2015 URBAN WATER MANAGEMENT PLAN UPDATE

DRAFT

BEAUMONT CHERRY VALLEY WATER DISTRICT

560 Magnolia Avenue

Beaumont, CA 92223

November, 2016

2015
URBAN WATER MANAGEMENT PLAN UPDATE

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November, 2016

ABBREVIATIONS AND ACRONYMS

Acre-ft	acre-feet (1 acre-ft = 325,800 gallons)
Acre-ft/yr	acre-feet per year
AFY	acre-feet per year
AMR	Automatic Meter Reading
BCVWD	Beaumont Cherry Valley Water District
BIA	Building Industry Association
BMP	Best Management Practices
BSU	Beaumont Storage Unit, Beaumont Basin
BMZ	Beaumont Management Zone (essentially the Beaumont Basin)
CaSIL	California Spatial Information Library
CEC	Chemicals of Emerging Concern
CEQA	California Environmental Quality Act
CFD	Community Facilities District
cfs	Cubic feet per second
CII	Commercial, Industrial and Institutional
CIMIS	California Irrigation Management Information System
Company	Beaumont Land and Water Company
Cr+6	Hexavalent Chromium
CUWCC	California Urban Water Conservation Council
CVAN	Cherry Valley Acres and Neighbors
CWC	California Water Code
DDW	State Water Resources Control Board, Division of Drinking Water
DFW	Department of Fish and Wildlife (formerly Fish and Game (DFG)
District	Beaumont Cherry Valley Water District
DMM	Demand Management Measure (water conservation)
DoF	Division of Finance
DWR	Department of Water Resources
EBX	East Branch Extension of the State Water Project
EBX II	East Branch Extension of the State Water Project Phase II
EIR	Environmental Impact Report
EMWD	Eastern Municipal Water District
ERP	Emergency Response Plan

ft	feet
ft bgs	feet below ground surface
GIS	Geographic Information System
gpcd or GPCD	Gallons per capita per day
gpd	Gallons per day
gpm	gallons per minute
GWMP	Groundwater Management Plan
HCF	hundred cubic feet (748 gallons) = 1 “unit”
HOA	Home Owners Association
HP	Horsepower
IEBL	Inland Empire Brine Line (connects to SARI)
IPR	Indirect Potable Reuse (advance treated recycled water for recharge)
IRWMP	Integrated Regional Water Management Plan or Program
JPA	Joint Powers Agency
LAFCO	Local Agency Formation Commission
LSG	Little San Gorgonio
MAX	Maximum
MCL	Maximum Contaminant Level
MF	Microfiltration
MG	Million gallons
mgd	millions of gallons per day
mg/L	milligram per liter (approx. 1 part per million)
mi^2	square miles
MIH	miner’s inch-hours, a volume of water, 0.020 cfs flowing for 1 hour in Southern California, (72 cubic feet or 538.6 gallons)
MIN	Minutes or Minimum
MOU	Memorandum of Understanding
MSL	Mean Sea Level
N/A	Not Available/Not Applicable
NDMA	*N*-Nitrosodimethylamine
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
Pass	San Gorgonio Pass Water Agency
Pass Agency	San Gorgonio Pass Water Agency
PPCP	Pharmaceuticals and Personal Care Products

RCFCD	Riverside County Flood Control and Water Conservation District
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SAR	Sodium Adsorption Ratio
SAWPA	Santa Ana Watershed Project Authority
SARI	Santa Ana Regional Interceptor (Brine line)
SBVMWD	San Bernardino Valley Municipal Water District (Valley District)
SCAG	Southern California Association of Governments
SCPGA	Southern California Professional Golf Association
SGPWA	San Gorgonio Pass Water Agency (Pass or Pass Agency)
SGPRWA	San Gorgonio Pass Regional Water Alliance
SOI	Sphere of Influence
SPW	State Project Water (Imported water from Northern California)
sq mi	square mile
STWMA	San Timoteo Watershed Management Authority
SWP	State Water Project
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
THM	Trihalomethane (a disinfection by-product)
TIN	Total Inorganic Nitrogen (sum of ammonia-nitrogen + nitrite-nitrogen + nitrate-nitrogen)
TOC	Total Organic Carbon
UF	Ultra-filtration
ULFT	Ultra-Low-Flush Toilet
USGS	U.S. Geological Survey
USWS	U.S. Weather Service
UWMP	Urban Water Management Plan
Valley District	San Bernardino Valley Municipal Water District
WRWRF	Wochholz Regional Water Reclamation Facility
WSCP	Water Shortage Contingency Plan
WUCOLS	Water Use Classification of Landscape Species
WWTF	Wastewater Treatment Facility
YVWD	Yucaipa Valley Water District

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Section 1

Introduction and Overview

Urban Water Management Planning and California Water Code

The California Water Code requires all urban water suppliers within the state to prepare urban water management plans and update them every five years. These plans satisfy the requirements of the Urban Water Management Planning Act of 1983 including amendments that have been made to the Act since then. Sections 10610 through 10656 of the Water Code detail the information that must be included in these plans, as well as who must file them. Appendix A of this Urban Water Management Plan (UWMP) contains the text of the Act. This report constitutes the 2015 update to the Beaumont-Cherry Valley Water District's 2013 Urban Water Management Plan (UWMP).

According to the Act, the Legislature finds and declares all of the following:

- The waters of the state are a limited and renewable resource subject to ever-increasing demands.
- 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.
- A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate.
- As part of its long-range planning activities, every urban water supplier should make every effort to ensure an appropriate level of reliability in its water supply sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years.
- 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.
- Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies. 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. Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

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

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

- The management of urban water demands and efficient use of water shall be actively pursued to protect the people of the state and their water resources.
- The management of urban water demands and efficient use of urban water supplies shall be a guiding criterion in public decisions.
- Urban water suppliers shall be required to develop water management plans to actively pursue the efficient use of available supplies.

The Act requires that each urban water supplier, 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, shall prepare, update and adopt its urban water management plan at least once every five years or before December 31, in years ending in five and zero, except as modified by the Legislature. (The Legislature required the 2015 UWMP Update to be submitted to DWR by July 1, 2016.) The Urban Water Supplier should periodically review the UWMP and any changes or amendments required as a result of that review shall be adopted (§10640).

BCVWD submitted its last UWMP Update in July 2013.

Changes in the Act Since 2010

There have been some changes to the Act since 2010. The changes are summarized in Table 1-1.

Water Conservation Act of 2009 (SB X7-7)

The Water Conservation Act of 2009 required retail urban water suppliers to report, in their UWMP's, their Base Daily per Capita Water Use (Baseline GPCD), 2015 Interim Urban Water Use Target, 2020 Urban Water Use Target, and Compliance Daily per Capita Water Use. This was included in BCVWD's 2013 UWMP Update.

Beginning in 2016, retail water suppliers are required to comply with the water conservation requirements in SB X7-7 in order to be eligible for State water grants or loans. Retail water agencies are required to set targets and track progress toward decreasing daily per capita urban water use in their service area, which will assist the State in meeting its 20 percent reduction goal by 2020.

Table 1-1
Changes to the UWMP Act since 2010

Topic	CWC Section	Legislative Bill	Summary
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.
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.
Electronic Submittal	10644 (a) (2)	SB 1420, 2014	Requires the plan, or amendments to the plan, to be submitted electronically to the department.
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.
Water Loss	10631 (e) (1) (J)	SB 1420, 2014	Requires a plan to quantify and report on distribution system water loss.
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.
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.
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.

Urban Water Management Plans in Relationship to Other Planning Efforts

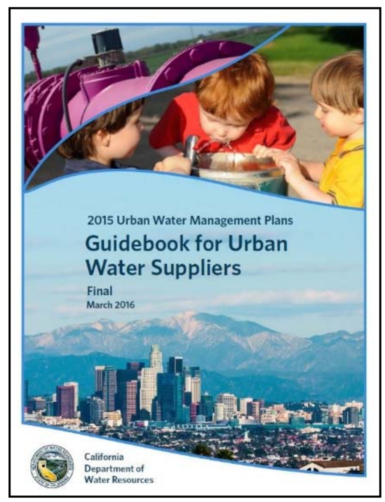
In the preparation of this UWMP Update, BCVWD used the following documents among others:

- 2015 BCVWD Potable Water Master Plan Update, (January, 2016)
- 2016 BCVWD Non-potable Water Master Plan, (in process)

- Recycled Water Facilities Planning Report for Recycled Water Pipeline and Pump Station, (June, 2014)
- City of Beaumont, General Plan, (March, 2007)
- Pass Area Land Use Plan, part of Riverside County General Plan, (October 7, 2003)
- San Gorgonio Pass Water Agency, Update of Demand Section of 2010 Urban Water Management Plan (UWMP) and Amendment of 2010 UWMP, (July 23, 2014)
- San Gorgonio Pass Water Agency, 2010 Urban Water Management Plan (UWMP), (December, 2010)
- San Gorgonio Pass Water Agency, Update Evaluation of Potential Water Transfer Opportunities, (July 23, 2013)
- Resolution 2015-05, Resolution of The Board of Directors of the San Gorgonio Pass Water Agency to Adopt Facility Capacity Fees for Facilities and Water, (July 27, 2015)

The City of Beaumont General Plan and the Pass Area Land Use Plans, listed above, are approaching or older than ten years; however, these are the latest land use and general plans available at this time.

UWMP Report Organization



The organization of the sections of this report follows as closely as possible the "Guidebook for Urban Water Suppliers, Final March 2016" developed by the California Department of Water Resources (DWR) to facilitate review by DWR. Although there is some flexibility in the organization and content, the "Guidelines" have specific required elements and table formats. Throughout the various sections, the California Water Code (law) is cited and included to help the reader better understand why certain material is presented the way it is. Whenever the Water Code is cited it is presented in a boxed format as shown below:

CWC 10631

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

UWMP and Grant or Loan Eligibility

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 California Water Code (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.

Changes to California law require that, beginning in 2016, urban retail water suppliers must comply with water conservation requirements established by the Water Conservation Act of 2009 in order to be eligible for State water grants or loans. For 2015 UWMP's this means that a retail water agency must meet its 2015 Interim Urban Water Use Target and report compliance in the 2015 UWMP.

Suppliers may still be eligible for State water grants or loans if either of the following requirements are met.

1. The urban retail water supplier submits a schedule, financing plan, and budget, for achieving the per capita reductions; and/or
2. The urban retail water supplier submitted to DWR, for DWR's approval, documentation demonstrating that its entire service area qualifies as a disadvantaged community.

If an agency met its 2015 Interim Target, or met either of the exceptions above, and is participating in a multiagency water project or an Integrated Regional Water Management Plan, it shall continue to be eligible to receive grants or loans even though one or more of the other participating agencies is not in compliance with the SB X7-7 requirements.

Section 2

Plan Preparation

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. This part applies only to water supplied from public water systems…*
>
> *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.*

BCVWD is a retail, urban water supplier as the District has over 16,000 connections and delivers just over 9,000 acre-ft per year (AFY) of potable water.

Public Water System

> *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 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.*

BCVWD is a retail, public water system regulated by the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW).

Agencies Serving Multiple Service Areas/Public Water Systems

BCVWD has a single service area which includes the City of Beaumont and the unincorporated community of Cherry Valley in Riverside County and a portion of San Bernardino County. Table 2-1 presents information on BCVWD.

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, AF
3310002	Beaumont Cherry Valley Water District	16,799	9,293
	TOTAL	16,799	9,293

NOTES:

Regional Planning

BCVWD is one of thirteen regional water providers and local governments that are a part of the San Gorgonio Pass Regional Water Alliance (SGPRWA or Alliance) formed through a memorandum of understanding (MOU) in March 2014. The Alliance is not preparing a separate regional UMWP Update. The goals of the Alliance are:

- To improve coordination, collaboration and communication among local, state and federal governments and water purveyors and other water resource stakeholders in the San Gorgonio Pass region to achieve greater efficiency and effectiveness in delivering water supplies.
- To develop and promote common water strategies that will, when implemented, fulfill the water demands of the regional area for the future

Individual or Regional Planning and Compliance

Table 2-2 shows BCVWD's 2015 UWMP Update is an individual UWMP.

Table 2-2: Plan Identification			
Select Only One	Type of Plan		Name of RUWMP or Regional Alliance
☑	Individual UWMP		
	☐	Water Supplier is also a member of a RUWMP	
	☑	Water Supplier is also a member of a Regional Alliance	Other
☐	Regional Urban Water Management Plan (RUWMP)		
NOTES: BCVWD is a memer of, the San Gorgonio Pass Regional Water Alliance, which was formed in 2015; they did not prepare a 2015 UWMP			

Fiscal or Calendar Year and Units of Measurement

BCVWD is on a calendar year basis. Units of measure are acre-feet (AF) or acre-ft per year (AFY) unless clearly indicated otherwise. Individual customer meters read and customers are billed in terms of hundreds of cubic feet (HCF). Daily volumes are generally reporter in million gallons (MG) or million gallons per day (mgd). Data reported herein includes all of 2015. Units are clearly indicated on all tables.

Table 2-3 shows the Agency Identification information.

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)	
Units of Measure Used in UWMP (select from Drop down)	
Unit	AF
NOTES:	

Coordination and Outreach

Wholesale and Retail Agency Coordination

> *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).*

The wholesale water provider in the San Gorgonio Pass area of Riverside County is the San Gorgonio Pass Water Agency (SGPWA). The Agency has been informed of BCVWD's projected imported water needs. BCVWD provided SGPWA with responses to their inquiries on the District's water demands, supplies and imported water needs.

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)*
San Gorgonio Pass Water Agency
NOTES:

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.*

Table 2-5 presents a list of adjacent water agencies, communities and organizations that would have an interest in the BCVWD UWMP Update.

Table 2-5
Agencies, Communities, and Organizations Having an Interest BCVWD's UWMP

Agency	Sent Notice	Agency	Sent Notice
City of Beaumont	■	Eastern MWD	■
City of Banning	■	SGPWA	■
City of Yucaipa	■	Beaumont Basin Watermaster	■
City of Calimesa	■	Riverside County LAFCO	■
YVWD	■	San Bernardino County LAFCO	■
South Mesa WC	■	CVAN	■
Santa Ana Watershed Project Authority (SAWPA)	■	Riverside BIA	■
Beaumont Cherry Valley Parks and Recreation District	■	Riverside County Flood Control and Water Conservation District	■
HOAs		Beaumont Unified School District	■
Riverside County Planning Department		San Bernardino County Land Use Services	

The City of Beaumont has a direct interest since the city is served by BCVWD; BCVWD is also in discussions with the City about recycled water. The City of Banning has agreements with BCVWD to recharge imported water on their behalf, has an existing emergency potable water connection with BCVWD and stub outs across Highland Springs Avenue for potable and recycled water connections and has financially participated with BCVWD in the construction of several production wells. BCVWD has pipeline facilities within the City of Calimesa; however the District does not serve the city. The city is served by YVWD.

YVWD has been working with BCVWD to provide recycled (non-potable) water to BCVWD. BCVWD prepared a Facilities Planning Report in June 2014 for a Recycled Water Supply Pipeline and Pump Station; this report has been approved by the SWRCB.

The County of Riverside Planning Department is involved with land use planning and building permit approval in the unincorporated community of Cherry Valley; the County of San Bernardino Land Use Services controls land use planning in the unincorporated portion of the District's service in that county. The Riverside and San Bernardino County LAFCOs have an interest since they have requirements for water supply assessments whenever there is an annexation. Riverside County Flood Control and Water Conservation District are involved with BCVWD on the Grand Avenue Storm Water

Capture project and control the flood control channels within BCVWD's service area. Some of these channels play a role in basin recharge.

The Beaumont Basin Watermaster manages the groundwater basin which provides over 80% of the District's groundwater production.

The SGPWA is the State Water Contractor that imports water on behalf of the District and its other retail agencies through the East Branch Extension of the State Water Project. BCVWD has been purchasing water from SGPWA and percolating it in BCVWD's groundwater recharge facility since 2006. The SGPWA also has an agreement with BCVWD to use recharge facilities at the mouth of Little San Gorgonio Canyon on BCVWD-owned land for the recharge of State Project Water.

The Cherry Valley Acres and Neighbors (CVAN) is a local organization which is very active on land use and water issues.

The Riverside Building Industry Association is included since they are also very active in the area. There are a number of Home Owner Associations, (HOAs), which have in interest in as much as most of them are overseeing the non-potable water systems in their areas. The Beaumont Cherry Valley Parks and Recreation District and the Beaumont Unified School District are major current users of BCVWD's potable and non-potable water

The Santa Ana Watershed Planning Authority (SAWPA) is the major regional water resource planning organization in the Upper Santa Ana River and provides funding form projects in BCVWD's service area.

It should be pointed out that BCVWD does not serve any customers in San Bernardino County except its own residences.

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.*

In early May, 2016, the 60-day notification was sent to the organizations indicated in Table 2-5 above. The notice stated that BCVWD was in the process of updating its UWMP. A formal notice of the date and time of the public hearing for adoption of the 2015 UWMP Update was sent to all of the Agencies in Table 2-5 on __________, 2016 for a Public Hearing on ______________, 2016 in the Board Room, Beaumont Cherry Valley Water District, 560 Magnolia Avenue, Beaumont, CA 92223. The meeting was noticed, as required, in the newspaper ______________________.

The 2015 UWMP Update was posted on BCVWD's website on ____________.

Project Team and Acknowledgements

The 2015 Urban Water Management Plan Update was prepared by Joseph. C. Reichenberger P.E., BCEE, Staff Engineer, with assistance and review from Eric Fraser P.E, General Manager and Dan Jaggers P.E., Director of Engineering,

We acknowledge the help from the District's Board of Directors, other District Staff including Tony Lara, Director of Operations, Knute Dahlstrom, Sylvia Molina, Bruce Kincaid, Robert Rasha, and Bill Clayton.

Section 3

System Description

General Description of District

> *10631. A plan shall be adopted in accordance with this chapter and shall do all of the following:*
>
> *10631. (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.*

The Beaumont Cherry Valley Water District (BCVWD) provides potable and non-potable water service to about 16,799 active accounts, (16,985 connections), as of December 2015[1], in the City of Beaumont and the unincorporated community of Cherry Valley in Riverside and San Bernardino Counties in Southern California. The District's is approximately 75 miles east of Los Angeles along Interstate 10. BCVWD's average day demand in 2015 was 9.2 mgd; maximum day was 15.3 mgd. This was a decrease from 2013 when the average day and maximum day demands were 11.45 mgd and 20.2 mgd respectively -- primarily due to required landscape and outdoor water use conservation measures enacted by the State of California due to the 5-year drought.

The San Gorgonio Pass area started to develop in the late 1880s and in 1912 the community of Beaumont incorporated. BCVWD was formed in 1919 as the Beaumont Irrigation District under California Irrigation District Law, Water Code Section §20500 *et seq*. The name was changed to the Beaumont Cherry Valley Water District in 1973. Beaumont and Cherry Valley remained small until about the mid-1980s.

BCVWD Office since 2008

The populations of Beaumont and Cherry Valley in 1980 were 6,818 and 5,012 respectively. The boom of the early 2000s, saw Beaumont's population to skyrocket to 36,837 by 2010; Cherry Valley showed only limited growth to 6,279 during that same time period. Current (2015)

[1] BCWD (2015). Annual Financial Report for Fiscal Year Ended December 31, 2015.

population served by the District is approximately 48,400. Meeting the water demands for this rapid growth in Beaumont was challenging.

The population served by the District is expected to nearly double by 2040-45. The City of Beaumont’s General Plan, adopted in 2007, had a projected build-out population of 87,200. The build out population within the District’s Sphere of Influence (SOI) is estimated to be about 112,300 based on BCVWD estimates of land use.

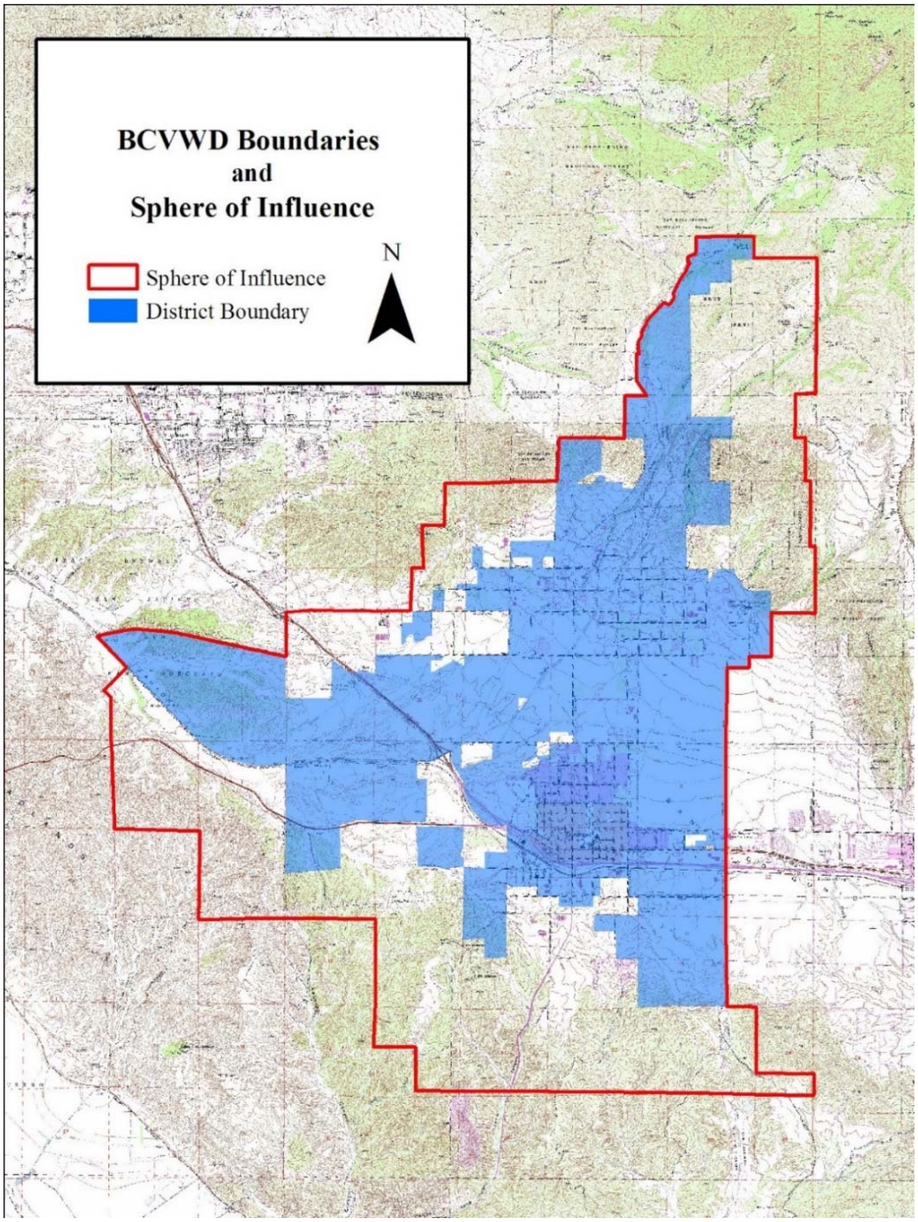
Service Area

The District's present service area covers approximately 28 square miles, virtually all of which is in Riverside County, and includes the City of Beaumont and the community of Cherry Valley. The District owns 1,524 acres of watershed land in Edgar Canyon in San Bernardino County located just north of the Riverside-San Bernardino County line where the District operates a number of wells and several reservoirs.

The District's SOI, or ultimate service planning area, encompasses an area of approximately 37.5 square miles (14.3 sq. mi. are in the City of Beaumont). This SOI, shown in Figure 3-1, was established by the Riverside and San Bernardino County Local Agency Formation Commissions (LAFCOs). SOIs are established as a planning tool and help establish agency boundaries and avoid problems in service, unnecessary duplication of costs, and inefficiencies associated with overlapping service.

The District's SOI is bounded on the west and north by the Yucaipa Valley Water District (YVWD) and on the east by the City of Banning. The northerly boundary of Eastern Municipal Water District (EMWD) is one-mile south of the District's southerly SOI boundary. The area between EMWD and the District's SOI is not within any SOI and could be annexed to either the District or EMWD. The District’s SOI in Little San Gorgonio Canyon follows Oak Glen Road. The area west of Oak Glen Road is within YVWD’s SOI; east of Oak Glen Road is within the District’s SOI.

In 1999, as part of an agreement to transfer the “Midway Area” to the City of Banning, the easterly limit of the District’s SOI was set at Highland Springs Road. Areas east of Highland Springs Road are now served by the City of Banning. (Note, the “Midway Area” was along 6th St. east of Highland Springs Rd.)



Source: modified from USGS 1:24 000 topographic maps of Beaumont, Forest Falls, Yucaipa, and El Casco, CA

0 8000

Approximate Scale in Feet

NORTH

Figure 3-1
District Boundary and Sphere of Influence

Beaumont Cherry Valley Water District
Beaumont, California

West of I-10, between Oak Valley Parkway (formerly San Timoteo Canyon Road) and I-10, the District's SOI matches that of the City of Beaumont and extends northerly and westerly to Southern California Edison Power Line Easement (Towers). This corresponds to the northerly boundary of the Fairway Canyon Project. North of the Power Line Easement there is an open space reserve that would limit any development westerly along Oak Valley Parkway (San Timoteo Canyon Rd.) This portion of the District's SOI boundary abuts the City of Calimesa and Yucaipa Valley Water District (YVWD).

About the year 2007, Riverside County LAFCO revised the District's SOI Boundaries east of I-10 in the vicinity of Calimesa. The area north of Cherry Valley Blvd from I-10 eastward to a point about 1,000 ft west of Hannon Rd is now in the City of Calimesa and in YVWD's SOI.

Though not in the District's service area boundary at the present time, a future development (Jack Rabbit Trail Project) southerly of Highway 60 is in the District's service area and ultimately would be served by the District.

The District's service area ranges in elevation from 2300 feet above mean sea level (MSL) in Fairway Canyon area of Beaumont on the western boundary, to 2900 feet in Cherry Valley, and over 4,000 feet in the upper reaches of the SOI. The area serves primarily as a "bedroom" community for the Riverside/San Bernardino Area and the communities east of Los Angeles County along the I-10 corridor.

The District is governed by a 5-member Board of Directors, each representing a division within the existing service area. Members of the Board of Directors are elected at large.

BCVWD's Water Supply System

BCVWD has a potable water supply system and a non-potable water system. The potable water system is supplied exclusively by groundwater wells; the non-potable water system is designed to convey non-potable groundwater, recycled water, untreated imported water and potable water, as make-up, or a blend of all. In addition to these systems the District owns and operates a groundwater recharge facility and imported water pipeline. BCVWD's 2015 average day and maximum day potable water demands were 9.2 mgd and 15.3 mgd, respectively. Average day non-potable water demand for 2015 was 1.15 mgd. These demands are lower than 2013 when the average day total potable and non-potable demand was 11.45 mgd; maximum day was 20.2 mgd. The impact of the Governor's mandated conservation is evident.

Potable Water System

BCVWD's potable water system is supplied by wells in Little San Gorgonio Creek (Edgar Canyon) and the Beaumont Basin (sometimes called the Beaumont Storage Unit or the Beaumont Management Zone). The District has a total of 24 wells (1 well is a standby). One of the wells, Well 26, can pump into either the potable water or the non-potable water system. Currently it is pumping into the non-potable water system. The Beaumont Basin is adjudicated and managed by the Beaumont Basin Watermaster. BCVWD augments its groundwater supply with imported State Project Water from the San Gorgonio Pass Water Agency (SGPWA) which is recharged at BCVWD's recharge facility at the intersection of Brookside Avenue and Beaumont Avenue.

Wells in Edgar Canyon have limited yield, particularly in dry years, and take water from shallow alluvial and bedrock aquifers; wells in the Beaumont Basin are large capacity and pump from deep aquifers – some as deep as 1500 ft below the ground surface. The Edgar Canyon wells are very inexpensive to operate and are the preferred source; however, those wells are not able to meet the current average day demand. The Edgar Canyon wells pump to a gravity transmission main that extends the full length of the District-owned properties in Edgar Canyon. The transmission main connects to the distribution system in Cherry Valley. Water from the Edgar Canyon Wells, which is not used in the developed areas adjacent to Edgar Canyon or Cherry Valley, is transferred to lower pressure zones serving the City of Beaumont. This happens regularly in the winter time. The Edgar Canyon Wells provide about 15 to 20 percent of the total annual supply; the rest is pumped from wells in the Beaumont Basin.

BCVWD has two active stream diversion locations within Little San Gorgonio Creek (Edgar Canyon) that are in the State Water Resources Control Board, Division of Water Rights database (S014351, S014352). The diversions have pre-1914 recorded water rights amounting to 3,000 miner's inch hours (MIH) or approximately 45,000 acre-feet per year (AFY) of right for diversion of water for domestic and irrigation uses. These date back to the early history of the District. However, the District has never had a demand that requires such large quantities of water supply; and the watersheds may not be capable of supplying such quantities during an average year. At the present time the District currently diverts streamflow in Edgar Canyon to a series of percolation ponds which recharge the shallow wells in Edgar Canyon. This water is then extracted for domestic purposes.

BCVWD's total well capacity (Edgar Canyon and Beaumont Basin) is about 27.5 million gallons per day (mgd) with the largest well out of service, which is much greater than the current 15.3 mgd maximum day demand (2015).

