Both the design of water system (capacity & infrastructure) and the cost of the City's overall water portfolio are governed by peaking

In order to develop rates which apportion the cheapest source of water to those users who use the least amount of water, Carollo analyzed two factors (1) source of supply costs and (2) water use across customer classes as well as within each customer class. The Peaking Factors provided previously in Table 3-5 illustrates that each customer class uses water differently. This Peak Factor provides that each customer class is distributed its proportionate share, based on demand, of base or peak costs. As user rates are designed, specifically for tiered rates, these costs are further delineated to define the cost of water for each tier.

Allocation of Water Supply Costs

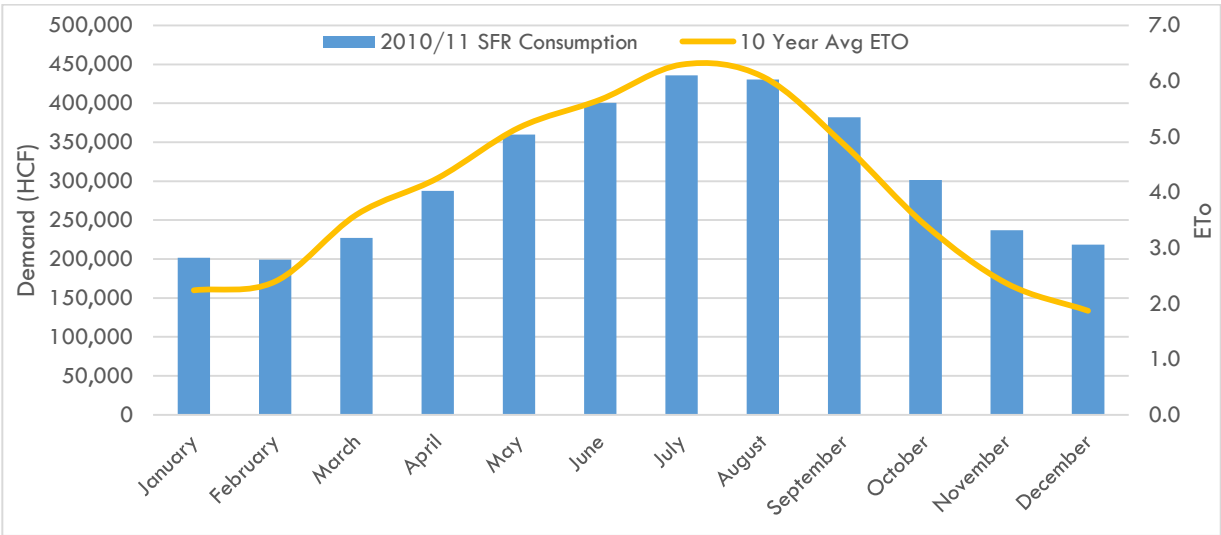
Water pumped within the Agency's basin allotments is the cheapest water supply cost and is therefore dedicated first to the most efficient users (i.e., those who use the least and place the least demand on system resources). Because this finite allotment does not currently meet all of the City's demand, the City must purchase replenishment water at a significantly higher cost. At current demand and allotment levels, it is necessary for the City to purchase replenishment water. As calculated in Table 2-2, the FY 2015/16 cost per acre-foot of groundwater is only $45 per acre-foot, while the replenishment cost is $852 per acre-foot. However, water supply costs are not the only costs to be collected in the commodity charge. Beyond simply utilizing various sources of supply (Groundwater vs. Replenishment Water) as the basis for tier price differentials, the developed tiered rates evaluate the impact of peaking on infrastructure planning, design, and repair & replacement. More detail about peaking factors for single family residential customers can be found in the "Single Family Residential Rates" section of the next chapter.

Single Family Peaking Analysis

When consumption records for the single family customer class are evaluated further, certain trends are analyzed to reveal individualized Peaking Factors. As

Figure 3-2 shows, there is significant system peaking in the summer (demand is closely correlated to ETo[1]). By analyzing various system peaks and water use characteristics, the foundation of setting tiered water rates can be defined.

FIGURE 3-2 SINGLE FAMILY DEMAND PEAKING ANALYSIS



[1] EvapoTranspiration - the total amount of water lost through evaporation in the soil and transpiration ("breathing") of the plants. The higher the ETo, the more water required for irrigation.

Although this peak capacity is mostly left unused from October through April (winter months), the City needs to maintain the ability to meet these demands at any point. Therefore, the City's infrastructure must be built and maintained based on these peak demands. Furthermore, without this peak demand during the summer, it is likely all of the City's customer demands could be met within its groundwater allotment, negating the need to purchase increasingly expensive replenishment water purchases from MWD.

Development of Commodity Costs

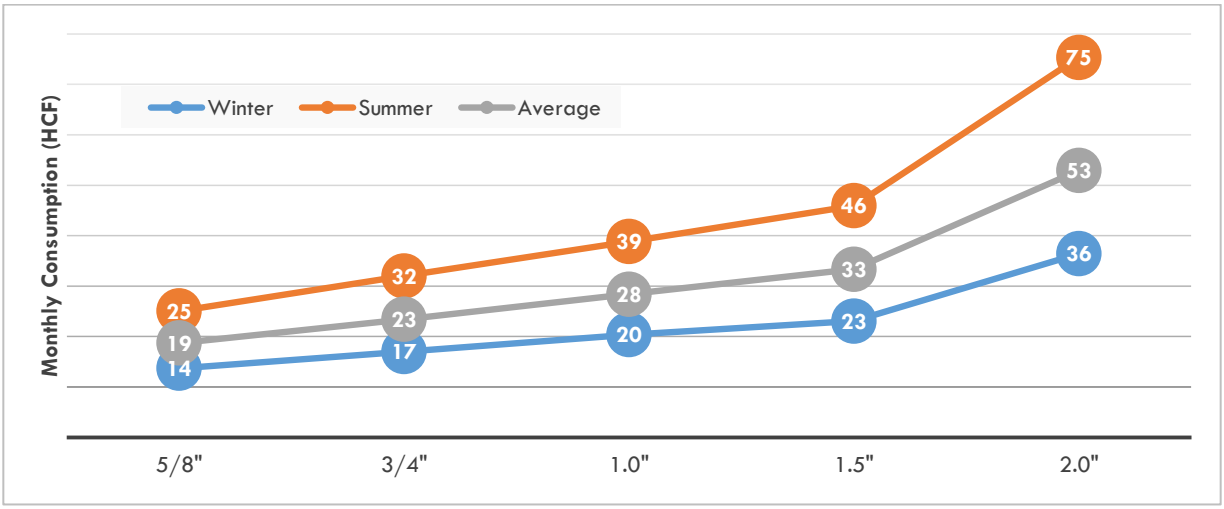
As discussed above, a majority of the City's costs are fixed and do not vary with changes in consumption and are related to maintaining, pumping, and distributing the water. In order to keep an affordable fixed service charge and to further encourage water use efficiency, a portion of this fixed cost is attributable to the Base and Peak components.

In FY 2015/16, the City is forecasted to spend $4.0 million in dues and assessments related to water supply costs. In addition to these costs, $5.8 million of operating expenditures were allocated to Base and Peak components based on system peaking factors.[2] These costs include expenses related to Water Production and Quality, a portion of Main & Replacement, and all Conservation costs.

Fixed Charge Analysis

In addition to looking at how each customer class uses water differently, Carollo analyzed how demands varied by each meter size within a customer class. This analysis was performed to determine whether any adjustment to tier sizes should be afforded to tiered customers. Only Single Family Residential showed a constant and close correlation between demand and meter size. The figure below illustrates a close correlation between water demands (in winter, summer, and average) and increasing meter size. This correlation and consistency was not shown among other customer classes.

FIGURE 3-3 SINGLE FAMILY CONSUMPTION TRENDS BY METER SIZE



[2] When the summer months are annualized and compared to annual consumption, nearly 82 percent of demands are deemed base demands with the remaining 18 percent attributed to peak demands.

4. WATER RATE DESIGN ANALYSIS

The rate design analysis links the customer class costs—identified in Table 3-6—with the water rates necessary to achieve cost recovery. The focus of this process is to achieve full cost recovery and substantiate that each customer class is paying their fair and proportionate share of system costs.

SELECTING RATE STRUCTURES

In determining the appropriate rate level and structure, Carollo analyzed various rate design alternatives and the corresponding customer and utility implications. Beyond the identified study objectives, Carollo identified additional criteria for consideration and discussed them at length with City staff. To the right is a partial list of the rate design elements:

- Clear and understandable
- Easily administered
- Follows cost of service principles
- Provides revenue stability
- Affordability
- Complies with legal and regulatory requirements

Given the numerous and, at times, competing elements, selection of an appropriate rate structure is complex. There is no single structure that meets all objectives equally, nor are all objectives or elements valued the same by the utility or customers. Each criteria or element has merit and plays an important role in the rates implementation and overall effectiveness. These elements and competing objectives were discussed and evaluated at length throughout the financial and rate study process.

PROPOSED WATER RATES

Based on discussion with City staff and careful review of the cost of service analysis, Carollo recommends that the City implement the following rate design modifications:

- Increase the fixed charge to better reflect how actual costs are incurred. This adjustment helps the City meet its objective of increased revenue stability and predictability.
- Implement a four-tier rate structure for Single Family residential customers with seasonally adjusted, meter size specific tier allotments. By defining increased allotments for larger meters, it recognizes the additional capacity purchased at the time of connection. Additionally, adjusting the tier allotments seasonally can help to stabilize revenues and promote efficient water use year round.
- Implement a two tier rate structure for Multi-Family customers with water allocations based on the number of dwelling units in each multi-family complex.
- Implement customer class specific uniform rates for other customer classes. Definitions of class specific uniform rates take into account each customer class's usage characteristics and can better distribute costs to individual customers based on those characteristics.

FIXED CHARGE

A bimonthly fixed charge is a cost recovery mechanism that is generally included in the rate structure to facilitate recovery of fixed expenditures, including meter and customer related costs. As discussed previously, this charge also includes a portion of the capacity related costs to provide a stable source of revenue independent of monthly water demand.

While an increased fixed charge provides a stable source of revenues for the utility, increasing the fixed charge reduces the amount allocated to the commodity rates, and thus has the incidental effect of reducing incentives for conservation. The proposed revenue adjustments, as a percentage, do not equal or necessarily correlate to an equivalent percentage increase to rates or monthly bills. The results of the cost of service analysis and rate redesign will affect users differently based on their meter size and water consumptions habits.

The fixed charge is a combination of the Customer and Capacity functional components. The Customer component covers costs that apply to all accounts in the system, regardless of usage or the size of the connection to the system. To determine this charge, the meter unit cost is multiplied by the meter capacity ratios previously developed by the City to calculate the meter capacity cost. These ratios mirror the ratios identified in the AWWA M22 Manual *Sizing Water Service Lines and Meters*. Although not identical, the ratios reflect a reasonable cost and benefit factor. The meter capacity cost is then added to the Customer cost to calculate the cost based fixed charges shown in Table 4-1.

TABLE 4-1 COMPONENTS TO PROPOSED FIXED CHARGE (BIMONTHLY)

METER SIZE	CAPACITY RATIO	CAPACITY COMPONENT	CUSTOMER COMPONENT	TOTAL BIMONTHLY CHARGE [1]
5/8"	1.0	$3.31	$12.29	$15.61
3/4"	1.5	4.97	12.29	17.27
1"	2.5	8.28	12.29	20.58
1.5"	5.0	16.57	12.29	28.87
2"	8.0	26.51	12.29	38.80
3"	15.0	49.70	12.29	62.00
4"	25.0	82.83	12.29	95.13
6"	55.0	182.23	12.29	194.52
8"	90.0	298.19	12.29	310.49
10"	140.0	463.85	12.29	476.15

Note:

1. Total bimonthly charge has been rounded up to nearest $0.01.

Table 4-2 identifies the proposed bimonthly fixed charges for the five-year rate period.

TABLE 4-2 PROPOSED FIXED CHARGES (BIMONTHLY)

METER SIZE	CURRENT	FY 2015/16 PROPOSED	FY 2016/17 PROPOSED	FY 2017/18 PROPOSED	FY 2018/19 PROPOSED	FY 2019/20 PROPOSED
5/8"	$11.55	$15.61	$20.34	$24.21	$28.46	$30.33
3/4"	12.99	17.27	22.17	26.10	30.41	32.40
1"	14.43	20.58	25.82	29.87	34.30	36.55
1.5"	21.66	28.87	34.97	39.29	44.04	46.93
2"	30.32	38.80	45.94	50.60	55.73	59.39
3"	53.41	62.00	71.55	76.99	83.00	88.45
4"	79.40	95.13	108.13	114.69	121.97	129.97
6"	150.84	194.52	217.87	227.78	238.85	254.53
8"	237.35	310.49	345.90	359.73	375.21	399.85
10"	237.35	476.15	528.80	548.21	570.02	607.45

COMMODITY RATES

The commodity rates are developed for each customer class group and are designed to recover the costs proportionate to water demands. Cost of service based rates were developed for each customer class based on the principle of maintaining vertical and horizontal customer-class equity. Customer classes, such as single-family residential or commercial, only pay for their assigned share of costs of service, and within each customer class, each account will pay a fair share of the costs assigned to that customer class. Customer related commodity costs are calculated based on the class group's average annual water usage and its annualized summer consumption. The water commodity rate for each customer class group is calculated based on the customer class' cost (required revenues) and the forecasted annual water demands. The proposed bimonthly commodity based rates are shown in Table 4-8.

SINGLE FAMILY RESIDENTIAL RATES

Given the City's ongoing water supply issues, it is important that the proposed water rate structure promotes efficient water usage, and passes the true cost of providing water service on to the customers who utilize that service. Implementation of a tiered rate structure for single-family customers is an important step in reaching those objectives. The study reviewed the appropriateness and applicability of several rate structure alternatives for the Single Family residential customer class.

- Uniform Rates – Uniform rate structures charge a flat volumetric rate for each unit (HCF) of water consumed. The City currently utilizes a uniform rate structure for all customer classes. While uniform rate structures offer an effective and easily understood means of recovering variable costs, their simplicity causes some drawbacks. Uniform rates represent blended water costs, and therefore do not tie the high cost of imported replenishment water to high levels of usage. It also has the incidental effect of making it more difficult to incentivize water conservation and discourage inefficient usage.
- Fixed Tiered Rates – Fixed tiered rates assign allocations and tier breaks to all Single Family residential customers uniformly. The unit price of water increases with each tier. All usage above the highest tier

break is charged at the highest rate to reflect the proportionately higher costs of serving those who use more water. Tier allotments and rates can be designed to recover the costs associated with different sources of supply. However, fixed tiered rate structures may not differentiate high use from use that is truly wasteful, as they do not account for factors dictating each customer's usage pattern.

- Tiers by Meter Size – Similar to the Fixed Tiered rates, this methodology assigned fixed tiers to a specific meter size, rather than collectively to the customer class. This recognizes the meter's inherent purchase of greater system capacity. This methodology works for Single Family residential as there is a strong correlation between demand and meter size. This correlation was not present in any of the City's other customer classes.

Proposed Rate Structure

The proposed single-family rate structure is designed to proportionately allocate a greater share of the costs of service to those whose higher water usage enerates additional costs to the water utility and incidentally promotes efficient water usage and conservation, while avoiding and minimizing administrative impacts. The proposed rate structure is an inclining block rate structure designed to reflect the City's various sources of supply coupled with a single-family home's specific consumption patterns.

Meter Size Based Subclasses

The Single Family residential customer class has been split to recognize each of the available meter sizes. The tier allocations were determined by analyzing the relationship between meter size and consumption patterns. This analysis provides that each meter size is being apportioned an equivalent allocation of peak costs based on system characteristics, rather than demand alone. Table 4-6 shows past single family residential customer usage based on the size of the customer meter.

TABLE 4-3 SFR USAGE BY METER SIZE

METER SIZE	ACCOUNTS	CONSUMPTION (HCF)	PERCENTAGE OF TOTAL CONSUMPTION	AVERAGE CONSUMPTION (HCF)
5/8"	648	131,372	4%	203
3/4"	4,441	1,189,890	32%	268
1"	4,739	1,545,615	42%	326
1.5"	1,559	582,349	16%	374
2"	373	232,844	6%	624
Total	**11,760**	**3,682,068**	**100%**	**313**

Single Family Residential Tier Structure

Rates for each single-family meter size have been developed with a four-tiered inclining block structure, with tier allotments that vary seasonally. The unit cost per HCF of water consumed in each tier will remain constant throughout the course of the year. Allotments in excess of Tier 1 will be adjusted seasonally to reflect varying outdoor water usage needs during winter and summer.

Seasonal Adjustments

Seasonal adjustments of the tier structure allow rates to be tailored to consumption patterns and promote year-round efficient water usage. Seasons were determined based on historical consumption patterns as well as long-term weather patterns. The rate structure accounts for winter and summer usage. Bills for water usage in the months of November through April will be calculated using winter allotments. Bills for water usage in the months of May through October will be calculated using the higher summer allotments. Table 4-4 shows past Single Family residential customer usage based on the month and season.

TABLE 4-4 SFR USAGE BY MONTH

MONTH	SEASON	CONSUMPTION (HCF)	PERCENTAGE OF TOTAL CONSUMPTION
January	Winter	201,797	12%
February	Winter	199,052	12%
March	Winter	227,258	10%
April	Winter	287,523	8%
May	Summer	359,979	6%
June	Summer	400,802	6%
July	Summer	435,895	5%
August	Summer	430,592	5%
September	Summer	381,982	6%
October	Summer	301,692	8%
November	Winter	237,137	10%
December	Winter	218,362	11%
Total	**-**	**3,682,071**	**100%**

The summer months accounted for 63 percent of the total customer demand, while only 37 percent was used during winter months. This pattern was used in the development of the seasonal allotments. Table 4-5 shows the winter and summer allotments for each of applicable meter size.