The District has 11 pressure zones and 14 reservoirs (tanks) ranging in size from 0.5 million gallons (MG) to 5 MG. Total storage is approximately 22 MG –almost 2.5 average days or 1.4 maximum days. The reservoirs provide gravity supply to their respective pressure zones. The BCVWD's system is constructed such that any higher zone reservoir can supply water on an emergency basis to any lower zone reservoir. There are booster pumps in the system to pump water up from a lower pressure zone to a higher pressure zone also.

The transmission system in the main pressure zones is 24-in diameter. (There are some 30-in diameter pipelines at some reservoirs.) The bulk of the pipe is ductile iron pipe with cement mortar lining and was installed in the last 10 to 15 years. There are a number of small distribution lines (4-in and smaller that are gradually being replaced over time with minimum 8-in diameter ductile iron pipe. All developments since the early 1980s have installed mortar lined, ductile iron pipe. The distribution system is capable of providing over 4,000 gallons per minute (gpm) fire flow in the industrial/commercial areas of the service area.

Imported Water and Recharge Facilities

Around 2001, BCVWD began investigating an 80-acre site on the east side of Beaumont Avenue between Brookside Ave. and Cherry Valley Blvd. as a location for a facility to recharge captured storm flow and imported water. After extensive hydrogeologic investigations including pilot testing, the District eventually purchased the site, (known as the Oda Property), and developed Phase 1 of the recharge facility on the westerly half of the site. The Phase 1 facilities were completed and went on line in late summer 2006. Phase 2 of the recharge facility was completed in 2014. This site has excellent recharge capabilities with long-term percolation rates around 7 to 10 acre-ft/acre/day with proper maintenance.

The District completed construction of a 24-in pipeline from the turnout on East Branch Extension (EBX) of the State Water Project to the groundwater recharge site in 2006. A metering station was installed at the turnout at Noble Creek and Vineland Avenue and BCVWD began taking imported water deliveries from SGPWA for recharge in September 2006. In conjunction with the recharge facility, the District developed a drought-tolerant landscape demonstration garden with walking trails and picnic areas for visitors to the site. Since its operation in 2006 through the end of 2015, nearly 48,500 acre-ft (about 15.8 billion gallons) of imported water have been recharged. As of the end of 2014, BCVWD has 28,930 acre-ft "banked" in the Beaumont Basin; this is more than a three year supply.

Non-potable (Recycled) Water System

Currently BCVWD has over 40 miles of non-potable water transmission and distribution pipelines, (6-in and larger), in place. This construction has occurred since about 2002. A 24-in diameter ductile iron pipeline forms a loop around the City of Beaumont. The system includes a 2 million gallon recycled (non-potable) water reservoir which provides gravity storage and pressurization for the system. The 2 MG non-potable water reservoir is configured to receive potable water or untreated State Project Water (SPW) through air gap connections. The non-potable water system can have a blend of recycled water, imported water, non-potable groundwater, and potable water. The 2 MG reservoir is located at the District's groundwater recharge facility at Beaumont Avenue between Brookside Ave. and Cherry Valley Blvd. There are about 300 existing landscape connections to the recycled water system receiving about 1,300 acre-ft of water based on 2015 meter records. (In 2014, the non-potable water use was 1,900 acre-ft.) The impacts of the Governor's conservation mandate impacted the non-potable system too.

A large part of the non-potable water system is currently supplied from Well 26, supplemented with potable water which is introduced into the 2 MG non-potable water tank through an air gap connection. The non-potable water system in the Tournament Hills and Fairway Canyon area is currently supplied with potable water through several interconnections between the potable and non-potable water system.

BCVWD was awarded a facilities planning grant from the SWRCB to develop a facilities plan for a recycled water connection with YVWD. This facilities plan was approved by the SWRCB in August 2014 and BCVWD could apply for grant/loan funding for the project. BCVWD is also in discussions with the City of Beaumont for recycled water.

BCVWD Authority Under the Irrigation District Law

As stated above, BCVWD was formed as an "irrigation district" under California Water Code §20500 *et seq*. defines the "powers" and authority of irrigation districts which are summarized below:

- Furnish water in the district for any beneficial use, including fire protection (§20500, 22077)

- Control, distribute, store, spread, treat, recapture and salvage any water (including but not limited to sewage waters for the beneficial use of the district or its residents (§22078)
- Provide for any and all drainage made necessary by the irrigation provided for by the District. (§22095)
- Acquire lease and operate plants for the generation, transmission, distribution and sale of electric power (§22115)
- Acquire, construct, maintain, and operate facilities for the collection and disposal of sewage subject to approval by a majority of the voters of the district (§22170, 22176)
- Fix and collect charges for any service provided by the district including the sale of water (with standby charges), connections to new pipelines or extensions of existing pipelines, use of water for groundwater recharge, use of water for power purposes and sale of electric power (§22280)
- Impose a special tax pursuant to Article 3.5 (commencing with Section 50075) of Chapter 1 of Part 1 of Division 1 of Title 5 of the Government Code. The special taxes shall be applied uniformly to all taxpayers or all real property within the district, except that unimproved property may be taxed at a lower rate than improved property (§22078.5)

Although these powers are permitted under statute, approval from LAFCO may be required before certain activities are undertaken.

Service Area Climate

Table 3-1 presents the monthly temperature, precipitation and evapotranspiration for the BCVWD service area.

Temperature

Table 3-1 presents temperature data for the City of Beaumont obtained from the Western Regional Climate Center. The climate in Cherry Valley is similar, but temperatures are cooler in the upper elevations of the District's SOI. Temperatures below freezing are common in winter in the upper elevations of the service area. Temperatures over 100°F are also common in the summer.

Precipitation

As shown in Table 3-1, virtually all the precipitation occurs during the months of November through April; most of the precipitation is in the form of rain, but snow is common in higher elevations of the service area during the winter. Some rainfall occurs in summer from thunderstorms that are associated with monsoonal moisture. Annual precipitation in Beaumont (2680 MSL) averages approximately 17.8 inches, with increasing amounts of precipitation with increasing elevation. Cherry Valley averaged 20.6 inches for the period 1911-2006; Oak Glen (4600 ft MSL) averaged 25.5 inches for the 61-year period 1946-2006.

Table 3-1
Climate in BCVWD Service Area[1]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Average Max. Temperature (F)	60.5	63.6	66.2	72.5	78.8	88.0	95.6	95.5	90.6	80.7	69.4	62.0	77.0
Average Min. Temperature (F)	38.6	39.1	40.0	42.8	47.7	52.5	58.4	58.6	55.8	49.3	43.1	39.2	47.1
Average Total Precipitation (in.)	3.76	3.44	3.12	1.36	0.63	0.16	0.23	0.22	0.51	0.60	1.65	2.09	17.76
Average Total Snowfall (in.)	1.1	0.4	0.2	0	0	0	0	0	0	0	0.1	0.3	2.0
Standard Monthly Average Evapotranspiration, ETo[2]	2.81	2.76	3.78	5.31	6.10	6.97	7.08	6.83	5.67	4.15	3.31	2.56	57.33

[1] Western Regional Climate Center, Beaumont 1E 7/1/1948 – 12/30/2004
[2] CIMIS website – Winchester, CA

Table 3-2 shows the percentage of occurrence of storms of various total rainfall amounts in Beaumont. Rarely does a total storm rainfall exceed 3 inches. A "storm," in the Table 1-2 analysis, is defined as a continuous period of measurable daily rainfall interrupted by not more than 3 consecutive days of no measureable rainfall.

Evapotranspiration

Table 3-1, presented above, shows the monthly reference average ETo based on the California Irrigation Management Information System (CIMIS), Winchester, CA station. This station is located about 15 miles south of the BCVWD and is representative of the evapotranspiration in the District's service area. The reference ETo represents the amount of water used and evaporated by a 4-in to 7-in tall stand of grass in an open field. Water use by other crops and landscape materials can be determined using the appropriate crop coefficient in conjunction with the ETo.

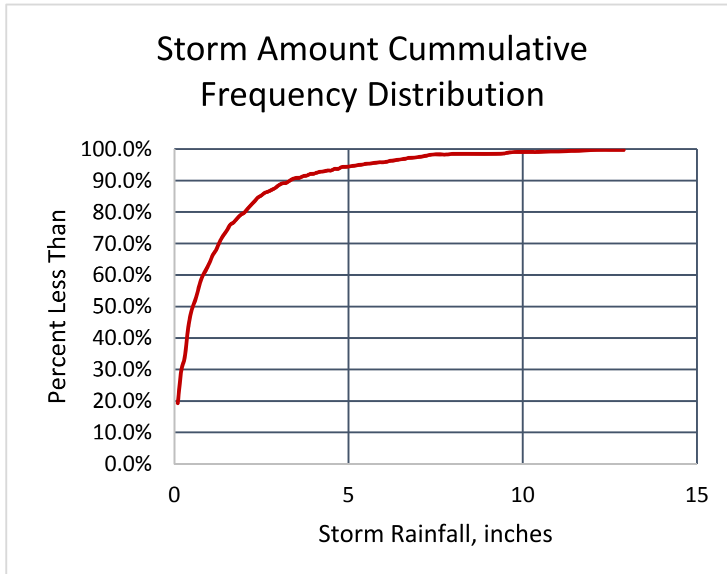
The service area is in Reference ETo Zone 9 – South Coast Marine to Desert Transition.[2] Outdoor water consumption for corrals, orchards and lawns during the hot, dry summer months is high. Data reported to the SWRCB, Conservation Reporting for 2015 showed per capita residential water use ranging from about 100 gpcd in the winter and spring months to about 200 gpcd in September. BCVWD was able to achieve a 23% reduction in water demand from 2013

[2] California Department of Water Resources and University of California Cooperative Extension, A Guide to Estimating Irrigation Water Needs of Landscape Plantings in California, The Landscape Coefficient Method and WUCOLS III, August 2000.

to the same period in 2015-16 in spite of a population growth of nearly 800 people. Attaining water conservation targets is a challenge.

Table 3-2
Total Storm Rainfall Frequency Beaumont (1918 – 2006)

Storm Total, in	Percent of Time
0.50 or less	49%
1.0 or less	63.9%
2.0 or less	79.8%
3.0 or less	88.5%
4.0 or less	92.2%
5.0 or less	94.5%
6.0 or less	95.8%
7.0 or less	97.4%
8.0 or less	98.5%
More than 8.0	1.5%



Climate Change

Climate change will result in reduced snowpack and more precipitation as rain. Although studies have shown that the average amount of precipitation may not change significantly under the different climate change (greenhouse gas scenarios) models, events will be more extreme. Wet periods will be wetter and drought periods drier. The timing of the runoff will be accelerated. For example, the peak runoff period in the Sierra Nevada Mountains will occur earlier in the year and will be at a higher rate due to the warmer temperatures and rainfall, on a limited snowpack. Much of this runoff may not be able to be captured by existing reservoirs designed under historic hydrology and operating under "old" storage/outflow management rules. Existing conveyance systems will not be adequate to move this water to off stream storage reservoirs or to groundwater recharge facilities. This will result in more water lost to the ocean and unavailable to meet demands.

DWR (2008) predicts that the Sierra snowpack water storage will be reduced 25% to 40% by 2050.[3] Chung, et al. (2009) estimated that climate change impacts will reduce Delta Exports

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[3] DWR 2008. *Managing an Uncertain Future, Climate Change Adaptation Strategies for California's Water*, State of California, The Resources Agency, Department of Water Resources, October.

through the State Water Project (SWP) and the Central Valley Project (CVP) by 7% to 10% by 2050 and by 21% to 25% by the end of the 21st century. (Note that DWR's 2013 SWP Reliability Report, referenced later in this UWMP Update, included the effects of climate change.)

BCVWD conducted a climate change vulnerability assessment using the methodology in Appendix I of the UWMP Update Guidelines and the Climate Change Handbook for Regional Water Planning.[4] It should be pointed out that there is considerable speculation and variability between the various greenhouse gas/climate models. The approach in this UWMP Update is to consider climate change generically rather than specifically. The vulnerability assessment will address:

- Water Demand
- Water Supply
- Water Quality
- Flooding
- Ecosystem and Habitat Vulnerability

Vulnerability due to sea level rise and hydropower impacts do not directly impact BCVWD, but could indirectly impact BCVWD. For example, sea level rise will impact the Delta levee system which could impact SWP deliveries and SWP water quality should a levee failure occur. Although BCVWD does not have any hydropower facilities, reduced hydropower generation will affect the cost BCVWD pays SCE for electric power.

Water Demand

Since water use in BCVWD's service area varies by more than 50% during the year due to outdoor water use, increases in temperature due to climate change would be expected to increase summer time urban and agricultural water. However, this will be more than offset by the installation of water efficient and drought tolerant landscaping in new developments in response to tightening landscape ordinances. The City of Beaumont and Riverside County have been continually updating their landscape ordinances in response to directives from DWR. The most recent DWR Model Water Efficient Landscape Ordinance version was July 2015. Outdoor residential potable water consumption will also be reduced in the future with the implementation of graywater systems using laundry wastewater etc. Water use on orchards in the District will decrease as these areas are converted into urban uses. In summary, BCVWD believes climate change impacts on demand will be more than offset by more efficient outdoor

[4] USEPA Region 9 et al (2011). *Climate Change Handbook for Regional Water Planning,* prepared by CDM for US Environmental Protection Agency, Region 9, California Department of Water Resources, US Army Corps of Engineers South Pacific Division, and Resources Legacy Fund, November.

water use, reduced turf areas, implementation of graywater systems, and land use conversion from orchards to residential.

As an example, when BCVWD was under Stage 2 Water Conservation measures which limited outdoor water use and limited landscape sprinkling to two days per week, BCVWD was able to achieve a 23% reduction in water use from 2015-16 compared to the corresponding period in 2013.

Water Supply

Surface flow is not directly used for water supply. All streams in the area are ephemeral and dry up during the summer. Some only have flow during and shortly after rainfall events.

Other than imported SWP supply from the SGPWA which will make up an increasing fraction of the District's water supply over time, very little of the District's direct supply comes from local snowmelt; so the impact of climate change on the local supply will be minimal. The impact on the SWP and Delta exports was discussed above.

BCVWD is very fortunate in that the Beaumont Groundwater Basin has large storage capacity for banked water. BCVWD has an 80,000 acre-ft storage account in the Basin. During wet years, BCVWD can bank SPW for dry years, as was successfully done from 2006 through 2014 when over 46,000 acre-ft were recharged. The Beaumont Basin Watermaster keeps an accounting of stored water. As of the end of 2014, BCVWD had 28,930 acre-ft of water in storage for use during dry years.

Water Quality

Wildfires are always a threat in the area; fortunately CalFire and the local fire departments are very responsive. BCVWD, YVWD and the City of Banning have water distribution systems available for fire prevention which have been effective in controlling wild fires. Erosion from burned areas is always a problem. The District has been effective at mitigating the effects of wildfire erosion by diverting streamflow to desilting ponds constructed in and at the mouth of Little San Gorgonio Creek and percolating the desilted flow. The California Public Interest Energy Research (PIER) Program predicted a 30% increase in burned area by 2085 due to potential climate change impacts. BCVWD believes that erosion from the increased burned area can be managed with the existing infrastructure.

Flooding

BCVWD's has some well facilities that are probably with the 200-year flood plain in Little San Gorgonio Creek. During these events some damage may occur. But the District can still manage since there is adequate spare capacity in the Beaumont Basin wells. The Beaumont Basin wells are definitely outside of the 100-year flood plain and most likely outside of the 200-year flood plain though there are no 200-year flood plain maps to verify this. Riverside County

Flood Control and Water Conservation District has an improved channel for Noble Creek. It is relatively new and well-maintained.

There was significant flooding in 1969 which washed out pipelines in Little San Gorgonio Creek. Much of this pipeline has been replaced with new ductile iron pipe since 1983 and the remaining portion is master planned to be replaced in the next 5 to 10 years.

Sediment from erosion of burned areas is controlled by desilting basins in and at the mouth of Little San Gorgonio Creek.

Ecosystem and Habitat Vulnerability

Principal habitat areas are Noble Canyon and Little San Gorgonio Canyon and tributaries above Cherry Valley. Black bear, bobcats and mountain lions are frequently seen in Little San Gorgonio Creek canyon areas. These are under the ownership of BCVWD for the most part and will remain open space. San Timoteo Canyon and its tributaries between Beaumont and Redlands provides a corridor for habitat movement. There are some undeveloped lands south of BCVWD's SOI which are designated at open space. There may be some threatened and endangered species in all of these areas. These areas provide natural corridors for wildlife movement.

San Timoteo Creek and Cooper's Creek, a tributary of San Timoteo Creek immediately downstream of the YVWD's and the City of Beaumont's wastewater treatment effluent discharge respectively have some continuous flow at least for some distance downstream of the discharge. A portion of the effluent discharge will be required to be maintained by the Regional Board and US Fish and Wildlife for threated and endangered species habitat.

Service Area Population and Demographics

> ***CWC Section 10631***
>
> *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 .*

Historically the principal industry in the Beaumont-Cherry Valley area was agriculture and agriculture related services, particularly those associated with fruit production (cherries) and egg ranching. Over the years the agricultural areas and other vacant lands were converted to housing tracts as new home buyers seek more affordable homes, particularly within the City of Beaumont. A major egg ranch, Sunny Cal, is no longer in business and most of the facilities have been removed in anticipation of development. A Specific Plan has been developed for that project and street and infrastructure plans are nearing completion.

Several major commercial centers were constructed since year 2000, most notably the Wal-Mart and Kohl Center in Southeast Beaumont, the revitalized Stater Brothers-Walgreens center on 14th and Oak Valley Parkway, and others. A number of major distribution centers have been constructed including Lowes Distribution Center, the Pro-Logis Developments and the Beaumont Business Center on the Dowling Orchard site in Southwest Beaumont.

Several large housing projects were started during the “boom” period around 2005 but many of these stopped due to the downturn in the economy around 2008. These developments have been approved for construction; some, in fact, have the grading completed and underground utilities installed. These projects include Seneca Springs, K-hov Four Seasons, Tournament Hills, Fairway Canyon, Sun Cal, Pardee Sundance, Aspen Creek, and Heartland. Several of these projects have re-started in 2014 and continue to develop. Home building reached a 14-year low of 169 single family homes in 2011; but in 2015 approached 500 single family homes. The average over the last three years was 449 single family homes per year in Beaumont – about 1,350 people per year.

A number of projects were approved by the City of Beaumont, but have not yet started construction due to the economy. These projects include Hidden Canyon, Kirkwood Ranch, Potrero Creek Estates, and Noble Creek Meadows (formerly Noble Creek Vistas). These projects are expected to be into construction in the not-to-distant future.

In addition, there are a number of projects are still in the City of Beaumont review stage e.g. Jack Rabbit Trail, Preserve/Legacy Highlands. Tournament Hills 3, Hidden Canyon II and others.

Growth in Cherry Valley has been much slower. The area is still rural residential.

Historical Population

Historic and current populations for the District’s service area were extracted from the District’s 2013 UWMP Update are presented in Table 3-3. There were some minor adjustments to account for the latest census data. The data in Table came from several sources:

- 1980 and 1990 populations and household information – U.S. Census Bureau, 2000 Census of Population and Housing, Population and Housing Unit Counts, PHC-3-6, California, Washington D.C., 2003. This data was used for the City of Beaumont. Data for Cherry Valley for this period was estimated.
- 2000 and 2010 population and household information – U.S. Census Bureau American Fact Finder for Beaumont, CA and Cherry Valley CDP[5], CA.

[5] CDP = Census-designated Place

Table 3-3
Historical Population and Housing

	1980	1990	2000	2010	2015
City of Beaumont					
Population	6,818	9,685	11,384	36,877	41,780
Households	2,852	3,718	3,881	11,801	13,390
People/Household	2.39	2.60	2.93	3.12	3.12
Housing Units			4,258	12,908	14,646
Occupied Housing Units			3,881	11,801	13,390
Cherry Valley					
Population	5,012	5,945	5,891	6,362	6,597
Households	2,023	2,530	2,310	2,612	2,715
People/Household	2.48	2.35	2.55	2.43	2.43
Housing Units			2,627	2,874	2,985
Occupied Housing Units			2,434	2,612	2,715
TOTAL					
Population	11,830	15,630	17,275	43,239	48,377
Households	4,875	6,248	6,191	14,413	16,105
People/Household	2.43	2.50	2.79	3.00	3.00
Housing Units			6,885	15,782	17,631
Occupied Housing Units			6,315	14,413	16,105

- 2015 population – Estimated for Cherry Valley based on historic growth from 2010. Estimated of City of Beaumont based on housing completions from City Planning Department, Major Project Status Reports for period 2010 through 2015.

It should be pointed out that the data in Table 3-3 are all of the people living in the District's service area. Except for a relatively few number of people that are on private wells or local water systems, all are served by the District. The District's Sphere of Influence (SOI) extends beyond its service area; but the existing population between the service area and the sphere of influence boundary is small at this time.

Figure 3-2 shows the population growth in the City of Beaumont and Cherry Valley from 1980 to 2015. The population after 2010 was estimated as described for Table 3-3.

The data in Table 3-3 and Figure 3-2 show very rapid growth for the City of Beaumont from the year 2000 to 2010. About 2/3 of this growth occurred between 2000 and 2007 based on building permits issued by the City of Beaumont. The high rate of growth continued until mid-2008 when development slowed markedly following the economic turndown in the US and California. The population in Cherry Valley remained relatively constant since 1990. During the period from 2000 to 2008, the community of Cherry Valley did not experience the same growth spurt that occurred in the City of Beaumont and other areas in Western Riverside County.

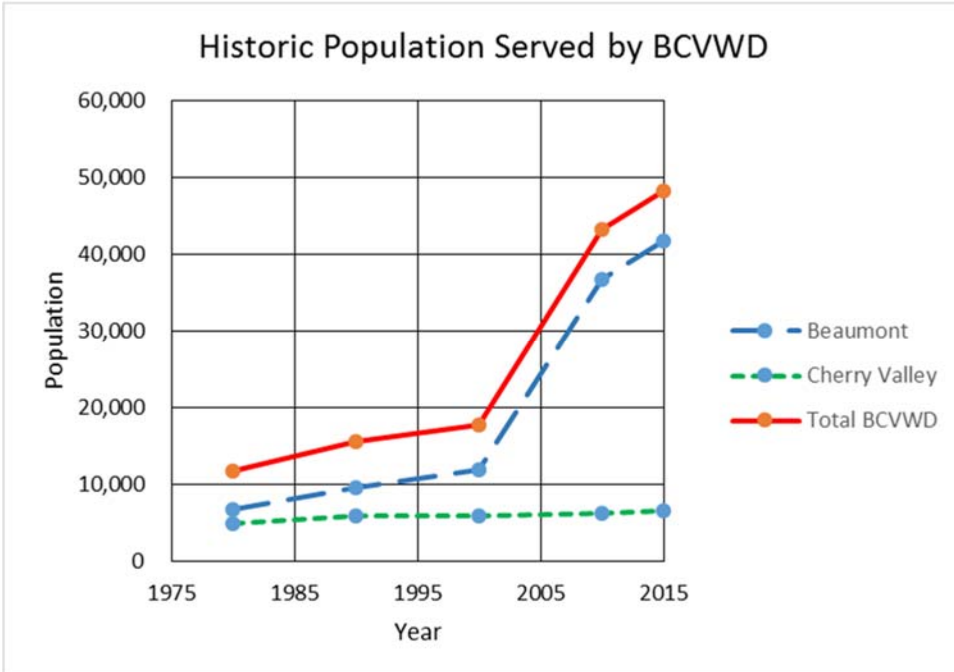

Figure 3-2
Historical Population Growth in District

The U.S. Census Bureau, American Fact Finder provided some information about the housing units in Beaumont and Cherry Valley. This information is presented in Table 3-4. Table 3-4 shows the housing stock in Beaumont is relatively new with over 60% constructed since 2000 and over 68% since 1990. This means most of the housing units have relatively water efficient plumbing systems. Chery Valley, on the other hand, has much older housing stock.

Figure 3-3 shows the number of single family home building permits issued in the City of Beaumont for the years 2002 through 2015. Although not shown in Figure 3-3, the permits started picking up in 1999-2000 and reached their peak in 2005 with 2,300 new home permits issued for that year. The number of permits for new homes declined to a low of 169 in 2011. Over the last 8 years, permits averaged 346 per year; over the last 3 years, permits averaged 449 per year. The 14-year average was 772 per year. **Future growth will likely be in the range of 400 to 600 permits per year, although some developers have projected slightly higher amounts in their build-out forecasts**.

BCVWD Historic Connection Growth

Figure 3-4 shows the growth in total connections (services) within BCVWD's service area. Most of these occurred in the City of Beaumont. Total connections at the end of 2015 was 16,985 as stated in the 2016 BCVWD Operating Budget. Total metered connections at the end of 2014 was 16,577 as stated in the 2015 BCVWD Annual Budget. Prior to the year 2000, the District had about 5,600 total connections. The number of connections increased steadily until about 2008 when the annual increase began to slow down and level off.

Table 3-4
Housing Characteristics

Housing Type	Percent of Total Housing Units (2013 data)	
	Beaumont	Cherry Valley
Single Family	89.2%	73.1%
Multi-family	7.7%	0.3%
Mobile Home	3.1%	26.6%
Age of Housing	61.5% since 2000 68.4% since 1990	6.8% since 2000 86.4% since 1960

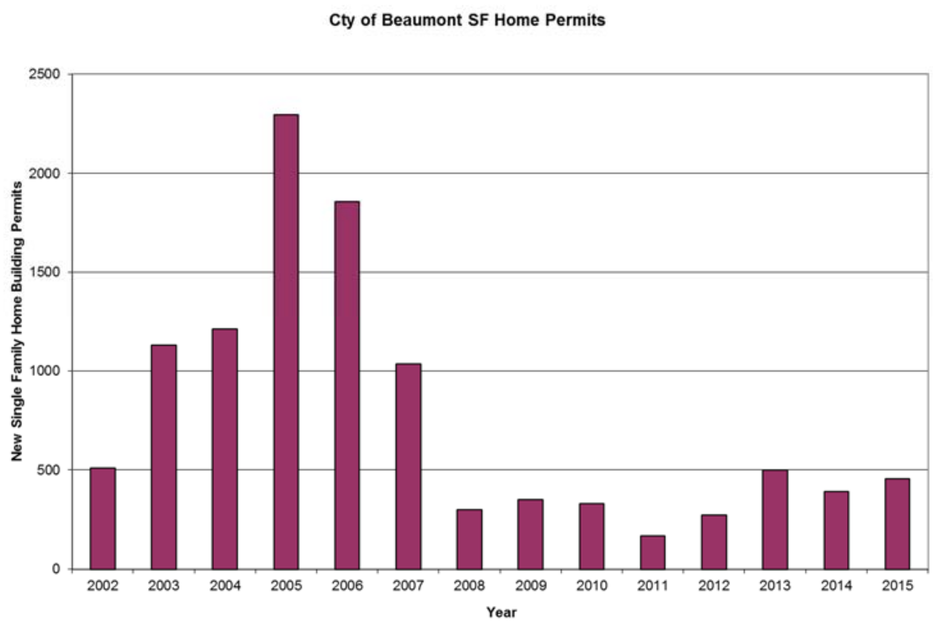

Figure 3-3
Growth in Beaumont as Shown by Single Family Home Building Permits

The peak year was 2005 when 2,433 connections were added. For 2009 and 2015 the increase was just under 350 connections per year. The average for the period 2001 through 2015 was 762 new connections per year. For 2014 and 2015, the District added 440 and 408 connections respectively. The number of connections dropped in 2011. This is more a function of the data collection which is taken from the total active accounts. The drop may be due to the high number of foreclosures in the service area. Many of these accounts were “closed.” Based on an analysis of the total number of connections and the population in the service area, there are about 2.85 people per connection.

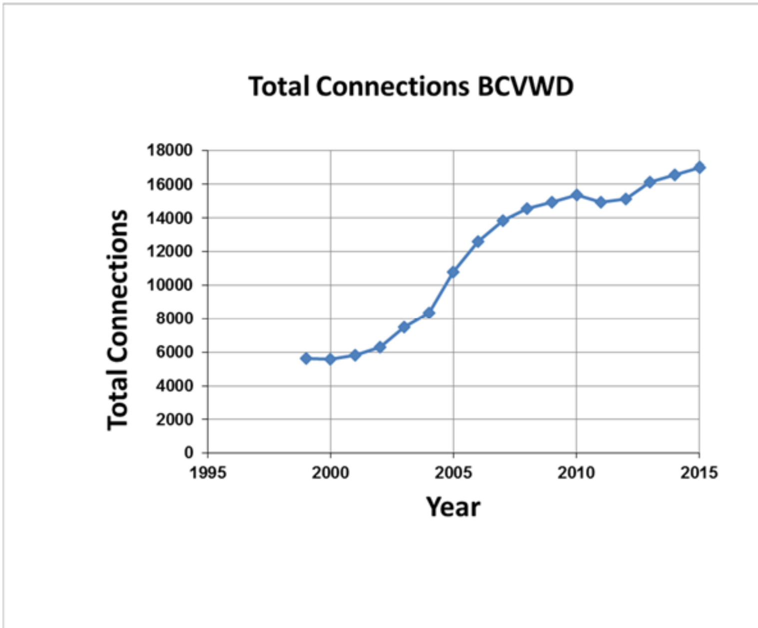

Figure 3-4
Connection Growth in BCVWD Since 1999

Build-out Population

The BCVWD service area build-out or "saturation" population was determined using the City of Beaumont's Zoning Map from the City's General Plan[6] and the District's Geographic Information System (GIS) to determine the total areas of the various zoning categories in the District's SOI. Actual GIS data was obtained from the City and integrated into the District's GIS system to determine the land use within the District's SOI. The zoning designation included a range of dwelling units/acre. An average value was used in the build-out analysis. The District's estimate of the City of Beaumont's build-out population is 90,600. (The City's General Plan, page 25, states the build-out population is 87,200; so the District's estimate is reasonable.)

The same approach was used for Cherry Valley, only this time data from Riverside County General Plan, Pass Area Land Use Plan was used[7]. Again the GIS data set was obtained from the County and integrated into the District's GIS system to determine the land use category areas within the District's SOI. Build-out population for Cherry Valley, within the BCVWD's SOI is 21,700 people.

Total estimated build-out population within the BCVWD's SOI is 112,300 or about 2.3 times the current population. BCVWD believes this population would not be reached until well beyond 2050 or 2060, if ever.

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[6] City of Beaumont General Plan, Adopted March 2007.

[7] The Pass Area Land Use Plan, October 7, 2003. (Part of Riverside County General Plan)

The build-out population is a function of the local zoning; this could change at any time resulting in an increase or reduction in the build-out population. Changes in the SOI boundary by LAFCO would also affect the ultimate population served.

Projected Service Area Growth

The build-out population estimate was presented above, which will set the ultimate water demand. The increase in the water demand over time from current to build-out is discussed in the following subsections.

Review of the City of Beaumont's Major Project Status Report[8] listed six projects that were currently under development (on-going construction). These are listed in Table 3-5.

Table 3-5
Projects within BCVWD Service Area Under Construction

Development Name	Total Housing Units Approved	Estimated Housing Units Yet to be Constructed (Feb 2016)	Estimated Build-out Year
Sundance	4,716	1,730	2021[9]
Fairway Canyon SCPGA	3,566	2,085	2025
Heartland	981	981	2035
Four Seasons	2,041	400	2025
Perricone Juices	Industrial	Some Industrial EDUs	Approved 19,182 sf Addition to Existing Facility
Rolling Hills Ranch Industrial/Winco/Prologis	Industrial	Some Industrial EDUs	2020
Totals	11,304	5,196	

BCVWD used the developers' plans for the projects in Table 3-5 in conjunction with Google Earth image dated 2/5/2016 to verify the construction progress and estimate the number of housing units (Equivalent Dwelling Units) remaining. It appears there are about 5,200 EDUs in the current on-going projects yet to be constructed as of February 2016.

Table 3-6 presents a list of other projects in various stages of approval the City of Beaumont. The total number EDUs is estimated to about 9,058.

[8] City of Beaumont, Major Project Status Report, February 16, 2016.

[9] Miyashiro to Jaggers (2014). Sundance Future Phasing., Personal Communication, email July 8.

The housing units yet to be constructed in Table 3-5 plus the EDUs in the other projects in Table 3-6 total 14,254 EDUs in the City of Beaumont. This would result in an increase in population of 40,000 people based on 2.8 people per EDU. This would bring the total Beaumont population to 81,780.

This population estimate approaches the build out population presented previously (90,600), which was based on average densities within the various land use categories. The 81,780 estimate is consistent with the City of Beaumont's General Plan build out population of 87,200.[10]

Cherry Valley Population Growth and BCVWD Served Population

As presented previously, the ultimate build-out population served by BCVWD for Cherry Valley based on the Pass Area Land Use Plan[11] densities is 21,700 people or about 7,750 EDUs. This is based on an increase to 2.8 persons per EDU projected at build-out.

There are 2,874 housing units in Cherry Valley in 2010 per the census data, but 26.6% of those are mobile homes. The 2,874 housing units are equivalent to about 2,485 EDUs. So build-out will result in about another 5,265 new EDUs. The Sunny Cal Egg Ranch Development (560 EDUs), included in the City of Beaumont, is actually within the current Cherry Valley census area and would have been included among the 5,265 EDU increase for Cherry Valley. So to avoid "double counting," the Sunny Cal Egg Ranch EDUs were deducted resulting in a net projected 4,655 EDU increase for Cherry Valley.

Except for the Sunny Cal Egg Ranch project, BCVWD believes the bulk of the 4,655 Cherry Valley EDUs will not be constructed until after 2030.

The City of Beaumont's population from the developments, (81,780 presented previously), combined with the Cherry Valley build-out population, (21,700 presented above), the total population served by BCVWD 103,480. This is consistent with the GIS land use based build-out estimate of 112,300 presented previously. The 112,300 estimate will be used as the District's build-out, served, population for planning purposes.

Existing EDUs and EDU Growth to Build-out

BCVWD uses Equivalent Dwelling Units (EDUs) to calculate and project potable water demand. BCVWD Rules and Regulation, Section 5, defines the water use as 580 gal/EDU/day. This is equivalent to 0.65 AFY/EDU. (An analysis developed for and presented in the 2015 Adopted Potable Water Master Plan supports this demand.)

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[10] City of Beaumont General Plan, March 2007, page 25.

[11] Pass Area Land Use Plan, October 7, 2003, Part of Riverside County General Plan.

Table 3-6
Other Projects in BCVWD's Service Area

Development Name	Total Housing Units Approved	Estimated Build-out Year	Status (June 2016)
Kirkwood Ranch	403	2030	Specific Plan (1991), Tent. Tr. Map 27357 Approved
Taurek (Potrero/Viele, TR-31162)	244	Unknown	Tent. Tr. Map Submitted, Annex., Map, EIR Pending Public Hearing
Potrero Creek Estates	700	2040	Specific Plan (1989)
Tract 32850, Manzanita Park Rd. N/First St.	95	2025	Tract 32850 Approved
Nobel Creek Vistas	648	2030	Specific Plan (2006), Entitled
Hidden Canyon Industrial	Industrial (82 EDUs)	2020	Specific Plan/Plot Plan Approved, PM 36426 Awaiting LAFCO Annexation Approval
Sunny Cal Specific Plan	571	2025	Annexation Pending. Specific Plan & Tract Map Approved TM 36583, Entitled
Tournament Hills 3, TM 36307 Phase 4	233	Unknown	Tract 36307, Amendment to Oak Valley Specific Plan Approved
Seasons at Beaumont 38 Units Rental Complex (1)	25.3	Unknown	Plot Plan Approved
Heartland II	Commercial	Unknown	
Pacific Scene II	125 (est)	Unknown	
Jack Rabbit Trail	2,000	Unknown	
The Preserve/Legacy Highlands Specific Plan	3,412	Unknown	
American Villas (693 American Ave)	36	Unknown	
Eighth St. Condos (1343 Eighth St.) (1)	10.7	Unknown	
Pennsylvania Ave Apts (850 Penn Ave) (1)	5.3		
Beaumont Commons Affordable Housing (Xenia, 6^{th} -8^{th} St) (1)	80.0	Unknown	

Table 3-6 (Cont'd)
Other Projects

Development Name	Total Housing Units Approved	Estimated Build-out Year	Status (June 2016)
Tuscany Townhomes (8th Xenia) (1)	125.4	Unknown	
Oak Valley Senior Center (Oak Valley Pkwy/Oak View) (1)	248.1	Unknown	
Beaumont Distribution Center	14 (EDUs)	Unknown	
Mountain Bridge	Commercial	Unknown	
Totals	9,058		

(1) In multi-family buildings, EDUs = 2/3 * Housing Units

BCVWD's 2015 Potable Water Master Plan projected EDU growth based on discussions with the developers having on-going projects. The "base year" for the analysis was 2013. The EDU growth is summarized in Table 3-7.

Table 3-7
Summary of New EDUs in BCVWD Service Area (base year 2013)
(Taken from BCVWD 2015 Potable Water Master Plan)

	Cumulative New EDUs							
	2015	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**Build-out**
Beaumont	893	5,530	8,301	11,382	14,144	15,852	16,317	17,856
Cherry Valley	13	23	82	251	552	1,661	2,233	4,655
Totals	918	5,553	8,383	11,633	14,696	17,513	18,550	22,511
Average New EDUs/year		927	566	650	612	563	207	

Based on the past history of building permits in the City of Beaumont, presented previously in Figure 3-3, about 600 to 700 or so EDUs per year is believed to be a reasonable market assimilation rate for the area. This is somewhat below the "boom" years around 2005 to 2007, but similar "boom" years are not expected to occur in the future. In Table 3-7 the 927 EDUs per year average from 2015 to 2020 is greater than the 600 to 700 EDUs mentioned above; but this higher construction rate is due to the number of tracts that were approved and started construction before the economic turndown brought a “halt” to these developments. A number of these tracts were fully graded with utilities already installed at the time the work was stopped. As a result they are “ready to go” and developers want to get these projects finished as soon as possible.

Table 3-8 shows the growth in population for Beaumont, Cherry Valley and BCVWD as a whole based on the EDU growth shown in Table 3-7. This growth rate is greater than that currently experienced by the City of Beaumont’s Building Department which averaged 449 single family homes per year for the period 2013 through the end of 2015. The average for 2001 through 2015 was 772 single family homes per year

Table 3-8 also shows the population growth assuming a slower EDU growth of 500 EDUs/year in the City of Beaumont – more nearly matching the growth of the last few years. It shows that there would be a “lag” of about five years by 2040 – not much when considering water demand planning.

Table 3-8
Current and Projected Population in BCVWD Service Area

	Population						
	2015	**2020**	**2025**	**2030**	**2035**	**2040**	**Build-out**
Based on EDU Growth in Table 3-5							
Beaumont	41,780	54,764	62,522	71,149	78,883	83,665	92,806
Cherry Valley	6,597	6,622	6,784	7,244	8,066	11,139	19,494
Totals BCVWD	48,377	61,386	69,306	78,393	86,949	94,804	112,300
Based on 500 EDUs/year in Beaumont							
Cherry Valley	6,597	6,622	6,784	7,244	8,066	11,139	19,494
Beaumont	41,780	48,780	55,780	62,780	69,780	76,780	92,806
Totals BCVWD	48,377	55,402	62,564	70,024	77,846	87,919	112,300

The growth in EDUs in Table 3-7 will be the basis for projecting the water demand in this 2015 UWMP Update. But the reader should recognize that there could be a lag in reaching the 2040 demand.

Figure 3-5 shows the historic and projected population served by BCVWD taken from Tables 3-3 and 3-8 using the EDU growth in Table 3-7. Since the UWMPs are required to be updated every five years, adjustments in the water demands can be made as needed.

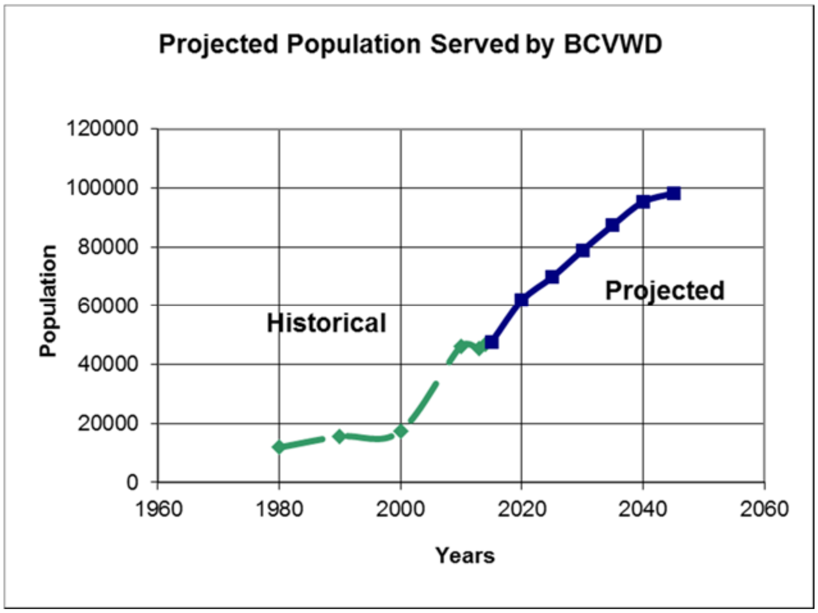

Figure 3-5
Historic and Projected Population Served by BCVWD
(based on EDU growth rate in Table 3-7)

Comparison with Department of Finance Projections

Table 3-9 shows a comparison between State of California Division of Finance (DoF) population growth rate for Riverside County and the population growth rate represented by the EDU growth rate in the BCVWD service area, shown in Table 3-7.

Table 3-9
DoF Riverside County vs. BCVWD 2015 UWMP Update
Population Growth Rates

	Population								
	2010	2015	2020	2025	2030	2035	2040	2045	2050
California DoF Riverside County, 000s	2,194	2,323	2,478	2,662	2,862,	3,053	3,215	3,353	3,481
Annual % Change		1.17%	1.33%	1.49%	1.51%	1.33%	1.06%	0.86%	0.76%
BCVWD	43,239	48,377	61,386	69,306	78,393	86,949	94,804	97,707	--
Annual % Change		2.4%	5.4%	2.6%	2.6%	2.2%	1.8%	0.6%	

The projected growth rate for BCVWD is higher than for Riverside County as a whole through the next 25 years or so. Table 3-10 shows BCVWD's retail population, current and projected to be consistent with the Department of Water Resources format.

Table 3-10
(DWR Table 3-1) BCVWD Population – Current and Projected

DWR Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040
	48,377	61,386	69,306	78,393	86,949	94,804
NOTES: See Table 3-6 and text for description of methodology						

Impact of Potential Growth Limitation Initiative

In late 2015 there was discussion of a resident sponsored managed growth initiative that would limit the number of new housing units in the City of Beaumont to 350 units per year, 300 if in a planned community. There was discussion to try to get this on the November 2016 ballot. The impact this potential initiative would have on the District's EDU projections in this UWMP Update is best illustrated by Figure 3-6. First, it is not likely the initiative will affect those projects which have some form of entitlement; so the impacts will likely not be manifested for some time. But if implemented, it would likely cause some of the future projects, identified previously in this UWMP Update (e.g. Table 3-6), to be deferred, perhaps as much as 10 years or so.

Based on Figure 3-5, if the initiative were implemented, BCVWD's year 2045 potable demand would be reduced by about 20 percent.

During the last few years, several large projects in the City of Beaumont, previously planned residential, have been proposed to be commercial and industrial projects. Those areas include projects listed in Tables 3-5 and 3-6, such as the Heartland Development, the Hidden Canyon Development and possibly the Jack Rabbit Trail Development. This would result in a significant reduction in the water demand

Comparison to Previous UWMPs

To provide a perspective on population growth estimates, Figure 3-7 shows the historic population through the 2010 census along with the population projections in the 2002, 2005, 2013, and 2015 UWMP Updates. Also included for reference is the Southern California Association of Government's (SCAG's) 2007 Regional Transportation Plan (RTP) Population forecast

The 2015 UWMP Update shows more aggressive growth than the previous (2013) version, but less than SCAG.

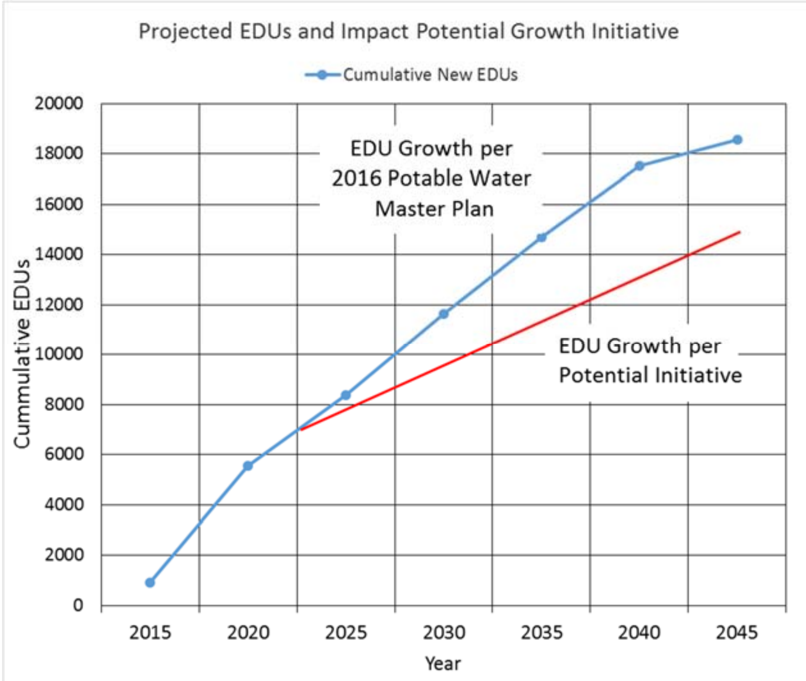

Figure 3-6
Possible Impact of Growth Initiative on BCVWD Planning

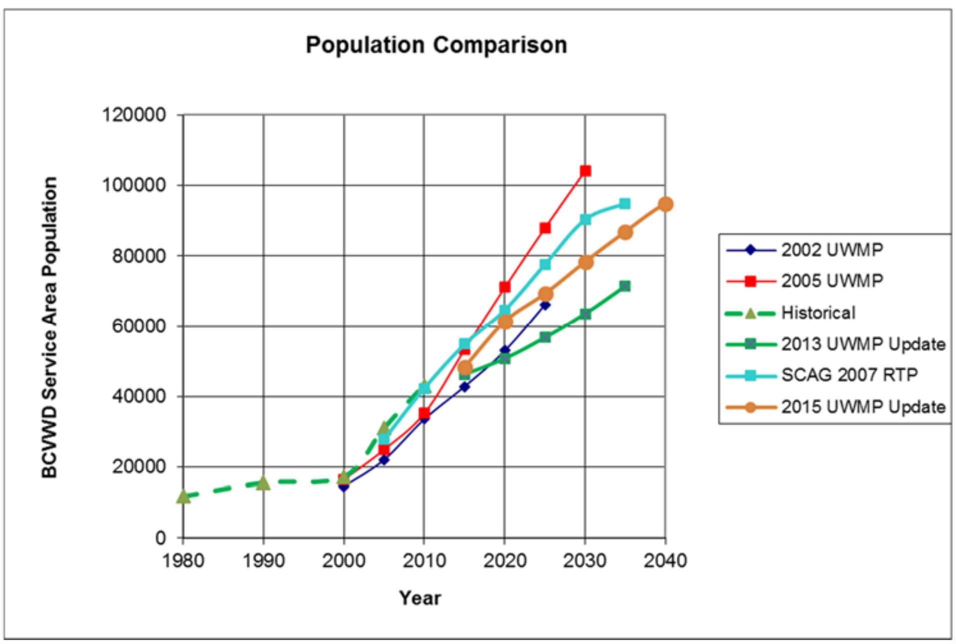

Figure 3-6
Historical Population and Previous UWMP Population Projections

Other Demographic Information

Income and Home Values

Table 3-11 presents data on the household income and median home values in the service area.

Table 3-11
Income and Housing Values for 2014[12]

Parameter	City of Beaumont	Cherry Valley	California
Median Household Income	$66,775	$58,080	$61,489
Per Capita Income	$26,627	$29,789	$29,906
Median Home or Condo Value	$216,300	$167,800	$371,400

Population Age and Diversity

The median age in Beaumont is 32.5 years; Cherry Valley is 52.9 years. The median age in California is 35.6 years, the U.S. as a whole, is 37.4 years. Beaumont is a young community, many first time home buyers; Cherry Valley is an older community.

The service area is ethnically diverse. Beaumont is primarily Caucasian and Hispanic with a small number of Asians; Cherry Valley is primarily Caucasian.

Employment

The latest data on employment in the service area is for the year 2014 from American Fact Finder census. This is summarized in Table 3-12.

Table 3-12
Employment from 2010 Census

Parameter	City of Beaumont	Cherry Valley	Total
Total Population 16 yrs and older	28,915	6,145	35,060
Total Population 16 yrs and older in labor force	18,400 (63.6%)	3,055 (49.7%)	21,455 (61.1%)

Principal industries for males in the City of Beaumont are construction, retail trade and manufacturing; for females, principal industries are retail sales, cashiers and office

[12] Source American Fact Finder

administration. In Cherry Valley the principal industries for males are construction and retail trade; for females, education and healthcare/social services.

Land Use

Figure 3-8 shows the distribution of land use within the District's SOI based on the City of Beaumont and Riverside County Zoning as presented in the latest General Plans. This does not necessarily represent the current land use distribution. Almost 50% of the land use is residential; 39% is open space, conservation or rural mountainous.

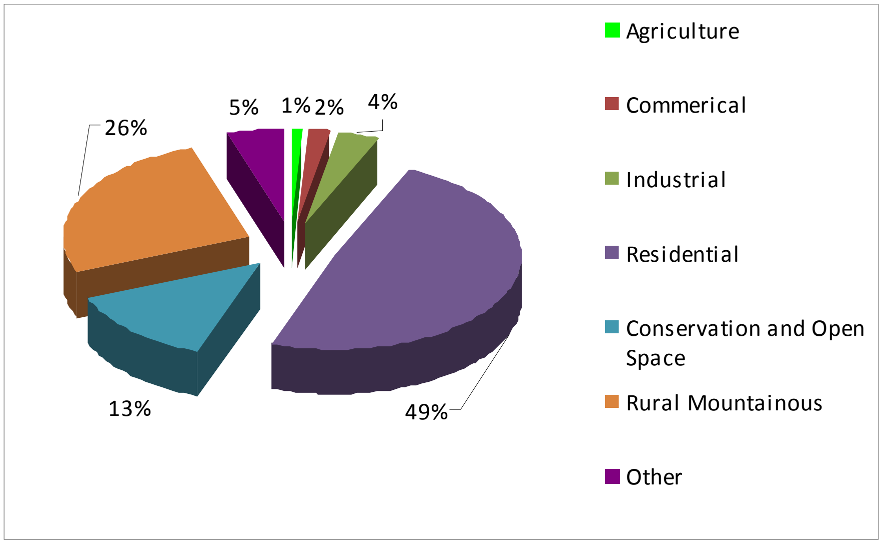

Figure 3-8
Land Use Distribution within BCVWD SOI based on Current Zoning

Section 4

System Water Use

This section provides data on the historic and projected water use within the BCVWD service area. For purposes of this UWMP the terms "**water use**" and "**water demand**" are **used interchangeably**.

Recycled versus Potable and Raw Water Demand

BCVWD's water supply mix for 2015 includes imported water (recharged and/or taken from banked storage), groundwater, and non-potable water. In the future, the non-potable water will included recycled water from YVWD and the City of Beaumont. Figure 4-1 shows the mix of water sources for BCVWD in year 2015.

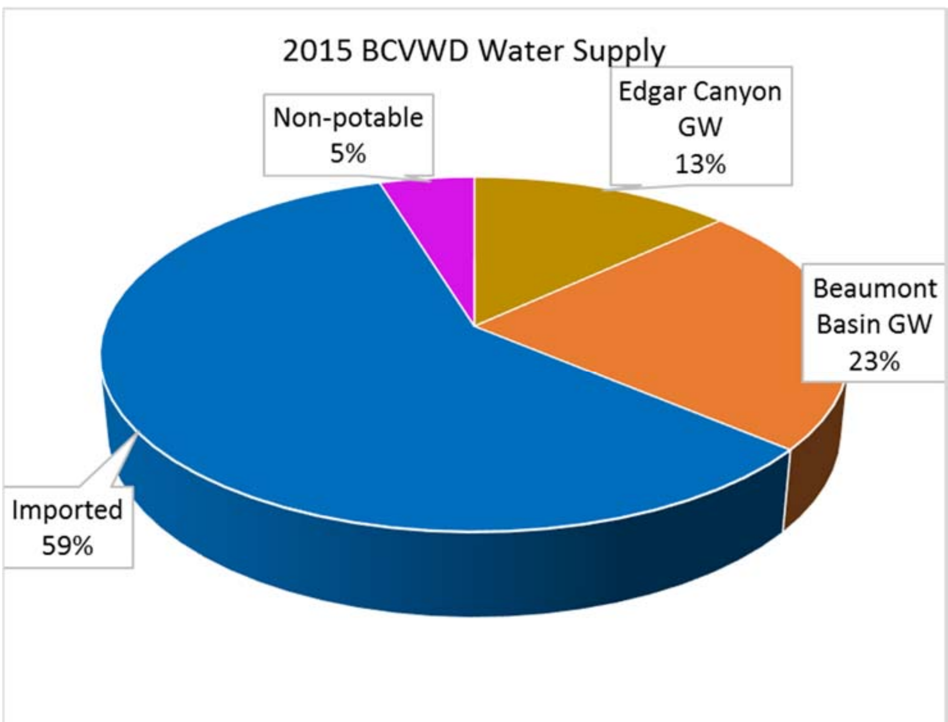

Figure 4-1
BVCWD Water Sources Year 2015

Beaumont Basin groundwater includes only "forbearance" water and "reallocation of overlier pumping rights" based on the Beaumont Basin Adjudication. Forbearance water is potable or non-potable water supplied to an overlier. This typically occurs when the overlier develops.

For 2015, BCVWD only recharged 2090 AF due to the reduced SGPWA SWP Allocation. The rest of the imported water (4270 AF) came from imported water banked in previous years in BCVWD's groundwater storage account.

In the future there will be greater use of non-potable water.

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).

Definitions

For purposes of the 2015 UWMPs, the following definitions are used by DWR for each of the water sectors listed in the CWC. The order of the sectors follows the order found in the CWC. Each of these sectors are the only sectors that will be accepted by the WUE data online submittal tool..

Single-family Residential -- A single-family dwelling unit. A lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling.

Multi-family -- Multiple dwelling units contained within one building or several buildings within one complex.

Commercial – A water user that provides or distributes a product or service. CWC 10608.12 (d).

Industrial -- A water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System (NAICS) code sectors 31 to 33, inclusive, or an entity that is a water user primarily engaged in research and development. CWC 10608.12

(h). The following link is to the NAICS website: http://www.census.gov/cgi-bin/sssd/naics/naicsrch.

Institutional (and governmental) -- 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. CWC 10608.12 (i). Note that BCVWD account codes lump “Institutional” in with “Commercial.” In the tables to follow, the instutional and commercial fractions were estimated.

Landscape -- Water connections supplying water solely for landscape irrigation. Such landscapes 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. This is a retail demand.

Sales to Other Agencies – BCVWD has pumped water on behalf of the City of Banning in the past, but none was pumped for the City of Banning in 2015. The City of Banning has participated with BCVWD in funding several wells in the Beaumont Basin. When water is pumped by BCVWD for the City of Banning, it is considered City of Banning pumping and is not included in BCVWD’s extractions.

Saline Water Intrusion – BCVWD does not supply any water to saline water intrusion barriers.

Groundwater Recharge -- The managed and intentional replenishment of natural groundwater supplies using man-made conveyances such as infiltration basins or injection wells. Water used for groundwater banking or storage may also be reported using this sector. If all, or a portion of, the groundwater recharge water is subsequently pumped out of the basin in the same year, that water will be reported by the pumping agency as a supply from groundwater (Tables 6-1 and/or 6-8 and 6-9). BCVWD is required to meet replacement water obligations of the Beaumont Basin water master by recharge or by taking water from BCVWD’s groundwater storage account. Future years include a groundwater recharge component to build up BCVWD’s storage account for dry years.

Conjunctive Use – BCVWD banks imported water in BCVWD’s storage account in the Beaumont Basin when available from SGPWA and as funds permit. This water can be extracted in future years when imported water allocations are insufficient to meet demands.

Agricultural -- Water used for commercial agricultural irrigation through BCVWD’s agricultural irrigation meters.

Distribution System Losses -- Reporting of system losses is required by the CWC in the 2015 UWMPs. See Section 4.3 and Appendix L for details on the required methodology for calculating system losses. The CWC requires reporting losses for the most recent 12 months for which data is available, which can be taken to mean the calendar year or fiscal year used for data reporting throughout the rest of the UWMP. Report the losses for the most recent 12 months available in Table 4-1. If the reported water losses are for a 12 month period that is different from the calendar or fiscal year used for data reporting throughout the rest of the UWMP, the water supplier will state this in the UWMP.

Other Water Uses

There are several other water uses mentioned in the UWMP Guidelines:

Exchanges -- Water exchanges are typically water delivered by one water user to another water user, with the receiving water user returning the water at a specified time or when the conditions of the parties' agreement are met. BCVWD does not currently exchange water with any agency.

Surface Water Augmentation -- The planned placement of recycled water into a surface water reservoir that is used as a source of domestic drinking water supply. (Used in Chapter 6, Section 6.5 Recycled Water). BCVWD does not do "surface water augmentation."

Transfers -- The CWC defines a water transfer as a temporary or long-term change in the point of diversion, place of use, or purpose of use due to a transfer, sale, lease, or exchange of water or water rights. In the past, South Mesa Water Company has transferred water to BCVWD's groundwater storage account for payment. This was occurred between 2004 and 2014 when South Mesa has more than adequate groundwater supply to meet their needs at that time.

Wetlands or Wildlife Habitat -- Water used for a managed environmental use to improve an environmental condition. The City of Beaumont is required to maintain a flow of 1.8 mgd in Cooper's Creek a tributary of San Timoteo Creek from the City's wastewater treatment plant. Currently BCVWD is not receiving recycled water from the City of Beaumont, but this source is anticipated in the future. The requirement to maintain streamflow affects the amount of recycled water available to BCVWD.