TABLE 4-5 SINGLE FAMILY TIER BREAK POINTS

BIMONTHLY BREAK POINTS (HCF) - WINTER					
METER SIZE	5/8"	3/4"	1"	1.5"	2"
Tier 1	22	22	22	22	22
Tier 2	28	36	42	46	60
Tier 3	34	46	58	62	86
Tier 4	34+	46+	58+	62+	86+
BIMONTHLY BREAK POINTS (HCF) - SUMMER					
METER SIZE	5/8"	3/4"	1"	1.5"	2"
Tier 1	22	22	22	22	22
Tier 2	34	48	62	66	94
Tier 3	44	66	92	96	140
Tier 4	44+	66+	92+	96+	140+

Single Family Volumetric Rates

As detailed in Figure 3-2, peak factors were analyzed for each of the proposed tiers in order to develop rates that reflect the increased engineering and financial strain of peaking and incidentally encourage conservation. To develop rates for usage within each tier, it is necessary to calculate base and peak unit costs.

Table 4-6 calculates the unit costs for Single Family residential usage based on the class's specific consumption and demand characteristics. The usage as presented in the following table differs from the baseline, historic usage shown in Table 4-3 SFR Usage by Meter Size due to the impact of price elasticity and continued conservation.

TABLE 4-6 SFR - BASE AND AVERAGE PEAK UNIT RATE CALCULATION (FY 15/16)

	BASE	PEAK
Allocated to SF	$2,804,935	$2,911,217
Total SF Consumption (HCF)	3,467,994	3,467,994
Unit Cost ($/HCF)	$0.81	$0.84

The purpose of the Peak Factor is to distribute the calculated average peak unit cost to each tier based on the defined usage and peak of each tier.

TABLE 4-7 SFR - BASE AND PEAK RATE CALCULATION (FY 15/16)

	TIER 1	TIER 2	TIER 3	TIER 4
Peak Factor	0.65	1.00	1.26	1.42
Allocated Peak Costs	$1,058,624	$871,469	$352,715	$628,409
Consumption by Tier (HCF)	1,261,088	1,038,139	420,173	748,593
Peak Rate ($/HCF)	$0.55	$0.84	$1.07	$1.20

The proposed volumetric tiered rates are calculated by adding the base unit cost of $0.81/HCF (Table 4-6) to the corresponding tier's Peak Rate (Table 4-7). The proposed volumetric rates for Single Family residential consumption in each tier are shown in Table 4-8. The proposed rates will apply to all meter sizes in both winter and summer.

TABLE 4-8 SINGLE FAMILY RESIDENTIAL VOLUMETRIC RATES ($/HCF)

CURRENT (ALL USAGE)	PROPOSED	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
$1.40	Tier 1	$1.36	$1.54	$1.62	$1.71	$1.82
	Tier 2	1.65	1.88	1.98	2.09	2.23
	Tier 3	1.87	2.13	2.26	2.38	2.53
	Tier 4	2.01	2.29	2.42	2.55	2.72

MULTI-FAMILY RESIDENTIAL RATES

Due to the high variance in account characteristics among individual customers, traditional tiered rate structures are often not a good fit for multi-family accounts. While multi-family usage is relatively homogeneous per dwelling unit, the number of units per complex varies widely. Relying only on account total information to develop and impose rates would penalize large complexes rather than excessive use or peaking. Therefore, tiered rate structures for multi-family accounts are typically developed based on allotments per dwelling unit rather than allotments per account. Dwelling unit counts for each of the City's multi-family accounts were readily available within the billing system as the City's residential sewer charges are imposed on a per-dwelling unit basis.

Average bi-monthly consumption per multi-family account for FY 2010/11 was 126 HCF; while the average bi-monthly consumption per dwelling unit was 24 HCF. The per-dwelling unit information enables the tiered rates to appropriately standardize multi-family accounts to target efficiency and peaking, rather than demand alone.

Peak factors were analyzed for each of the proposed tiers in order to develop rates that encourage conservation and reflect the increased engineering and financial strain of peaking. To develop the total tiered rate it is necessary to calculate Base and Peak unit costs.

Table 4-9 calculates the unit costs for multi-family residential usage based on the class's specific consumption and demand characteristics.

TABLE 4-9 MFR - BASE AND AVERAGE PEAK UNIT RATE CALCULATION (FY 15/16)

	BASE	PEAK
Allocated to MFR	$634,560	$570,835
Total MFR Consumption (HCF)	824,664	824,664
Unit Cost ($/HCF)	$0.77	$0.69

The purpose of the Peak Factor is to distribute the calculated average peak unit cost to each tier based on the defined usage and peak of each tier.

TABLE 4-10 MFR - BASE AND PEAK RATE CALCULATION (FY 15/16)

	TIER 1	TIER 2
Peak Factors	0.84	1.16
Allocated Peak Costs	$311,504	$259,331
Consumption by Tier (HCF)	450,018	374,646
Peak Rate ($/HCF)	$0.59	$0.81

The proposed volumetric tiered rates are calculated by adding the Base unit cost of $0.71/HCF (Table 4-9) to the corresponding tier's Peak Rate (Table 4-10).

The proposed volumetric rates for multi-family residential consumption in each tier are shown in Table 4-11.

TABLE 4-11 MULTI-FAMILY RESIDENTIAL VOLUMETRIC RATES ($/HCF)

CURRENT (ALL USAGE)	PROPOSED	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
$1.40	Tier 1	$1.36	$1.49	$1.53	$1.57	$1.69
	Tier 2	1.58	1.74	1.78	1.83	1.97

Following a detailed usage analysis of consumption by unit, tiers were developed to reflect the natural break point observed in the customer data. This 12 HCF per dwelling unit breakpoint captures roughly 55 percent of demands in tier 1 with the remaining in tier 2.

TABLE 4-12 BIMONTHLY MFR TIER BREAK POINTS (PER UNIT)

	HCF Per Dwelling Unit
Tier 1	12
Tier 2	12+

COMMERCIAL RATES

As shown in Table 3-5, the commercial (CA) customer class uses water relatively consistently throughout the course of the year, exhibiting a much lower peak than the other customer classes and the overall system average. The proposed commercial volumetric rates reflect the lowered peak burden placed on the water system by commercial customers.

Again, due to the high variance in account characteristics among individual customers, traditional tiered rate structures are often not a good fit for commercial customers. Unlike multi-family customers, there is no readily available methodology for creating appropriately sized tiered rates. As such, the proposed rates maintain a uniform rate structure. Table 4-13 shows the proposed rates for commercial accounts.

TABLE 4-13 COMMERCIAL RATES

CURRENT	PROPOSED	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
$1.40	Commercial	$1.46	$1.60	$1.64	$1.68	$1.81

CITY, GOVERNMENT AND INSTITUTIONAL, AND IRRIGATION RATES

City of Arcadia (AR), government and institutional (GV), and irrigation (IM) customer classes follow similar annual consumption patterns. All serve substantial outdoor usage for irrigation, and each of the classes exhibit a higher summer peak than the other customer classes (CA, MF, and SF) and the overall system average. The proposed rates reflect the increased peak burden placed on the water system by City of Arcadia, government and institutional, and irrigation accounts. As this peak is higher than Commercial accounts, the rate reflects this increased level of service.

Like commercial accounts, city, government, institutional, and irrigation accounts are not a homogenous group. Therefore, traditional tiered rate structures are often not applicable. Like commercial, the proposed rates maintain a uniform rate structure. Table 4-14 shows the proposed rates for city, government, institutional, and irrigation accounts.

TABLE 4-14 CITY OF ARCADIA, GOVERNMENT & INSTITUTIONAL, AND IRRIGATION RATES

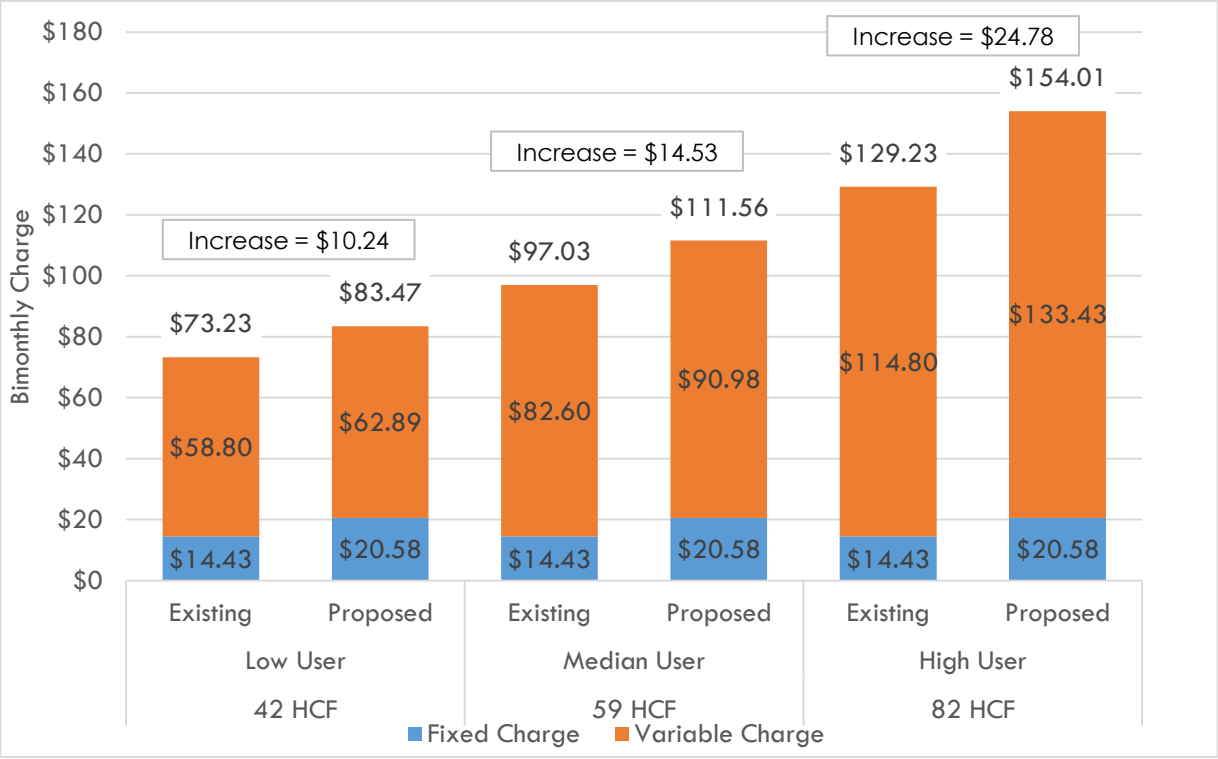
CURRENT	PROPOSED	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
$1.40	AR, GV, and IM	$1.71	$1.88	$1.93	$1.98	$2.13

CUSTOMER IMPACTS

Before implementing any rate structure recommendations, Carollo worked closely with City staff to evaluate the impact of the proposed rate structure and revenue adjustments to water customers.

The proposed rates will affect each customer differently based on each customer's account and usage characteristics. Figure 4-1 shows a graphical representation of the level of rate increases experienced by single-family residential customers with a 1 inch meter, assuming summer allotments. The blue portion of the bar represents the customers fixed charge, while the orange represents the commodity or variable portion of the overall bill. The figure compares the increase in bills for three types of customers: low, median, and high users.

FIGURE 4-1 SINGLE FAMILY RESIDENTIAL BILL COMPARISON (1" METER)

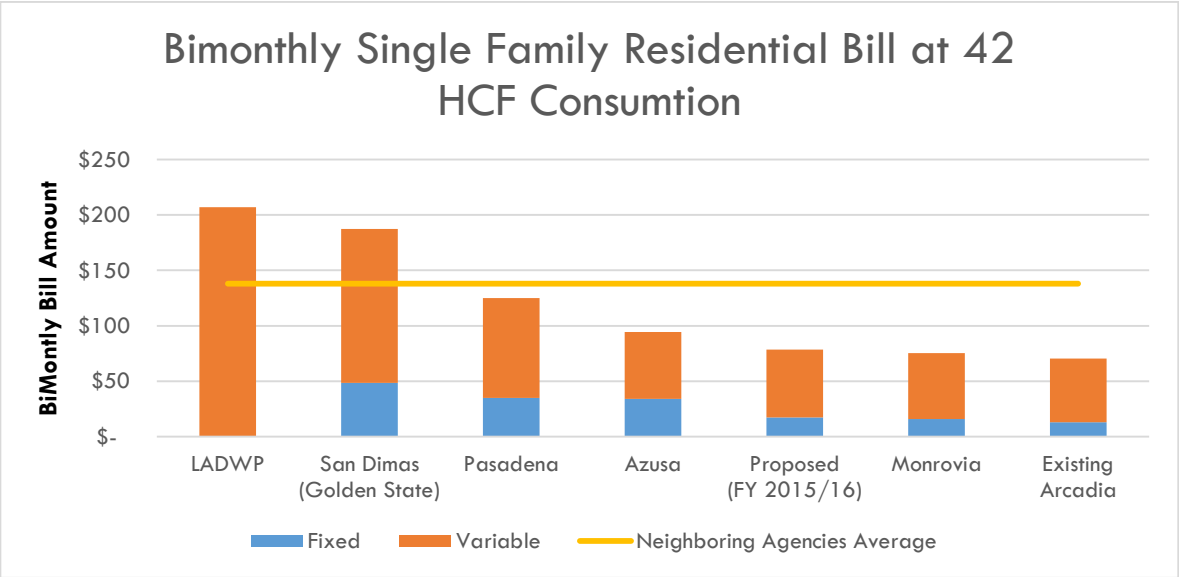


RATE COMPARISON

Carollo conducted a water rate survey of neighboring and similar utilities. Although utilities are not equal, it is common to examine comparisons between similar or neighboring utilities. Figure 4-2 compares a typical single-family residential user (1" meter) with the current rate structure and the proposed rates against five neighboring utilities. The estimated bills for the proposed rates are calculated assuming the summer allotments and the median summer usage of a customer in single-family subclass 1. In addition to the local comparisons, the figure details the City's existing rate.

Care should be taken in drawing conclusions from such comparisons, as factors including location, source of supply, customer profiles, age of the system, and various operational and capital related needs all play a part in rate structure design.

FIGURE 4-2 BIMONTHLY SINGLE FAMILY RESIDENTIAL BILL AT 42 HCF CONSUMPTION



As illustrated, despite the proposed increase and rate structure modifications, water rates are still low relative to neighboring agencies. The existing rate structure reveals a bill less than half that of some neighboring agencies.

5. SEWER REVENUE REQUIREMENTS

The sewer revenue requirement analysis follows the same basic steps as those previously outlined in the discussion of the water revenue requirements.

SEWER USAGE AND GROWTH

This analysis assumes that there will be no account growth through the projection period as the City is almost entirely built-out. Additionally it is assumed that any population growth and associated sewer flow growth will not have a significant effect on the City's sewer operations or expenditures.

EXISTING OPERATING EXPENDITURES

For sound financial operations of the City's sewer system, the revenues generated must be sufficient to meet the expenditures or cash obligations of the utility. The revenue needs are defined as the amount of revenues that must be recovered through water rates in order to cover annual expenditures, less any offsetting revenues. Offsetting revenues can include interest earnings and other non-operating revenues. Table 5-1 identifies the expenditures and offsetting revenues for FY 2015/16.

TABLE 5-1 OFFSETTING REVENUES & EXPENDITURES

OFFSETTING REVENUES	FY 2015/16	Notes
Inspection and Engineering	$9,082	Includes engineering services, inspection fees, and maps and publication fees
Interest Earnings	15,509	Includes interest earned on the Sewer Capital Projects Fund.
Total Offsetting Revenues	**$24,570**	
OPERATING EXPENDITURES		
Salaries and Wages	$785,278	
Supplies	17,306	
Operating Expenses	390,458	
Special Programs	-	
Total Operating Expenditures	**$1,193,041**	

Operating Needs

Operating needs are expenditures that the sewer utility incurs in the day-to-day operations of its systems – e.g., employee salaries and benefits, fuel, chemicals, and chemicals. Other costs in the operating budget include indirect costs from the City's indirect cost allocation plan.

The City's FY 2013/14 sewer operating budget served as the basis for forecasting future operating expenses. The budget was compared to prior year actual financial information to identify any anomalies or one-time expenditures not appropriate for forecasting in future years. City staff also reviewed the budget for costs that may need to be adjusted due to future operational changes. Unless manually calculated, future years were

forecasted using escalation factors appropriate for the type of expense. These factors were assigned on a line-item basis using one of the escalation factors shown in Table 2-4

Operating expenses are projected to increase to $1.39 million in FY 2019/20, representing a 24 percent overall increase from the FY 2013/14 level of $1.12 million, or an average annual increase of 3.7 percent. The projected expenditure increases are driven solely by inflationary increases to the existing expenditure stream. Table 5-2 below show the projected operating expenditures in millions of dollars for each year of the study period.

TABLE 5-2 PROJECTED OPERATING EXPENDITURES (IN MILLIONS)

OPERATING EXPENSE ITEM	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Salaries and Wages	$0.80	$0.83	$0.87	$0.90	$0.94
Supplies	0.02	0.02	0.02	0.02	0.02
Operating Expenses	0.38	0.39	0.41	0.42	0.43
Special Programs	0.00	0.00	0.00	0.00	0.00
Total Operating Expenditures	**$1.20**	**$1.24**	**$1.29**	**$1.34**	**$1.39**

Capital Projects

The City's existing sewer CIP includes a variety of capital projects that involve repairing (or replacing) the City's existing sewer assets as well as the replacement or purchase of other small equipment. No expansion projects are expected as the City's system is entirely built out. The City's planned CIP takes a minimalistic approach to system reinvestment with expenditures averaging only about $300,000 per year, and equipment expenditures averaging about $140,000 per year. Table 5-4 identifies the five-year CIP used in the revenue requirement analysis. Project costs shown in the table have been escalated to the midpoint of construction

The City is expected to cash fund these projects through use of reserves and annual rate revenues. The City's sewer utility does not have any outstanding debt obligations. No future debt is expected as the City intends to cash fund all future capital projects.