Historical Water Uses

BCVWD's historical water use is summarized below:

Year	1980	1990	2000	2005	2010	2015
Potable Water Demand, AFY	5,074	5,572	6,308	9,306	11,023	9,792

The reduction in water use in 2015 was due to water conservation measures imposed during the drought.

Current (2015) Water Use by Sector

Table 4-1 shows BCVWD's water demand (water use) by sector for the year 2015.

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type *(Add additional rows as needed)*	2015 Actual		
	Additional Description *(as needed)*	Level of Treatment When Delivered	Volume, AF
Single Family		Drinking Water	6,612
Multi-Family		Drinking Water	287
Commercial	estimated	Drinking Water	118
Industrial		Drinking Water	169
Institutional/Governmental	estimated	Drinking Water	611
Landscape	potable water only	Drinking Water	772
Agricultural irrigation		Drinking Water	49
Other	Metered construction, street sweeping, etc.	Drinking Water	160
Losses	estimated	Drinking Water	500
Groundwater recharge	Imported Water Banked for future extractions during dry periods. During 2015, 2090 AF imported water recharged and extracted in 2015	Raw Water	0
Landscape	non-potable water	Raw Water	514
		TOTAL	9,792
NOTES:			

Future Water Use by Sector

Table 4-2 shows the future water use by sector. Included in Table 4-2 are planned quantities of groundwater recharge of imported water. The May 2016 Emergency Conservation Regulation requires a 3-year supply to avoid state-mandated water restrictions. BCVWD Board adopted Resolution 2014-05 that requires a 5-year supply. The groundwater recharge quantities are planned amounts achieve a minimum 5-year firm water supply to ensure water supply for new EDUs and meet new State Emergency Water Conservation Regulation, "stress test" requirements.

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, AF *Report To the Extent that Records are Available*				
		2020	2025	2030	2035	2040
Single Family		12,702	14,191	16,084	17,878	19,533
Multi-Family		400	625	710	785	855
Commercial		126	135	145	155	165
Industrial		180	190	200	210	220
Institutional/Governmental		650	685	730	770	820
Agricultural irrigation		60	55	50	45	40
Other	Metered construction and street sweeping water, etc.	300	315	325	340	350
Losses		335	380	430	475	500
	Total Potable Water	14,753	16,576	18,674	20,658	22,483
Groundwater recharge	Imported Raw Water Banked for future extractions during dry periods. Does NOT Include Imported Water to Meet Replacement Obligations	1,000	1,500	2,000	2,500	2,500
	Subtotal Potable and Raw Water	15,753	18,076	20,674	23,158	24,983
Landscape	Non-potable Water	1,906	2,374	2,931	3,228	3,449
	TOTAL	17,659	20,450	23,605	26,386	28,432
NOTES: Groundwater recharge quantities are planned quanties to build 5-year supply per BCVWD Resolution 2014-05 ; Landscape demand does not include golf course demands. Golf courses are on private wells and will only be supplemented with non-potable water.						

The potable water demands, (i.e., all of the demands in Table 4-2 except “Landscape” and “Groundwater Recharge), are based on BCVWD’s 2015 Potable Water Master Plan Update. The potable water demands in the 2015 Master Plan Update were based on discussions with developers and projects in the construction, planning or proposal stage from the City of Beaumont’s Planning Department “Major Project Status Reports.” The projected growth to 2040 was discussed in Section 3. The rate of growth of the potable water demand is based on the growth of EDUs. With the economic turndown around 2007 or so, there were a number of large housing projects under construction, many had pads graded and utilities installed, when development stopped. These projects are ready to and developers have returned.

The growth in EDUs is assumed to be:

5-year Period	EDUs/year
2015 – 2020	927
2020 – 2025	566
2025 – 2030	650
2030 – 2035	612
2035 – 2040	563

This is a very aggressive EDU growth rate; Section 3 discusses the historical growth rate. Current growth rates in EDUs experience by the City of Beaumont is on the order of 450 EDUs/year. For planning purposes, it is better to be aggressive.

The water demand projections do not include any “water conservation” effects. There will likely be some lingering effect of the water restrictions mandated by the Governor’s Office for 2015 as the population becomes more aware of the water situation in California. Also developers are constructing much more water efficient homes with limited turf landscaping and more efficient appliances. New landscape ordinances will be limiting turf areas in street medians and common areas which could bring down the demands projected in Table 4-2 by perhaps as much as 10% to 15%.

The water demand to the multi-family, commercial, industrial, institutional/governmental, and “other” categories were projected from the actual 2015 values through 2040 on the basis that the changes in demand would be proportional to the changes in single family demand. As single family residences increase there will be a proportionate increase in commercial, institutional, and industrial to support it. Multi-family units will grow also as land becomes more valuable.

The agricultural irrigation connections are declining as the land use is changing from orchards to residential land. Most of the irrigation customers are in Cherry Valley and would not likely be served by the recycled water system within the foreseeable future. They will continue to be served potable water. The agricultural irrigation accounts will decline throughout the planning period at a gradual rate particularly as the cost of water continues to increase.

The landscape demands are derived from BCVWD’s 2015 Potable Water Master Plan Update and are associated with BCVWD’s non-potable water system. The non-potable system could include recycled water from YVWD and the City of Beaumont, filter wash water from YVWD, non-potable groundwater, or imported SPW. The landscape demands **do not** include the irrigation demands from the two golf courses: Tukwet Canyon (1,250 AFY) and Oak Valley Greens (750 AFY). These golf courses are on their own wells and have Beaumont Groundwater Basin Overlier Rights. Irrigation of these golf courses from BCVWD’s non-potable water system would depend on the amount of recycled water and filter wash water available.

BCVWD's operational plan is to supply the landscape demands first, then if there is recycled and filter wash water available, supply it to the golf courses. Any unused recycled water (typical of winter time operations) could be advance treated and recharged (planned indirect potable water reuse project).

The Groundwater Recharge quantities shown in Table 4-2 are for planned recharge to build-up or maintain BCVWD's Beaumont Basin groundwater storage account. They are not actual demands. The quantities shown are **over and above** that needed by BCVWD to meet their normal Beaumont Basin replacement water obligations. Banking water in the storage account is critical to meeting demands during dry years.

If imported SPW is not available in a given year, no groundwater recharge would occur. But when imported water is available, any deficiencies from previous years would be "carried over" and made up.

Table 4-3 shows the total water demands which summarizes the demands from Table 4-2.

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*	9,792	15,753	18,076	20,674	23,158	24,983
Non-potable Water Demand	0	1,906	2,374	2,931	3,228	3,449
TOTAL WATER DEMAND	9,792	17,659	20,450	23,605	26,386	28,432

**Recycled water demand fields will be blank until Table 6-4 is complete.*

NOTES: Non-potable demand does not include Golf Courses. Total Golf Course Demand is 2000 AFY; BCVWD will only supplement the GC demand.

The non-potable water demand in Table 4-3 is the landscape demand and does not include golf course demands. Tukwet Canyon and Oak Valley Golf Courses have their own well supply. BCVWD intends on serving the golf courses only when non-potable water is available.

Distribution System Water Losses

California Senate Bill No. 1420, (SB 1420), requires water utilities that submit Urban Water Management Plans to calculate annual system water losses using the water audit methodology developed by the American Water Works Association (AWWA). SB 1420 requires that utilities submit these audits every five years as part of their respective Urban Water Management Plans.

> ***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*
>
> *(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.*

To facilitate the process, AWWA has developed an Excel spreadsheet based on the principles in AWWA Manual M36 Water Audit methodology. Version 5.0 of the spreadsheet software was used in the analysis.

Table 4-4 summarizes the water loss volume from the AWWA spreadsheet.

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	500
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: : BCVWD believes the amount calculated in the Water Audit Spreadsheet is not correct due to change in the this method of accounting for the 2 month lag between production (measured daily) and consumption (meter read time -- most bimonthly, but some monthly). TheDstrict believes the Water Loss Volume is really about 500 AF	

Estimating Future Water Savings

> **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.*

The water demand projections in Table 4-2 are based on BCVWD's 2015 Potable Water Master Plan and are conservative and do not include the passive savings from residual conservation or savings from new codes and ordinances. It is anticipated that future codes and restrictions will also have an effect at reducing consumption. Codes and ordinances which will reduce consumption, but are not considered in the demand projections include:

- Executive Order B-29-15 and California Code of Regulations Title 23, Division 2, Chapter 2.7. Model Water Efficient Landscape Ordinance – 2015. DWR estimates that a typical California landscape will use 12,000 gallons less water in a year or about 20% less than projected with the 2009 ordinance; commercial landscapes will cut water use by as much as 35%
- City of Beaumont Municipal Code 17.06 Landscaping.
- County of Riverside Ordinance No. 859 – Water Efficient Landscape Requirements
- BCVWD Resolution 2016-05 –Authorizing the Implementation of Water Use Restrictions and Rescinding Resolution 2015--05. This resolution rescinded the twice per week landscape watering restrictions but did maintain the other conservation measures in the May 18, 2016 Drought Emergency Water Conservation Regulations which was designed to prevent waste and unreasonable use of water and promote water conservation. (BCVWD was able to self-certify that it has adequate water supply for 3 years based on hydrologic conditions 2012 - 13, 2013 - 14, and 2014 - 15 water years and imported water from SGPWA identical to calendar years 2013 through 2015.)

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.*

Table 4-4A presents the long term low-income housing needs, per capita water demand and annual water demand per low-income housing unit for the City of Beaumont and Cherry Valley.

The number of low-income housing units for the City Beaumont was based on information in the City of Beaumont's General Plan, Housing Element dated October, 2010. The data in the Beaumont Housing Element originated in the Regional Housing Needs Assessment (RHNA) prepared by SCAG. The RHNA new housing construction need was 2,732 dwelling units. More recent information was not available for this 2015 UWMP Update. For the purposes of this UWMP update, the 2,732 dwelling units was assumed to be the ultimate build-out need.

Table 4-4A
Current and Projected Low-income Housing Needs

	2015	**2020**	**2025**	**2030**	**2035**	**2040**
	Low Income Housing EDUs					
City of Beaumont						
Single Family	0	0	0	0	0	0
Multi-family	675	1000	1325	1650	1975	2300
Subtotal EDU	675	1000	1325	1650	1975	2300
Cherry Valley						
Single Family	73	77	80	83	87	90
Multi-family	3	7	10	13	17	40
Subtotal EDU	77	83	90	97	103	130
Total						
Single Family	73	77	80	83	87	90
Total Multi Family	678	1007	1335	1663	1992	2340
Total Low Income	752	1083	1415	1747	2078	2430
Water Use						
Typical gpcd	175	175	175	175	175	175
Typical AFY*	0.59	0.59	0.59	0.59	0.59	0.59
Low Income Single Family	0.44	0.44	0.44	0.44	0.44	0.44
Low Income Multi-Family	0.30	0.30	0.30	0.30	0.30	0.30
Water Use AFY						
Low Income Single Family	32	33	35	36	38	39
Low Income Multi-Family	200	298	395	492	589	692
Total Water Use	233	331	430	528	627	731

* Based on 3 people per residence

The number of units in 2010, (350 for Beaumont and 70 for Cherry Valley), was used as a starting point to project growth in low income housing. The came from the City's Housing Element, Inventory of Government Assisted Housing Developments (rounded up). All of the low-income housing units are in multi-family units and that was assumed to continue through to the year 2035.

For the community of Cherry Valley, WRCOG developed a Low-income housing need for the entire WRCOG area (10,311 units). A separate projection for Cherry Valley was not provided. The low-income housing allocation for Cherry Valley was estimated based on the ratio of the current population of Cherry Valley to the total WRCOG population. The result was an estimated "need" of 175 low-income housing units in Cherry Valley. For Cherry Valley the low-income housing needs were assumed to be single family units with multi-family units only developed in the year 2035 and beyond.

The growth projections of low income housing parallels the population growth.

The single family, low-income unit water demand was estimated to be 75% of a typical Beaumont single family home. Multi-residential low income unit water demand was estimated to be 2/3 of a low-income single family unit.

The 2040 low-income water demand of 731 acre-ft/yr represents about 3.2% of BCVWD's water demand for 2040, i.e., not significant.

Table 4-5 certifies to the following:

- Future Water Savings from codes and ordinances is not included. The water demand projections in Table 4-2 are conservative. BCVWD does expect some reduction in the demand, on a per capita basis, over time.
- The water requirements for low income housing are included in the demand projections in Table 4-2

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook)	No
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.	
Are Lower Income Residential Demands Included In Projections?	Yes
NOTES:	

Climate Change

Climate change will increase the landscape and outdoor water demand over time as evapotranspiration increases. However, new landscape ordinances which limit the amount of turf and encourage drought tolerant plantings will reduce the total water needs. In addition new developments are reducing the turf areas on each lot and installing more drought-friendly landscaping. The drought-friendly landscaping is also extended to street medians and common areas. BCVWD believes the net impact of climate change on future water demand should be minimal.

Section 5

SB X7-7 Baseline and Targets

In February 2008, the Governor introduced a seven-part comprehensive plan for improving the Sacramento-San Joaquin Delta. A key component of his plan was a goal to achieve a 20 percent reduction in per capita water use statewide by the year 2020 (called “20x2020”).

In November 2009, SB X7-7, The Water Conservation Act of 2009, was signed into law as part of a comprehensive water legislation package. With the adoption of the Water Conservation Act of 2009, the Governor’s 2008 water reduction plan was codified and the State is required to set a goal of reducing urban water use by 20 percent by the year 2020. Each retail urban water supplier must determine baseline water use during their baseline period and also establish target water use for the years 2015 and 2020 in order to help the State achieve the 20 percent reduction.

In this 2015 UWMP Update, water agencies, such as BCVWD, must demonstrate compliance with their pre-established water use target for the year 2015. This will also demonstrate whether or not BCVWD is currently on track to achieve its 2020 target.

Compliance is verified by DWR’s review of the SB X7-7 Verification Form submitted with BCVWD’s 2015 UWMP. The SB X7-7 Verification Form summarized in Tables 5-1 and 5-2 of this section.

Terminology

When determining water use in this UWMP, two terms are often used interchangeably:

- **Daily per Capita Water Use -** the amount of water used per person per day. In the UWMP calculations, this is total water use within a service area, divided by population and is measured in gallons.
- **Gallons per Capita per Day (GPCD**) – This is the “Daily per Capita Water Use” measured in gallons. Therefore, the term commonly used when referring to “Daily per Capita Water Use” is “Gallons Per Capita per Day” or “GPCD.”

It is important to distinguish GPCD (as used in Urban Water Management Plans) from the R-GPCD that is used in drought reporting to the State Water Resources Control Board.

- **GPCD** is the total water use within a service area (residential, commercial, institutional, etc…) minus allowable exclusions, divided by the population. This is used in UWMPs for purposes of the Water Conservation Act of 2009.
- **R-GPCD** is solely the estimated residential water use in a service area divided by population. R-GPCD is used in drought reporting to SWRCB for purposes of

complying with the Governor's drought declarations and executive orders in 2014 and 2015.

In the calculation of the "GPCD" above, there are four exclusions:

- Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier
- The net volume of water that the urban retail water supplier places into long term storage
- The volume of water the urban retail water supplier conveys for use by another urban water supplier
- The volume of water delivered for agricultural use, except as otherwise provided in subdivision (f) of Section 10608.24. (In 2015, BCVWD delivered 49.43 AF for agricultural irrigation.)

Updating Calculations from 2013 UWMP

(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 2011, 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.

BCVWD last updated its UWMP in 2013. Since BCVWD used the 2010 Census in the preparation of its 2013 UWMP Update and the baselines and targets, there is no need to update the calculations.

Update of Target Method

BCVWD used Target Method 1 – Eighty percent of BCVWD's baseline per capita daily water use in its 2013 UWMP Update. It was compared to target method 4 – 95% of the applicable state hydrologic region target. Using the state hydrologic region target resulted in a very low, unattainable target; so, target method 1 was adopted and is used in this UWMP Update.

Required Use of 2010 U.S. Census Data

BCVWD submitted its UWMP Update in August 2013, which included the population data from the 2010 census.

SBX-X7 Verification Forms

The SB X7-7 Verification Forms, to demonstrate compliance with the Water Conservation Act of 2009, have been filled out and are included in the 2015 UWMP Update submittal to DWR. The results are summarized in this section.

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 Water Code specifies two different base periods for compliance with SB X7-7:

1. The first base period is a 10- to 15-year continuous period, and is used to calculate baseline per capita water use per §10608.20. The 15-year continuous period is used if the Agency used recycled water to supply more than 10% of its retail water demands. (BCVWD did not use recycled water during the baseline evaluation period.)
2. The second baseline period is a 5-year continuous period, and is used to calculate baseline per capita water use per §10608.22. Note that if the water agency's per capita demand is 100 GPCD or less, it is not necessary to determine this 5-year base period. Note that BCVWD's per capita demand is much higher than 100 GPCD, so the 5-year baseline period must be calculated and is described below.

Determination of the 10-15 Year Baseline Period (Baseline GPCD)

> ***CWC 10608.12***
>
> *"Base daily per capita water use" means any of the following:*
>
> *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.*
>
> *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.*

In BCVWD's 2013 UWMP Update, the District performed a detailed analysis of 10-year baseline periods from 1995-2004 through 2001-2010. The period 1999-2008 was selected as the 10-year baseline period for calculation of targets. In as much as the 2010 census data was used in the 2013 UWMP Update, there is no need to update or change the 10-year baseline per capita.

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.*

In the 2013 UWMP Update BCVWD determined the 5-year, continuous baseline period was from 2004 through 2008. Again there is no need to revisit or change the 5-year baseline period.

Service Area Population

> ***CWC 10608.20***
>
> *An urban retail water supplier shall include in its urban water management plan due in 2010…the baseline per capita water use,…along with the bases for determining those estimates, including references to supporting data.*
>
> *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.*
>
> ***CWC10644***
>
> *(a)(2) The plan…shall include any standardized forms, tables or displays specified by the department.*

In the preparation of this 2015 UWMP Update, BCVWD used the U. S. Census data for the decade years 1990, 2000, and 2010. The City of Beaumont is entirely within BCVWD's service area and the census bureau data was used directly. For the unincorporated community of Cherry Valley the "Cherry Valley CDP" (census-designated place) population was used. To determine the population in the intervening years for calculation of baseline per capita water use, the growth in population between years 1990 and 2000 was estimated to be linear. This is reasonable considering the population growth within BCVWD during the decade was only 1,645 people (165 people per year). Refer to Table 3-1 and Figure 3-1 presented previously in Section 3. From 2000 to 2010, the population increase was estimated to follow the growth in connections; this was a period of high growth within BCVWD.

Gross Water Use

> *CWC 10608.12*
>
> *"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:*
>
> *Recycled water that is delivered within the service area of an urban retail water supplier or its urban wholesale water supplier*
>
> *The net volume of water that the urban retail water supplier places into long term storage*
>
> *The volume of water the urban retail water supplier conveys for use by another urban water supplier*
>
> *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

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.

Baseline Daily Per Capita Water Use

A detailed analysis of various baseline periods conforming to the Water Code was presented in BCVWD's 2013 UWMP Update as stated above. The analysis resulted in the 10-year baseline period being 1999-2008 and the 5-year baseline period being 2004-2008. Verification form SB 7X-7 Table 5 is presented below which summarizes the baseline period analyses for 1999-2008 and 2004-2008.

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	1999	17,131	5,887	307
Year 2	2000	17,298	6,308	326
Year 3	2001	18,014	5,063	251
Year 4	2002	19,223	8,896	413
Year 5	2003	22,390	7,109	283
Year 6	2004	24,612	8,308	301
Year 7	2005	30,994	9,306	268
Year 8	2006	35,745	11,339	283
Year 9	2007	39,013	13,054	299
Year 10	2008	40,894	13,441	293
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**302**
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	24,612	8,308	301
Year 2	2005	30,994	9,306	268
Year 3	2006	35,745	11,503	287
Year 4	2007	39,013	13,164	301
Year 5	2008	40,894	13,554	296
5 Year Average Baseline GPCD				**291**
2015 Compliance Year GPCD				
2015		48,377	9,743	**180**
NOTES:				

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 (10608.20(e)).*
>
> *CWC 10608.20*
>
> *(g) An urban retail water supplier may update its 2020 urban water use target in its 2015 urban water management plan…*

The Water Code identified four methods which could be used to establish the target GPCD; BCVWD chose Target Method 1 – 80% of the 10-year Baseline GPCD.

Year 2020 Target (by Target Method 1) = 0.80 * 302 GPCD = 242 GPCD

5-year 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.*

Year 2020 Target (by Target Confirmation) = 0.95 * 291 GPCD = 276 GPCD

In BCVWD's case, CWC §10608.22 controls, and the District's confirmed **year 2020 target is 276 GPCD.**

Calculate the 2015 Interim Urban Water Use Target

The year 2015 Interim Target GPCD is midway between the 10-year Baseline (302 GPCD) and the year 2020 Confirmed Target (276 GPCD). BCVWD's **year 2015 Interim Target is 289 GPCD.**

Baselines and Targets Summary

Table 5-1 presents a summary of results of the baseline per-capita and target analysis. Table 5-2 shows that BCVWD met the intermediate, year 2015 target and the year 2020 target by a considerable margin. It should be pointed out that Stage 2 Water Restrictions were in effect in the District during this period.

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 GPCD *	Confirmed 2020 Target GPCD*
10-15 year	*1999*	*2008*	*302*	*289*	*276*
5 Year	*2004*	*2008*	*291*		
*All values are in Gallons per Capita per Day (GPCD)					
NOTES:					

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.*

BCVWD's actual per capita for 2015 was 1180 GPCD, which is well below the interim Target of 289 GPCD in Table 5-1. 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** Enter "0" if no adjustment is made *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*		
180	289	0	0	0	0	180	180	Yes
**All values are in Gallons per Capita per Day (GPCD)*								
NOTES: The persistent drought and Stage 2 Water Use Restrictions imposed by BCVWD resulted in a 24.3% water savings year 2015-16 vs comparable period in 2013. Without the water savings the year 2015 per capita would have been closer to 223 GPCD								

Table 5-2 provides for some adjustments to the 2015 GPCD for such reasons as defined in the Water Code. For BCVWD there were no adjustments needed. But is should be pointed out that the Stage II water restrictions and water conservation measures resulted in a 24.3% savings in potable water. Without the restrictions the 2015 GPCD would have been about 223 GPCD. Still well below the interim target.

Another factor that affected the District's per capita is the substantial new homes which have been constructed in the District. Since 2001 there have been 10,800 new single family houses constructed in Beaumont. This is almost 74% of all of the housing units in Beaumont having modern plumbing fixtures, high efficiency appliances and California friendly, drought tolerant landscaping with much reduced turf areas.

The drought conservation and the new housing stock were responsible for the reduction in per capita water consumption.

CWC 10608.24

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

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

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

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.

BCVWD was in compliance with the 2015 Interim Target and no adjustment to the year 2015 per capita is required.

Section 6

System Supplies

Overview

In the early years of the District, before the middle of the 20th Century, diverted surface water from Edgar Canyon (Little San Gorgonio Creek) was used for domestic and agricultural supply. Remnants of some of the diversion boxes are still visible in Edgar Canyon. Since the early 1900's, wells in Edgar Canyon supplemented the surface diversions. Eventually the surface diversions were no longer used and the District relied solely on groundwater from both Edgar Canyon and, after 1936 or so, the Beaumont Storage Unit (BSU or the Beaumont Basin).

The Beaumont Groundwater Basin was adjudicated on February 4, 2004 and a Watermaster established for management of the basin (RIC389197). The Adjudication put the basin into a safe yield operation. The principal terms of the Adjudication are described later in this section; the full Adjudication is included in Appendix E.

In September 2006, BCVWD completed the Phase I of its storm water capture and groundwater recharge project located along Beaumont Ave. between Brookside Ave. and Cherry Valley Blvd. and began recharging imported State Project Water (SPW) purchased from the San Gorgonio Pass Water Agency (Pass Agency or SGPWA). The facility sits astride Noble Creek. The imported water percolates into the ground and comingles with the native groundwater in the Beaumont Basin. Groundwater and percolated imported water are BCVWD's only current water source. In 2015 BCVWD completed Phase II of the recharge facility which more than doubled the recharge capacity.

Future water sources will include recycled water and could include captured and recharged storm water from Edgar, Noble, Marshall and other canyons, urban runoff captured and recharged in detention and water quality basins, captured, nitrate-contaminated underflow from the Edgar Canyon, groundwater from the Singleton Groundwater Basin and perhaps the San Timoteo groundwater basins.

BCVWD is considering introducing SPW directly into the non-potable water distribution system. This will reduce the cost of water pumped into the non-potable system by about $100 per acre-ft and will reduce energy and the District's carbon footprint. (The $100 per acre-ft is the cost of energy to pump the water from the Beaumont Basin groundwater table into the non-potable water distribution system.) When recycled water having a TDS concentration greater than 330 mg/L is introduced into the non-potable water system, imported SPW will need to be blended in to meet the 330 mg/L, 10-year average Maximum Benefit TDS in the blended water in order to comply with the Regional Board's permit requirements for the Beaumont Groundwater Basin in Order R8-2015-0026, NPDES CA0105376.

Table 6-1 identifies the water sources which are currently used or planned to be used by the District to meet future demands. Each of these sources will be described in more detail in subsequent subsections.

The District's water supply plan is based on the following set of principles:

- The Plan must be sustainable in terms of water quality and quantity.
- Energy is a major consideration in the evaluation of alternative water supply strategies.
- Local water resources such as poor quality groundwater and recycled water should be maximized in the non-potable water system and used for irrigation.
- Surplus non-potable water should be supplied to golf courses whenever it is not needed to meet other landscape non-potable water demands. This will provide BCVWD with forbearance water, as described in the Adjudication, which can be extracted from the Beaumont Basin to meet potable water demands.
- Recycled Water not needed for landscaping or golf courses should be advance treated and percolated to augment the potable water supply in conformance with applicable rules and regulations.
- Urban runoff and storm runoff from Little San Gorgonio Creek, Marshall Creek, Noble Creek and other local watersheds should be captured and percolated to the extent practical to minimize the amount leaving the "basin."
- The Beaumont Basin Adjudication will be followed with return flow credits given for imported and recycled water.
- The SGPWA has committed to provide the needed imported water supply to meet BCVWD's needs through build-out.

Table 6-1
Current and Future Water Sources Available to BCVWD

Water Source	Current	Future
Groundwater, Edgar Canyon	●	●
Groundwater stored in the Beaumont Basin	●	●
Imported Water purchased through SGPWA	●	●
Recycled water for landscape irrigation		■
Recycled water for groundwater recharge		Potential
Storm Water Capture and Recharge from Edgar Canyon, Noble Creek and other local watershed		■
Urban Storm Runoff captured in detention and water quality basins		■
Captured, nitrate-contaminated shallow groundwater from Edgar Canyon to supplement non-potable water system		Potential
Singleton Basin groundwater		Potential
San Timoteo Basin groundwater to supplement non-potable water system		■
Joint Projects with Other Agencies with Exchanges		Potential

● Firm, existing source ■ Firm, future source

There are constraints on the use of some of these sources, e.g. recycled water to ensure the water quality of the groundwater is maintained over time. These constraints are established by the RWQCB and are described later in this section. The RWQCB and the DDW have constraints on the use recycled water for irrigation and groundwater recharge.

The water supply plan which is developed must be flexible. Conditions will change over time, regulations will change, more information and experience will be gained with the existing facilities, and other things will occur requiring periodic adjustments to the water supply plan.

Purchased or Imported Water

Imported Water is provided to BCVWD through the San Gorgonio Pass Water Agency (SGPWA), one of the 29 State Water Contractors that import water from Northern California through the State Water Project. The Agency has a service area of 225 sq. mi., exclusively in Riverside County. In addition to BCVWD, the major water retailers in the SGPWA service area include the City of Banning, YVWD, Banning Heights Mutual Water Company, High Valley Water District, South Mesa Mutual Water Company, and Cabazon Water District. Currently only

BCVWD, YVWD and the City of Banning have taken imported water. The SGPWA has used a small amount for their own use and recharged the Beaumont Groundwater Basin. Table 6-2 shows the historical deliveries from SGPWA and the amount delivered to BCVWD. As can be seen from the table, the majority of the deliveries were to BCVWD over the time period. This percentage of SGPWA's deliveries is expected to continue into the future at the rates following the end of the temporary surplus in February 2014, i.e., 80 to 85% or so.

The SGPWA or "Pass Agency" has a Table A amount of **17,300 acre-ft/year** based on their contract with the Department of Water Resources (DWR). Table A amounts are used in allocating the total State Water Project (SWP) water supply that is determined by DWR to be available for delivery each year among the State Water Contractors. The Table A amount is the maximum amount a contractor may request in any year from DWR. It is also the maximum amount that DWR agrees to deliver to a contractor, like the Pass Agency, during a year. The sum total of all of the Table A amounts for all of the 29 State Water Contractors under the Monterey Agreement (1994) shall not exceed 4.185 million acre-ft. (The DWR 2011 State Water Project Delivery Reliability Report[1] states 4.172 million acre-ft as the total combined maximum Table A amount – not significantly different.) The Pass Agency's Table A is shared with other agencies in the Pass' service area.

Under certain hydrologic and water supply conditions, DWR is not always able to deliver all of the water requested by the contractors. In these cases a smaller amount ("allocation") is set by DWR by prorating the total amount available in proportion to the contractor's Table A amount. Thus the Pass Agency's Table A amount of 17,300 acre-ft/year is subject to the reliability of State Water Project. See Table 6-2.

The State Water Project has been, and continues to be, subject to delivery reduction caused by the operational restrictions of several biological opinions issued in December 2008 and June 2009 by the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). These federal court decisions have been remanded (returned back) to the agencies for further study. In March 2014, the US Circuit Court of Appeals, 9th District, reversed a lower court decision by US District Court Judge Oliver Wanger and upheld the US Fish and Wildlife Service's protection of the Delta Smelt. In December 2014, the protection was extended to salmon and steelhead.

The DWR 2011 delivery reliability report[2] uses the assumptions in the 2008/2009 biological opinions and there is essentially no change to the delivery reliability with the recent (2014) decisions.

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[1] State Water Project Final Delivery Reliability Report 2011 (2012). Department of Water Resources, (June)

[2] Ibid

Table 6-2
Historical Delivers of SPW to SGPWA and BCVWD

Calendar Year	Total SGPWA Deliveries, acre-ft (1)	BCVWD Deliveries, acre-ft (2)	BCVWD % of SGPWA Deliveries	DWR Allocation %
2003	116			90
2004	814			65
2005	687			90
2006	4,420	3,501	79.2	100
2007	4,815	4,501	93.5	60
2008	4,905	2,399	48.9	35
2009	6,609	2,741	41.4	40
2010	8,403	5,727	68.1	50
2011	10,730	7,979	74.4	80
2012	10,974	7,783	70.9	65
2013	9,695	7,434	76.7	35
2014	5,131	4,405	85.9	5
2015	3,467	2,773	80.0	20
2016	11,430*	9,870	86.4	60
Total		59,113		

Sources: (1) Report on Water Conditions, Reporting Period 2014, SGPWA, (2) 2014 Watermaster Annual Report, * 2016 SGPWA Total from J. Davis to E. Fraser email; BCVWD totals for Nov and Dec estimated

The delivery reliability was calculated by DWR using the Cal-Sim-II computer model which simulates current and future operations of the SWP. The analyses are based on 82 years (1922-2003) of rainfall and runoff adjusted to reflect current and future levels of development. The impact of climate change is factored into the calculations. Figure 6-1 presents a cumulative probability curve of deliveries as a percent of a Contractor's Table A amount. The results are summarized in Table 6-3. In reading Table 5-3, 90 percent of the time the SWP will be able to deliver 28 percent of a Contractor's Table A; 50 percent of the time, the SWP will be able to deliver 64 percent of Table A.

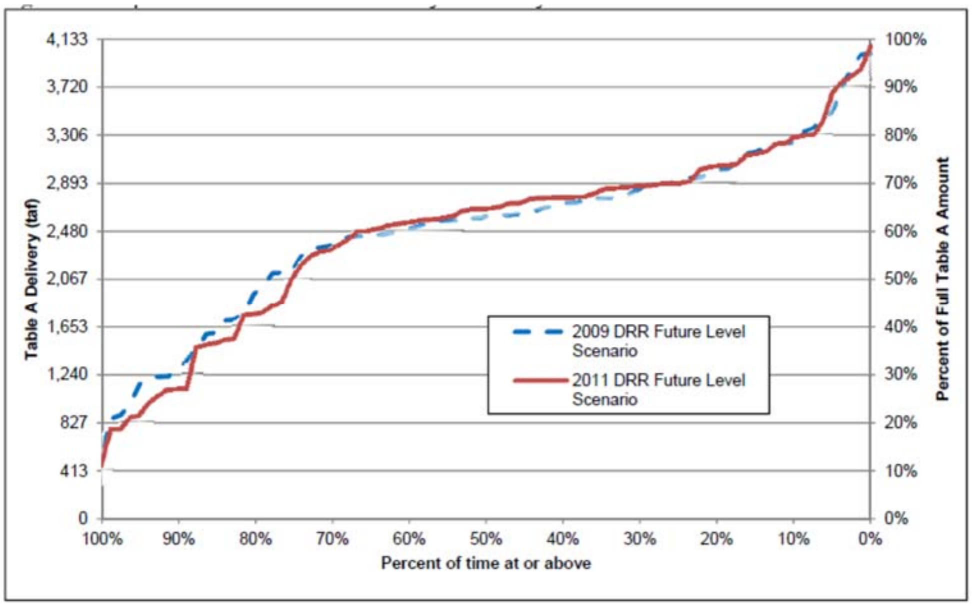

Figure 6-1
SWP Delivery Reliability (Future Conditions)

Source: 2011 Final Delivery Reliability Report, Technical Addendum

Figure 6-2 presents recent historical delivery percentages from 1992 – 2016. The average for the period is 66.0% or slightly above the 64% stated in the 2011 Delivery Reliability Report. This is not surprising since the Reliability Report percentages were based on future conditions. But the figure does lend credibility to the Reliability Report projections. This 64% reliability factor has been considered in the amount of water available on a consistent basis from the SWP.

Table 6-3
Percent Probability of Receiving Full Table A Amount

Probability Expressed as a	Percent of Table A
90	28
80	42
70	56
60	61
50	64
40	66
30	69
20	73
10	78

Source: Extracted from 2011 Final Delivery Reliability Report Technical Addendum

Relating this to the Pass Agency, it means **on the average** (50% of the time), the SWP should be able to **deliver 11,100 acre-ft/yr to the Pass Agency**.

On July 27, 2015 the Pass Agency Board of Directors adopted a Facility Capacity Fee. The Capacity Fee is to be charged to new development on a "per EDU" basis for "new" water and for facility capacity increase to improve reliability and to be able to accommodate the larger volumes of water available during wet years including Article 21 Water. On February 18, 2014, the Board of Directors of the SGPWA adopted Resolution No. 2014-02, A Resolution of the San Gorgonio Pass Water Agency Establishing a Policy for Meeting Future Water Demands. Section 3(a) of this resolution states:

> *"The Agency is prepared to take the necessary actions to provide its service area with adequate supplies of water to meet expanding and increasing needs in the years ahead. As additional water resources are required to meet increasing needs, the Agency will be prepared to take the necessary actions to deliver such supplies."*

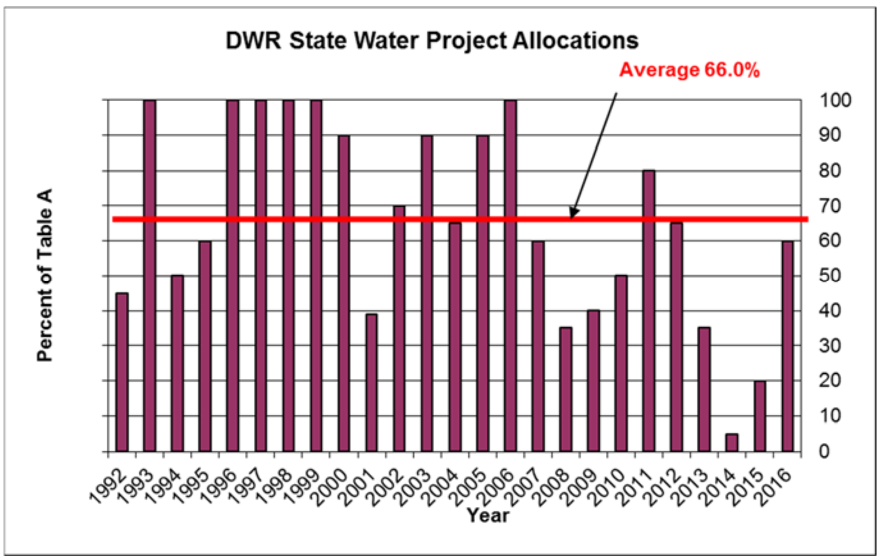

Figure 6-2
Historical SWP Delivery Percentages (1992 – 2016)

On July 27, 2015 the SGPWA adopted Resolution 2015-05, Resolution of the Board of Directors of The San Gorgonio Pass Water Agency to Adopt Facility Capacity Fees for Facilities and Water. The recitals of this resolution state:

> *"WHEREAS, the Board of Directors finds and determines that the present existing water importation, production, transportation, delivery facilities and water supplies are inadequate to meet anticipated demand;"*

Resolution 2015-05 was supported by a "nexus study" which supported the costs and charges along with a staff report. The Facility Capacity Fee as adopted by the SGPWA, has two components:

- A Facility Component
- A Water Supply Component

Both are imposed on new development, i.e., residential, commercial and industrial, effective July 27, 2015 as stated in the adopted resolution.

The Facility Component would fund the purchase of additional capacity in the Foothill Pipeline of the EBX and a storage facility in the Beaumont Basin known as the Brookside Avenue Recharge Facility (BARF). The Water Supply Component is used to "purchase new water and/or water rights and entitlements to meet future water demand" based on the expected water use of the new home or new commercial/industrial facility.

The component related to the construction of the Beaumont Avenue Recharge Facility (BARF) is considered by BCVWD to be a redundant facility for BCVWD customers since BCVWD's Development Community has funded adequate facilities to recharge more water than needed for current and all foreseeable future demands.

The new water supply component and increased capacity in the Foothill Pipeline are necessary to meet current and future demand. The nexus study further states:

"To maintain reliability for the benefit of future development <u>SGPWA will need to purchase additional water rights and entitlements outside of its SWP contract</u>.

The nexus study recognizes the reliability issues with the current Table A amount:

"The task of meeting the demands of new growth with scarce water sources is exacerbated by the significant reduction in reliability of imported water deliveries from the SWP due to periodic drought conditions, regulatory and court case cutbacks in allocations. <u>SGPWA will need to purchase new water rights and entitlements to insure that additional water supplies will be available in the future as the SGPWA experiences new development</u>. It has been estimated that the total water demand at build-out is expected to be in excess of local supplies and existing imported SWP water, with allowances for reduced reliability. This deficit will need to be balanced by the purchase of new water rights and entitlements. The water rights and entitlements, (authorized by SGPWA Act 101-27.1(b), (d), and (g)), that are needed to meet the demands of new development shall be purchased with funds provided by new development in the form of a Water Capacity Fee."

The Staff Report supporting the Resolution states:

"The Agency would ensure that future development within that entity's service area would be covered in the Agency's urban water management plan and <u>that entity would have a right to expect future water supplies to be provided by the Agency for that development</u>."

Resolution 2015-05 of the Board of Directors of the San Gorgonio Pass Water Agency to Adopt Facility Capacity Fees for Facilities and Water states:

"WHEREAS, pursuant to Section 101-27.1 of the SGPWA Act, SGPWA has prepared a Capacity Fee Study (Study) to support the need for additional water facilities and new water and/or water rights in that the existing facilities are not adequate to meet future increasing water needs in the SGPWA service area."

Attachment 1 of Resolution 2015-05, Findings Supporting the Adoption of the Facility Capacity Fees states:

"The water capacity fee component will only be required of new development if the retail agency tasked with suppling water to that development determines that additional supplemental supply is needed."

Based on these statements, the SGPWA has established an obligation to meet the water supply needs of the region and recognizes the current SGPWA Table A is fully subscribed to current users. If an agency, like BCVWD, determines that supplemental water is needed for a new development, the agency shall request SGPWA to obtain the supply, the water capacity fee component shall be paid, and the SGPWA will obtain the supplemental supply.

Based on the foregoing, BCVWD can rely on the SGPWA to secure and deliver the imported water needed to meet BCVWD's current and future demands as set forth in this 2015 UWMP Update and subsequent UWMP Updates.

It is assumed the Pass Agency will consider the SWP reliability factor (64%) in the purchase of any additional Table A water from other State Water Contractors to ensure 100% reliability of Table A water.

In addition to the maximum annual Table A amount, there is a contractual limit of **32 cfs** on the instantaneous rate of delivery through the Aqueduct. (If operated continuously for the entire year, this would be 23,360 acre-ft. Since this exceeds the annual Table A amount, the maximum amount which could be delivered on an annual basis is still 17,300 acre-ft.) So California aqueduct conveyance is not a current limitation.

As stated above, and supported by SGPWA studies and Resolutions, the SGPWA considers the current allocation of the Agency's Table A amount of 17,300 AFY to be fully subscribed by the current users which are BCVWD, YVWD and the City of Banning (See Table 6-2). The respective allocation of the 17,300 AFY based on historical deliveries between 2013 and 2016 is: Banning 2,200 AFY, YVWD 1,218 AFY and BCVWD 13,882 AFY. This is the best representation of post-temporary surplus demands. Drought periods, such as 2013-2015 severely limit the availability of imported water.

BCVWD will need additional imported water to meet its long term needs, even when maximizing local water resources. As stated above, with the adoption of the Capacity Fee, the Pass Agency has committed to provide adequate water supply to meet the region's, (including BCVWD's), projected needs to at least year 2040.

BCVWD can reduce its need for supplemental water from the Pass Agency through:

- Water conservation
- Use of recycled water for landscape irrigation
- Increased storm water capture and recharge
- Use of local groundwater containing high nitrate and TDS in the non-potable water system
- Advanced wastewater treatment of YVWD and/or City of Beaumont recycled water for groundwater recharge

Importation Facilities and Capacity

Pass Agency imports SPW through the East Branch Extension (EBX). EBX Phase I was completed in 2003; the Environmental Impact Report for EBX Phase II (EBX II) was certified in 2008 and Phase II is currently nearing completion of construction and scheduled for completion in early 2016.

The EBX begins downstream of DWR's Devil Canyon Power Plant at the Devil Canyon Afterbay, north of the City of San Bernardino (Water Surface Elevation =1,931 ft MSL). From the Afterbay, the SPW flows through the Foothill Pipeline to the Greenspot Pump Station. From the Greenspot Pump Station, the water is pumped through the Greenspot Pipeline to the Crafton Hills Pump Station. The Crafton Hills Pump Station then pumps the SPW through the Crafton Hills Pipeline to Crafton Hills Reservoir. From the Crafton Hills Reservoir the water flows by gravity to the inlet of the Cherry Valley Pump Station. The Cherry Valley Pump Station then pumps the SPW through the Noble Creek Pipeline to the EBX terminus at Noble Creek in Cherry Valley (HGL Elevation ≈ 3,000 ft MSL). The EBX has a total length of about 33 miles; the water is lifted over 1,000 ft to get it to the Pass Agency. The EBX facilities up to the Garden Air Creek Metering Facilities are shared with San Bernardino Valley MWD (Valley District).

EBX II provides Valley District and the Pass Agency additional capacity to deliver water and at the same time provides some system redundancy. EBX II begins at Greenspot Rd and Cove Camp Rd and goes south in the Mentone Pipeline crossing under the Santa Ana River to the Citrus Reservoir and Pump Station at the intersection of Opal St and San Bernardino Ave. From the Citrus Pump Station the SPW is pumped through the Mentone Pipeline East to the Crafton Hills Pump Station, constructed as part of the first phase of the EBX.

Table 6-4 presents a summary of the EBX Facilities and capacities; Table 6-5, the EBX II Facilities and their capacities.

Table 6-4
EBX Facilities, incl. EBX II Improvements

Facility	Description	Size	Capacity	SGPWA Capacity	Comment reference to SGPWA
Foothill Pipeline	From Devil Canyon to Santa Ana River Crossing	78”	220 cfs	32 cfs	Can use additional capacity with SBVMWD Board Approval
Santa Ana River Crossing (SARC)	Under Santa Ana River to Greenspot Pump Station	42”	108 cfs	16 cfs	Has 48 cfs capacity in parallel route (EBX II)
Greenspot Pump Station	Greenspot Pump Station		70 cfs total	16 cfs	Has 48 cfs capacity in parallel route (EBX II)
Greenspot Pipeline	Greenspot Pump Station to Crafton Hills Pump Station	48”	70 cfs	16 cfs	Has 48 cfs capacity in parallel route(EBX II)
Crafton Hills Pump Station			135 cfs total;110 cfs firm	64cfs	3 @25 cfs, 2 @ 20cfs, 2 @ 10 cfs
Crafton Hills Pipeline	Crafton Hills Pump Station to Crafton Hills Reservoir	54”		64 cfs	
Crafton Hills Reservoir			220 AF		Enlarged in EBX II from 85 AF
Bryant Street PIpeline	Crafton Hills Reservoir to Riverside San Bernardino County Line	54”	104 cfs	64 cfs	
Singleton Pipeline	Riverside San Bernardino County Line to Cherry Valley Pump Station	54”	64 cfs	64 cfs	
Cherry Valley Pump Station			52 cfs total; 32 cfs firm	52 cfs	Includes 20 cfs pump added in EBX II plus 1@16 cfs, 2@ 8 cfs
Noble Creek Pipeline	Cherry Valley Pump Station to Noble Creek Terminus	36”	32 cfs	32 cfs	Capacity could be as high as 52 cfs if velocity allowed to 7.4 ft/sec

Table 6-5
EBX II Improvements

Facility	Description	Size	Capacity	SGPWA Capacity	Comment reference to SGPWA
Mentone Pipeline South	Foothill Pipeline to Citrus Reservoir	66"	175 cfs	48 cfs	Has 16 cfs capacity in parallel route (EBX I)
Citrus Reservoir			400 AF		
Citrus Pump Station			160 cfs 150 cfs firm	48 cfs	Has 16 cfs capacity in parallel route (EBX I) 4@ 25 cfs, 4 @ 20 cfs, 2@ 10 cfs
Mentone Pipeline East	Citrus Pump Station to Crafton Hills Pump Station	60"	160 cfs	48 cfs	Has 16 cfs capacity in parallel route (EBX I)

BCVWD takes water from a 20-in diameter turnout and metering station at the current end of the EBX at Orchard Ave. and Noble Creek in Cherry Valley.

The EBX II project includes modification of the Crafton Hills and Cherry Valley Pump Stations, enlargement of Crafton Hills Reservoir, and a connector to the Yucaipa Pipeline.

From Tables 6-4 and 6-5, the Pass Agency has **64 cfs capacity in the East Branch Extension** except for:

- ***Foothill Pipeline*** – Pass Agency has 32 cfs in this pipeline but can use additional capacity if SBVMWD is not using the capacity. The 32 cfs is the maximum capacity Pass Agency currently has in the rest of the California Aqueduct.
- ***Cherry Valley Pump Station*** – Pass Agency has 52 cfs of total pumping capacity and 32 cfs of firm capacity (largest pump out of service). There is no space to add additional pumps in the building without major modifications.
- ***Noble Creek Pipeline*** – The velocity in this pipeline based on the total capacity of the Cherry Valley Pump Station of 52 cfs is 7.4 ft/sec. This is marginally acceptable with the headloss of 35 ft in the 10,000 ft length pipeline.

Facilities for Additional EBX Capacity

With completion of EBX II construction in 2016, the Pass Agency is still limited to 32 cfs or 17,300 acre-ft/yr in the EBX assuming a 75% operating time. This is based on the current SGPWA purchased capacity of 32 cfs in the Foothill Pipeline.

Pass Agency recognized the need to get additional capacity up to 64 cfs in the Foothill Pipeline and adopted a Capacity Fee in July 2015 to purchase an additional 32 cfs capacity in the Foothill Pipeline. This would double the current Pass Agency delivery capacity to 35,000 acre-ft/year assuming a 75% utilization factor.

BCVWD's Anticipated Need for Imported Water

BCVWD's 2017 Master Plan (Table 5-29 in the Master Plan) indicated BCVWD will need between 13,800 AFY and 16,300 AFY of imported water by the year 2040 depending on local water resource development, lingering water conservation, more restrictive landscaping ordinances, etc. This is the amount needed just to meet demand. Additional imported water will be needed to be banked to comply with the State's 2016 Emergency Conservation Measures which requires a 3-year supply to avoid imposing severe water use restrictions. BCVWD's Board of Directors, through Resolution 2014-05, established a requirement for a 5-year supply since drought periods have extended for more than 3 years. Table 6-26 herein (presented and discussed later) summarizes the imported water requirements and is consistent with the 2016 Master Plan. Build-out imported water requirement just to meet demand from the 2016 Potable Water Master Plan are in the range of 18,500 AFY to 23,000 AFY, again depending on local water resource development, water conservation, etc.

BCVWD Facilities for Imported Water

BCVWD takes water from a 20-in diameter turnout and metering station at the current end of the EBX I at Orchard Ave. and Noble Creek in Cherry Valley. Water from the turnout is metered by DWR and then enters a 3,500-ft long, 24-in diameter pipeline, constructed by BCVWD, which conveys the water to BCVWD's groundwater recharge site located east of Beaumont Ave. between Brookside Ave and Cherry Valley Blvd.

The 24-in diameter pipeline, designed for 30 cfs, was constructed in 2006. If operated continuously, the pipeline could convey 21,700 acre-ft per year. The capacity is based on maintaining the pipeline velocity below 10 ft/second. Higher velocities could be tolerated for short periods of time which would result in increased short-term delivery capacity. Based on imported water projections, the pipeline capacity should be adequate until well after year 2040 – maybe even build-out.

Phase I of the Recharge Facility, (West of Noble Creek), was completed in September 2006 and BCVWD began to take imported water at that time. Phase I consists of approximately 10.2 wetted acres based on the projected horizontal area at the normal water depth. Phase I has 3 "trains," or sets of percolation ponds (2.7 acres, 4.2 acres, and 3.32 acres (wetted area) respectively for "trains" 1, 2, and 3). Phase II was completed in 2015 and is operational. Phase II has an estimated horizontal wetted area of about 17 acres. It, too, is constructed in "trains" to allow wetting and drying.

Recharge of imported water has occurred almost continuously since September 2006. As of December, 2015, 48,530 acre-ft (15.8 billion gallons) of water have been recharged to BCVWD's account. Refer to Table 5-2 presented previously. Since 2006, annual recharge has averaged 4,853 AFY with a maximum of nearly 8,000 AFY.

Based on operational studies from 2006 through 2010, Geoscience Support Services, Inc., (Geoscience), determined the weighted average recharge rate for the Phase I facility is 10.3 acre-ft/wetted acre/day. This is a very high rate. Since there are a total of 10.2 wetted acres in Phase I, the existing recharge facility would be able to percolate over 100 acre-ft/day. Theoretically this is would be over 36,000 acre-ft per year (about twice the Pass Agency's Table A amount.) The 36,000 acre-ft per year, however should be reduced because of the need to "rest" and "restore" the basins and perform routine maintenance. If 2 of the 3 Phase I trains were operating at any one time, the theoretical capacity would be about 25,000 acre-ft/yr for Phase I.

Taking a conservative approach, using a percolation rate of 6 acre-ft/wetted acre/day and considering both Phase I and Phase II facilities, the percolation capacity would be 150 acre-ft/day. Using a 75% utilization factor, the percolation capacity on an annual basis would be over 40,000 acre-ft. However, achieving a capacity of 40,000 AFY would require frequent rest periods along and frequent pond bottom scouring. At this point, BCVWD does not have sufficient long-term operating experience with the Phase II ponds to justify more than a conservative 25,000 to 30,000 AFY total percolation capacity for Phases I and II combined. This capacity is adequate for BCVWD's long term needs to build-out.

Aquifer Response

BCVWD installed monitoring wells with the initial construction of the recharge facility to track and "trace" the recharged water. According to Geosciences, Inc, Feb 2010 report, BCVWD recharged over 15,000 acre-ft of water from September 2006 to December 20, 2009 in the Phase I facilities and water levels in the three shallow aquifer monitoring wells (perforated from 480 to 550 ft below ground surface) increased 94.4 ft, 86.1 ft, and 89.5 ft respectively. In the deeper aquifer (perforated 600 to 700 ft below ground surface), water levels increased in the fall and winter when BCVWD Well 23 was used less and decreased in summer when the well was used more. The water level in the two very deep monitoring wells (perforated 600 to 1000 ft below ground surface) increased 11.5 and 13.2 ft respectively since start of recharge in September 2006. In summary, it is clear the water is reaching the intended aquifers.

This data contradicts statements made in a USGS Report for the Pass Agency[3]. Specifically their report states that artificial recharge, including that from imported SPW in recharge ponds

[3] USGS (2006). Geology, Ground-Water Hydrology, Geochemistry, and Ground-Water Simulation of the Beaumont and Banning Storage Units, San Gorgonio Pass Area, Riverside County, California, D. L.

takes between 23 and 71 years to reach the water table depending on location. Spreading data from monitoring wells during Phase I operation of the recharge facility supports a much faster vertical travel time – more like 60 days under saturated conditions.

Imported Water Quality

State Project Water experiences some changes in water quality in response to wet and dry cycles in Northern California. Data from the Metropolitan Water District of Southern California, (Metropolitan), shown in Figure 6-3, shows the TDS in their imported water supplies from 1988 to 2014 – a 26-year period. Of particular interest is the Silverwood Reservoir source. The SGPWA also uses the same Silverwood Reservoir source. During high flow years, the TDS approached 100 mg/L; during the drought period of the early 1990s, TDS approached 400 mg/L. The last few years during the drought, the TDS has been in the 250 to 300 mg/L range. The nitrate concentration (as nitrate) in the imported water for 2014 was 1.9 mg/L, (0.43 mg/L as N).

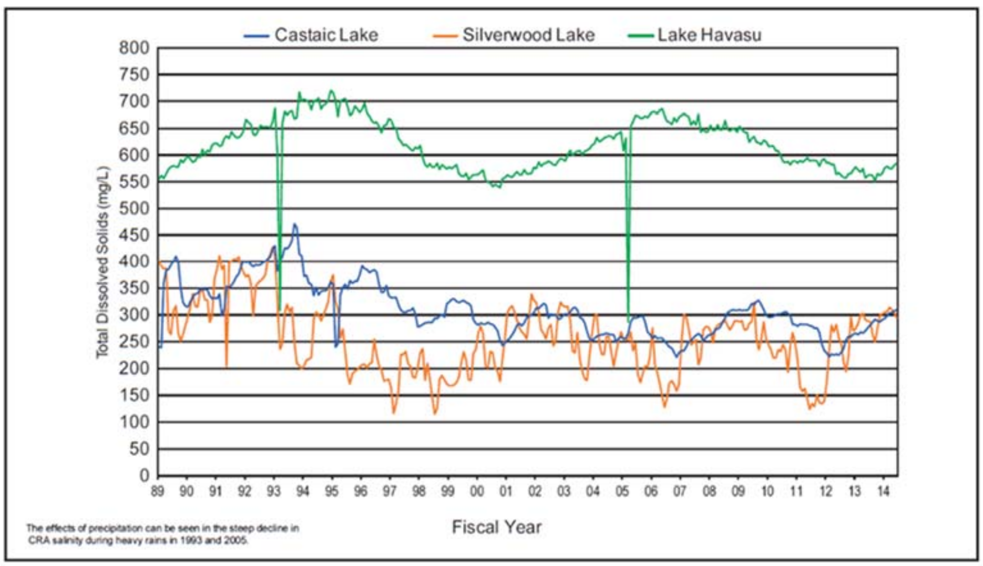

Figure 6-3
Quality of Metropolitan's Imported Water Supplies[4]

Article 19 of the Department of Water Resources' contract with SGPWA states that it is the objective of the State and the State shall take all reasonable measures to make available

Rewis, A. H. Christensen, J. C. Matti, J. A. Hevesi, T. Nishikawa, and P. Martin, Scientific Investigations Report 2006-5026.

[4] Metropolitan Water District of Southern California (Metropolitan 2012) Annual Report for the Fiscal Year July 1, 2011 to June 30, 2012. Chapter 4/

project water of such quality that the TDS concentration does not exceed 440 mg/L on a monthly average or 220 mg/L as an average during any 10-year period.[5]

The average TDS for the period January 2004 through January 2010 was 249 mg/L. This matches the TDS for the 25-year period from 1972-97[6]. For the 10-year period 1988-97 the TDS averaged 300 mg/L. This indicates that there could be some 10-year periods in the future where the SPW could exceed 250 mg/L and careful salinity management will be necessary. In their salinity management plan, Metropolitan used an average of 250 mg/L TDS for the East Branch.[7]

Implementation of the Bay Delta Conservation Plan should help maintain or improve the quality of the State Project Water; so a TDS concentration of 250 mg/L as a 10-year average should be is reasonable at this time.

Groundwater

> *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.*

The District currently owns and operates a total of 24 groundwater wells of which only 20 are used to any great degree. Three of the wells have their capacity shared with the City of Banning. (BCVWD constructed these wells under a cooperative agreement with Banning for shared capacity rights.) The 20 wells have a total production capability of approximately 27.3 million gallons per day (mgd) not including the capacity shared with Banning. Thirteen of the wells are in Edgar Canyon; eleven are in the Beaumont Basin.

Details on the District's wells and their current capacity can be found in the 2016 Potable Water Master Plan.

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[5] State of California Department of Water Resources (1962), Contract between the State of California, Department of Water Resources and San Gorgonio Pass Water Agency for a Water Supply. November 16.

[6] California Urban Water Agencies (1999). Recommended Salinity Targets and Program Actions for the CalFed Water Quality Program, December.

[7] Metropolitan Water District of Southern California (2012). Salinity in Metropolitan Supplies, Historical Perspective, Handout #2. Presented at Salinity Management Update Study Workshop, Southern California Salinity Coalition, June 1.