Ongoing System Replacement

An analysis was completed to determine the sufficiency of the City's current level of system reinvestment. The replacement value of the City's sewer system was estimated to be $90.3 million in 2014 dollars based on system data available in the City's Sewer Master Plan and Sewer System Management Plan, and typical costs for sanitary sewer assets. The budgeted level of system reinvestment, an average of $300,000 per year, results in a system wide replacement cycle of 300 years.

Almost the entire replacement value of the sewer system is accounted for in the City's gravity sewer lines and manholes, which make up over 99 percent of the City's sewer system assets. Because such assets typically have a useful lifespan ranging from 50 to 85 years, depending upon materials and local conditions, the City could reasonably target a replacement cycle of 75 years for the sewer system as a whole. Achieving a 75 year replacement cycle would require that approximately $1.2 million (2014 dollars) be invested into the sewer system annually. The revenue requirements analysis has been developed assuming that the City phases in additional replacement projects (above the budgeted CIP) over the next 5 years until annual spending reaches $1.2 million (2014 dollars). After that time, annual CIP spending is held constant at $1.2 million (2014 dollars).

Table 5-3 summarizes the calculation of the sewer system replacement value and replacement cycles. Table 5-4 shows the City's planned sewer CIP projects

TABLE 5-3 SEWER SYSTEM REPLACEMENT FUNDING ESTIMATE

SYSTEM COMPONENT	QUANTITY		REPLACEMENT COST
Gravity Lines	731,783	ft	$83,700,000
Pressurized Lines	1,430	ft	230,000
Manholes	3,000	total	17,100,000
Pump Station	1	total	500,000
Total System Replacement Cost			$90,330,000
Current City CIP, Average Annual Spending			$300,000
Replacement Cycle at Current Spending			300 years
Annual Spending Required for 75 year Replacement Cycle			$1,200,000

Note:

1. Replacement costs are estimated in 2014 dollars based on system information available in the City's Sewer Master Plan and Sewer System Management Plan, and typical unit costs for each system component.

TABLE 5-4 SEWER CAPITAL IMPROVEMENT PLAN (ESCALATED DOLLARS)

	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Annual Sewer CCTV Inspection	$30,000	$30,000	$30,000	$30,000	$30,000	-
Public Works Facility Improvements	2,000	1,500	1,500	1,500	1,500	-
SCADA System Upgrades and Computerized Utilities System Mapping	10,000	10,000	10,000	10,000	10,000	-
Miscellaneous Sewer Main Repair Project	50,000	-	50,000	-	50,000	-
Huntington Drive Sewer Capacity Improvement Project -Design	60,000	-	-	-	-	-
Asset and Permit Tracking Management System	25,000	-	-	-	-	-
Installation of Andover HVAC Controls	3,500	-	-	-	-	-
Huntington Drive Sewer Capacity Improvement Project· Construction	-	575,000	-	-	-	-
Camino Real Capacity Improvement -4th to 2nd -Design	-	-	50,000	-	-	-
Camino Real Sewer Capacity Improvement -4th Ave to 2nd Ave.	-	-	-	400,000	-	-
Huntington/Campus Sewer Capacity Improvement -Design	-	-	-	-	50,000	-
Subtotal Budgeted CIP Expenditures	$180,500	$616,500	$141,500	$441,500	$141,500	$0
Ongoing Replacement Funding [1]	-	-	420,000	360,000	960,000	1,200,000
Total Annual System Reinvestment	**$180,500**	**$616,500**	**$561,500**	**$801,500**	**$1,101,500**	**$1,200,000**
Budgeted Equipment Expenditures	62,700	291,000	122,800	226,600		

Note:

1. Replacement spending based on a 75 year replacement cycle will be achieved in FY 2019/20

Reserve Needs

In addition to the operating and capital expenses, discussed above, there are also revenue requirements related to maintaining the City's sewer reserve funds.

Operating Reserve

The revenue requirement analysis targets a total minimum operating fund balance equivalent to 90 days of operating expenses. The minimum reserve amount is adjusted annually driven by changes to the City's operating expenditures. The City should continue to monitor revenues and reserve levels on an annual basis. The reserve target may also be adjusted further as policy dictates, to minimize rates, or to smooth future rate increases. Should the City reach and maintain desired reserve levels, it is recommended that it implement a reserve policy to formally define desired funding levels, needs, and uses.

Sewer Capital Projects Fund

The Capital Projects Fund is a fund maintained by the City that is used to fund capital improvements to the sewer system and to provide a source of funds for capital projects in the event of an emergency. The revenue requirements analysis has been completed assuming a capital projects fund minimum of $1.6 million.

One component of the Capital Projects Fund is a targeted emergency capital reserve. This is set at $1.3 million, based on 1.5 percent of the estimated system replacement value of $90 million. If an event were to require emergency funding for the sewer system greater than the analyzed reserve levels, the sewer Capital Projects fund could presumably borrow from the water Facilities Reserve. If this occurred, the City would need to put in place proper repayment structures to refund the water Facilities Reserve, and to avoid possible equity concerns.

EXISTING REVENUES

The City's primary source of sewer revenues is sewer Service Fees from residential, commercial, and industrial customers, which make up almost 98 percent of total sewer revenues. User rates generated approximately $1.2 million in FY 2012/13.

RECOMMENDED REVENUE REQUIREMENTS

Based on the study projections, the City must increase sewer revenues annually in order to meet projected revenue needs due to annual increases in expenditures and to fund the CIP. Both the bimonthly fixed charges and the volumetric rates will be increased.

Unlike the City's water utility, the sewer utility does not currently hold a large amount of reserves within its operating or capital projects funds. Therefore, almost the entirety of the projected sewer CIP expenditures will need to be funded with revenues from user rates. Funding of the CIP and system replacement projects is the primary driver of the need for sewer rate increases.

Operating Costs

Increases in operating costs dictate the need for rate increases to a lesser degree. Operating costs are expected to increase in each year driven by the inflationary increases discussed previously. The City has worked to increase operational efficiency in an effort to control operating cost increases. Over the study period, operating costs are expected to increase to a total of approximately $1.4 million.

Table 5-5 presents a summarized financial forecast for the City's sewer utility.

TABLE 5-5 SEWER FINANCIAL FORECAST (IN MILLIONS)

	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
PRE RATE INCREASE					
User Rate Revenues	$1.22	$1.80	$2.25	$2.38	$2.52
Other Revenues	0.02	0.02	0.02	0.03	0.03
Total Revenues	**$1.24**	**$1.82**	**$2.27**	**$2.41**	**$2.55**
EXPENDITURES					
Operating Costs	$1.20	$1.24	$1.29	$1.34	$1.39
Rate Funded Capital	0.34	0.71	0.89	1.02	1.25
Policy Expenditures	0.00	0.00	0.00	0.00	0.00
Total Expenditures	**$1.54**	**$1.96**	**$2.18**	**$2.36**	**$2.63**
Cash flows (pre rate increase)	($0.30)	($0.14)	$0.10	$0.05	($0.08)
Revenues From Rate Increase	$0.29	$0.45	$0.13	$0.14	$0.15
Resulting Cash flows	($0.01)	$0.31	$0.23	$0.19	$0.07
INCREASE TO BIMONTHLY RATES [1]					
Residential Fixed Charge	*$4.00*	*$3.11*	*$0.94*	*$0.99*	*$1.05*
Commercial Fixed Charge	*$11.96*	*$9.28*	*$2.79*	*$2.96*	*$3.13*
Commercial Variable Charge (per HCF)	*$0.07*	*$0.05*	*$0.02*	*$0.02*	*$0.02*
CONSOLIDATED RESERVES (INCLUDES OPERATING AND CAPITAL FUNDING RESERVES)					
Beginning Balance	$2.35	$1.78	$2.09	$2.14	$2.11
Use of Reserves for O&M	0.00	0.00	0.00	0.00	0.00
Use of Reserves for Capital	(0.58)	0.31	0.05	(0.03)	(0.11)
Ending Balance	$1.78	$2.09	$2.14	$2.11	$2.00

Note:

1. All monetary values presented are in millions of dollars excluding *bimonthly rate increases*.

As of the finalizing of this report, the City is considering deferring the sewer rate increases scheduled on July 1, 2016 until January 1, 2017 and shifting all subsequent July 1 increases to the following January 1. This shift deviates from Carollo's recommendation and does result in a revenue loss and necessary use of reserves. However, the City believes that the rate defer allows utility customers to better manage these increases.

Table 5-6 presents a summarized financial forecast that reflects impacts of the shift to January 1 rate increase implementation in each year of the study period. The shift results in a total cash flow shortfall of $0.23 million over the five year study period. Under this strategy, the year-end consolidated fund balance expected to total $1.55 million for FY 2019/20.

TABLE 5-6 FINANCIAL FORECAST – JANUARY 1 RATE INCREASES (IN MILLIONS)

	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Total Revenues (Pre Rate Increase)	$1.24	$1.82	$2.27	$2.41	$2.55
Less: Expenditures	(1.54)	(1.96)	(2.36)	(2.58)	(2.81)
Cash flows (pre rate increase)	**($0.30)**	**($0.14)**	**($0.09)**	**($0.17)**	**($0.26)**
Revenues From Rate Increase	$0.29	$0.22	$0.07	$0.07	$0.08
Resulting Cash flows (Use of Reserves)	($0.01)	$0.09	($0.02)	($0.10)	($0.19)
Bimonthly Rate Increases	**January**	**January**	**January**	**January**	**January**
Residential Fixed Charge	$4.00	$3.11	$0.94	$0.99	$1.05
Commercial Fixed Charge	$11.96	$9.28	$2.79	$2.96	$3.13
Commercial Variable Charge (per HCF)	$0.07	$0.05	$0.02	$0.02	$0.02
Consolidated Reserves (Includes Operating, Facilities, and Equipment Reserves)					
Beginning Balance	$2.35	$1.78	$1.86	$1.84	$1.74
Use of Reserves for O&M	0.00	0.00	0.00	0.00	0.00
Use of Reserves for Capital	(0.58)	0.09	(0.02)	(0.10)	(0.19)
Ending Balance	**$1.78**	**$1.86**	**$1.84**	**$1.74**	**$1.55**

Note:

1. All monetary values presented are in millions of dollars excluding *bimonthly rate increases.*

6. SEWER COST OF SERVICE ANALYSIS

After revenue requirements for the City's sewer system were determined, a cost of service analysis was completed to validate the City's existing sewer rate structure and to update the rates based on the projected revenue requirements. The sewer cost of service analysis follows a methodology similar to that used for the water cost of service analysis.

FUNCTIONAL COST COMPONENTS

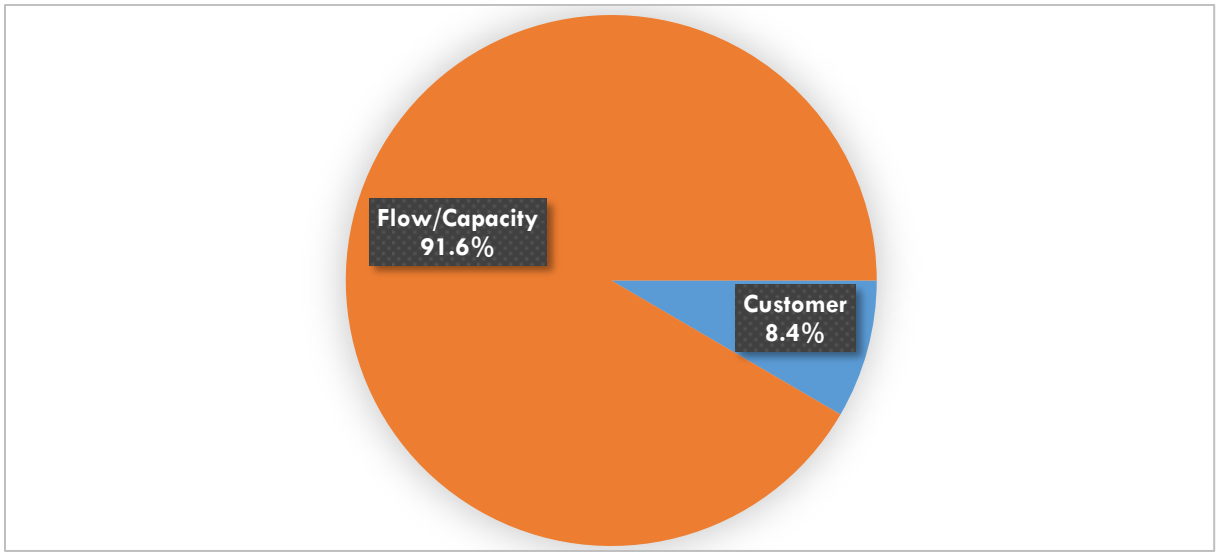
The City's sewer budget was analyzed line-item by line-item and expenditures were distributed between the functions of Customer and Flow.

- *Customer:* Expenditures are fixed expenditures that relate to operational support activities including accounting, billing, customer service, and administrative and technical support. These expenditures are essentially common-to-all customers and are reasonably uniform across the different customer classes.
- *Flow/Capacity:* Expenditures include those that are incurred based on the actual amount of flow discharged into the system, as well as those associated with potential discharges into the sewer system. These costs include operating and maintaining the sewer system, as well as capital costs, since the system is sized based on flow requirements.

ALLOCATION TO FUNCTIONAL COMPONENTS

Almost 92 percent of the City's sewer costs fall in the Flow/Capacity function, with the remaining costs allocated to the customer function. Figure 6-1 presents the results of the sewer functional allocation.

FIGURE 6-1 SEWER FUNCTIONAL ALLOCATION



CUSTOMER CLASS ALLOCATION

Costs are allocated to each customer class based on each class's characteristics and the results of the functional allocation. Customer costs are allocated to each class based on the number of accounts, Flow/Capacity costs are allocated to each class based on annual sewer flows. Table 6-1 shows the characteristics of each sewer customer class.

TABLE 6-1 SEWER CUSTOMER CLASS CHARACTERISTICS

CUSTOMER CLASS	ACCOUNTS	EDUS [2]	ANNUAL WATER USAGE (HCF)[3]	WINTER WATER USAGE (HCF)[4]	RETURN TO SEWER FACTOR (WINTER)[5]	ANNUAL SEWER FLOW (HCF)[6]
Residential [1]	12,719	19,814	4,576,139	1,105,803	66%	2,191,248
Commercial	717	2,151	541,538	160,583	90%	433,573
Total	**13,436**	**21,965**	**5,117,677**	**1,266,386**		**2,624,821**

Notes:

1. Residential data include single family, multi-family, and sewer only users. Water consumption for sewer only accounts has been assumed at the average single family usage
3. Single Family EDUs are based on one EDU per single family account. Multi-family EDUs are based on the total number of individual units shown in the City's billing data. Commercial EDUs are based on three EDUs per commercial account as implied by the current bimonthly fixed charges
4. FY 2012/13 water usage for accounts with sewer service.
5. FY 2012/13 water usage for accounts with sewer service in December, January, February, and March. This is used as a proxy for assumed non-irrigation water usage
6. Estimated return to sewer (RTS) factor for water usage in the months of December, January, February, and March. The residential RTS is based on assuming single family indoor usage of 11 HCF per month and a 90 percent RTS for multifamily accounts. The commercial RTS is assumed at a typical level of 90 percent
7. Calculated based on winter water usage and winter return to sewer factor.

Table 6-2 shows cost allocation for each customer group based on the forecasted revenue requirement.

TABLE 6-2 FY 2015/16 CUSTOMER CLASS COSTS

CUSTOMER CLASS	CUSTOMER	FLOW/CAPACITY	TOTAL
Residential	$143,250	$8,075	$151,325
Commercial	1,374,273	271,921	1,646,194
Total	**$1,517,522**	**$279,997**	**$1,797,519**

7. SEWER RATES DESIGN

The rate design analysis determines how the customer class costs identified above in Table 6-2 are recovered from each customer class through sewer rates. The focus of this process is to achieve full cost recovery and substantiate that each customer class is paying its fair and proportionate share of system costs.

PROPOSED SEWER RATES

The results of the cost of service analysis indicate that the current sewer rate structure equitably recovers costs from each customer class. Table 7-1 compares the revenues collected from each class based on across the board rate increases to those developed in the cost of service analysis. As shown, the revenue generated from each rate structure is in very close alignment. It is recommended that the City retain the current rate structure, and update it to reflect the increased revenue requirements discussed previously.

TABLE 7-1 COST OF SERVICE ALLOCATION (PERCENT OF TOTAL REVENUES)

RATE	ACROSS THE BOARD INCREASE	DEVELOPED RATES
Residential Fixed Charge	84%	84%
Commercial Fixed Charge	9%	9%
Commercial Variable Charge	7%	7%
Total	**100%**	**100%**

The proposed sewer rates shown in Table 7-2 represent across the board increases in which all of the sewer rates are increased proportionally. As detailed below, Residential does not have a variable rate. As sewer flows are not metered, water demands are used as a proxy for sewer flows. As commercial is a heterogeneous class, the fixed and variable structure provides greater proportionality and reflect of a commercial user's use of the system. Residential demands are viewed to be consistent (homogeneous) and are already built into the calculated rate.

TABLE 7-2 PROPOSED SEWER RATES

EXISTING	PROPOSED RATES	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
$8.42	Residential (Fixed, Bimonthly)	$12.42	$15.53	$16.47	$17.46	$18.51
25.16	Commercial (Fixed, Bimonthly)	37.12	46.40	49.19	52.15	55.28
0.13	Commercial (Variable, Per HCF of water used)	0.20	0.25	0.27	0.29	0.31

CUSTOMER IMPACTS

Before implementing any rate structure recommendations, Carollo worked closely with Sewer Utility staff to evaluate the impact of the proposed rate structure and revenue adjustments to sewer customers. Figure 7-1 and

Figure 7-2 show the bimonthly bill impacts of the proposed rates for residential and commercial customers. The variable charge for commercial customers has been calculated assuming 50 HCF of water consumption.

FIGURE 7-1 BIMONTHLY RESIDENTIAL SEWER BILL

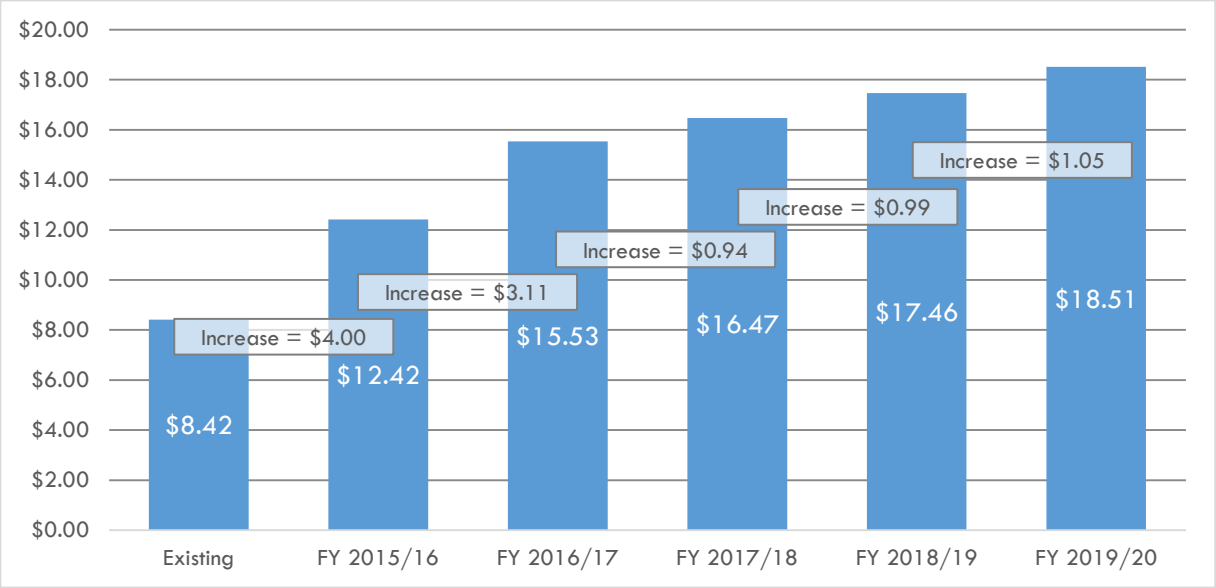
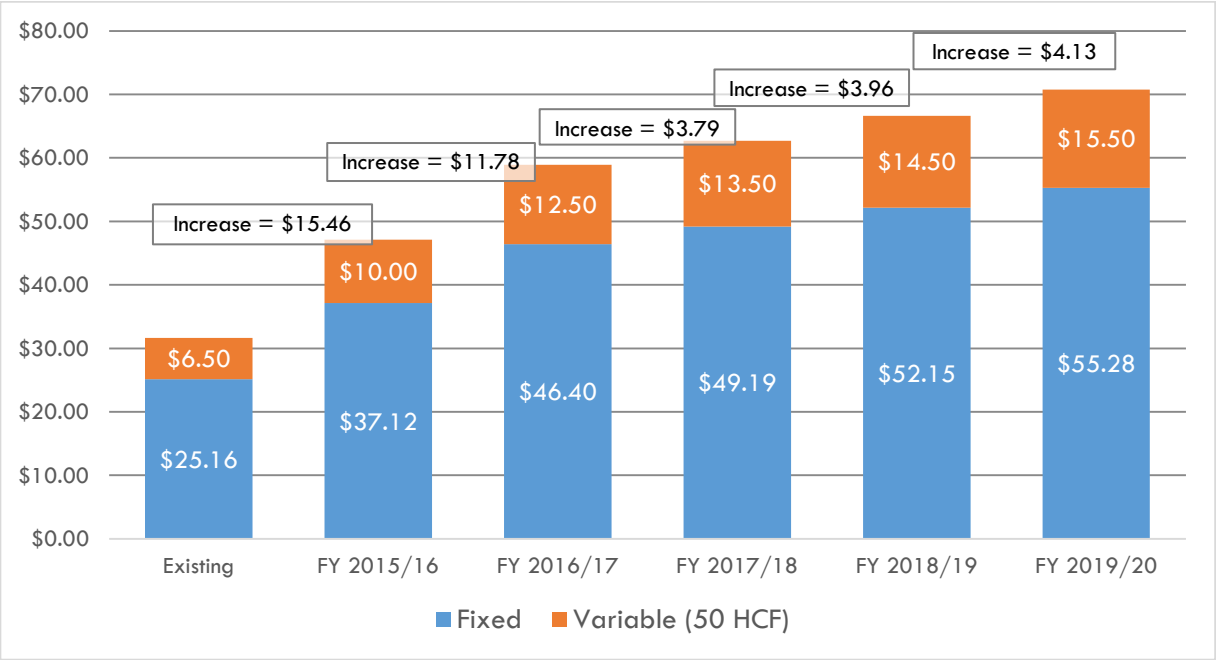


FIGURE 7-2 BIMONTHLY COMMERCIAL SEWER BILL (50 HCF)



8. CONCLUSIONS

WATER REVENUE REQUIREMENTS AND RATES

Increases in water supply costs brought on by the ongoing drought have significantly impacted the finances of the City's water utility. Current projections from the Watermaster indicate that water supply concerns may not be abated for some time, it is projected that over the next five years the OSY will remain below the historic average. Additionally, maintenance of the water system, and inflationary increases to operating and maintenance costs will continue to drive higher expenditures over the next five years and beyond. The proposed water revenue increases are necessary for the City to maintain its high level of service to each of the water customers. The City should continue to evaluate revenue requirements in each year based on financial and operational conditions at that time.

The proposed water rates have been designed to not only provide the revenues necessary to operate the system, but also to help control water supply costs by promoting efficient water usage through a price signal. The expanded water rate structure aims to enhance customer equity by proportionately allocating costs to customers in a manner that reflects each customer's usage characteristics. More specifically, the tiered rate structure has been developed so that the costs of the more expensive imported water supplies are recovered from customers using large amounts of water. Absent this higher level of usage, the City would otherwise not need to purchase replenishment water.

Under the tenets of Article XIII D, adoption of the proposed five-year water rate structure would set the maximum rates that the City may implement in each year. Given the unpredictability of weather patterns and subsequently the MSGB OSY, the City may realize savings on water supply costs if the OSY is raised above the level analyzed in this study. If such savings are realized, the City may opt to forgo rate increases in any given year, or implement rates lower than the adopted rates. It is important that such decisions be made with careful consideration so that possible revenue shortfalls are avoided.

SEWER REVENUE REQUIREMENTS AND RATES

Increases in sewer revenues are needed so that the City can support inflationary increases in operating and maintenance costs, and increased system reinvestment aimed at maintaining the systems functionality and value. The proposed revenue increases would allow the City to fund ongoing operations, and to achieve a 75-year replacement cycle for the sewer system. The City should continue to evaluate revenue requirements in each year based on financial and operational conditions at that time.

The proposed sewer rates retain the existing sewer rate structure and are increased proportionally in each year to generate the necessary level of revenue. Like the water rates, adoption of the proposed five-year sewer rate structure would set the maximum rates that the City may implement in each year. If the City finds that revenue requirements are less than those projected in this study, the City may, with care, opt to forgo rate increases in any given year, or implement rates lower than the adopted rates.

9. APPENDIX

TABLE 9-1 WATER REVENUE REQUIREMENTS ANALYSIS

Cash Flow Test	Approved						
	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Revenues							
User Rate Revenues	$ 9,827,715	$ 9,827,715	$ 9,432,586	$ 10,515,411	$ 11,761,225	$ 12,275,734	$ 13,081,784
Other Charges for Services	234,310	241,340	248,580	256,037	263,718	271,630	279,779
Grant Income	-	-	-	-	-	-	-
Interest Earnings	128,039	129,747	117,473	101,328	89,916	70,914	59,593
Other Revenues	(229,786)	(228,248)	(226,665)	(225,034)	(223,354)	(221,624)	(219,842)
Revenue 6	-	-	-	-	-	-	-
Revenue 7	-	-	-	-	-	-	-
Revenue 8	-	-	-	-	-	-	-
Revenue 9	-	-	-	-	-	-	-
Total Revenues	**$ 9,960,279**	**$ 9,970,553**	**$ 9,571,973**	**$ 10,647,743**	**$ 11,891,506**	**$ 12,396,654**	**$ 13,201,315**
Expenditures							
DIVISION: 7201 WATER-ADMIN	$ 3,483,400	$ 3,587,902	$ 3,695,539	$ 3,806,405	$ 3,920,597	$ 4,038,215	$ 4,159,362
DIVISION: 7204 WATER-MAIN & REPLACEMENT	1,056,700	1,088,401	1,121,053	1,154,685	1,189,325	1,225,005	1,261,755
DIVISION: 7205 WATER-METER CUSTOMER SV	353,300	363,899	374,816	386,060	397,642	409,572	421,859
DIVISION: 7206 WATER-PRODUCTION/QUALITY	6,683,100	7,491,383	6,915,214	6,809,732	6,732,938	6,682,109	6,905,715
Debt Service	-	-	-	-	-	-	-
Rate Funded Capital (PAYGO)	-	-	-	-	-	-	-
Additional O&M Expenditures	-	-	195,000	200,850	206,876	213,082	219,474
Total Operating Expenditures	**$ 11,576,500**	**$ 12,531,585**	**$ 12,301,623**	**$ 12,357,733**	**$ 12,447,378**	**$ 12,567,982**	**$ 12,968,164**
Policy Expenditures							
Replacement Funding	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Transfers to Capital Reserve	-	-	-	-	-	-	-
Additions to Meet Minimum Fund Balances	531,919	-	-	12,393	20,619	-	-
Total Policy Expenditures	**$ 531,919**	**$ -**	**$ -**	**$ 12,393**	**$ 20,619**	**$ -**	**$ -**
Policy Overrides							
Replacement Funding							
Transfers to Capital Reserve							
Additions to Meet Min Fund Balances							
Total Expenditures for Cash Flow Test	**$ 12,108,419**	**$ 12,531,585**	**$ 12,301,623**	**$ 12,370,126**	**$ 12,467,996**	**$ 12,567,982**	**$ 12,968,164**
Cash Flow Surplus (Deficit)	**$ (2,148,141)**	**$ (2,561,032)**	**$ (2,729,649)**	**$ (1,722,383)**	**$ (576,490)**	**$ (171,328)**	**$ 233,150**

Debt Coverage Test	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Revenues							
Water Revenues	$ 9,960,279	$ 9,970,553	$ 9,571,973	$ 10,647,743	$ 11,891,506	$ 12,396,654	$ 13,201,315
Water Connection Fee Revenues Allowed							
Reclaimed Water Reveues							
Reclaimed Water Connection Fee Revenues Allowed							
Total Revenues	**$ 9,960,279**	**$ 9,970,553**	**$ 9,571,973**	**$ 10,647,743**	**$ 11,891,506**	**$ 12,396,654**	**$ 13,201,315**
Expenditures							
Water Expenditures	$ 11,576,500	$ 12,531,585	$ 12,106,623	$ 12,156,883	$ 12,240,502	$ 12,354,901	$ 12,748,690
Debt Service	-	-	-	-	-	-	-
Coverage	-	-	-	-	-	-	-
Total Expenditures	**$ 11,576,500**	**$ 12,531,585**	**$ 12,106,623**	**$ 12,156,883**	**$ 12,240,502**	**$ 12,354,901**	**$ 12,748,690**
Bond Coverage Surplus (Deficit)	**$ (1,616,221)**	**$ (2,561,032)**	**$ (2,534,649)**	**$ (1,509,140)**	**$ (348,996)**	**$ 41,753**	**$ 452,625**
Debt Coverage Applicable Debt	$ -	$ -	$ -	$ -	$ -	$ -	$ -

Revenue Requirement		FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Revenue Surplus/(Shortfalls)		$ (2,148,141)	$ (2,561,032)	$ (2,729,649)	$ (1,722,383)	$ (576,490)	$ (171,328)	$ 233,150
		Cash Flow Driven	*Coverage Driven*	*Cash Flow Driven*	*Cash Flow Driven*	*Cash Flow Driven*	*Cash Flow Driven*	*Surplus*
Revenue Increase	July	July	July	January	July	July	July	July
Calculated Rate Increase (%)		22.00%	27.00%	65.00%	17.00%	5.00%	2.00%	0.00%
** Rounded to the nearest whole percent*								
Rate Override (%)		**0.00%**	**0.00%**	**15.00%**	**15.00%**	**7.00%**	**7.00%**	**7.00%**
		90 days	90 days	90 days	90 days	93 days	108 days	133 days
Rate Increases		25%	25%	25%	25%	25%	30%	36%
Rate Increase (%)		0.00%	**0.00%**	**15.00%**	**15.00%**	**7.00%**	**7.00%**	**7.00%**
Cumulative Rate Increase (%)		0.00%	0.00%	15.00%	32.25%	41.51%	51.41%	62.01%

Cash Flows							
Revenues Before Rate Increase	$ 9,960,279	$ 9,970,553	$ 9,571,973	$ 10,647,743	$ 11,891,506	$ 12,396,654	$ 13,201,315
Revenues From Rate Increase	-	-	1,414,888	1,577,312	823,286	859,301	915,725
Less: Rate Increase Delay	-	-	(707,444)	-	-	-	-
Less: Expenditures	(11,576,500)	(12,531,585)	(12,301,623)	(12,357,733)	(12,447,378)	(12,567,982)	(12,968,164)
Cash Flow	**$ (1,616,221)**	**$ (2,561,032)**	**$ (2,022,205)**	**$ (132,678)**	**$ 267,414**	**$ 687,973**	**$ 1,148,875**
Operating Fund							
Beginning Balance	$ 2,322,560	$ 4,931,900	$ 3,089,980	$ 2,985,195	$ 2,997,588	$ 3,114,551	$ 3,652,074
Cash Flow	(1,616,221)	(2,561,032)	(2,022,205)	(132,678)	267,414	687,973	1,148,875
Additions (Subtractions)	(91,925)	(200,495)	(25,750)	(193,775)	(150,450)	(150,450)	(150,450)
Year End Transfer to Facilities Fund	2,240,066	919,607	1,943,170	338,846	-	-	-
Ending Fund Balance	**$ 2,854,479**	**$ 3,089,980**	**$ 2,985,195**	**$ 2,997,588**	**$ 3,114,551**	**$ 3,652,074**	**$ 4,650,500**
Operating Balance	**90 days**	**90 days**	**90 days**	**90 days**	**93 days**	**108 days**	**133 days**
	25%	**25%**	**25%**	**25%**	**25%**	**30%**	**36%**

TABLE 9-2 SEWER REVENUE REQUIREMENTS ANALYSIS

Cash Flow Test

	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Revenues						
Sewer System Charge	$ 1,179,642	$ 1,179,642	$ 1,740,042	$ 2,175,053	$ 2,305,556	$ 2,443,889
Industrial Waste Fee	38,966	38,966	57,477	71,846	76,157	80,727
Public Works Inspection	1,030	1,061	1,093	1,126	1,159	1,194
Engineering Charges	8,000	8,000	8,000	8,000	8,000	8,000
Interest Earnings	16,761	15,509	13,125	15,587	18,191	17,786
Other Revenus	-	-	-	-	-	-
Other Financing Sources	-	-	-	-	-	-
Total Revenues	**$ 1,244,399**	**$ 1,243,178**	**$ 1,819,737**	**$ 2,271,612**	**$ 2,409,063**	**$ 2,551,596**
Expenditures						
SALARIES & WAGES	$ 769,808	$ 800,600	$ 832,624	$ 865,929	$ 900,566	$ 936,589
SUPPLIES	16,480	16,974	17,484	18,008	18,548	19,105
OPERATING EXPENSES	371,830	382,985	394,474	406,309	418,498	431,053
SPECIAL PROGRAMS	-	-	-	-	-	-
Debt Service	-	-	-	-	-	-
Rate Funded Capital (PAYGO)	-	339,674	714,215	885,839	1,024,041	1,246,591
Additional O&M Expenditures	-	-	-	-	-	-
Total Operating Expenditures	**$ 1,158,118**	**$ 1,540,234**	**$ 1,958,797**	**$ 2,176,085**	**$ 2,361,654**	**$ 2,633,338**
Policy Expenditures						
Replacement Funding	$ -	$ -	$ -	$ -	$ -	$ -
Transfers to Capital Reserve	-	-	-	-	-	-
Additions to Meet Minimum Fund Balances	-	-	-	-	-	-
Total Policy Expenditures	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenditures for Cash Flow Test	**$ 1,158,118**	**$ 1,540,234**	**$ 1,958,797**	**$ 2,176,085**	**$ 2,361,654**	**$ 2,633,338**
Cash Flow Surplus (Deficit)	**$ 86,281**	**$ (297,056)**	**$ (139,060)**	**$ 95,526**	**$ 47,409**	**$ (81,742)**