The greatest demand experienced by BCVWD occurred in 2009 when 22.1 mgd were used on one day (July 19); for 2015 the maximum day demand was 15.3 mgd. This is the lowest since 2005 and was likely due to the strict water conservation measures in effect for the drought. Historically the maximum day/average day ratio has been 1.87, but BCVWD uses a ratio of 2.0 for planning purposes. BCVWD can meet the maximum day demand with the largest well, (Well 29), out of service based on a 24-hour operation assuming short-term use of the shared Banning capacity (Total capacity is 21.5 mgd).

The District's wells are located in four areas:

- Upper Edgar Canyon (San Bernardino County)
- Middle Edgar Canyon (San Bernardino County)
- Lower Edgar Canyon (Riverside County)
- Beaumont Storage Unit (Beaumont Basin) (Riverside County)

Note that “Edgar Canyon” is synonymous with “Little San Gorgonio Creek”.

Edgar Canyon Wells

BCVWD has a total of 13 wells in Edgar Canyon; Well No. 13 is a standby for Well No. 12; Well No. 9A has limited use and Well RR-1 is in the process of being refurbished. Total capacity of the wells, not including RR-1, 9A and 12 is 1,510 gallons/minute (gpm) or 2.17 mgd. Individual well capacities range from 50 gpm to 300 gpm. Well capacities in Edgar Canyon vary from year to year, and throughout a given year, depending on hydrologic conditions, i.e., wet year vs dry year.

Groundwater in Edgar Canyon primarily occurs in the shallower, younger and older alluvial valleys and within the rock fractures beneath the alluvium. Numerous faults cross the canyon generally in a southeast-northwest direction. These act as barriers to groundwater movement and subdivide the canyon into several sub basins. Over the years BCVWD has drilled numerous wells, pilot holes and test wells in Edgar Canyon; but, because of the faulting, many of these wells have proven to be of limited use or value. Many “dry holes” are noted on some of the old BCVWD system maps.

The groundwater aquifer in Edgar Canyon is limited and storage is small. Groundwater levels vary from just few feet below ground surface to about 200 feet below ground surface. The groundwater levels and groundwater production respond quickly to stream flow. During wet years considerably more water can be pumped than during dry years.

BCVWD prefers to use the wells in Edgar Canyon since they are the least expensive to operate and the water can be conveyed to the District customers by gravity with no additional pumping.

The District has arbitrarily subdivided Edgar Canyon into three production areas:

- **Upper Edgar Canyon** -- in San Bernardino County from the District's northern boundary, where Oak Glen Road crosses over Little San Gorgonio Creek, to a point about the center of Section 2, T1S/R1W approximately 1.5 miles north of the Riverside/San Bernardino County Line. The Upper Canyon wells include all wells except Wells 6, 4A, 5 and RR-1.
- **Middle Edgar Canyon** -- in San Bernardino County from the Riverside/San Bernardino County Line to a point about 0.5 mile north of the County line. Well 6 is in the Middle Canyon
- **Lower Edgar Canyon** in Riverside County from the mouth of the Canyon at Orchard St to about 1 mile north (upstream) where Well No. 5 is located. Well No. 4A is located about 1/4 mile below Well No. 5. Well RR-1 is about ½ mile north of Orchard St., downstream of Well 4A.

The Edgar Canyon wells are very inexpensive to operate and are the preferred source; however, those wells are not able to meet even the average day demand.

Locating water wells in Edgar Canyon has been a challenge due to the faults crossing the canyon. The faults form barriers to groundwater flow and create small, low production, low storage, aquifers. The successful wells are clustered into the 3 areas – Upper, Middle and Lower Edgar Canyon. In between the areas there is no groundwater production.

Beaumont Basin Wells

The Beaumont Basin, or Beaumont Storage Unit (BSU) as it is also known, is one of the largest groundwater units in the San Gorgonio Pass area covering an area of about 27 sq. mi. with at least 1.1 million acre-feet of water in storage and about 200,000 to 400,000 acre-feet of unused groundwater storage capacity. STMWA estimated the amount of water in the Beaumont Basin could be as much as 2.4 million acre-ft based on usable groundwater extending down to 1500 ft below ground surface.[8] This is 500 ft deeper than previously assumed and is based on several recent wells drilled by BCVWD and others.

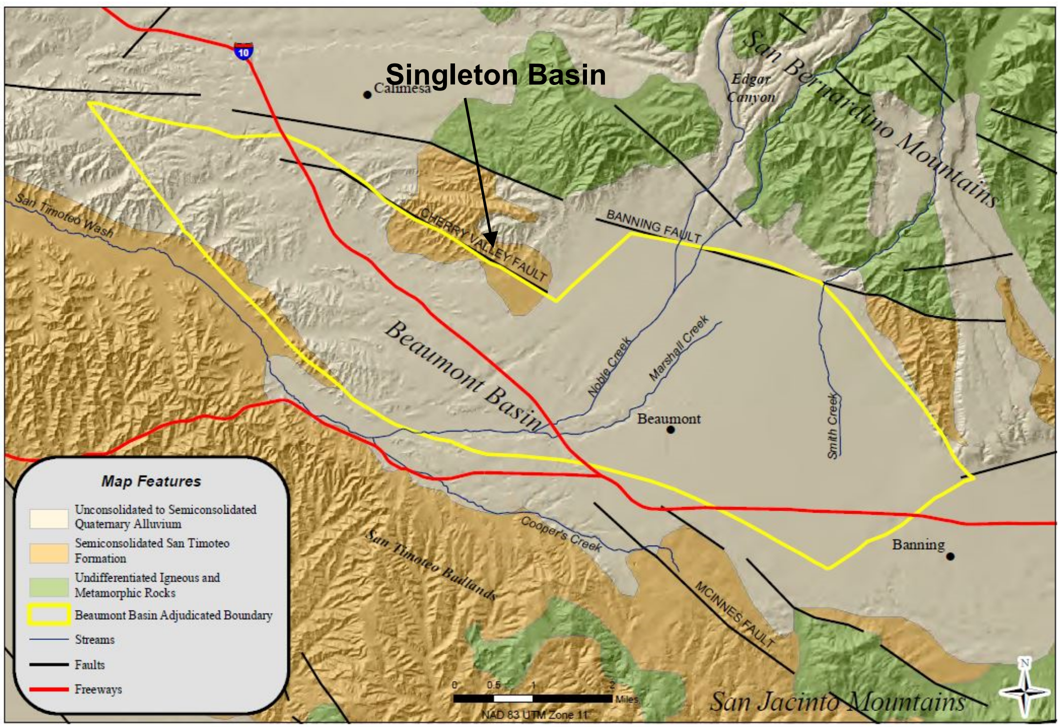
The boundaries of the BSU are defined on all sides by postulated faults including the Banning and Cherry Valley Faults to the north and unnamed faults to the south, east, and west. The Cherry Valley Fault is the dividing line between the BSU and the Singleton storage unit. See Figure 6-4.

Groundwater within the BSU primarily occurs in the older alluvium and the San Timoteo Formation. Groundwater elevations in the BSU range from approximately 160 ft below ground

[8] "*Integrated Regional Water Management Program for the San Timoteo Watershed*," Final Draft, prepared for the San Timoteo Watershed Management Authority, Wildermuth Environmental, Inc., p 2-15, June 2005.

surface (bgs) to 600 ft bgs. Underlying the BSU are nearly impermeable granitic/metamorphic basement rocks.

It should be noted that the BSU has been drawn down from the steady state groundwater elevations computed in the Bloyd (1971) report[9]. The Bloyd report shows that the groundwater elevation is approximately 100 feet below steady-state (pre-development) conditions. According to STWMA, progressive drawdown of water levels in the Beaumont Basin occurred from the 1920s to about 1980. Since then, groundwater levels have stabilized. Current levels in the basin are about 75 to 120 ft below the 1920 levels and about 10 to 40 ft below the 1980 level.[10] Even though water levels have dropped, there has been no known adverse impact, e.g., water quality impacts, subsidence, etc. The only adverse impact is additional pumping cost. With the adjudication, the Basin is now under a long-term safe yield operation. Fluctuations in water levels will occur from wet years to dry years; but there should be no long-term decline.



Source: Alda, Inc/Thomas Harder, 2-1 Watermaster Annual Report

Figure 6-4
Beaumont Groundwater Basin and Major Fault Boundaries

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9 Bloyd, R.M., 1971, Underground storage of imported water in the San Gorgonio Pass area, southern California: U.S. Geological Survey Water-Supply Paper 1999-D.

10 "*Integrated Regional Water Management Program for the San Timoteo Watershed*," Final Draft, prepared for the San Timoteo Watershed Management Authority, Wildermuth Environmental, Inc., p 2-13, June 2005

Since startup of the BCVWD recharge facility and the recharge of SPW, groundwater in the BSU flows from the recharge site, (at Beaumont and Brookside Avenues), in a southeasterly direction toward Banning and a southwesterly direction to San Timoteo Creek.

During the field investigation work performed by BCVWD in anticipation of developing its recharge facility, multiple aquifers systems were identified by Geoscience Support Services Inc. (Geoscience)[11]. They designated the aquifer systems beneath the recharge site as:

- Perched -- 300 to 400 ft bgs
- Shallow -- 478 to 485 ft bgs
- Intermediate – 600 to 1000 ft bgs
- Deep –below 1000 ft bgs

Prior to drilling Well 23 at the recharge site, the base of useable groundwater water in the Beaumont Basin was thought to be 1,000 ft bgs. This was the primary production zone of most of the older municipal wells in the BSU, including the District's. (There are currently seven production wells in the Beaumont Basin having depths of 1,400 ft or more.) As part of the pilot recharge project, a well was drilled to 1,500 ft bgs and test pumped at 3,000 gpm. The water quality from this well is excellent, with total dissolved solids concentrations in the low 200 mg/L range. The finding of this deep aquifer greatly extends the amount of usable groundwater in the BSU.

Groundwater Quality

Overall, the water quality from BCVWD's wells is excellent. Table 6-6 presents a summary of the quality of water from the District's 2015 Consumer Confidence Report.

Edgar Canyon

In Edgar Canyon the TDS concentration is below 250 mg/L range; hardness is moderate; nitrate levels are low, except at the mouth of Edgar Canyon. At the mouth of Edgar Canyon, USGS has reported[12] that a monitoring well 2S/1W-22G4 had a nitrate-N concentration of 11.3 mg/L. This exceeds the drinking water MCL of 10 mg/L. Well 2S/1W-22G4 is a shallow monitoring well that is perforated from 138 to 158 below ground surface. USGS states that this well is likely affected by "an anthropogenic source of nitrogen that may include agricultural activity or septic

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[11] Geoscience Support Services, Inc., (2002). *Geohydrologic Investigation Noble Creek Recharge Study*, July 1, 2002

[12] USGS (2006). *Geology, Ground-Water Hydrology, Geochemistry, and Ground-Water Simulation of the Beaumont and Banning Storage Units, San Gorgonio Pass Area, Riverside, California*, U.S. Department of the Interior, U.S. Geologic Report, in cooperation with the San Gorgonio Pass Water Agency, Scientific Investigations Report 2006-5026.

tank seepage." This well is not used for potable water supply; BCVWD has no production wells in the high nitrate area.

Table 6-6
Summary of BCVWD Groundwater Quality[13]

Constituent	Concentration, mg/L unless noted otherwise
	Average
Total Dissolved Solids, TDS	247
Specific Conductance, μmhos/cm	432
pH, pH units	7.5
Sodium	19
Calcium	51
Magnesium	17
Potassium	1.5
Bicarbonate	221
Chloride	9
Sulfate	24
Nitrate	7.6
Fluoride	0.4
Total Alkalinity, mg/L as $CaCO_3$	182
Total Hardness, mg/L as $CaCO_3$	200

Data from 1998 and 1999, showed the TDS in BCVWD's RR-1 well, in the floor of Edgar Canyon near the mouth, was 370 mg/L. Nitrate as nitrate was 24-27 mg/L. The TDS near the mouth of the canyon is much higher than farther up the canyon where BCVWD has its production wells.

Bonita Vista Water Company wells, on the ridge to the west of Edgar Canyon, showed high nitrate concentration; the Company has since been annexed into BCVWD and the wells were taken out of active operation. Based on this information, the ridges adjacent to the mouth of Edgar Canyon likely have elevated nitrate concentrations.

[13] BCVWD 2015 Consumer Confidence Report

The groundwater at the mouth of Edgar Canyon and beneath the ridges on the west side and possibly the east side, though there is no data to confirm this, has high nitrates and should not be used for potable water without further treatment. This groundwater could be introduced into the non-potable distribution system and beneficially used on landscaping, however. BCVWD has plans to do this.

Beaumont Basin

In the Beaumont Basin during the period 2002 – 2006, TDS concentrations in the groundwater ranged from 160 to 360 mg/L. Historical ambient TDS based on the period 1954 – 1973 was 230 mg/L; for the period 1984- 2003 the ambient TDS was 260 mg/L. Although there is a slight upward trend, the TDS is still very low.[14]

Average nitrate-N concentrations for the period 2002 – 2006 ranged from 0.26 to 7.9 mg/L with maximum concentrations ranging from 0.26 to 9.03 mg/L. During that same period about 70% of the wells sampled for nitrate-N had an average concentration less than 2.5 mg/L. None of the wells sampled had nitrate-N exceeding the MCL of 10 mg/L[15]. BCVWD's Well No. 16 in Cherry Valley experienced a "spike" in nitrate-N in 2005 reaching 9.0 mg/L; at the same time, Well No. 21 showed a concentration of 6.1 mg/L.[16] These concentrations have since decreased. This was investigated; but no conclusions could be drawn as to the exact cause. It is possible this could occur again.

The University of California Riverside (UCR), under contract with the SWRCB, conducted a water quality assessment of Beaumont Management Zone with the specific objective of looking at nitrate contamination from on-site wastewater disposal systems.[17]

Forty wells and eleven surface water sites were sampled and analyzed in the UCR study. In the central part of the BMZ, i.e., generally in Cherry Valley, several wells "showed clear signs of contamination by septic systems. The groundwater within the central part of Cherry Valley appeared to be more strongly affected by septic systems than groundwater on the periphery of

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[14] Wildermuth Environmental Inc. (2007). First Biennial Engineer's Report, July 2003 through June 2006, Beaumont Basin Watermaster for San Timoteo Watershed Management Authority vs. City of Banning et.al, June.

[15] Ibid

[16] Wildermuth Environmental, Inc. (2007). Water Quality Impacts from On-site Waste Disposal Systems in the Cherry Valley Community of Interest, Final Report, prepared for San Timoteo Watershed Management Authority, Project Committee No. 1, March.

[17] Univ. of California Riverside (2012). Final Report: Water Quality Assessment of the Beaumont Management Zone: Identifying Sources of Groundwater Contamination Using Chemical and Isotope Tracers. SWRCB Agreement No. R*-2010-0022, Department of Environmental Sciences, Riverside, CA 92521, Feb 3.

Cherry Valley. Several wells had measureable concentrations of pharmaceuticals and personal care products (PPCPs) and major anions and cations [associated with wastewater], suggesting septic waste was entering the groundwater system.[18]"

BCVWD has been able to deal with the nitrate concentrations by blending with other lower nitrate source waters when it has become an issue. Riverside County Ordinance 871 requires any new septic tanks within the Cherry Valley Community of Interest be able to remover 50% of the nitrogen. Usually this requires an "add on" process to the conventional septic tank. At some point in time it may be necessary to either install well-head treatment for nitrate removal (ion exchange or reverse osmosis) if blending alone cannot mitigate the problem. If the problem gets worse, sewers may need to be installed in the more densely developed portions of Cherry Valley.

One issue that has emerged is hexavalent chromium (Cr+6). Total chromium is regulated by the state of California, Division of Drinking Water, at an MCL of 50 µg/L (50 parts per billion). There are two forms of chromium that exist in natural waters – trivalent chromium (Cr+3) and hexavalent chromium (Cr+6). Trivalent chromium is a trace metal that the human body needs; hexavalent chromium is considered toxic based on laboratory animal studies. Trace amounts of hexavalent chromium are natural and found in rock and minerals. In some areas, high concentrations of hexavalent chromium are the result of industrial discharges. On July 1, 2014, a separate, State of California, MCL of 10 µg/L (10 parts per billion) for Cr+6 was established.

BCVWD sampled for hexavalent chromium as required by the State. Well 3, in the Beaumont Basin, had a concentration of 11 µg/L; wells 25 and 26, also in the Beaumont Basin, had concentrations of 11-12 µg/L and 14-15 µg/L respectively. This is all from natural causes; the concentrations are at or slightly above the MCL. Since these wells are above the MCL, quarterly monitoring will be required. Although BCVWD is concerned; there is no reason to be alarmed. The MCL was set low enough that health risk is extremely low. Well 26 is no longer pumping into the potable water distribution system; Well Nos. 3 and 25 have been placed on standby status and are not currently being used until Well Nos. 3 and 25 can be modified to reduce the Cr+6.

At the present time nitrates are not an immediate concern and hexavalent chromium concentrations in the wells continues to be monitored. At some point, it may be necessary to provide wellhead treatment.

As part of the preparation of this 2015 UWMP Update, a review of past industrial/commercial operations, particularly their waste disposal practices, was researched on the SWRCB's GeoTracker[19] to see if there could be any future water quality impact from these discharges.

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[18] Ibid, pg. 27

[19] http://geotracker.waterboards.ca.gov/ Accessed 7/11/2016.

Lockheed Martin Corporation[20] used two remote sites near Beaumont, CA, to test solid rocket propellant and motors, weapons, and ballistics. Contamination related to these operations has been identified at both sites—Potrero Canyon and Laborde Canyon. Although the sites are owned or managed by entities other than Lockheed Martin today, Lockheed Martin has assumed responsibility for environmental cleanup at both locations. Both sites are still "open" and assessment and interim remedial action is going on.

The Potrero Canyon site is south of Beaumont and does not overlie any of the Beaumont Basin. BCVWD is not extracting any groundwater from this area. Laborde Canyon is located southwest of the City of Beaumont in the San Timoteo Badlands and also does not overly the Beaumont Groundwater Basin. BCVWD has no wells in this area either.

The SWRCB's GeoTracker list was reviewed for potentially contaminated sites in the BCVWD service area. There about 20 sites in the BCVWD SOI on the list; three are still "open." These include the Beaumont Landfill (inactive) at Fourth St. and Nicholas St., O'Reilly Auto Parts on Sixth and Maple, and SOCO on Fourth and Beaumont Ave. The O'Reilly site is in the assessment phase; SOCO is in the remediation phase, and the landfill is in the monitoring phase. These sites have not affected any BCVWD wells; BCVWD's nearest wells to these facilities are about 0.75 mile away.

Groundwater Management

CWC 10631

...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:

A copy of any groundwater management plan adopted by the urban water supplier…or any other specific authorization for groundwater management.

…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.

The Beaumont Basin was adjudicated in February 2004, in Superior Court, Riverside County, Case RIC 389197, *San Timoteo Watershed Management Authority vs. City of Banning et al*. The Judgment established the Beaumont Basin Watermaster (Watermaster) to administer the judgment. It established the rights of the Overlying Parties and the Appropriator Parties, e.g., BCVWD and others. Some of the essential elements of the Judgment are as follows:

- The "Safe Yield" of the Basin was established at 8,650 AFY. This was to be re-evaluated every 10 years. §I 3.X and §VI 5.Y. It was re-evaluated in 2013 -2015 and on April 2015, through Resolution 2015-01, the safe yield was reduced to 6,700 AFY

[20] http://www.lockheedmartin.com/us/who-we-are/sustainability/remediation/beaumont.html Accessed 09052012

- A controlled overdraft of the basin was allowed for the first ten years to create more usable storage capacity in the Basin for Conjunctive Use. In the Judgment this was termed “Temporary Surplus.” This was established at 160,000 acre-ft. After ten years (February, 2014), the controlled overdraft ceased. This provided a ten-year time frame for the appropriators to develop facilities to use or bank imported SPW and develop other water sources. § I3.BB and Exhibit C, Column (5).
- The Overlying Parties can extract, in total, a maximum of 8,650 acre-ft/yr. (All of the initial safe yield was dedicated to the Overlying Parties.) The Overlying Parties and their rights are shown in column (4) of Exhibit B. If an Overlying Party pumps more than five times its share of the operating safe yield (as shown in column (4) of Exhibit B) in any five consecutive year period, the overlying producer shall provide Watermaster with sufficient funds to replace the overproduction (typically with imported water). Exhibit B, Column (4) and §II 1.A
- During the first ten years after adoption of the Judgment (until 2014), the Appropriator Parties can extract, in total, a maximum of 16,000 AFY, i.e., the “temporary surplus” amount divided by ten years. Thereafter the Appropriating Parties can extract, as a maximum, only the amount each has in storage or otherwise credited to the Appropriator Party. If, after the first ten years, an Appropriator Party pumps more than each has in storage or otherwise credited, the Appropriator producer shall provide Watermaster with sufficient funds to replace the overproduction (typically with imported water). Watermaster uses a similar 5-consecutive year period for accounting as described above for the Overlying Parties. BCVWD is an Appropriator Party. BCVWD has a 42.51% share of the temporary surplus for the first ten years (until 2014) and can extract up to 6,802 acre-ft/yr without the need to replenish. Thereafter BCVWD can only extract what it has in storage or otherwise credited to BCVWD by Watermaster**.** §V 4 and Exhibit C, Column (5)
- An Overlying Party can request water service from an Appropriator Party. For example, an Overlying Party can subdivide its property and then request an Appropriator, such as BCVWD, to supply the new subdivision with water. When this happens, the Overlying must forgo extracting that volume of water provided by the Appropriating Party and the Appropriating Party shall have the right to produce the equivalent volume of water which the Overlying Party did not pump. §III 3. (This is sometimes called “forbearance” water.)
- If an Appropriating Party serves recycled water to an Overlying Party, the Overlying Party’s water right is not diminished, but the Appropriator Party shall have the right to use that portion of the Overlying Water Right offset by the

recycled water. In other words, serving recycled water to an Overlying Party allows the Appropriator to pump the equivalent amount of groundwater. §III 3 E.

- There is a provision which requires the BCVWD to set aside 2,400 AFY of projected water demand in the 2005 Urban Water Management Plan update specifically for Oak Valley Partners, LP. For the 2010 UWMP update, the Judgment states this figure should be revised to reflect the projected water demands. Oak Valley Partners, LP has an overlying pumping right per column (4) of Exhibit B equal to 1,806 AFY. However it is unclear how this 1,806 AFY is to split between YVWD and BCVWD. BCVWD started to provide potable water service to Oak Valley Partners, LP land in 2005; in 2010, BCVWD provided a total of 1,307 acre-ft to them. BCVWD continues to provide potable water to the land from its potable and non-potable water distribution system §III.3.G.
- If any Overlying Party produces less than five times the share of the safe yield assigned to the Overlying Party during any 5 year period (per Column (4) of Exhibit B), the unused portion shall be apportioned to the Appropriator Parties per Column (2) of Exhibit C: BCVWD 42.51%, Yucaipa Valley Water District 13.58%, South Mesa Water Company 12.48%, and the City of Banning 31.43%. The availability and allocation of any such groundwater not produced by the overlying parties in accordance with their rights under the Judgment shall be first determined in fiscal year 2008/09 and every year thereafter according to a schedule. (Watermaster Rules and Regulations §7.8.)
- Any Appropriator may transfer all or any portion of its Appropriator's Production Right or Operating Yield that is surplus to its needs to another Appropriator. (Watermaster Rules and Regulations §7.3.)
- Watermaster has the authority to enter into Groundwater Storage Agreements with producers for the storage of supplemental water, wellhead protection and recharge, well abandonment, well construction, monitoring, replenishment, mitigation of overdraft, and collection of assessments. §VI.5.
- Supplemental replenishment water can be recycled water, State Project Water, or other imported water. Replenishment can be accomplished by spreading and percolation, injection, or directly using treated surface water or raw or treated imported water. §VI 7.
- A minimum 200,000 acre-ft of groundwater storage capacity shall be reserved for conjunctive use. Any person, party or not a party to the Judgment, can make reasonable beneficial use of the groundwater storage capacity for storage of supplemental water provided that it is in accordance with a storage agreement with Watermaster. §I.3.S and §V.5.B

- Minimal producers (10 or less acre-ft/yr) are exempt from the Adjudication. §III.4.and §I.3.K

Watermaster is responsible for providing the legal and practical means of ensuring the waters of the Beaumont Basin are put to maximum beneficial use and include:

- Administer the Judgement; approve Producer activities,
- Maintain and improve water supply; maintain and improve water quality; monitor and understand the Basin
- Develop and administer a well policy; develop contracts for beneficial programs and services; provide cooperative leadership

To simplify the Judgement, an appropriator, like BCVWD, after February 2014, can only extract water within the appropriator's storage account as determined by Watermaster. Water in the storage account can include:

- Imported water recharged by the Appropriator.
- Water transferred from one Appropriator's storage account to the Appropriator.
- Recycled water recharged to the Beaumont Basin which meets Regional Board and SWRCB Division of Drinking Water (DDW) groundwater water recharge regulations.
- "New" captured storm water or urban runoff recharged by the Appropriator.
- Unused Overlying Party pumping rights allocated back to the Appropriator.
- Return flows from imported water or recycled water applied to land overlying the Beaumont Basin by the Appropriator
- Forbearance water allocated to the Appropriator for providing potable or recycled water to the Overlying Party's land.

Watermaster performs an annual accounting of these sources and produces an annual report identifying the water in storage for each appropriator.

According to Watermaster, BCVWD had 28,930 acre-ft in storage in the Beaumont Basin at the end of 2014. Data is not available from Watermaster for 2015, but it is estimated to be about 21,700 AF.[21] BCVWD's storage account has a maximum capacity of 80,000 acre-ft.

The entire Judgment is contained in Appendix E.

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[21] SPW purchased and recharged = 2,090 AF; Water pumped from Beaumont Basin not incl. Well 26 = 8,833 AF; Well 26 pumping to non-potable system = 514 AF. Change in storage account = -7,237 AF

Overdraft Conditions

> *CWC 10631*
>
> *(b)(2) For basins that have not been adjudicated, (provide) 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.*

BCVWD has been extracting groundwater from Edgar Canyon for nearly 100 years. Data presented later in this section, (see Table 6-8), shows BCVWD's average Edgar Canyon groundwater pumped over the period 1983-2015 was 2,181 AFY. A study by STWMA indicated a safe yield of about 2,600 AFY; a SGPWA water balance study put the safe yield between 2,000 and 2,800 AFY. Based on these studies and BCVWD's long term records of pumping, Edgar Canyon is not in overdraft.

Prior to 2004, the year the Adjudication came into effect, the Beaumont Basin was in overdraft. Groundwater levels had declined from historical levels. It should be noted that the BSU has been drawn down from the steady state groundwater elevations computed in the Bloyd (1971) report[22]. The Bloyd report shows that the groundwater elevation is approximately 100 feet below steady-state (pre-development) conditions. According to STWMA, progressive drawdown of water levels in the Beaumont Basin occurred from the 1920s to about 1980. Since then, groundwater levels have stabilized. Current levels in the basin are about 75 to 120 ft below the 1920 levels and about 10 to 40 ft below the 1980 level.[23] However, in spite of the drop in water levels, there were no water quality impacts or known subsidence. At the present time, with the Adjudication, the Beaumont Basin is operated on a long-term safe yield basis.

The SGPWA monitors the overdraft in the Beaumont Basin and Figure 6-5 shows the accumulated overdraft, (AF), since 1997. As can be seen once imported water began to be imported the accumulated overdraft leveled off. The "overdraft" increased slightly after 2013 due to the drought when imported water supplies were reduced. Basins managed on a long-term safe yield basis are expected to have fluctuations in groundwater levels from year to year depending on hydrologic conditions and the availability of imported water. During dry years the water levels drop; during wet years the levels recover.

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[22] Bloyd, R.M., 1971, Underground storage of imported water in the San Gorgonio Pass area, Southern California: U.S. Geological Survey Water-Supply Paper 1999-D.

[23] "*Integrated Regional Water Management Program for the San Timoteo Watershed*," Final Draft, prepared for the San Timoteo Watershed Management Authority, Wildermuth Environmental, Inc., p 2-13, June 2005

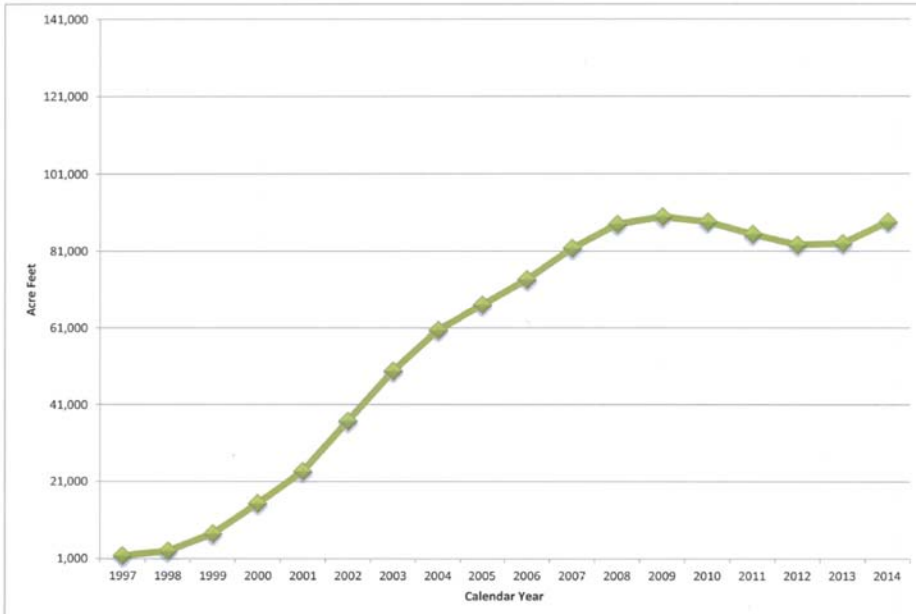

Figure 6-5
Accumulated Overdraft in Beaumont Basin since 1997 (by SGPWA)
(includes the impact of imported replenishment water)[24]

The accumulated overdraft is expected to remain nearly constant with the Adjudication; although there could be some fluctuations due to wet and dry periods causing variable amounts of recharge water to be available. To minimize outflow and loss of recharged imported water, Beaumont Basin water levels should be maintained at or near current conditions. During “wet” years when more imported water is available, the accumulated overdraft will be reduced. This is normal operation for a groundwater basin

The Beaumont Basin Watermaster has a calibrated groundwater model which is used to manage the basin. The model was used in the recent review of the safe yield value and resulted in a reduction to 6,700 AFY -- a value closer to some of the earlier hydrogeologic reports. In summary, although water levels are below historic levels, the Beaumont Basin, as a result of the Adjudication, is operating on a safe yield basis.