Debt Coverage Test	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Revenues						
Sewer Revenues	$ 1,244,399	$ 1,243,178	$ 1,819,737	$ 2,271,612	$ 2,409,063	$ 2,551,596
Sewer Connection Fee Revenues Allowed						
Total Revenues	**$ 1,244,399**	**$ 1,243,178**	**$ 1,819,737**	**$ 2,271,612**	**$ 2,409,063**	**$ 2,551,596**
Expenditures						
Sewer Expenditures	$ 1,158,118	$ 1,200,560	$ 1,244,582	$ 1,290,246	$ 1,337,613	$ 1,386,747
Debt Service	-	-	-	-	-	-
Coverage	-	-	-	-	-	-
Total Expenditures	**$ 1,158,118**	**$ 1,200,560**	**$ 1,244,582**	**$ 1,290,246**	**$ 1,337,613**	**$ 1,386,747**
Bond Coverage Surplus (Deficit)	**$ 86,281**	**$ 42,618**	**$ 575,154**	**$ 981,366**	**$ 1,071,450**	**$ 1,164,849**
Debt Coverage Applicable Debt	$ -	$ -	$ -	$ -	$ -	$ -

Revenue Requirement	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Revenue Surplus/(Shortfalls)	$ 86,281	$ (297,056)	$ (139,060)	$ 95,526	$ 47,409	$ (81,742)
	Surplus	*Cash Flow Driven*	*Cash Flow Driven*	*Surplus*	*Surplus*	*Cash Flow Driven*
Revenue Increase	January	January	July	July	July	July
Calculated Rate Increase (%)	0.00%	49.00%	8.00%	0.00%	0.00%	4.00%
** Rounded to the nearest whole percent*						
Rate Override (%)	**0.00%**	**47.51%**	**25.00%**	**6.00%**	**6.00%**	**6.00%**
	90 days	85 days	90 days	90 days	90 days	90 days
Rate Increases	25%	23%	25%	25%	25%	25%
Rate Increase (%)	**0.00%**	**47.51%**	**25.00%**	**6.00%**	**6.00%**	**6.00%**
Cumulative Rate Increase (%)	0.00%	47.51%	84.38%	95.45%	107.17%	119.60%

Cash Flows						
Revenues Before Rate Increase	$ 1,244,399	$ 1,243,178	$ 1,819,737	$ 2,271,612	$ 2,409,063	$ 2,551,596
Revenues From Rate Increase	-	578,911	449,380	134,814	142,903	151,477
Less: Rate Increase Delay	-	(289,456)	-	-	-	-
Less: Expenditures	(1,158,118)	(1,540,234)	(1,958,797)	(2,176,085)	(2,361,654)	(2,633,338)
Cash Flow	**$ 86,281**	**$ (7,601)**	**$ 310,320**	**$ 230,340**	**$ 190,312**	**$ 69,735**
	$ -	$ 289,456	$ 449,380	$ 134,814	$ 142,903	
Operating Fund						
Beginning Balance	$ 275,474	$ 285,563	$ 277,963	$ 306,883	$ 318,143	$ 329,822
Cash Flow	86,281	(7,601)	310,320	230,340	190,312	69,735
Transfers to Capital Fund	(76,192)	-	(281,399)	(219,081)	(178,632)	(57,620)
Ending Fund Balance	**$ 285,563**	**$ 277,963**	**$ 306,883**	**$ 318,143**	**$ 329,822**	**$ 341,938**
Operating Balance	**90 days**	**85 days**	**90 days**	**90 days**	**90 days**	**90 days**
	25%	**23%**	**25%**	**25%**	**25%**	**25%**

TABLE 9-3 WATER OPERATIONS AND MAINTENANCE BUDGET SUMMARY

O&M Escalators

	Source:	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
General Inflation	SMART	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Labor Inflation	SMART	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Utilities Inflation	SMART	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Construction Inflation	SMART	3.00%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Depreciation Funding	SMART	2.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Interest Income	SMART	2.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Customer Growth	SMART	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Gnrl Infltn + Cstmr Grwth	SMART	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
No Annual Increase	SMART	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
One Time Expense	SMART	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%
Purchased Water Inflation	SMART	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Metered Water Demand	SMART	0.00%	0.00%	-4.02%	-3.06%	-2.74%	-2.45%	-0.41%
Delivered Water Demand	SMART	0.00%	-1.00%	-1.00%	-1.00%	-1.00%	-1.00%	-1.00%
Water Inflation + Water Demand	SMART							
Utilities + Delivered Water Demand	SMART	5.00%	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%

O&M Summary

	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Revenues							
User Rate Revenues	$ 9,827,715	$ 9,827,715	$ 9,432,586	$ 10,515,411	$ 11,761,225	$ 12,275,734	$ 13,081,784
Other Charges for Services	234,310	241,340	248,580	256,037	263,718	271,630	279,779
Grant Income	-	-	-	-	-	-	-
Interest Earnings	128,039	129,747	117,473	101,328	89,916	70,914	59,593
Other Revenues	(229,786)	(228,248)	(226,665)	(225,034)	(223,354)	(221,624)	(219,842)
Revenue 6	-	-	-	-	-	-	-
Revenue 7	-	-	-	-	-	-	-
Revenue 8	-	-	-	-	-	-	-
Revenue 9	-	-	-	-	-	-	-
Total Revenues	**$ 9,960,279**	**$ 9,970,553**	**$ 9,571,973**	**$ 10,647,743**	**$ 11,891,506**	**$ 12,396,654**	**$ 13,201,315**
Expenditures							
DIVISION: 7201 WATER-ADMIN	$ 3,483,400	$ 3,587,902	$ 3,695,539	$ 3,806,405	$ 3,920,597	$ 4,038,215	$ 4,159,362
DIVISION: 7204 WATER-MAIN & REPLACEMENT	1,056,700	1,088,401	1,121,053	1,154,685	1,189,325	1,225,005	1,261,755
DIVISION: 7205 WATER-METER CUSTOMER SV	353,300	363,899	374,816	386,060	397,642	409,572	421,859
DIVISION: 7206 WATER-PRODUCTION/QUALITY	6,683,100	7,491,383	6,915,214	6,809,732	6,732,938	6,682,109	6,905,715
Additional O&M Expenditures	-	-	195,000	200,850	206,876	213,082	219,474
Total Expenditures	**$ 11,576,500**	**$ 12,531,585**	**$ 12,301,623**	**$ 12,357,733**	**$ 12,447,378**	**$ 12,567,982**	**$ 12,968,164**
Net Operating Surplus (Deficit)	**$ (1,616,221)**	**$ (2,561,032)**	**$ (2,729,649)**	**$ (1,709,990)**	**$ (555,872)**	**$ (171,328)**	**$ 233,150**

O&M Detail

Revenues

		Escalator	FY 2013/14 Projection (Pre-Rate Increase)	FY 2014/15 Projection (Pre-Rate Increase)	FY 2015/16 Projection (Pre-Rate Increase)	FY 2016/17 Projection (Pre-Rate Increase)	FY 2017/18 Projection (Pre-Rate Increase)	FY 2018/19 Projection (Pre-Rate Increase)	FY 2019/20 Projection (Pre-Rate Increase)
User Rate Revenues									
			$ 9,827,715						
3512	Water Sales	Metered Water Demand	$ 9,827,715	$ 9,827,715	$ 9,432,586	$ 10,515,411	$ 11,761,225	$ 12,275,734	$ 13,081,784
	XXXX	Customer Growth	-	-	-	-	-	-	-
	Other User Rate Revenues	General Inflation	-	-	-	-	-	-	-
	Total User Rate Revenues		**$ 9,827,715**	**$ 9,827,715**	**$ 9,432,586**	**$ 10,515,411**	**$ 11,761,225**	**$ 12,275,734**	**$ 13,081,784**
Other Charges for Services									
3501	Maps & Publications	General Inflation	$ 1,178	$ 1,213	$ 1,249	$ 1,287	$ 1,325	$ 1,365	$ 1,406
3505	Engineering Charges	General Inflation	170,960	176,089	181,371	186,813	192,417	198,189	204,135
3510	Meter Services	General Inflation	-	-	-	-	-	-	-
3540	Meter Inspection Fees	General Inflation	62,173	64,038	65,959	67,938	69,976	72,075	74,238
	Other Other Charges for Services	General Inflation	-	-	-	-	-	-	-
	Total Other Charges for Services		**$ 234,310**	**$ 241,340**	**$ 248,580**	**$ 256,037**	**$ 263,718**	**$ 271,630**	**$ 279,779**
Grant Income									
3420	Federal Funds	One Time Expense	$ -	$ -	$ -	$ -	$ -	$ -	$ -
3447	EPA-Restoration Program	One Time Expense	-	-	-	-	-	-	-
3450	Grants-Other Agencies	One Time Expense	-	-	-	-	-	-	-
	Other Grant Income	One Time Expense							
	Total Grant Income		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Interest Earnings									
3301	Interest	--Funding Page--	$ 8,685	$ 8,221	$ 7,999	$ 7,627	$ 7,884	$ 7,406	$ 8,061
3307	Interest	--Funding Page--	119,354	121,526	109,473	93,701	82,032	63,507	51,532
	Total Interest Earnings		**$ 128,039**	**$ 129,747**	**$ 117,473**	**$ 101,328**	**$ 89,916**	**$ 70,914**	**$ 59,593**
Other Revenues									
3306	Unrealized Gain/Loss	No Annual Increase	$ (281,031)	$ (281,031)	$ (281,031)	$ (281,031)	$ (281,031)	$ (281,031)	$ (281,031)
3320	Rent & Royalties	General Inflation	10,382	10,694	11,015	11,345	11,685	12,036	12,397
3801	Miscellaneous	General Inflation	23,344	24,044	24,766	25,509	26,274	27,062	27,874
3818	Sale of Property	General Inflation	17,519	18,044	18,586	19,143	19,718	20,309	20,918
	Grant Income	One Time Expense	-	-	-	-	-	-	-
	Total Other Revenues		**$ (229,786)**	**$ (228,248)**	**$ (226,665)**	**$ (225,034)**	**$ (223,354)**	**$ (221,624)**	**$ (219,842)**
	Total Revenues		**$ 9,960,279**	**$ 9,970,553**	**$ 9,571,973**	**$ 10,647,743**	**$ 11,891,506**	**$ 12,396,654**	**$ 13,201,315**

Expenditures

			Escalator	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
DIVISION: 7201		WATER-ADMIN								
	SALARIES & WAGES									
7201	4010	REGULAR EMPLOYEES	Labor Inflation	$ 720,100	$ 741,703	$ 763,954	$ 786,873	$ 810,479	$ 834,793	$ 859,837
7201	4013	VACATION PAY OFF	Labor Inflation	10,000	10,300	10,609	10,927	11,255	11,593	11,941
7201	4014	VACATION SELL BACK	Labor Inflation	6,000	6,180	6,365	6,556	6,753	6,956	7,164
7201	4015	ALLOWANCES	Labor Inflation	1,100	1,133	1,167	1,202	1,238	1,275	1,313
7201	4016	DEF COMP-CITY PAID	Labor Inflation	200	206	212	219	225	232	239
7201	4019	STAND BY PAY	Labor Inflation	13,000	13,390	13,792	14,205	14,632	15,071	15,523
7201	4021	LONGEVITY PAY	Labor Inflation	9,200	9,476	9,760	10,053	10,355	10,665	10,985
7201	4032	TEMPORARY	Labor Inflation	20,000	20,600	21,218	21,855	22,510	23,185	23,881
7201	4130	OVERTIME	Labor Inflation	1,000	1,030	1,061	1,093	1,126	1,159	1,194
7201	4241	P.E.R.S	Labor Inflation	168,300	173,349	178,549	183,906	189,423	195,106	200,959
7201	4242	.5% CITY CONTRIBUTION	Labor Inflation	1,600	1,648	1,697	1,748	1,801	1,855	1,910
7201	4244	MEDICAL/DENTAL	Labor Inflation	108,200	111,446	114,789	118,233	121,780	125,433	129,196
7201	4245	LONG TERM DISABILITY	Labor Inflation	900	927	955	983	1,013	1,043	1,075
7201	4247	LIFE INSURANCE	Labor Inflation	1,500	1,545	1,591	1,639	1,688	1,739	1,791
7201	4248	RETIREE MEDICAL	Labor Inflation	46,600	47,998	49,438	50,921	52,449	54,022	55,643
7201	4250	FICA/HOSPITAL INSURANCE	Labor Inflation	10,600	10,918	11,246	11,583	11,930	12,288	12,657
	Total:	SALARIES & WAGES		1,118,300	1,151,849	1,186,404	1,221,997	1,258,657	1,296,416	1,335,309
	SUPPLIES									
7201	5110	OFFICE SUPPLIES	General Inflation	16,000	$ 16,480	$ 16,974	$ 17,484	$ 18,008	$ 18,548	$ 19,105
7201	5111	WATER BILL POSTAGE	General Inflation	47,000	48,410	49,862	51,358	52,899	54,486	56,120
7201	5120	DRAFTING SUPPLIES	General Inflation	3,000	3,090	3,183	3,278	3,377	3,478	3,582
7201	5125	PRINT SHOP	General Inflation	25,000	25,750	26,523	27,318	28,138	28,982	29,851
	Total:	SUPPLIES		91,000	93,730	96,542	99,438	102,421	105,494	108,659
	OPERATING EXPENSES									
7201	6145	WATER CONSERVATION COST	General Inflation	8,000	$ 8,240	$ 8,487	$ 8,742	$ 9,004	$ 9,274	$ 9,552
7201	6160	CONTRACT SERVICES	General Inflation	123,400	127,102	130,915	134,843	138,888	143,054	147,346
7201	6210	TELEPHONE	General Inflation	100	103	106	109	113	116	119
7201	6505	GENERAL LIABILITY	General Inflation	125,200	128,956	132,825	136,809	140,914	145,141	149,495
7201	6507	WORKERS' COMPENSATION	General Inflation	69,800	71,894	74,051	76,272	78,561	80,917	83,345
7201	6540	TAXES	General Inflation	0	-	-	-	-	-	-
7201	6730	OFFICE EQUIPMENT	General Inflation	1,500	1,545	1,591	1,639	1,688	1,739	1,791
7201	6750	VEHICLE MAINTENANCE	General Inflation	4,300	4,429	4,562	4,699	4,840	4,985	5,134
7201	6760	BUILDING REPAIR & MAINT	General Inflation	2,600	2,678	2,758	2,841	2,926	3,014	3,105
7201	6904	RENTS	General Inflation	830,000	854,900	880,547	906,963	934,172	962,197	991,063
7201	6930	MEMBERSHIP & PUBLICATIONS	General Inflation	8,000	8,240	8,487	8,742	9,004	9,274	9,552
7201	6940	OFFICIAL MEETINGS	General Inflation	3,500	3,605	3,713	3,825	3,939	4,057	4,179
7201	6970	TRAINING	General Inflation	7,000	7,210	7,426	7,649	7,879	8,115	8,358
7201	6971	TUITION REIMBURSEMENT	General Inflation	9,000	9,270	9,548	9,835	10,130	10,433	10,746
7201	6987	DUES & ASSESSMENTS	General Inflation	11,000	11,330	11,670	12,020	12,381	12,752	13,135
7201	6990	DEPRECIATION	General Inflation	0	-	-	-	-	-	-
7201	6995	GENERAL FUND CHARGES	General Inflation	1,070,700	1,102,821	1,135,906	1,169,983	1,205,082	1,241,235	1,278,472
	Total:	OPERATING EXPENSES		2,274,100	2,342,323	2,412,593	2,484,970	2,559,520	2,636,305	2,715,394
	SPECIAL PROGRAMS									
7201	XXXXX	Special Programs XXXXX	General Inflation	0	$ -	$ -	$ -	$ -	$ -	$ -
		Total: SPECIAL PROGRAMS		0	0	0	0	0	0	0
	DIVISION: 7201	WATER-ADMIN		$ 3,483,400	$ 3,587,902	$ 3,695,539	$ 3,806,405	$ 3,920,597	$ 4,038,215	$ 4,159,362

DIVISION: 7204		WATER-MAIN & REPLACEMENT									
	SALARIES & WAGES										
7204	4010	REGULAR EMPLOYEES	Labor Inflation	516,900	$ 532,407	$ 548,379	$ 564,831	$ 581,776	$ 599,229	$ 617,206
7204	4014	VACATION SELL BACK	Labor Inflation	4,000	4,120	4,244	4,371	4,502	4,637	4,776
7204	4021	LONGEVITY PAY	Labor Inflation	10,900	11,227	11,564	11,911	12,268	12,636	13,015
7204	4032	TEMPORARY	Labor Inflation	12,000	12,360	12,731	13,113	13,506	13,911	14,329
7204	4130	OVERTIME	Labor Inflation	23,000	23,690	24,401	25,133	25,887	26,663	27,463
7204	4241	P.E.R.S	Labor Inflation	121,800	125,454	129,218	133,094	137,087	141,200	145,436
7204	4242	.5% CITY CONTRIBUTION	Labor Inflation	200	206	212	219	225	232	239
7204	4244	MEDICAL/DENTAL	Labor Inflation	108,300	111,549	114,895	118,342	121,893	125,549	129,316
7204	4245	LONG TERM DISABILITY	Labor Inflation	900	927	955	983	1,013	1,043	1,075
7204	4247	LIFE INSURANCE	Labor Inflation	700	721	743	765	788	811	836
7204	4250	FICA/HOSPITAL INSURANCE	Labor Inflation	7,700	7,931	8,169	8,414	8,666	8,926	9,194
	Total:	SALARIES & WAGES		806,400	830,592	855,510	881,175	907,610	934,839	962,884
	SUPPLIES									
7204	5260	FIELDS	General Inflation	3,000	$ 3,090	$ 3,183	$ 3,278	$ 3,377	$ 3,478	$ 3,582
7204	5280	UNIFORM	General Inflation	9,000	9,270	9,548	9,835	10,130	10,433	10,746
7204	5410	TOOLS	General Inflation	5,000	5,150	5,305	5,464	5,628	5,796	5,970
	Total:	SUPPLIES		17,000	17,510	18,035	18,576	19,134	19,708	20,299
	OPERATING EXPENSES									
7204	6750	VEHICLE MAINTENANCE	General Inflation	114,800	$ 118,244	$ 121,791	$ 125,445	$ 129,208	$ 133,085	$ 137,077
7204	6760	BUILDING REPAIR & MAINT	General Inflation	500	515	530	546	563	580	597
7204	6771	WAREHOUSE & SHOP	General Inflation	6,000	6,180	6,365	6,556	6,753	6,956	7,164
	Total:	OPERATING EXPENSES		121,300	124,939	128,687	132,548	136,524	140,620	144,839
	SPECIAL PROGRAMS									
7204	7540	REPAIRS TO MAINS	General Inflation	45,000	$ 46,350	$ 47,741	$ 49,173	$ 50,648	$ 52,167	$ 53,732
7204	7550	REPAIRS TO SERVICES	General Inflation	55,000	56,650	58,350	60,100	61,903	63,760	65,673
7204	7560	REPAIRS TO HYDRANTS	General Inflation	12,000	12,360	12,731	13,113	13,506	13,911	14,329
	Total:	SPECIAL PROGRAMS		112,000	115,360	118,821	122,385	126,057	129,839	133,734
	DIVISION: 7204	WATER-MAIN & REPLACEMENT		$ 1,056,700	$ 1,088,401	$ 1,121,053	$ 1,154,685	$ 1,189,325	$ 1,225,005	$ 1,261,755

DIVISION: 7205		**WATER-METER CUSTOMER SV**										
	SALARIES & WAGES											
7205	4010	REGULAR EMPLOYEES	Labor Inflation	199,600	$ 205,588	$ 211,756	$ 218,108	$ 224,652	$ 231,391	$ 238,333
7205	4014	VACATION SELL BACK	Labor Inflation	2,000	2,060	2,122	2,185	2,251	2,319	2,388
7205	4021	LONGEVITY PAY	Labor Inflation	5,100	5,253	5,411	5,573	5,740	5,912	6,090
7205	4130	OVERTIME	Labor Inflation	3,000	3,090	3,183	3,278	3,377	3,478	3,582
7205	4241	P.E.R.S	Labor Inflation	47,300	48,719	50,181	51,686	53,237	54,834	56,479
7205	4242	.5% CITY CONTRIBUTION	Labor Inflation	200	206	212	219	225	232	239
7205	4244	MEDICAL/DENTAL	Labor Inflation	39,300	40,479	41,693	42,944	44,232	45,559	46,926
7205	4245	LONG TERM DISABILITY	Labor Inflation	300	309	318	328	338	348	358
7205	4247	LIFE INSURANCE	Labor Inflation	300	309	318	328	338	348	358
7205	4250	FICA/HOSPITAL INSURANCE	Labor Inflation	3,000	3,090	3,183	3,278	3,377	3,478	3,582
	Total:	**SALARIES & WAGES**		**300,100**	**309,103**	**318,376**	**327,927**	**337,765**	**347,898**	**358,335**
	SUPPLIES									
7205	5410	TOOLS	General Inflation	1,000	$ 1,030	$ 1,061	$ 1,093	$ 1,126	$ 1,159	$ 1,194
	Total:	**SUPPLIES**		**1,000**	**1,030**	**1,061**	**1,093**	**1,126**	**1,159**	**1,194**
	OPERATING EXPENSES									
7205	6750	VEHICLE MAINTENANCE	General Inflation	18,700	$ 19,261	$ 19,839	$ 20,434	$ 21,047	$ 21,678	$ 22,329
7205	6771	WAREHOUSE & SHOP	General Inflation	500	515	530	546	563	580	597
	Total:	**OPERATING EXPENSES**		**19,200**	**19,776**	**20,369**	**20,980**	**21,610**	**22,258**	**22,926**
	SPECIAL PROGRAMS									
7205	7510	REPAIRS TO METERS	General Inflation	18,000	$ 18,540	$ 19,096	$ 19,669	$ 20,259	$ 20,867	$ 21,493
7205	7570	METERS & SERVICE CONN	General Inflation	0	-	-	-	-	-	-
7205	7610	METER READING SUPPLIES	General Inflation	15,000	15,450	15,914	16,391	16,883	17,389	17,911
	Total:	**SPECIAL PROGRAMS**		**33,000**	**33,990**	**35,010**	**36,060**	**37,142**	**38,256**	**39,404**
	DIVISION: 7205	**WATER-METER CUSTOMER SV**		**$ 353,300**	**$ 363,899**	**$ 374,816**	**$ 386,060**	**$ 397,642**	**$ 409,572**	**$ 421,859**

DIVISION: 7206		WATER-PRODUCTION/QUALITY									
	SALARIES & WAGES										
7206	4010	REGULAR EMPLOYEES	Labor Inflation	300,300	$ 309,309	$ 318,588	$ 328,146	$ 337,990	$ 348,130	$ 358,574
7206	4014	VACATION SELL BACK	Labor Inflation	4,200	4,326	4,456	4,589	4,727	4,869	5,015
7206	4019	STAND BY PAY	Labor Inflation	0	-	-	-	-	-	-
7206	4021	LONGEVITY PAY	Labor Inflation	6,200	6,386	6,578	6,775	6,978	7,187	7,403
7206	4130	OVERTIME	Labor Inflation	10,000	10,300	10,609	10,927	11,255	11,593	11,941
7206	4241	P.E.R.S	Labor Inflation	70,700	72,821	75,006	77,256	79,573	81,961	84,419
7206	4242	.5% CITY CONTRIBUTION	Labor Inflation	200	206	212	219	225	232	239
7206	4244	MEDICAL/DENTAL	Labor Inflation	50,700	52,221	53,788	55,401	57,063	58,775	60,538
7206	4245	LONG TERM DISABILITY	Labor Inflation	400	412	424	437	450	464	478
7206	4247	LIFE INSURANCE	Labor Inflation	400	412	424	437	450	464	478
7206	4250	FICA/HOSPITAL INSURANCE	Labor Inflation	4,500	4,635	4,774	4,917	5,065	5,217	5,373
	Total:	SALARIES & WAGES		447,600	461,028	474,859	489,105	503,778	518,891	534,458
	SUPPLIES									
7206	5260	FIELDS	General Inflation	200	$ 206	$ 212	$ 219	$ 225	$ 232	$ 239
7206	5410	TOOLS	General Inflation	800	824	849	874	900	927	955
	Total:	SUPPLIES		1,000	1,030	1,061	1,093	1,126	1,159	1,194
	OPERATING EXPENSES									
7206	6210	TELEPHONE	General Inflation	12,000	$ 12,360	$ 12,731	$ 13,113	$ 13,506	$ 13,911	$ 14,329
7206	6614	WATER	General Inflation	2,100	2,163	2,228	2,295	2,364	2,434	2,508
7206	6750	VEHICLE MAINTENANCE	General Inflation	35,900	36,977	38,086	39,229	40,406	41,618	42,866
7206	6760	BUILDING REPAIR & MAINT	General Inflation	70,000	72,100	74,263	76,491	78,786	81,149	83,584
7206	6771	WAREHOUSE & SHOP	General Inflation	5,000	5,150	5,305	5,464	5,628	5,796	5,970
7206	6903	PERMITS FEES	General Inflation	10,000	10,300	10,609	10,927	11,255	11,593	11,941
7206	6987	DUES & ASSESSMENTS	-- Consumption Forc. --	4,070,000	4,653,890	3,973,597	3,760,116	3,571,302	3,404,282	3,507,369
	Total:	OPERATING EXPENSES		4,205,000	4,792,940	4,116,818	3,907,634	3,723,245	3,560,784	3,668,566
	SPECIAL PROGRAMS									
7206	7206	BULK MAILING	General Inflation	2,500	$ 2,575	$ 2,652	$ 2,732	$ 2,814	$ 2,898	$ 2,985
7206	7410	POWER PURCHASED	es + Delivered Water Demar	1,800,000	2,000,000	2,079,000	2,161,121	2,246,485	2,335,221	2,427,462
7206	7420	PUMPING SUPPLIES	General Inflation	70,000	72,100	74,263	76,491	78,786	81,149	83,584
7206	7425	WATER TESTING	General Inflation	40,000	41,200	42,436	43,709	45,020	46,371	47,762
7206	7440	UNSCHEDULED REPAIR	General Inflation	100,000	103,000	106,090	109,273	112,551	115,927	119,405
	WELLS									
7206	7450	REPAIRS TO PUMP	General Inflation	12,000	12,360	12,731	13,113	13,506	13,911	14,329
	FACILITIE									
7206	7530	REPAIRS TO RESERVOIRS	General Inflation	5,000	5,150	5,305	5,464	5,628	5,796	5,970
	Total:	SPECIAL PROGRAMS		2,029,500	2,236,385	2,322,477	2,411,901	2,504,789	2,601,274	2,701,497
	DIVISION: 7206	WATER-PRODUCTION/QUALITY		6,683,100	7,491,383	6,915,214	6,809,732	6,732,938	6,682,109	6,905,715
		Total Expenditures		$ 11,576,500	$ 12,531,585	$ 12,106,623	$ 12,156,883	$ 12,240,502	$ 12,354,901	$ 12,748,690

TABLE 9-4 SEWER OPERATIONS AND MAINTENANCE BUDGET SUMMARY

O&M Escalators

	Source:	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
General Inflation	SMART	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Labor Inflation	SMART	3.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%
Utilities Inflation	SMART	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Construction Inflation	SMART	3.00%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Depreciation Funding	SMART	2.50%	3.50%	3.50%	3.50%	3.50%	3.50%	3.50%
Interest Income	SMART	2.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%
Customer Growth	SMART	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Gnrl Infltn + Cstmr Grwth	SMART	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
No Annual Increase	SMART	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
One Time Expense	SMART	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%	-100.00%
Purchased Water Inflation	SMART	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Metered Water Demand	SMART	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Delivered Water Demand	SMART	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Water Inflation + Water Demand	SMART	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

O&M Summary

	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Revenues							
Sewer System Charge	$ 1,179,642	$ 1,179,642	$ 1,179,642	$ 1,740,042	$ 2,175,053	$ 2,305,556	$ 2,443,889
Industrial Waste Fee	38,966.00	38,966.00	38,966.00	57,477.16	71,846.45	76,157.24	80,726.68
Public Works Inspection	1,000.00	1,030.00	1,060.90	1,092.73	1,125.51	1,159.27	1,194.05
Engineering Charges	8,000.00	8,000.00	8,000.00	8,000.00	8,000.00	8,000.00	8,000.00
Interest Earnings	13,400.00	16,761.26	15,508.69	13,125.00	15,587.24	18,190.81	17,786.32
Other Revenus	-	-	-	-	-	-	-
Other Financing Sources	-	-	-	-	-	-	-
Total Revenues	**$ 1,241,008**	**$ 1,244,399**	**$ 1,243,178**	**$ 1,819,737**	**$ 2,271,612**	**$ 2,409,063**	**$ 2,551,596**
Expenditures							
SALARIES & WAGES	$ 740,200	$ 769,808	$ 800,600	$ 832,624	$ 865,929	$ 900,566	$ 936,589
SUPPLIES	16,000	16,480	16,974	17,484	18,008	18,548	19,105
OPERATING EXPENSES	361,000	371,830	382,985	394,474	406,309	418,498	431,053
SPECIAL PROGRAMS	-	-	-	-	-	-	-
Total Expenditures	**$ 1,117,200**	**$ 1,158,118**	**$ 1,200,560**	**$ 1,244,582**	**$ 1,290,246**	**$ 1,337,613**	**$ 1,386,747**
Net Operating Surplus (Deficit)	**$ 123,808**	**$ 86,281**	**$ 42,618**	**$ 575,154**	**$ 981,366**	**$ 1,071,450**	**$ 1,164,849**

O&M Detail

Revenues

		Escalator	FY 2013/14 Actual (Post-Rate Increase)	FY 2014/15 Projection (Pre-Rate Increase)	FY 2015/16 Projection (Pre-Rate Increase)	FY 2016/17 Projection (Pre-Rate Increase)	FY 2017/18 Projection (Pre-Rate Increase)	FY 2018/19 Projection (Pre-Rate Increase)	FY 2019/20 Projection (Pre-Rate Increase)
Revenues									
	Sewer System Charge	Customer Growth	1,179,642	1,179,642	1,179,642	1,740,042	2,175,053	2,305,556	2,443,889
	Industrial Waste Fee	Customer Growth	38,966	38,966	38,966	57,477	71,846	76,157	80,727
	Public Works Inspection	General Inflation	1,000	1,030	1,061	1,093	1,126	1,159	1,194
	Engineering Charges	No Annual Increase	8,000	8,000	8,000	8,000	8,000	8,000	8,000
	Interest Earnings	No Annual Increase	13,400	16,761	15,509	13,125	15,587	18,191	17,786
	Other Revenus	No Annual Increase		-	-	-	-	-	-
	Total Revenues		**$ 1,241,008**	**$ 1,244,399**	**$ 1,243,178**	**$ 1,819,737**	**$ 2,271,612**	**$ 2,409,063**	**$ 2,551,596**
Other Financing Sources									
	Other Other Financing Sources	General Inflation	$ -	$ -	$ -	$ -	$ -	$ -	$ -
	XXXX	One Time Expense	-	-	-	-	-	-	-
	Total Other Financing Sources		**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
	Total Revenues		**$ 1,241,008**	**$ 1,244,399**	**$ 1,243,178**	**$ 1,819,737**	**$ 2,271,612**	**$ 2,409,063**	**$ 2,551,596**

Expenditures			Escalator	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
DIVISION: 7201		SEWER-MAINTENANCE								
	SALARIES & WAGES									
3306	4010	REGULAR EMPLOYEES	Labor Inflation	497,500	$ 517,400	$ 538,096	$ 559,620	$ 582,005	$ 605,285	$ 629,496
3306	4014	VACATION SELL BACK	Labor Inflation	5,400	5,616	5,841	6,074	6,317	6,570	6,833
3306	4015	ALLOWANCES	Labor Inflation	200	208	216	225	234	243	253
3306	4021	LONGEVITY PAY	Labor Inflation	10,400	10,816	11,249	11,699	12,167	12,653	13,159
3306	4032	TEMPORARY	Labor Inflation	10,000	10,400	10,816	11,249	11,699	12,167	12,653
3306	4130	OVERTIME	Labor Inflation	3,000	3,120	3,245	3,375	3,510	3,650	3,796
3306	4241	P.E.R.S	Labor Inflation	117,200	121,888	126,764	131,834	137,107	142,592	148,295
3306	4242	.5% CITY CONTRIBUTION	Labor Inflation	700	728	757	787	819	852	886
3306	4244	MEDICAL/DENTAL INSURANCE	Labor Inflation	86,600	90,064	93,667	97,413	101,310	105,362	109,577
3306	4245	LONG TERM DISABILITY	Labor Inflation	700	728	757	787	819	852	886
3306	4247	LIFE INSURANCE	Labor Inflation	900	936	973	1,012	1,053	1,095	1,139
3306	4249	UNEMPLOYMENT INSURANCE	Labor Inflation	0	-	-	-	-	-	-
3306	4250	FICA/HOSPITAL INSURANCE	Labor Inflation	7,600	7,904	8,220	8,549	8,891	9,247	9,616
	Total:	SALARIES & WAGES		740,200	769,808	800,600	832,624	865,929	900,566	936,589
	SUPPLIES									
3306	5125	PRINT SHOP	General Inflation	8,000	$ 8,240	$ 8,487	$ 8,742	$ 9,004	$ 9,274	$ 9,552
3306	5260	FIELDS	General Inflation	6,000	6,180	6,365	6,556	6,753	6,956	7,164
3306	5280	UNIFORM	General Inflation	1,500	1,545	1,591	1,639	1,688	1,739	1,791
3306	5410	TOOLS	General Inflation	500	515	530	546	563	580	597
	Total:	SUPPLIES		16,000	16,480	16,974	17,484	18,008	18,548	19,105
	OPERATING EXPENSES									
7201	6160	CONTRACT SERVICES	General Inflation	49,500	$ 50,985	$ 52,515	$ 54,090	$ 55,713	$ 57,384	$ 59,106
7201	6505	GENERAL LIABILITY	General Inflation	18,300	18,849	19,414	19,997	20,597	21,215	21,851
7201	6507	WORKERS' COMPENSATION	General Inflation	19,600	20,188	20,794	21,417	22,060	22,722	23,403
7201	6614	WATER	General Inflation	200	206	212	219	225	232	239
7201	6750	VEHICLE MAINTENANCE	General Inflation	62,300	64,169	66,094	68,077	70,119	72,223	74,389
7201	6902	DISPOSAL CHARGES	General Inflation	3,000	3,090	3,183	3,278	3,377	3,478	3,582
7201	6903	PERMITS FEES	General Inflation	8,500	8,755	9,018	9,288	9,567	9,854	10,149
7201	6970	TRAINING	General Inflation	500	515	530	546	563	580	597
7201	6990	DEPRECIATION	General Inflation	0	-	-	-	-	-	-
7201	6995	GENERAL FUND CHARGES	General Inflation	199,100	205,073	211,225	217,562	224,089	230,811	237,736
	Total:	OPERATING EXPENSES		361,000	371,830	382,985	394,474	406,309	418,498	431,053
	SPECIAL PROGRAMS									
7201	XXXXX	Special Programs XXXXX	General Inflation	0	$ -	$ -	$ -	$ -	$ -	$ -
	Total:	SPECIAL PROGRAMS		0	0	0	0	0	0	0
	DIVISION: 7201	SEWER-MAINTENANCE		$ 1,117,200	$ 1,158,118	$ 1,200,560	$ 1,244,582	$ 1,290,246	$ 1,337,613	$ 1,386,747

TABLE 9-5 WATER FUNCTIONAL ALLOCATION FACTORS

ALLOCATION INDEX	Customer	Capacity	Base	Peak	Five	Six	As All Others	Total	Notes
Salaries & Wages						0%	100%	100%	Based on Average Salary Allocations. See S&B Allocation.
Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
Capacity Only	0%	100%	0%	0%	0%	0%	0%	100%	
Base Only	0%	0%	100%	0%	0%	0%	0%	100%	
Peak Only	0%	0%	0%	100%	0%	0%	0%	100%	
Fire Only	0%	0%	0%	0%	100%	0%	0%	100%	
As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
System Peaking Factors			82%	18%		0%	0%	100%	Based on Customer Data
As Fixed Assets						0%	100%	100%	
As Supply Costs		0.05%	16%	84%		0%	0%	100%	Based on Source of Supply Analysis
Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity
Capacity/Demand		50%	50%			0%	0%	100%	
						0%	100%	100%	
						0%	100%	100%	
						0%	100%	100%	

TABLE 9-6 SEWER FUNCTIONAL ALLOCATION FACTORS

ALLOCATION INDEX	Customer	Capacity	Flow/Capacity	BOD	TSS	Six	As All Others	Total	Notes
Salaries & Wages						0%	100%	100%	
Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
Capacity Only	0%	100%	0%	0%	0%	0%	0%	100%	
Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	
BOD Only	0%	0%	0%	100%	0%	0%	0%	100%	
TSS Only	0%	0%	0%	0%	100%	0%	0%	100%	
As All Others	0%	0%	0%	0%	0%	0%	100%	100%	
As Labor	17%	0%	83%			0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.