When the Adjudication was implemented, an extraction of 160,000 AF “temporary surplus” was planned to provide storage for conjunctive use and water banking. Watermaster was concerned about possible subsidence and implemented a basin-wide subsidence monitoring program. In 2006 Watermaster established a network of 72 benchmarks throughout the Basin and nearby basins and an initial level survey was conducted to establish a baseline. A second survey was conducted in 2007 which showed little vertical change. Whatever minimal change occurred was evenly distributed throughout the Basin. The program envisioned performing the survey every 3

[24] SGPWA, 2015, Annual Report of Water Conditions, Reporting Period 2014, November

years with the next round scheduled for spring 2009. The 2009 survey was not conducted since it was determined the level of subsidence was minimal. No additional surveys are scheduled at this time.[25] It can be concluded, the overdraft and the temporary surplus have not had any adverse effects.

Historical Groundwater Pumping

> *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:*
>
> *(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.*

Table 6-7, (DWR Table 6-1) shows BCVWD's historical pumping from Edgar Canyon and the Beaumont Basin for the last five years (2011-2015). Figure 6-6 shows BCVWD's pumping from the 1970s.

Edgar Canyon

BCVWD has long-term records on pumping. From 1957 to 2015, a period of 58 years, the average production from the Edgar Canyon Wells was 1,926 AFY. However, prior to 1983, the ability to utilize the water pumped from Edgar Canyon was limited due to a lack of sufficient conveyance capacity to deliver water from Edgar Canyon to Cherry Valley and Beaumont. In 1983, the District installed the 14-in Edgar Canyon Transmission Main which enabled larger quantities of water to be conveyed from Edgar Canyon to Cherry Valley and Beaumont. Since 1983 to 2015, a period of 32 years, the average amount pumped was 2,181 AFY. This is far more indicative of Edgar Canyon's ability to produce water.

Statistical information on the Edgar Canyon production for the period 1983 to 2015 is presented in Table 6-8. As can be seen in Table 6-8, Edgar Canyon Wells produce about 15% of the District's annual need.

[25] Beaumont Basin Watermaster, 2014 Annual Report (Draft), June 2015.

Table 6-7
(DWR Table 6-1) BCVWD Groundwater Pumping (2011 – 2015)

DWR 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 (1)	2015 (1)
Add additional rows as needed						
Alluvial Basin	Little San Gorgonio Creek	**2158**	**1990**	**1732**	**1325**	**1418**
Alluvial Basin	Beaumont Basin	**9431**	**10162**	**11097**	**10806**	**8833**
	TOTAL	11,589	12,152	12,829	12,131	10,251
NOTES: Little San Gorgonio Creek, also known as Edgar Canyon, is mix of shallow aluvial deposits and fractured rock aquifer. (1) 2014 and 2015 extractions were low, partially due to larger canyon wells (Well No. 6 and Well No. 14) being out of service.						

In Table 6-8, the term "10th Percentile" means that 90 percent of the time the production was greater than the value shown. In other words, there would be only one year in ten that the production would be less than 1,295 AFY. It is important to point out in Table 6-9 that annual production (far right column) will not be the total of the Upper, Middle and Lower Canyon values (second and third columns) because the maximums and minimums, etc. may not have occurred simultaneously, i.e., in the same year.

The San Timoteo Watershed Management Authority (STWMA)[26], estimated the safe yield from Edgar Canyon to be 2,600 AFY.[27] Is consistent with the average amount of extractions shown in Table 6-8 from Edgar Canyon for the period 1983 –2015.

A water budget analysis in a report prepared for the SGPWA indicated the yield from Edgar Canyon was between 2,000 and 2,800 AFY. The SGPWA report stated that based on the 20-year period 1988-2008, when water levels were reported rising in Edgar Canyon, pumping averaged 2,900 AFY and suggests that the yield of Edgar Canyon may be in the range of 2,300 to 2,800 AFY. This also is consistent with both the District's data and that of STWMA.[28]

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[26] The San Timoteo Watershed Management Authority (STWMA), was dissolved around the year 2011.

[27] Wildermuth Environmental, Inc. (2005). Integrated Regional Water Management Program for the San Timoteo Watershed, Final Draft, prepared for the San Timoteo Watershed Management Authority, , June 2005.

[28] SGPWA (2010). *Report on the Sustainability of the Beaumont Basin and Beaumont Management Zone*, prepared for the SGPWA by Hahn Water Resources, LLC, Evergreen, CO, November.

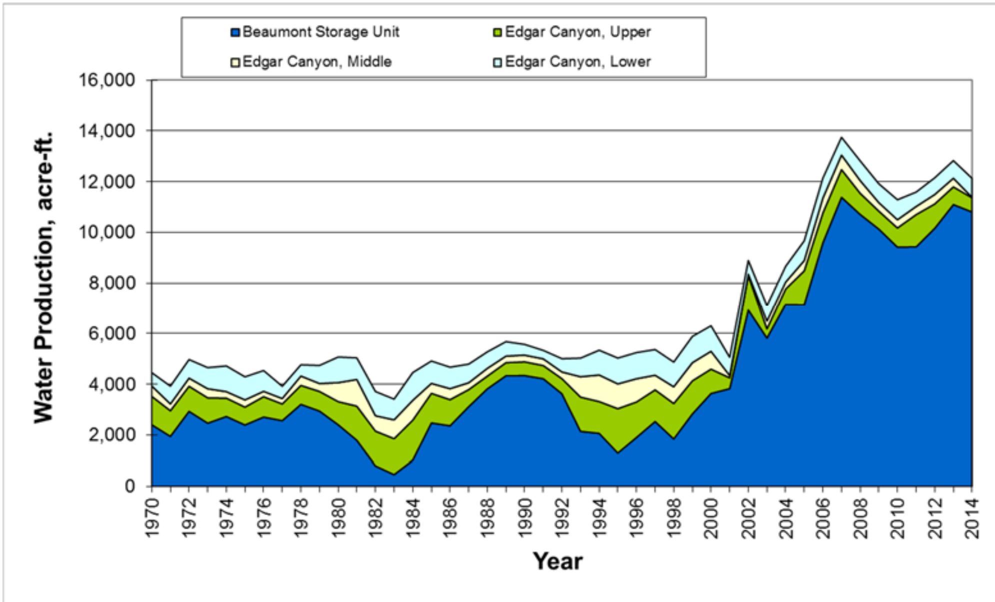

Figure 6-6
BCVWD Water Production History Since 1970

Based on production records for the 31-year period, 1983 – 2015, average and minimum production from Edgar Canyon was 2,181 AFY and 1,117 AFY respectively. Minimum yield is about 50% of the average. Refer to Table 6-8. **For planning purposes 2,200 and 1,110 AFY will be used for the average and minimum year respectively**.

Beaumont Basin Groundwater

Table 6-7, presented previously, showed BCVWD's pumping from the Beaumont Basin for 2011-2015. The water pumped includes imported water recharged and extracted the same year. (Some of imported water recharged was not extracted the same year and went into BCVWD's 80,000 acre-ft storage account monitored by Watermaster.)

In the Judgement, BCVWD and the other appropriators were not given any share of the safe yield; all of the safe yield was assigned to the Overlying Parties. However, during the 10 year period 2004 -2014, BCVWD and the appropriators were granted a portion of the "temporary surplus." The "temporary surplus" was designed to create a 160,000 acre-ft volume in the Beaumont Basin that could be used by the parties for conjunctive use and banking of imported water. This also gave time for the appropriators to construct facilities to use or recharge imported water to meet their needs after 2014.

Table 6-8
Groundwater Extraction Statistics from Edgar Canyon Wells
(1983 -2015)

Parameter	Annual Production Upper and Middle Canyon, acre-ft	Annual Production Lower Canyon, Acre-ft	Annual Production Acre-ft
Average	1,420	761	2,181
Maximum	2,720	1,095	3,738
Minimum	516	334	1,117
90th Percentile	2,268	1,017	3,230
10th percentile	704	541	1,295

Although the Basin safe yield was reserved for the overliers, if any overlier receives potable water or recycled water from any of the appropriators, according to the adjudication, the appropriator may pump the amount of water delivered to the overlier. Annually Watermaster makes an accounting of the unused overlier rights and distributes that amount to the appropriators in accordance with a predetermined share. (BCVWD's share is 42.51%.) In addition the Watermaster makes an accounting of the potable and recycled water supplied by an appropriator to an overlier. These two sources along with any imported water recharged go into the appropriator's storage account. Only stored water can be pumped. If an appropriator has insufficient stored water, Watermaster will assess the producer to pay for the purchase of imported water.

The safe yield of the Basin is subject to review every 10 years. It was reviewed in 2014 and a new safe yield of 6,700 AF was established by Watermaster in 2015.

BCVWD has 11 wells in the Beaumont Basin. The total pumping capacity is 17,425 gpm or 25.1 mgd, assuming the pumps operate 24 hours per day. Because of the large motors, these wells do not typically operate during the peak power periods. At 18-hr/day pumping, with all wells operating, the total pumping rate is 18.8 mgd. With the largest well out of service and 24 hr/day pumping the capacity is 13,425 gpm or 19.3 mgd; with 18 hours of pumping, the total pumping rate is 14.5 mgd.

The District's total well pumping capacity, Edgar Canyon plus Beaumont Basin Wells, with all wells operating 24 hr/day, is 27.3 mgd. With the largest well out of services (Well 29), the pumping capacity for 24-hr operation is 21.5 mgd

To put it in perspective, the year 2015 average and maximum day demands were 11.4 mgd and 15.3 mgd respectively. With all wells with standby power operating and assuming 24 hour/day pumping, (22.4 mgd capacity), the District can meet the maximum demand under extended multi-day power outages even under maximum day demand. In fact, the District could withstand an extended multi-day power outage, with the largest well on standby power out of service under all but the highest demand conditions (16.6 mgd capacity) However as growth occurs in the service area, this ability will be impacted unless provisions are made to increase well capacity and standby power capacity.

With the Adjudication as described previously in this section, the amount of extractable groundwater, not including stored water, recharged imported SPW or captured stormwater, consists of:

- Reallocation of unused overlier pumping rights
- Credit for providing potable water or non-potable water delivered to an overlying party or an overlying party's land (termed "Forbearance Water")
- Return flow credits

A detailed analysis of the projected amounts available is presented in BCVWD's 2016 Potable Water Master Plan. The results of this analysis is summarized in Table 6-9.

Although the Adjudication is silent on this issue, Table 6-9 includes a proportionate reduction in the reallocation of unused Overlying Party pumping rights to account for the reduction in safe yield from 8,650 AFY to 6,700 AFY. This is a conservative approach.

The non-potable forbearance water in Table 6-9 does not include any non-potable (recycled) water supplied to Tukwet Canyon and Oak Valley Golf Courses. Based on month to month analysis, this would add 330 to 515 AFY forbearance water over time (year 2020 to year 2040).

Table 6-9
Summary of BCVWD Extractable Groundwater from Beaumont Basin
(without replacement and not including stored water)
(not including forbearance for non-potable water to Golf Course)

Item	2015	2020	2025	2030	2035	2040
Reallocated Unused Overlier Pumping Rights, AFY	1,490	1,040	920	800	750	750
Potable Forbearance Water, AFY	272	472	710	930	1,044	1,044
Non-Potable Forbearance Water, AFY	0	30	60	90	120	120
Return Flow Credits above Baseline, AFY	165	223	280	514	868	922
Total, AFY	1,927	1,765	1,970	2,334	2,782	2,836

Source: 2016 BCVWD Potable Water Master Plan Tables 5-4, 5-5, and 5-24

Surface Water

BCVWD does not use local surface water directly but does have two active surface water diversions in Edgar Canyon. These are on file with the State of California Division of Water Rights.

- Diversion Number S014351 located in the SE1/4 of NE1/4 of Section 2, T2S, R1W, SB&M and first used in 1907. This location is about 1,200 ft downstream of the USGS gauging station in Little San Gorgonio Creek, near the upper end of the District's property.
- Diversion Number S014352 located in the NW1/4 of SE1/4 or Section 22, T2S, R1W, SB&M and first used in 1894. This location is just upstream of the existing percolation ponds at the mouth of Edgar Canyon.

In the early years of the District, the upper diversion was used to provide domestic and irrigation supply. Water was diverted from Little San Gorgonio Creek and conveyed to sand and sediment removal structures and filter boxes in the Canyon and then piped down to consumers and orchards in Cherry Valley and Beaumont.

These diversions are used today to direct surface flows in Little San Gorgonio Creek into a series of percolation ponds in Edgar Canyon which then recharge the shallow aquifers to help supply the existing wells in Upper and Middle Edgar Canyon. BCVWD has been doing this since the late 1800s and has a pre-1914 water right to divert up to 3,000 miner's inch-hours (MIH) or approximately 43,440 AFY for domestic and irrigation uses[29]. However, BCVWD has never had a demand that requires such large quantities of water supply; and the watersheds may not be capable of supplying such quantities during an average year. The diversion right is not included in BCVWD's water supply calculations, but is needed to ensure adequate supply from the Edgar Canyon wells.

Storm Water

Storm water capture plays a significant role in BCVWD's local water resource supply development. Several projects are currently in operation:

- Diversions and percolation ponds in Upper and Middle Edgar Canyon described above. See Figure 6-7.
- Construction of desilting basins and percolation basins immediately upstream of the Lower San Gorgonio percolation ponds at the outlet of Edgar Canyon. See Figure 6-8.

[29] A miner's inch in Southern California is reported to be 0.02 cubic ft/second (cfs)

Figure 6-7
Percolation Ponds in Upper Edgar Canyon

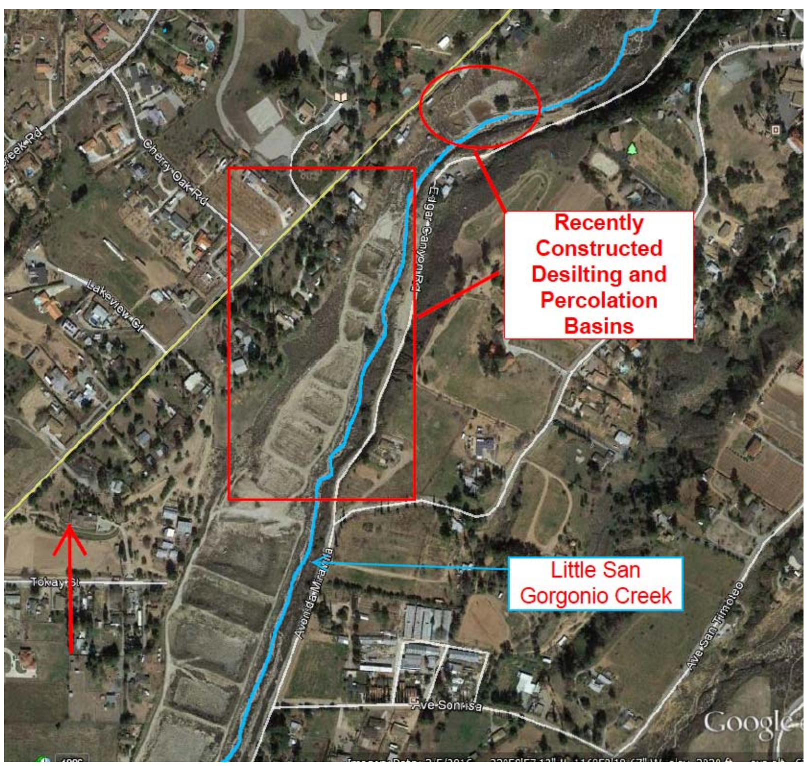

Figure 6-8
Recently Constructed Desilting and Recharge Basins
at the Mouth of Little San Gorgonio Creek (Edgar Canyon)

The diversions in Upper and Middle Edgar Canyon capture most of the storm flows and runoff that flows in the creek and diverts the flow to a series of percolation basins. The water is subsequently extracted by the adjacent wells.

On occasion there are very high flows which flow the entire length of Edgar Canyon. A portion of these flows can be captured in the new basins at the mouth of Edgar Canyon shown in Figure 6-10. In addition, BCVWD retains the right to use the older ponds, downstream of the new basins to capture flood water when they occur. During those times, the SGPWA would be precluded from percolating SPW.

Potential Storm Water Capture Projects

There were a number of projects which were explored in more detail in BCVWD's 2016 Potable Water Master Plan. These projects are listed in Table 6-11.

Edgar Canyon, Noble Creek and Marshall Creek

In BCVWD's 2013 UWMP Update, an estimate of the yield from the Edgar Canyon, Noble Creek and Marshall Creek Capture Projects was presented. No further work has been performed on these conceptual projects, so at this time the preliminary yield from the projects remains at 1,050 AFY.

Table 6-10
Potential Storm Water Capture Projects

Project	Brief Description
Soft plug in Noble Creek at BCVWD Groundwater Recharge Facility	Large flows which would bypass the spreading basins at the mouth of Edgar Canyon (Figure 6-10 above) could still be captured. Provide "soft plug" in lined portion of Noble Creek channel and divert flows into BCVWD's recharge facility. (Note that only extreme flows actually make it out of the canyon). Estimated Yield – 500 AFY.
Stormwater Capture Noble Creek	Noble Creek flows could be desilted on property owned by BCVWD (15.7 acres) along Noble Creek upstream of Noble St and west of Cherry Ave. Unfortunately this area is not over the Beaumont Basin, but the property could be used for desilting basins with the desilted water released back into Noble Cr. and recaptured at a soft plug in the lined channel and diverted into the District's recharge site. Estimated Yield = 400 AFY.
Marshall Creek s/o Elm to I-10	There is a significant amount of urban runoff from the developed are east of Beaumont Ave, between Oak Valley Parkway and Brookside Ave. which could be captured in the soft bottom of Marshall Creek using training dikes to prevent the water from going under the I-10 bridge. There is about 300 ac of urban drainage. Estimated Yield = 150 AFY.
Grand Avenue Storm Drain	Approximately 505 acres of area could be intercepted by a storm drain along Grand Ave. and conveyed to the District's Recharge facility. This water is relatively free of sediments and runoff is generated with even the slightest amount of rainfall
Sundance Urban Runoff	Eighth St., Cherry Ave., and Starlight Ave. Basins capture runoff from the Sundance development. These basins capture runoff effectively, but percolation needs to be improved.

Grand Avenue and Sundance Urban Runoff Capture

The Sundance Development, a project with over 4,700 housing units, between Cherry Ave. and Highland Springs Rd and Brookside Ave. and Eighth Street has 3 detention/water quality basins to store and percolate runoff from the development. These include the Starlight, Eighth St., and Cherry Basins and are shown in Figure 6-9. Photos of captured runoff in the Sundance Basins are shown in Figure 6-10.

The location, drainage area and conceptual plan for the Grand Avenue Stormwater Capture Project is shown in Figure 6-11. This project will intercept runoff from this rural residential watershed in Cherry Valley and convey it to BCVWD's Groundwater Recharge facility. The Grand Avenue Storm Drain is a joint project with Riverside County Flood Control and Water Conservation District, the agency that is designing the project. The project is partially funded under 2015 Integrated Watershed Protection Program through the Santa Ana Watershed Project Authority. It should be operational before year 2018.

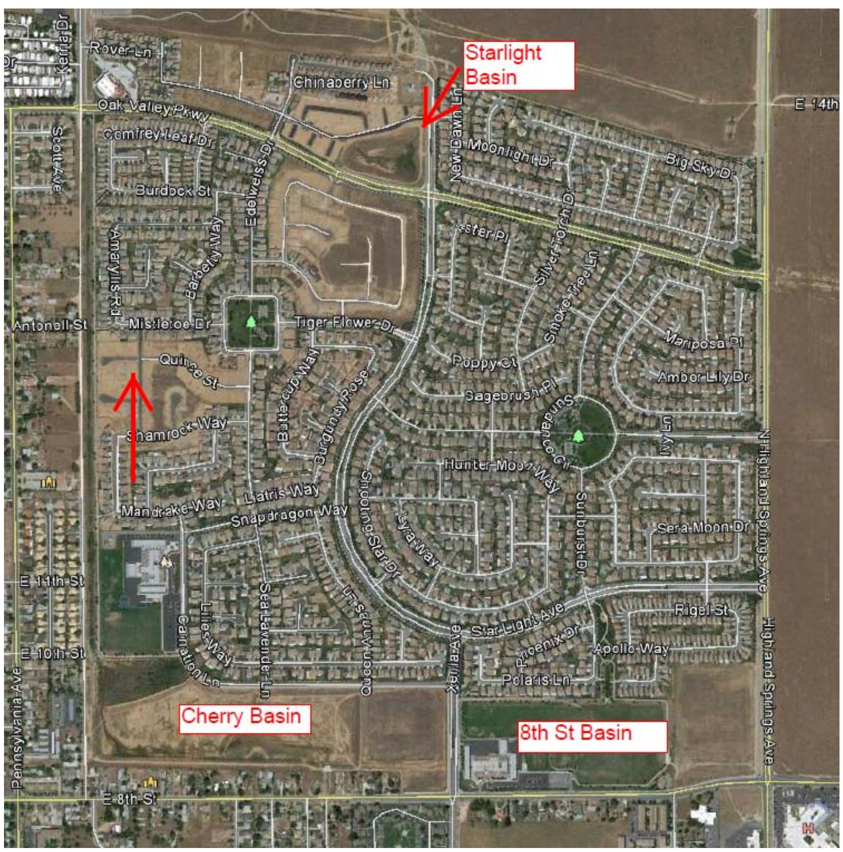

Figure 6-9
General Location of the Sundance Water Quality and Urban Runoff Capture Basins

Figure 6-10
Runoff Collected in Sundance Detention Basin

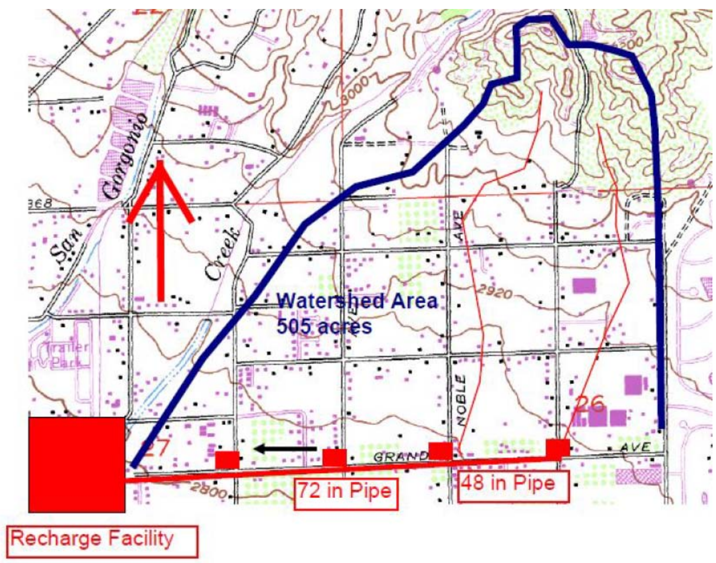

Figure 6-11
Grand Avenue Storm Water Interceptor Watershed Area

Table 6-11 shows some information about the watershed and the detention basin volume.

A detailed analysis of the runoff potential from these projects was performed as part of the 2016 BCVWD Potable Water Master Plan. Daily Beaumont rainfall totals for the 77-year period January 1, 1929 through December 31, 2006 were used in the runoff analysis. Individual rainfall periods were identified and the runoff from each storm was determined using the Natural Resources Conservation Service (NRCS) Curve Number approach. Table 6-12 shows the amount of storm runoff that can actually be captured – close to 800 acre-ft annual average.

Table 6-11
Summary of the Urban Runoff Drainage Areas and Retention Basin Volumes

Facility	Drainage Area, acres	Basin Volume, acre-ft
Grand Ave Interceptor	505	90[1]
Cherry Ave Basin	426	240
Eighth St. Basin	475	128
Starlight Basin	250	32

[1] Recharge during a multi-day storm even would add another 100 to 125 acre-ft

"Before and after" development calculations were made to determine "new water." From a water resources perspective, the Beaumont Basin Watermaster would likely not consider all of the captured storm water as "new water." "New water" is water which is developed over and above what would have occurred naturally, in an undeveloped condition.

Table 6-12
Urban Runoff Capture Summary

Facility	Estimated Captured Runoff, AFY	Percent of Storms Totally Captured	Total Average Annual Runoff, AFY, Based on 77 years of Record	Percent of All Possible Storm Water Captured
Grand Ave Interceptor	200	98.5%	232	90.0%
Cherry Ave Basin	258	95.8%	276	93.4%
Eighth St Basin	237	94.6%	308	76.9%
Starlight Basin	89	89.2%	171	52%
Total	784			

Table 6-13 shows an estimate of "new water" from the projects – about 730 AFY.

Table 6-13
Estimate of "New Water" from Storm Water Capture

Facility	Estimated Captured Runoff, AFY	Runoff from Undeveloped Land		Estimated Amount of New Water, AFY
		3-in Total Storm Rainfall, AFY	4-in Total Storm Rainfall, AFY	
Grand Ave Interceptor	200	41	75	172 to 192 (Use185)
Cherry Ave Basin	258	9	19	249 to 239 (Use 245
Eighth St Basin	237	10	21	226 to 216 (Use 220)
Starlight Basin	89	5	11	84 to 78 (use 80)
Total				730

Wastewater and Recycled Water

Recycled water use for non-potable purposes has a major role in BCVWD's water portfolio. BCVWD began planning the use of recycled water for landscape and golf course irrigation since the early 1990s with the development of a cooperative financing agreement to fund water supply infrastructure including recycled water. In November 1997, the City of Beaumont City Council adopted Ordinance 773 mandating the use of potable water for non-potable uses including cemeteries, golf courses, parks, street and highway landscaping, athletic fields, and other irrigation uses is a waste or an unreasonable use of water if recycled water is available. BCVWD's UWMPs dating to the 90s included plans and projections for the use of recycled water from the City of Beaumont. BCVWD continues in discussions with the City of Beaumont.

Recognizing that additional water may be needed than can be supplied by the City of Beaumont, BCVWD began discussions with YVWD around 2013. In June 2014, BCVWD prepared a Recycled Water Facilities Planning Report for a Recycled Water Supply Pipeline and Pump Station for a connection to YVWD's non-potable water system. The Facilities Planning report was approved by the SWRCB in August 2014. Since then discussions have move forward with YVWD

BCVWD's Existing Non-potable Water System

BCVWD has an extensive network of about 30 miles of non-potable transmission pipelines already constructed that can convey untreated SPW, groundwater, and recycled water. An extensive network of smaller distribution mains have been constructed by Tract developers to serve parks, medians, schools and common areas in their respective developments. The system includes a 2 million gallon non-potable water reservoir (2800 Zone Non-potable

Reservoir). There are about 300 existing landscape connections to the recycled water system receiving 1,650 acre-ft of water (year 2013 total). The existing recycled water system is currently pressurized with groundwater from Well 26 which has chromium levels above the CDPH levels. This is supplemented with potable water introduced into the non-potable water system through an air gap connection at the non-potable water storage tank (2800 Zone Non-potable Water Tank).

BCVWD's Non-potable Master Plan (under preparation) shows the system to have up to 5 pressures zones; 2370, 2520, 2600, 2800, and 3040. The 3040 Pressure Zone is not operational at the present time.

The Tournament Hills and Sun-Cal Fairway Canyon projects, south of I-10, have non-potable water distribution systems installed. This portion of the non-potable water system is isolated from and operates at a lower hydraulic grade line from the 2800 Non-potable Water Zone. This portion of non-potable water distribution system is currently supplied from the District's potable water system through interconnections having backflow prevention devices between the potable and non-potable water system. The non-potable water system was constructed from 2002 to the present using City of Beaumont Community Facilities District (CFD) bond funds, BCVWD funds derived from facilities (impact) fees collected from developers, BCVWD funding, and developer funding for the smaller distribution lines.

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.

Within BCVWD's service area, only the City of Beaumont provides wastewater collection, treatment and disposal. Except for the Highland Springs Village area of Cherry Valley, which is served by the City of Beaumont, the unincorporated community of Cherry Valley relies on on-site disposal systems.