TABLE 9-7 WATER FUNCTIONAL ALLOCATION RESULTS

OPERATING EXPENDITURES			FY 2015/16	Allocation	Customer	Capacity	Base	Peak	Five	Six	As All Others	Total	Notes
		WATER-ADMIN											
		SALARIES & WAGES											
7201	4010	REGULAR EMPLOYEES	$ 4,055,936	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4013	VACATION PAY OFF	$ 56,325	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4014	VACATION SELL BACK	$ 33,795	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4015	ALLOWANCES	$ 6,196	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4016	DEF COMP-CITY PAID	$ 1,126	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4019	STAND BY PAY	$ 73,222	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4021	LONGEVITY PAY	$ 51,819	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4032	TEMPORARY	$ 112,649	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4130	OVERTIME	$ 5,632	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4241	P.E.R.S	$ 947,943	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4242	.5% CITY CONTRIBUTION	$ 9,012	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4244	MEDICAL/DENTAL	$ 609,432	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4245	LONG TERM DISABILITY	$ 5,069	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4247	LIFE INSURANCE	$ 8,449	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4248	RETIREE MEDICAL	$ 262,473	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	4250	FICA/HOSPITAL INSURANCE	$ 59,704	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
		SUPPLIES											
7201	5110	OFFICE SUPPLIES	$ 90,119	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	5111	WATER BILL POSTAGE	$ 264,726	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	5120	DRAFTING SUPPLIES	$ 16,897	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	5125	PRINT SHOP	$ 140,812	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
		OPERATING EXPENSES											
7201	6145	WATER CONSERVATION COST	$ 45,060	Peak Only	0%	0%	0%	100%	0%	0%	0%	100%	
7201	6160	CONTRACT SERVICES	$ 695,046	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
7201	6210	TELEPHONE	$ 563	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6505	GENERAL LIABILITY	$ 705,184	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6507	WORKERS' COMPENSATION	$ 393,146	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6540	TAXES	$ -	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6730	OFFICE EQUIPMENT	$ 8,449	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6750	VEHICLE MAINTENANCE	$ 24,220	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6760	BUILDING REPAIR & MAINT	$ 14,644	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6904	RENTS	$ 4,674,944	As All Others	17%	7%	34%	43%	0%	0%	0%	100%	Weighted Average of all other allocated expenditures
7201	6930	MEMBERSHIP & PUBLICATIONS	$ 45,060	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6940	OFFICIAL MEETINGS	$ 19,714	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6970	TRAINING	$ 39,427	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6971	TUITION REIMBURSEMENT	$ 50,692	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6987	DUES & ASSESSMENTS	$ 61,957	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6990	DEPRECIATION	$ -	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	
7201	6995	GENERAL FUND CHARGES	$ 6,030,677	As All Others	17%	7%	34%	43%	0%	0%	0%	100%	Weighted Average of all other allocated expenditures

		WATER-MAIN & REPLACEMENT													
		SALARIES & WAGES													
7204	4010	REGULAR EMPLOYEES	$	2,911,420	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	4014	VACATION SELL BACK	$	22,530	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	4021	LONGEVITY PAY	$	61,394	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	4032	TEMPORARY	$	67,590	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	4130	OVERTIME	$	129,547	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	4241	P.E.R.S	$	686,034	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	4242	.5% CITY CONTRIBUTION	$	1,126	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	4244	MEDICAL/DENTAL	$	609,996	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	4245	LONG TERM DISABILITY	$	5,069	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	4247	LIFE INSURANCE	$	3,943	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	4250	FICA/HOSPITAL INSURANCE	$	43,370	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
		SUPPLIES													
7204	5260	FIELDS	$	16,897	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	5280	UNIFORM	$	50,692	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	5410	TOOLS	$	28,162	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
		OPERATING EXPENSES													
7204	6750	VEHICLE MAINTENANCE	$	646,607	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures	
7204	6760	BUILDING REPAIR & MAINT	$	2,816	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	6771	WAREHOUSE & SHOP	$	33,795	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
		SPECIAL PROGRAMS													
7204	7540	REPAIRS TO MAINS	$	253,461	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	7550	REPAIRS TO SERVICES	$	309,785	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
7204	7560	REPAIRS TO HYDRANTS	$	67,590	Capacity/Demand	0%	50%	50%	0%	0%	0%	0%	100%		0
		WATER-METER CUSTOMER SV												Could be allocated to Capacity/Customer	
		SALARIES & WAGES													
7205	4010	REGULAR EMPLOYEES	$	1,124,239	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
7205	4014	VACATION SELL BACK	$	11,265	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
7205	4021	LONGEVITY PAY	$	28,726	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
7205	4130	OVERTIME	$	16,897	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
7205	4241	P.E.R.S	$	266,415	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
7205	4242	.5% CITY CONTRIBUTION	$	1,126	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
7205	4244	MEDICAL/DENTAL	$	221,356	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
7205	4245	LONG TERM DISABILITY	$	1,690	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
7205	4247	LIFE INSURANCE	$	1,690	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
7205	4250	FICA/HOSPITAL INSURANCE	$	16,897	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
		SUPPLIES													
7205	5410	TOOLS	$	5,632	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
		OPERATING EXPENSES													
7205	6750	VEHICLE MAINTENANCE	$	105,327	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
7205	6771	WAREHOUSE & SHOP	$	2,816	Fixed (50/50)	50%	50%	0%	0%	0%	0%	0%	100%	50% to Customer and 50% to Capacity	
		SPECIAL PROGRAMS													
7205	7510	REPAIRS TO METERS	$	101,384	Capacity Only	0%	100%	0%	0%	0%	0%	0%	100%		
7205	7570	METERS & SERVICE CONN	$	-	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%		
7205	7610	METER READING SUPPLIES	$	84,487	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%		

		WATER-PRODUCTION/QUALITY												
		SALARIES & WAGES												
7206	4010	REGULAR EMPLOYEES	$ 1,691,428	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	4014	VACATION SELL BACK	$ 23,656	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	4019	STAND BY PAY	$ -	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	4021	LONGEVITY PAY	$ 34,921	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	4130	OVERTIME	$ 56,325	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	4241	P.E.R.S	$ 398,215	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	4242	.5% CITY CONTRIBUTION	$ 1,126	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	4244	MEDICAL/DENTAL	$ 285,566	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	4245	LONG TERM DISABILITY	$ 2,253	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	4247	LIFE INSURANCE	$ 2,253	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	4250	FICA/HOSPITAL INSURANCE	$ 25,346	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
		SUPPLIES											
7206	5260	FIELDS	$ 1,126	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	5410	TOOLS	$ 4,506	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
		OPERATING EXPENSES											
7206	6210	TELEPHONE	$ 67,590	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	6614	WATER	$ 11,828	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	6750	VEHICLE MAINTENANCE	$ 202,205	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	6760	BUILDING REPAIR & MAINT	$ 394,272	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	6771	WAREHOUSE & SHOP	$ 28,162	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	6903	PERMITS FEES	$ 56,325	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	6987	DUES & ASSESSMENTS	$ 18,216,665	As Supply Costs	0%	0%	16%	84%	0%	0%	0%	100%	Based on Source of Supply Analysis
		SPECIAL PROGRAMS											
7206	7206	BULK MAILING	$ 14,081	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	7410	POWER PURCHASED	$ 11,249,288	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	7420	PUMPING SUPPLIES	$ 394,272	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	7425	WATER TESTING	$ 225,298	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
7206	7440	UNSCHEDULED REPAIR	$ 563,246	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
		WELLS											
7206	7450	REPAIRS TO PUMP	$ 67,590	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
		FACILITIE											
7206	7530	REPAIRS TO RESERVOIRS	$ 28,162	System Peaking Factors	0%	0%	82%	18%	0%	0%	0%	100%	Based on Customer Data
Operating Expenditures Sub Total			**$ 61,607,598**		**$ 10,950,874**	**$ 4,378,572**	**$ 22,101,183**	**$ 22,835,317**	**$ -**	**$ -**	**$ 1,341,652**	**$ 61,607,598**	
Reallocation of "As All Others"					**$ 243,791**	**$ 97,477**	**$ 492,021**	**$ 508,364**	**$ -**	**$ -**	**$ (1,341,652)**		
Total Allocation			**$ 61,607,598**		$ 11,194,665	$ 4,476,049	$ 22,593,204	$ 23,343,681	$ -	$ -	$ -		
Percentage Allocation			**100.0%**		18.2%	7.3%	36.7%	37.9%	0.0%	0.0%	0.0%		

RATE REVENUE REQUIREMENT	FY 2015/16	Allocation	Customer	Capacity	Base	Peak	Five	Six	As All Others	Total	Notes
Operating Expenses	$ 61,607,598	As O&M	18%	7%	36%	37%	0%	0%	2%	100%	
Additional O&M	$ 1,035,281	Peak Only	0%	0%	0%	100%	0%	0%	0%	100%	
Debt	$ -	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Rate Funded Capital	$ -	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Replacement Funding (Depreciation Funding)	$ -	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Transfers to Capital Reserve	$ -	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Coverage Driven Increase		As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Less Offsetting Revenues											
Cashflow	$ (50,621)	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Other Charges for Services	$ (1,319,744)	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Grant Income	$ -	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Interest Earnings	$ (439,224)	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Other Revenues	$ 1,116,518	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Revenue 7	$ -	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Revenue 8	$ -	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Revenue 9	$ -	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	Weighted Average of all other allocated expenditures
Total Rate Revenues to be Collected	**$ 61,949,808**		**$ 10,950,874**	**$ 4,378,572**	**$ 22,101,183**	**$ 23,870,598**	**$ -**	**$ -**	**$ 648,581**	**$ 61,949,808**	
Reallocation of "As All Others"			**$ 115,863**	**$ 46,326**	**$ 233,835**	**$ 252,556**	**$ -**	**$ -**	**$ (648,581)**		
Total Allocation	**$ 61,949,808**		**$ 11,066,737**	**$ 4,424,899**	**$ 22,335,018**	**$ 24,123,155**	**$ -**	**$ -**	**$ -**		
Percentage Allocation	100.0%		17.9%	7.1%	36.1%	38.9%	0.0%	0.0%	0.0%		

TABLE 9-8 SEWER FUNCTIONAL ALLOCATION RESULTS

OPERATING EXPENDITURES			FY 2015/16	Allocation	Customer	Capacity	Flow/Capacity	BOD	TSS	Six	As All Others	Total	Notes
		SEWER-MAINTENANCE											
		SALARIES & WAGES											
3306	4010	REGULAR EMPLOYEES	$ 538,096	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4014	VACATION SELL BACK	$ 5,841	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4015	ALLOWANCES	$ 216	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4021	LONGEVITY PAY	$ 11,249	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4032	TEMPORARY	$ 10,816	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4130	OVERTIME	$ 3,245	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4241	P.E.R.S	$ 126,764	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4242	.5% CITY CONTRIBUTION	$ 757	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4244	MEDICAL/DENTAL INSURANCE	$ 93,667	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4245	LONG TERM DISABILITY	$ 757	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4247	LIFE INSURANCE	$ 973	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4249	UNEMPLOYMENT INSURANCE	$ -	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
3306	4250	FICA/HOSPITAL INSURANCE	$ 8,220	As Labor	17%	0%	83%	0%	0%	0%	0%	100%	Based on Average Salary Allocations. See S&B Allocation.
		SUPPLIES											
3306	5125	PRINT SHOP	$ 8,487	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	0
3306	5260	FIELDS	$ 6,365	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	0
3306	5280	UNIFORM	$ 1,591	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	0
3306	5410	TOOLS	$ 530	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	0
		OPERATING EXPENSES											
7201	6160	CONTRACT SERVICES	$ 52,515	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
7201	6505	GENERAL LIABILITY	$ 19,414	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
7201	6507	WORKERS' COMPENSATION	$ 20,794	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
7201	6614	WATER	$ 212	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
7201	6750	VEHICLE MAINTENANCE	$ 66,094	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
7201	6902	DISPOSAL CHARGES	$ 3,183	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
7201	6903	PERMITS FEES	$ 9,018	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
7201	6970	TRAINING	$ 530	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
7201	6990	DEPRECIATION	$ -	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
7201	6995	GENERAL FUND CHARGES	$ 211,225	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
Operating Expenditures Sub Total			**$ 1,200,560**		**$ 153,393**	**$ -**	**$ 1,047,166**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 1,200,560**	
Reallocation of "As All Others"					**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**		
Total Allocation			**$ 1,200,560**		$ 153,393	$ -	$ 1,047,166	$ -	$ -	$ -	$ -		
Percentage Allocation			**100.0%**		12.8%	0.0%	87.2%	0.0%	0.0%	0.0%	0.0%		

RATE REVENUE REQUIREMENT	FY 2015/16	Allocation	Customer	Capacity	Flow/Capacity	BOD	TSS	Six	As All Others	Total	Notes
Operating Expenses	$ 1,200,560	As O&M	13%	0%	87%	0%	0%	0%	0%	100%	
Additional O&M	$ -	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	0
Debt	$ -	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	0
Rate Funded Capital	$ 339,674	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
Replacement Funding (Depreciation Funding)	$ -	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	0
Transfers to Capital Reserve	$ -	Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	0
Coverage Driven Increase		Customer Only	100%	0%	0%	0%	0%	0%	0%	100%	0
Cashflow	$ (7,601)	Flow Only	0%	0%	100%	0%	0%	0%	0%	100%	0
Less Offsetting Revenues											
Public Works Inspection	$ (1,061)	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	0
Engineering Charges	$ (8,000)	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	0
Interest Earnings	$ (15,509)	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	0
Other Revenus	$ -	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	0
Other Financing Sources	$ -	As All Others	0%	0%	0%	0%	0%	0%	100%	100%	0
		As All Others	0%	0%	0%	0%	0%	0%	100%	100%	0
		As All Others	0%	0%	0%	0%	0%	0%	100%	100%	0
Total Rate Revenues to be Collected	**$ 1,508,064**		**$ 153,393**	**$ -**	**$ 1,379,240**	**$ -**	**$ -**	**$ -**	**$ (24,570)**	**$ 1,508,064**	
Reallocation of "As All Others"			**$ (2,459)**	**$ -**	**$ (22,111)**	**$ -**	**$ -**	**$ -**	**$ 24,570**		
Total Allocation	**$ 1,508,064**		**$ 150,934**	**$ -**	**$ 1,357,129**	**$ -**	**$ -**	**$ -**	**$ -**		
Percentage Allocation	100.0%		10.0%	0.0%	90.0%	0.0%	0.0%	0.0%	0.0%		

APPENDIX S

60-DAY NOTIFICATION LETTERS

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

December 18, 2015

Los Angeles County Department of Public Works
900 S. Fremont Ave.
Alhambra, CA 91803

To whom it may concern:

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an Urban Water Management Plan (UWMP) and periodically update the plan at least once every five years on or before December 31. The due date for completion of the current 2015 UWMP has been extended to July 1, 2016. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The City of Arcadia is currently in the process of preparing the City's 2015 UWMP and will make amendments and changes, as appropriate.

As an urban water supplier, the City of Arcadia is required pursuant to Section 10620(d)(2) of the UWMP Act to coordinate with water management agencies, relevant public agencies and other water suppliers on the preparation of the UWMP. The City of Arcadia invites you to submit comments in anticipation of the development of the 2015 UWMP.

Written comments can be provided to the following address within the next 30 calendar days:

City of Arcadia
Public Works Services Department
Attn: Vanessa Hevener
11800 Goldring Road
Arcadia, CA 91006

If you have questions regarding to this request or about the City of Arcadia's UWMP, please contact Vanessa Hevener, Environmental Services Officer at (626) 305-5327 or via email vhevener@ci.arcadia.ca.us. Thank you for your assistance in this process.

Sincerely,

Tom Tait

Tom Tait
Public Works Services Director

11800 Goldring Road
Post Office Box 60021
Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

November 19, 2015

Bruce Inman
Director of Public Works
City of Sierra Madre
232 W. Sierra Madre Blvd.
Sierra Madre, CA 91024

Dear Mr. Inman:

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an Urban Water Management Plan (UWMP) and periodically update the plan at least once every five years on or before December 31. The due date for completion of the current 2015 UWMP has been extended to July 1, 2016. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The City of Arcadia is currently in the process of preparing the City's 2015 UWMP and will make amendments and changes, as appropriate.

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www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

November 19, 2015

Tony Zampiello
Main San Gabriel Basin Watermaster
725 North Azusa Avenue
Azusa, CA 91702

Dear Mr. Zampiello:

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an Urban Water Management Plan (UWMP) and periodically update the plan at least once every five years on or before December 31. The due date for completion of the current 2015 UWMP has been extended to July 1, 2016. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The City of Arcadia is currently in the process of preparing the City's 2015 UWMP and will make amendments and changes, as appropriate.

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City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

November 19, 2015

County of Los Angeles
Register Recorder/County Clerk
12400 Imperial Highway
Norwalk, CA 90650

To whom it may concern:

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City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

November 19, 2015

Shane Chapman
General Manager
Upper San Gabriel Valley Municipal Water District
602 E. Huntington Drive, Suite B
Monrovia, CA 91016

Dear Mr. Chapman:

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an Urban Water Management Plan (UWMP) and periodically update the plan at least once every five years on or before December 31. The due date for completion of the current 2015 UWMP has been extended to July 1, 2016. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The City of Arcadia is currently in the process of preparing the City's 2015 UWMP and will make amendments and changes, as appropriate.

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City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

November 19, 2015

Benjamin Lewis
General Manager, Foothill District
Golden State Water Company
401 South San Dimas Canyon Road
San Dimas, CA 91773

Dear Mr. Lewis:

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an Urban Water Management Plan (UWMP) and periodically update the plan at least once every five years on or before December 31. The due date for completion of the current 2015 UWMP has been extended to July 1, 2016. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The City of Arcadia is currently in the process of preparing the City's 2015 UWMP and will make amendments and changes, as appropriate.

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Public Works Services Director

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City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

November 19, 2015

Ken Tcheng
General Manager
Sunny Slope Water Company
1040 El Campo Drive
Pasadena, CA 91107

Dear Mr. Tcheng:

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an Urban Water Management Plan (UWMP) and periodically update the plan at least once every five years on or before December 31. The due date for completion of the current 2015 UWMP has been extended to July 1, 2016. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The City of Arcadia is currently in the process of preparing the City's 2015 UWMP and will make amendments and changes, as appropriate.

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11800 Goldring Road
Arcadia, CA 91006

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City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

November 19, 2015

Lawrence Morales
General Manager
East Pasadena Water Company
3725 Mountain View Avenue
Pasadena, CA 91107

Dear Mr. Morales:

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an Urban Water Management Plan (UWMP) and periodically update the plan at least once every five years on or before December 31. The due date for completion of the current 2015 UWMP has been extended to July 1, 2016. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The City of Arcadia is currently in the process of preparing the City's 2015 UWMP and will make amendments and changes, as appropriate.

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Public Works Services Director

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(626) 256-6554
(626) 359-7028 Fax
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City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

November 19, 2015

Tina Cherry
Community Services Director
City of Monrovia
600 South Mountain Avenue
Monrovia, CA 91016

Dear Ms. Cherry:

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an Urban Water Management Plan (UWMP) and periodically update the plan at least once every five years on or before December 31. The due date for completion of the current 2015 UWMP has been extended to July 1, 2016. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The City of Arcadia is currently in the process of preparing the City's 2015 UWMP and will make amendments and changes, as appropriate.

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11800 Goldring Road
Arcadia, CA 91006

If you have questions regarding to this request or about the City of Arcadia's UWMP, please contact Vanessa Hevener, Environmental Services Officer at (626) 305-5327 or via email vhevener@ci.arcadia.ca.us. Thank you for your assistance in this process.

Sincerely,

Tom Tait
Public Works Services Director

11800 Goldring Road
Post Office Box 60021
Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

November 19, 2015

Dan Arrighi
Water Resources Manager
San Gabriel Valley Water Company
11142 Garvey Avenue
El Monte, CA 91734

Dear Mr. Arrighi:

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an Urban Water Management Plan (UWMP) and periodically update the plan at least once every five years on or before December 31. The due date for completion of the current 2015 UWMP has been extended to July 1, 2016. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The City of Arcadia is currently in the process of preparing the City's 2015 UWMP and will make amendments and changes, as appropriate.

As an urban water supplier, the City of Arcadia is required pursuant to Section 10620(d)(2) of the UWMP Act to coordinate with water management agencies, relevant public agencies and other water suppliers on the preparation of the UWMP. The City of Arcadia invites you to submit comments in anticipation of the development of the 2015 UWMP.

Written comments can be provided to the following address within the next 30 calendar days:

City of Arcadia
Public Works Services Department
Attn: Vanessa Hevener
11800 Goldring Road
Arcadia, CA 91006

If you have questions regarding to this request or about the City of Arcadia's UWMP, please contact Vanessa Hevener, Environmental Services Officer at (626) 305-5327 or via email vhevener@ci.arcadia.ca.us. Thank you for your assistance in this process.

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www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

November 19, 2015

Shan Kwan
City of Pasadena Water & Power Department
150 S. Los Robles Avenue, Suite 200
Pasadena, CA 91101

Dear Mr. Kwan:

The Urban Water Management Planning Act requires every "urban water supplier" to prepare and adopt an Urban Water Management Plan (UWMP) and periodically update the plan at least once every five years on or before December 31. The due date for completion of the current 2015 UWMP has been extended to July 1, 2016. The UWMP is a planning document and a source document to direct urban water suppliers to evaluate and compare their water supply and reliability to their existing water conservation efforts. The City of Arcadia is currently in the process of preparing the City's 2015 UWMP and will make amendments and changes, as appropriate.

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Public Works Services Department
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Sincerely,

Tom Tait
Public Works Services Director

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Post Office Box 60021
Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
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APPENDIX T

NOTICE OF PUBLIC HEARING

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Tony Zampiello
Raymond Basin Management Board
725 North Azusa Avenue
Azusa, CA 91702

Dear Mr. Zampiello:

The City of Arcadia will hold a Public Hearing to review and adopt the City's 2015 Urban Water Management Plan (2015 UWMP) at 7:00PM on June 21, 2016 in the City Council Chamber Conference Room at 240 W. Huntington Drive, Arcadia.

The City of Arcadia's 2015 UWMP was prepared pursuant to the "Urban Water Management Planning Act", California Water Code, Sections 10610 through 10656. The State Department of Water Resources requires every urban water supplier to prepare and adopt a Plan and periodically update that plan at least once every five years, in years ending in five and zero.

The City of Arcadia invites all interested parties and groups to attend and present their comments. A copy of the City of Arcadia's draft 2015 UWMP is available at the City Clerk's Office and www.ArcadiaCA.gov. If you have questions about the City's UWMP please contact please contact Vanessa Hevener, Environmental Services Officer at (626) 305-5327 or via email vhevener@ci.arcadia.ca.us. Thank you for your assistance in this process.

Sincerely,

tom tait

Tom Tait
Public Works Services Director

11800 Goldring Road
Post Office Box 60021
Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Tony Zampiello
Main San Gabriel Basin Watermaster
725 North Azusa Avenue
Azusa, CA 91702

Dear Mr. Zampiello:

The City of Arcadia will hold a Public Hearing to review and adopt the City's 2015 Urban Water Management Plan (2015 UWMP) at 7:00PM on June 21, 2016 in the City Council Chamber Conference Room at 240 W. Huntington Drive, Arcadia.

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Sincerely,

Tom Tait

Tom Tait
Public Works Services Director

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Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

County of Los Angeles
Register Recorder/County Clerk
12400 Imperial Highway
Norwalk, CA 90650

To whom it may concern:

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Sincerely,

tom tait

Tom Tait
Public Works Services Director

11800 Goldring Road
Post Office Box 60021
Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Shane Chapman
General Manager
Upper San Gabriel Valley Municipal Water District
602 E. Huntington Drive, Suite B
Monrovia, CA 91016

Dear Mr. Chapman:

The City of Arcadia will hold a Public Hearing to review and adopt the City's 2015 Urban Water Management Plan (2015 UWMP) at 7:00PM on June 21, 2016 in the City Council Chamber Conference Room at 240 W. Huntington Drive, Arcadia.

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Sincerely,

tom tait

Tom Tait
Public Works Services Director

11800 Goldring Road
Post Office Box 60021
Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Benjamin Lewis
General Manager, Foothill District
Golden State Water Company
401 South San Dimas Canyon Road
San Dimas, CA 91773

Dear Mr. Lewis:

The City of Arcadia will hold a Public Hearing to review and adopt the City's 2015 Urban Water Management Plan (2015 UWMP) at 7:00PM on June 21, 2016 in the City Council Chamber Conference Room at 240 W. Huntington Drive, Arcadia.

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Sincerely,

tom tait

Tom Tait
Public Works Services Director

11800 Goldring Road
Post Office Box 60021
Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Ken Tcheng
General Manager
Sunny Slope Water Company
1040 El Campo Drive
Pasadena, CA 91107

Dear Mr. Tcheng:

The City of Arcadia will hold a Public Hearing to review and adopt the City's 2015 Urban Water Management Plan (2015 UWMP) at 7:00PM on June 21, 2016 in the City Council Chamber Conference Room at 240 W. Huntington Drive, Arcadia.

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Sincerely,

Tom Tait

Tom Tait
Public Works Services Director

11800 Goldring Road
Post Office Box 60021
Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Lawrence Morales
General Manager
East Pasadena Water Company
3725 Mountain View Avenue
Pasadena, CA 91107

Dear Mr. Morales:

The City of Arcadia will hold a Public Hearing to review and adopt the City's 2015 Urban Water Management Plan (2015 UWMP) at 7:00PM on June 21, 2016 in the City Council Chamber Conference Room at 240 W. Huntington Drive, Arcadia.

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Sincerely,

Tom Tait

Tom Tait
Public Works Services Director

11800 Goldring Road
Post Office Box 60021
Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Tina Cherry
Community Services Director
City of Monrovia
600 South Mountain Avenue
Monrovia, CA 91016

Dear Ms. Cherry:

The City of Arcadia will hold a Public Hearing to review and adopt the City's 2015 Urban Water Management Plan (2015 UWMP) at 7:00PM on June 21, 2016 in the City Council Chamber Conference Room at 240 W. Huntington Drive, Arcadia.

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Sincerely,

Tom Tait

Tom Tait
Public Works Services Director

11800 Goldring Road
Post Office Box 60021
Arcadia, CA 91066-6021
(626) 256-6554
(626) 359-7028 Fax
www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Dan Arrighi
Water Resources Manager
San Gabriel Valley Water Company
11142 Garvey Avenue
El Monte, CA 91734

Dear Mr. Arrighi:

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Sincerely,

tom tait

Tom Tait
Public Works Services Director

.1800 Goldring Road
'ost Office Box 60021
\rcadia, CA 91066-6021
626) 256-6554
626) 359-7028 Fax
vww.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Shan Kwan
City of Pasadena Water & Power Department
150 S. Los Robles Avenue, Suite 200
Pasadena, CA 91101

Dear Mr. Kwan:

The City of Arcadia will hold a Public Hearing to review and adopt the City's 2015 Urban Water Management Plan (2015 UWMP) at 7:00PM on June 21, 2016 in the City Council Chamber Conference Room at 240 W. Huntington Drive, Arcadia.

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Sincerely,

Tom Tait

Tom Tait
Public Works Services Director

1800 Goldring Road
'ost Office Box 60021
ırcadia, CA 91066-6021
626) 256-6554
626) 359-7028 Fax
/www.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Bruce Inman
Director of Public Works
City of Sierra Madre
232 W. Sierra Madre Blvd.
Sierra Madre, CA 91024

Dear Mr. Inman:

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Public Works Services Director

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626) 256-6554
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/ww.ci.arcadia.ca.us

City of Arcadia

Public Works Services Department

Tom Tait
Public Works Services Director

June 3, 2016

Los Angeles County Department of Public Works
900 S. Fremont Ave.
Alhambra, CA 91803

To whom it may concern:

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Sincerely,

Tom Tait

Tom Tait
Public Works Services Director

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Post Office Box 60021
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(626) 359-7028 Fax
www.ci.arcadia.ca.us

Arcadia Weekly

125 E. Chestnut Ave
Monrovia, CA 91016
(626) 301-1010

PROOF OF PUBLICATION

(2015.5 C.C.P.)

State of California)
County of LOS ANGELES) ss

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am a principal clerk of the printer of the **Arcadia Weekly**, a newspaper published in the English language for the city of ARCADIA, county of LOS ANGELES, and adjudged as a newspaper of general circulation by the Superior Court of the County of LOS ANGELES, State of California on the date of October 3, 1997, Case Number GS004333; that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to-wit:

June 06, 2016

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at Monrovia, California,

This 06th day of June, 2016

x

Signature

(This space is for the County Clerk's Filing Stamp only)

Proof of Publication of

NOTICE OF PUBLIC HEARING BEFORE THE ARCADIA CITY COUNCIL

NOTICE IS HEREBY given that on Tuesday, June 21, 2016 at 7:00 p.m. or soon thereafter, in the Arcadia City Council Chambers, 240 West Huntington Drive, Arcadia, California, the City Council will hold a public hearing on the adoption of the City's Urban Water Management Plan 2015 Update, which outlines the City's water use history and current and planned water conservation practices. Copies of the document are available at the City Clerk's Office at City Hall, 240 W. Huntington Drive, Arcadia; the City's Library, 20 W. Duarte Road, Arcadia; the Arcadia Chamber of Commerce; 388 W. Huntington Drive, Arcadia and at the City's Public Works Services Department, 11800 Goldring Road, Arcadia. Persons challenging any action taken after the public hearing may be limited to raising only those matters raised by them or others at the public hearing.

Any interested person may file a written protest relating to this matter with the City Clerk prior to the conclusion of the public hearing, or having previously filed such written protest, may file a written withdrawal of the protest. A written protest shall state all grounds of objection and such protest by a property owner within the subject District and shall contain a description sufficient to identify the property owned by such property owner.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in a City Council meeting, please contact the City Clerk's office at (626) 574-5455 at least three (3) working days before the meeting or time when special services are needed. This notification will help City staff in making reasonable arrangements to provide you with access to the meeting.

For further information, contact the City of Arcadia Public Works Services Department at (626) 305-5327 Monday through Thursday between the hours of 6:45 a.m. and 5:00 p.m., and alternate Fridays 6:45 a.m. and 4:00 p.m., and closed alternate Fridays.

Publish Date: June 6, 2016
ARCADIA WEEKLY

APPENDIX U

RESOLUTION ADOPTING PLAN

RESOLUTION NO. 7132

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF ARCADIA, CALIFORNIA, ADOPTING AN UPDATED CITY OF ARCADIA 2015 URBAN WATER MANAGEMENT PLAN

WHERAS, the Urban Water Management Planning Act requires all urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet annually to update their Urban Water Management Plan ("UWMP") at least every five years in years ending in zero and five; and

WHEREAS, the City may make any amendments to its UWMP that are indicated following review and shall thereafter submit the UWMP to the Department of Water Resources; and

WHEREAS, the City has prepared and circulated for public review a draft 2015 UWMP and has properly noticed a public hearing; and

WHEREAS, a public hearing was held by the City of Arcadia City Council on June 21, 2016, to respond to public comments regarding the UWMP update; and

WHEREAS, UWMP is required in order for water suppliers to be eligible for State administered grants, loans and drought resistance program; and

WHEREAS, the City has updated its 2015 UWMP in compliance with the California Water Code.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ARCADIA, CALIFORNIA, DOES HEREBY FIND, DETERMINE AND RESOLVE AS FOLLOWS:

SECTION 1. The City Council hereby adopts the updated 2015 Urban Water Management Plan, a copy of which is on file in the office of the City Clerk.

SECTION 2. The Public Works Services Director is hereby authorized and directed to file a copy of the updated 2015 Urban Water Management Plan with the State Department of Water Resources.

SECTION 3. The Public Works Services Director is hereby authorized and directed to implement the water programs as set forth in the updated 2015 Urban Water Management Plan, including making recommendations to the City Council regarding necessary procedures, rules and regulations in an effort to carry out effective and equitable water programs.

SECTION 4. This Resolution shall take effect upon its adoption, and the City Clerk shall certify the adoption of this Resolution.

Passed approved and adopted this 21st day of June ,2016.

/s/ TOM BECK

Mayor of the City of Arcadia

ATTEST:

/s/ Gene Glasco

City Clerk

APPROVED AS TO FORM:

for

Stephen P. Deitsch
City Attorney

STATE OF CALIFORNIA)
COUNTY OF LOS ANGELES) SS:
CITY OF ARCADIA)

I, GENE GLASCO, City Clerk of the City of Arcadia, hereby certifies that the foregoing Resolution No. 7132 was passed and adopted by the City Council of the City of Arcadia, signed by the Mayor and attested to by the City Clerk at a regular meeting of said Council held on the 21st day of June, 2016 and that said Resolution was adopted by the following vote, to wit:

AYES: Council Member Amundson, Chandler, Tay, and Beck

NOES: None

ABSENT: Council Member Verlato

/s/ Gene Glasco

City Clerk of the City of Arcadia