YVWD to the west and the City of Banning to the east, provide wastewater collection, treatment and disposal of wastewater generated in their respective service areas. YVWD has a recently expanded and upgraded advanced wastewater treatment facility using UV disinfection and reverse osmosis. The City of Banning has plans prepared to upgrade their existing treatment plant using a membrane bioreactor. BCVWD has been in discussions with YVWD about obtaining supplemental non-potable water.

Wastewater Collection, Treatment, and Disposal

CWC 10633

(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

(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.

There are three existing wastewater reclamation plants in the San Gorgonio Pass Area. Only the City of Beaumont Treatment Plant No. 1 is within BCVWD's service area.

- City of Beaumont Treatment Plant No. 1
- YVWD Henry Wochholz Water Reclamation Plant
- City of Banning Wastewater Treatment Facility.

City of Beaumont

The City of Beaumont provides wastewater collection, treatment and disposal for wastewater generated within the City plus the Highland Springs area of Cherry Valley. Wastewater generally flows by gravity to the City's wastewater treatment plant; however, there are 9 wastewater lift and pumping stations in the southeastern and western portions of the City that pump wastewater collected in these areas and to the treatment plant or collection system leading to the treatment plant.

The City of Beaumont's Treatment Plant No. 1 (below) has a current permitted capacity of 4 million gallons/day (mgd). The treatment facility is located on Fourth St., ease of Viele Ave.

The treatment facility provides secondary treatment using the Biolac® activated sludge process, tertiary filtration and ultraviolet disinfection and operates under permit R8-2015-0026 NPDES CA 0105376. Waste biosolids from the secondary process is centrifuged and hauled offsite for disposal.

From January 2014 through March 2016, the plant flow monthly averages ranged from 2.98 to 3.22 mgd. A portion of the effluent is currently discharged to Cooper's Creek, (DP-001), a tributary of San Timoteo Creek which is a tributary of the Santa Ana River; a portion of the effluent is discharged into an unnamed creek at DP-007 located approximately 1,300 ft northwesterly along the railroad tracks from Veile Ave. As part of the environmental permitting[30] for the recycled water system, the US Fish and Wildlife Service required that 1.8 mgd of effluent continue to be discharged to Cooper's Creek for maintenance of habitat[31]. The current operating permit allows for use of the effluent on the Tukwet Canyon and Oak Valley Golf Courses and landscape irrigation within the BCVWD service area.

In a 2007 letter from CDPH (now DDW) to the City of Beaumont, the City was directed to upgrade the facility to meet Title 22 requirements for unrestricted use and perform validation testing on the UV disinfection system. In July 2016, the City completed a Title 22 Engineering Report[32] which included the UV Validation Testing which was accepted by the State with conditions. Some upgrades to the tertiary system were identified.

BCVWD continues to work with the City relative to recycled water. The City of Beaumont's effluent has a TDS concentration of about 400 mg/L which is in excess of the Regional Board's Maximum Benefit Water Quality Objectives for the Beaumont Basin. The recycled water from the City will have to be treated and/or "blended" with imported water or other waters to achieve the Maximum Benefit Water Quality Objectives.

The discharge limits in the current operating permit in terms of Total Dissolved Solids (TDS) and Total Inorganic Nitrogen (TIN) are shown in Table 6-14.

Table 6-14
City of Beaumont Wastewater Discharge Requirement for TDS and TIN

Parameter	DP-001 Cooper's Creek		DP-007 Unnamed Creek	Recycled Water
	Discharge up to 1.8 mgd	Discharge over 1.8 mgd	All Discharges	All Discharges
TDS	400 mg/L	300 mg/L	230 mg/L	330 mg/L
TIN	6 mg/L	3.6 mg/L	2 mg/L	No Limit

As stated above the TDS of the City's effluent discharge is 400 mg/L. This is good quality recycled water; however, it does not meet the water quality requirements in the permit for

[30] Initial Study/Mitigated Negative Declaration Beaumont Cherry Valley Water District Recycled Water System Project, SCH 2007081127, June 2007.

[31] Letter dated February 29, 2008, Karen Goebel USFWS to Michelle Jones SWRCB, Informal Consultation for Beaumont Cherry Valley Water District Recycled Water System, SRF Loan C-06-5157-110.

[32] City of Beaumont Wastewater Treatment Plant (2016). Title 22 Engineering Report and Validation Testing, Aqua Engineering and Albert A. Webb and Associates, July.

specific discharge locations. As a result the City will need to provide desalination to at least a portion of the flow, (reverse osmosis treatment), to meet these requirements.

According to the current permit, the City must start construction of the desalination facilities by September 1, 2018 and be in compliance with the TDS and TIN limits by March 1, 2020; any discharges of TDS or TIN in excess of the limits above shall be completely offset by January 1, 2025. This is a very aggressive schedule.

Table 6-15 shows the amount of recycled water which is available from the City of Beaumont's wastewater treatment facility over time. The table shows the deduction of 1.8 mgd for environmental habitat mitigation, and roughly 10% reduction for water used on the plant site for washdown and irrigation and water contained in the dewatered biosolids hauled offsite.

The population for the City of Beaumont is based on a less aggressive population growth than that shown in Table 3-6 and Table 3-8 presented previously. Using a slower population growth will avoid over estimating the amount of recycled water available and will be conservative from a water supply standpoint.

Table 6-15
Recycled Water Available from City of Beaumont's WWTP

Year	2015	2020	2025	2030	2035	2040
City of Beaumont Population[1]	41,780	43,762	49,014	54,895	61,483	68,000
Wastewater Generation Flow Rate, gpcd	75	75	75	75	75	75
Wastewater Flow, mgd	3.0	3.28	3.68	4.12	4.61	5.10
Environmental Mitigation Flow, mgd	1.8	1.8	1.8	1.8	1.8	1.8
Wastewater Available for Recycling, mgd	1.2	1.48	1.88	2.32	2.81	3.3
Estimated amount which can be recycled, mgd	1.07	1.33	1.69	2.09	2.53	3.0
Estimated amount which can be recycled, AFY	1,194	1,494	1,892	2,336	2,835	3,360
Estimated amount which can be recycled, AF/month	100	125	158	195	235	280

[1] The City of Beaumont population growth is less aggressive than shown in Tables in Section 3 to be conservative in the amount of recycled water available.

YVWD

The YVWD provides wastewater collection, treatment, disposal and recycled water to the City of Yucaipa and City of Calimesa and surrounding areas. The YVWD also provides potable water service.

The YVWD Wochholz Regional Water Recycling Facility (WRWRF) (to the right) is a tertiary facility with a current flow of 4.5 mgd and a design and permitted capacity of 8 mgd. The facility provides screening, grit removal, primary sedimentation, flow equalization, nitrogen removal using the Modified Ludzack Ettinger (MLE) activated sludge process. The activated sludge process uses an integrated fixed film system (IFAS). Following activated sludge, the effluent passes through microfiltration membranes. A portion of the effluent from the microfiltration process passes through reverse osmosis. All of the effluent is disinfected with UV irradiation and flows to a reclaimed water storage reservoir on site. For there the recycled water is pumped to YVWD non-potable water system. Primary sludge and waste secondary sludge is anaerobically digested and dewatered using belt presses. The dewatered biosolids are taken by a local landscaper, composted, and recycled.

The plant is relatively new; a 2.5 mgd reverse osmosis treatment process started operation in 2014. YVWD constructed a 15-mile long brine line from the WRWRF to the terminus of the Inland Empire Brine Line (IEBL) near the I-215/I-10 Interchange in San Bernardino. The IEBL joins the Santa Ana River Interceptor (SARI) at the Orange County line below Prado Dam. YVWD will be discharging effluent with a TDS of 330 mg/L or less, which meets the Regional Board's Maximum Benefit Water Quality Objectives for the Beaumont Basin.

The WRWRF operates under permit R8-2015-0027 NPDES CA010569 and discharges into Reach 3 of San Timoteo Creek. The WRWRF is located west of I-10, between County Line Road and Live Oak Canyon Road in San Bernardino County.

BCVWD is in discussions with YVWD to acquire a recycled (non-potable) water supply. YVWD will be extending a recycled water pipeline about 5 miles to serve a new residential community in Calimesa called Summerwind. This is near the intersection of I-10 and Cherry Valley Blvd where it would connect into BCVWD's master planned 2600 Zone non-potable water pressure system. YVWD could serve BCVWD's 2600, 2520, and 2370 pressure zones directly. A new booster pump station would be constructed to boost the water from the 2600 Zone into BCVWD's 2800 Zone non-potable water system. A facilities plan has been prepared by BCVWD for the connection. The plan has been approved by the State Water Resources Control Board and the District could apply for funding under the Water Reclamation Bond Program/State Revolving Fund program.

In addition to providing recycled water from the WRWRF, YVWD has spent microfiltration/nanofiltration washwater from YVWD's surface water treatment facility available during the summer to supplement the recycled water. Table 6-16 shows the amount of recycled water and filter washwater available each month.

Table 6-16
Recycled Water Available from YVWD 2015

Month	Jan	Feb	Mar	Apr	May	June	
Recycled Water, AF	126	83	15	9	77	0	
Spent Filter Washwater, AF	0	0	0	0	0	93	
Total, AF	126	83	15	9	77	93	
Month	**July**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**Totals**
Recycled Water, AF	0	0	0	49	74	144	577
Spent Filter Washwater, AF	93	93	93	93	0	0	467
Total, AF	93	93	93	142	74	144	1044

Table 6-16 is based on information provided by YVWD.[33] For purposes of this UWMP Update, it is assumed this quantity will be available throughout the planning period to year 2040. This is believed to be very conservative since YWVD will likely be experiences increases in wastewater flow over time. YVWD will be providing recycled water at a TDS concentration of 330 mg/L or less to meet the Beaumont Management Zone's Maximum Benefit Objective.

City of Banning

The City of Banning provides wastewater collection, treatment and disposal of wastewater collected in the City of Banning. The City also provides potable water service and is in the process of constructing a non-potable water supply system.

The City of Banning has a secondary treatment facility that percolates effluent into the alluvium along Smith Creek southeast of the City under a permit from the Colorado River Regional Water Quality Control Board. The City has begun construction of a recycled (non-potable) water line from Sun Lakes Golf Course east to the wastewater treatment plant. The City may pump percolated wastewater, (groundwater), using a retrofitted well at the wastewater treatment plant, into the pipeline to serve the golf course in the future. The City has plans to upgrade the wastewater treatment plant to a modern membrane bioreactor facility to provide recycled water for the future. It is possible that some surplus recycled water from the City of Banning could be

[33] Email YVWD J. Ares to BCVWD D. Jaggers, 3/18/2016. Deemed conservative; constrained by need to maintain habitat in San Timoteo Creek.

introduced into the BCVWD recycled water system at some point in the distant future. It is not under consideration at this time however.

Community of Cherry Valley

The community of Cherry Valley relies exclusively on on-site systems for wastewater treatment except for the Highland Springs Village which connected to the City of Beaumont's sewerage system. Currently there is about 0.5 mgd of wastewater generated in Cherry Valley; this volume of wastewater will grow to about 0.8 mgd by 2040.

In July 2007 BCVWD prepared a Facilities Planning Study to provide wastewater collection and treatment to a portion of Cherry Valley known as the Cherry Valley Community of Interest CVCOI. The CVCOI was the area generally north of Brookside Avenue, between Bellflower St. and Nancy St. It included the Cherry Oaks and Bonita Vista Areas. Providing sewers would minimize the nitrate contribution to the Beaumont Groundwater Basin and provide a source of recycled water which could be beneficially used. BCVWD would be the agency operating the collection system and treating the wastewater in either a separate treatment plant or through a contract with the City of Beaumont or other agency for treatment.

Although BCVWD had the power to provide wastewater collection and treatment under the Irrigation District Act under which it was formed, this power was never exercised and LAFCO required a vote of the District residents to exercise the power. The ballot measure was defeated in September 2007 and as a result BCVWD does not currently have sewering authority.

It is unlikely that Cherry Valley will have a sewer collection system within the next 20 years and so should not be considered as being a source of recycled water.

Summary

Table 6-17 (DWR Table 6-2) shows a summary of the wastewater collected within BCVWD's service area in 2015. Table 6-18 (DWR Table 6-3) shows the wastewater treatment and discharge within BCVWD's service area in 2015.

Table 6-17
(DWR Table 6-2) Wastewater Collected within Service Area in 2015

DWR Table 6-2 Retail: Wastewater Collected Within Service Area in 2015. Cherry Valley is unsewered.						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
39	Percentage of 2015 service area covered by wastewater collection system *(optional)*					
86	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?	Volume of Wastewater Collected from UWMP Service Area 2015, mgd	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party? *(optional)*
Add additional rows as needed						
City of Beaumont	Metered	3	City of Beaumont	Plant No. 1	Yes	Yes
Total Wastewater Collected from Service Area in 2015, mgd:		3				
NOTES: Wastewater volume based on monthly reports to RWQCB. Except for Highland Springs Village, which is sewered by the City of Beaumont, the remainder of Cherry Valley is unsewered						

Recycled Water System

CWC 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.

BCVWD has an extensive network of about 40 miles of transmission and main line, non-potable (recycled water) pipelines already constructed. These are shown in solid "purple" in Figure 6-14, which also shows BCVWD's non-potable water service area. The system includes a 2 million gallon non-potable water reservoir. There are about 300 existing landscape connections to the recycled water system receiving 1,650 acre-ft of water (year 2013 total) It is believed that the current usage is slightly less due to the drought restriction in effect the last few years. The non-potable water system was constructed from 2002 to the present.

Table 6-18
(DWR Table 6-3) Wastewater Treatment and Discharge within Service Area in 2015

DWR 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, mgd			
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
City of Beaumont	DP-001	Cooper's Creek	8 330101001	River or creek outfall	No	Tertiary	3	3	0	0
City of Beaumont	DP-007	Trib of Marshal Creek	8 330101001	Bay or estuary outfall	No	Tertiary	0	0	0	0
City of Beaumont	R-001	Tukwet GC	8 330101001	Other	No	Tertiary	0	0	0	0
City of Beaumont	R-002	Oak Valley GC	8 330101001	Other	No	Tertiary	0	0	0	0
City of Beaumont	R-003	BCVWD RW	8 330101001	Other	No	Tertiary	0	0	0	0
						Total, mgd	3	3	0	0
NOTES: City of Beaumont claims that a portion of the effluent discharged at DP-001 and DP-007 incidently recharge the Beaumont Groundwater Basin. Watermaster is still awaiting proof. The effluent does not comply with planned groundwater recharge regulations.										

The non-potable water system consists of 5 pressure zones: 2370, 2520, 2600, 2800, and 3040. The 3040 Non-potable Zone will likely not be operational for a number of years yet as most of the current demand is in the other zones. The 2370, 2520 and 2600 Non-potable Zones are south of I-10. These pressure zones are supplied with potable water from the 2600 Potable Water Zone through a series of interconnections. These zones have a current non-potable water demand of about 286 AFY.

The 2800 Non-potable Zone is supplied from the 2 MG 2800 Zone Non-potable Water Tank located at BCVWD's groundwater recharge site. The 2800 Non-potable Zone has a current average demand of about 1,365 AFY. This is by far the highest demand zone. Since September 2015 the 2800 Non-potable Zone has been supplied with water (non-potable) from Well 26 supplemented with potable water through an air gap at the 2800 Zone Tank. The use of Well 26 is temporary until recycled water becomes available.

The non-potable water system is designed so that any surplus recycled/non-potable water could overflow into the percolation basins at BCVWD's groundwater recharge facility and recharge the BSU. However, additional treatment and monitoring would likely be required and recharge with recycled water is not planned for a number of years yet. The existing pipeline from the EBX brings State Project Water to the site to blend with and supplement the recycled water to meet the Regional Board's Maximum Benefit, 10-year average TDS requirement of 330 mg/L in the non-potable water system. Figure 6-14 shows the location of an anticipated connection to the YVWD non-potable system, described below, as well as the City of Beaumont Wastewater Treatment Plant. A pump station and reservoir would need to be constructed at the City of

Beaumont Wastewater Treatment Plant site to boost water into the 2800 Zone non-potable system.

Recycled Water Beneficial Uses

> *CWC 10633*
>
> *(Describe and quantify) 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.*
>
> *CWC 10633*
>
> *. (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 pursuant to this subdivision*

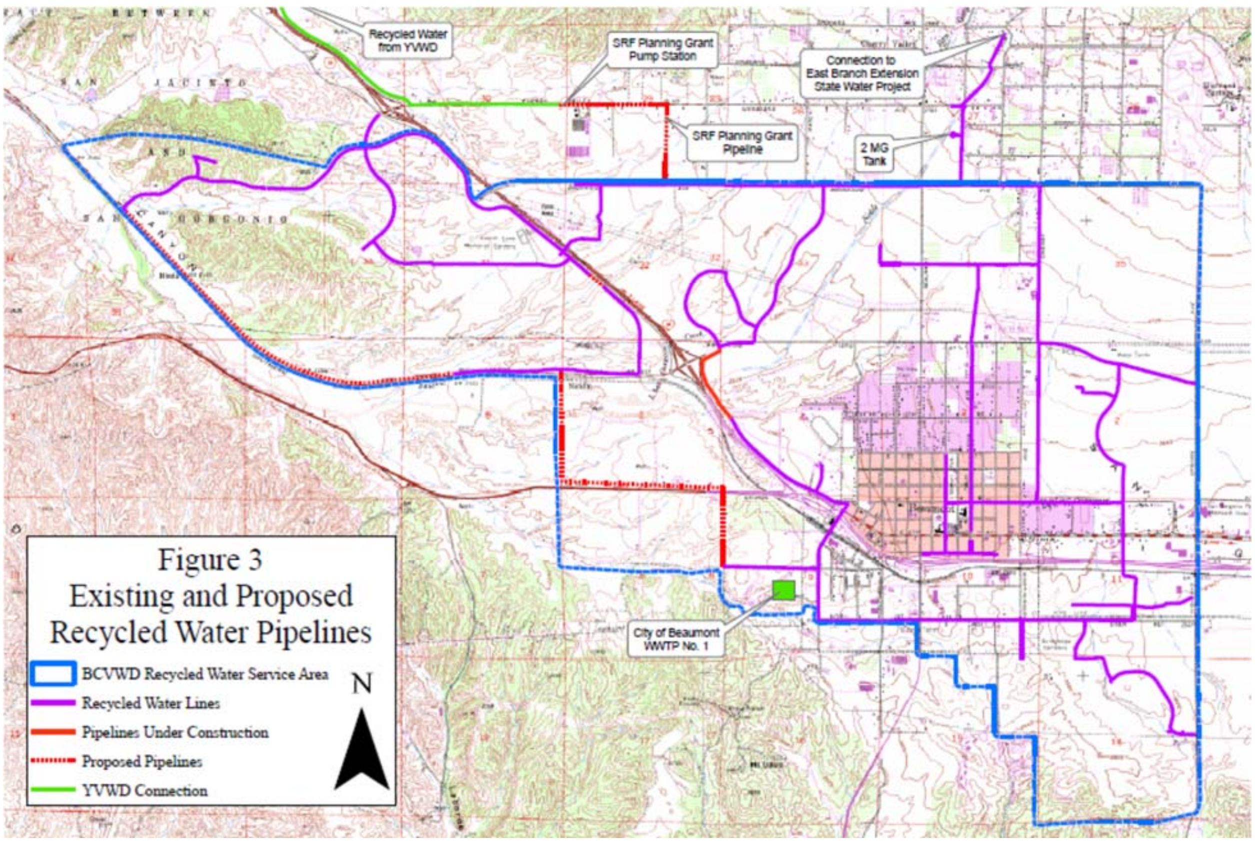

Figure 6-12
BCVWD Non-potable Water Transmission System

Source: Plan of Study, Pump Station and Recycled Water Pipeline to Use Recycled Water from YVWD within the BCVWD Service Area, May, 2010

BCVWD's non-potable (recycled) water system principal beneficial use is landscape irrigation of parks, playgrounds, common areas, street and highway medians and athletic complexes in residential, commercial and industrial areas. As new developments occurred, their landscape facilities were connected (separate metered connections) to the non-potable water system.

Once recycled water is available additional existing facilities (schools, parks, cemeteries, etc.) will be added to the system. There is one concrete ready mix supplier that is close to the non-potable water system. BCVWD has an agreement with the company to connect to the non-potable water system when recycled water is available.

Table 6-19 and Table 6-20 (DWR Tables 6-4A) for YVWD Recycled Water and City of Beaumont Recycled Water respectively show the projected quantities of recycled water for various beneficial uses from year 2015 to 2040. The quantities were determined from month-to-month analysis of recycled water supply and demand for each of the 5-year periods.

Table 6-19
(DWR Table 6-4A) Current and Projected Recycled Water Direct Beneficial Uses within Service Area – YVWD Recycled Water

DWR Table 6-4A Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area								
Name of Agency Producing (Treating) the Recycled Water:		Yucaipa Valley Water District						
Name of Agency Operating the Recycled Water Distribution System:		Beaumont Cherry Valley Water District						
Supplemental Water Added in 2015		none						
Source of 2015 Supplemental Water		NA						
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015 AFY	2020 AFY	2025 AFY	2030 AFY	2035 AFY	2040 AFY
Agricultural irrigation	none		0	0	0	0	0	0
Landscape irrigation (excludes golf courses)	none	Advanced	0	921	977	1,018	1,028	1,032
Golf course irrigation	none	Advanced	0	121	66	25	16	11
Commercial use	none		0	0	0	0	0	0
Industrial use	none		0	0	0	0	0	0
Geothermal and other energy production	none		0	0	0	0	0	0
Seawater intrusion barrier	none		0	0	0	0	0	0
Recreational impoundment	none		0	0	0	0	0	0
Wetlands or wildlife habitat	none		0	0	0	0	0	0
Groundwater recharge (IPR)*	none		0	0	0	0	0	0
Surface water augmentation (IPR)*	none			0	0	0	0	0
Direct potable reuse	none			0	0	0	0	0
Other *(Provide General Description)*	none		0	0	0	0	0	0
		Total AFY:	0	1,042	1,043	1,043	1,044	1,043
**IPR - Indirect Potable Reuse*								
NOTES: YVWD must provide some amount of effluent discharge to maintain habitat. Per DWR instructions this is not considered recycled water beneficial use. YVWD provides membrane treatment using reverse osmosis. Supply is based on correspondence from YVWD and is assume to not change over time to be conservative. Supply includes some filter washwater during summer months.								

Surplus recycled water is available during the winter and early spring months. Tukwet Canyon Golf Course is in the 2600 Zone and could be served recycled water as soon as the connection with YVWD is completed. The Tukwet Canyon golf course can be served directly from the YVWD connection through BCVWD's system. Oak Valley Golf Course is in the 2800 Non-potable Water Zone and recycled water from either YVWD or City of Beaumont would have to be boosted into the 2800 Zone to serve this golf course. Alternatively untreated SPW could be introduced into the 2800 Zone without boosting. Both Tukwet Canyon and Oak Valley Golf Courses are overlying parties in the Beaumont Basin Adjudication and have their own wells. BCVWD has existing piping and turnouts on the non-potable water system to supply both of the golf courses.

The golf courses could take recycled water during the winter and early spring and "rest" their wells. As their water demand increases during the late spring, summer and early fall, they would use their own wells for supply. The recycled water would then be used to supply

BCVWD's routine landscape demands. The benefit to BCVWD is Watermaster considers the recycled water provided to an overlying party as forbearance water and credit it to BCVWD's storage account.

Table 6-20
(DWR Table 6-4A) Current and Projected Recycled Water Direct Beneficial Uses within Service Area – City of Beaumont Recycled Water

DWR Table 6-4A Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area								
Name of Agency Producing (Treating) the Recycled Water:		City of Beaumont						
Name of Agency Operating the Recycled Water Distribution System:		Beaumont Cherry Valley Water District						
Supplemental Water Added in 2015		none						
Source of 2015 Supplemental Water		NA						
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015 AFY	2020 AFY	2025 AFY	2030 AFY	2035 AFY	2040 AFY
Agricultural irrigation	none		0	0	0	0	0	0
Landscape irrigation (excludes golf courses)	none	Secondary, Disinfected - 2.2	0	822	1,117	1,462	1,753	2,019
Golf course irrigation	none	Secondary, Disinfected - 2.2	0	332	365	387	441	517
Commercial use	none		0	0	0	0	0	0
Industrial use	none		0	0	0	0	0	0
Geothermal and other energy production	none		0	0	0	0	0	0
Seawater intrusion barrier	none		0	0	0	0	0	0
Recreational impoundment	none		0	0	0	0	0	0
Wetlands or wildlife habitat	none		0	0	0	0	0	0
Groundwater recharge (IPR)*	none	Advanced	0	0	418	491	646	827
Surface water augmentation (IPR)*	none			0	0	0	0	0
Direct potable reuse	none			0	0	0	0	0
Other *(Provide General Description)*	none		0	0	0	0	0	0
		Total AFY:	0	1,154	1,900	2,340	2,840	3,363
**IPR - Indirect Potable Reuse*								
NOTES: City of Beaumont is required to dischage 1.8 mgd (2,000 AFY) to maintain habitat in Coopers Creek. Per DWR instructions this is not considered a beneficial use. Recycled Water for GW Recharge (IPR) assumes 80% recovery.								

BCVWD has determined there will be surplus non-potable water available even after supplying Tukwet Canyon and Oak Valley Golf Courses. This amounts to about 400 AFY initially and grows to about 800 AFY over time. This water could be advance treated and recharged in BCVWD's groundwater recharge facility as indirect potable water reuse. See Table 6-20. Watermaster would credit this recharged, advance treated water, to BCVWD.

Planned vs. Actual Use of Recycled Water

CWC 10633

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

BCVWD last updated their UWMP in 2013. In 2013 it was envisioned the recycled water connection to the City of Yucaipa would be completed by sometime in 2015. See Table 6-21. This did not occur and so no recycled water could be delivered. However, in late 2015, BCVWD connected Well 26 to the non-potable water system and introduced 514 AF of non-potable well water into the non-potable system. This is continuing at least temporarily until recycled water can be secured from either YVWD or City of Beaumont or both.

Table 6-21
(DWR Table 6-5) 2013 UWMP Recycled Water Use Projection Compared to 2015 Actual

DWR Table 6-5 Retail: 2013 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		2013 Projection for 2015, AFY	2015 Actual Use, AFY
Agricultural irrigation			
Landscape irrigation (excludes golf courses)		1,500	0
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 AFY	1,500	0
NOTES: City of Beaumont is rquired to discharge 1.8 mgd (2,000 AFY) to maintain habitat in Cooper's Creek. Per DWR instructions, this is not considered a beneficial use.			

Actions to Encourage and Optimize Future Recycled Water Use

> *CWC 10633*
>
> *(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.*
>
> *CWC 10633*
>
> *(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.*

Existing Requirements

BCVWD's Rules and Regulations §4-1.1 require each applicant for water service to prepare a written application including the legal description of the parcel, water use, e.g., domestic, irrigation, commercial, etc., and the meter size desired. Commercial and industrial applicants will need to submit the volumes of water needed. For commercial and industrial applicants, the District then determines the feasibility for recycled water. The District applies this to schools also.

BCVWD would prepare a “Plan of Service” to document the facilities that are needed to be constructed. The Plan of Service will state if connection to the recycled water system is required and what recycled water facilities are needed to be installed with the development. Generally recycled water facilities would be required if there were significant landscaped areas such as parks, schools or common areas and the project was in the recycled water service area. If annexation to the District is required, the Plan of Service is also submitted to LAFCO.

If the water service is approved by the Board of Directors, prior to construction, the developer and the District enter into a “Water Main Extension and Facilities Construction Agreement.” This is a very detailed description of the infrastructure needed and the costs, reimbursements and other conditions. If connection to the recycled water system is required, it is formalized in the Main Extension Agreement. It is through this process that the current system has been constructed and landscaped areas connected. This will continue for future development in the District.

The City of Beaumont has Ordinances requiring the use of recycled water when available:

- 772 -- Requiring Conservation of Water in Accordance with the Adopted Beaumont Cherry Valley Water District Urban Water Plan and Recycled Water Master Plan
- 773 -- Requiring use of Recycled or Reclaimed Water in Accordance with State Law
- 775 -- Establishing Service Charges and Fees for Recycled or Reclaimed Water in the City of Beaumont and the City Sphere of Influence

The City of Beaumont Municipal Code, Title 17, §17.06.030 D. b. 11 and §17.06.030 D. c. 5 , have specific requirements to use non-potable and recycled water for landscaping when available. Riverside County Ordinance 859.2 has similar requirements.

Methods to Expand Use of Recycled Water

BCVWD is fortunate to have a non-potable water system already installed with about 300 landscape connections, operating with non-potable well water supplemented with potable water. This system is ready to convert to recycled water when available. There is no need to “market” the use of recycled water. Future developments within the City of Beaumont will be connecting to the existing system based on the Plan of Study for the specific project. These will be new connections for new landscaped areas. Existing ordinances and Rules and Regulations already require this.

Table 6-22 contains a list of existing facilities which could potentially be connected to the BCVWD non-potable water system. Many of these are in close proximity to the existing non-potable water pipelines but BCVWD does not want to connect them until more non-potable (recycled) water is available. Currently the demand for non-potable water exceeds the supply and requires potable water make-up to the system.

Table 6-22
Potential Future Service Connections to Non-potable Water System

Facility	Estimated Amount of Recycled Water, AFY	Estimated Year of Connection
Beaumont High School (new)	99	2020
Beaumont Adult School & San Gorgonio Middle School	50	2025
Noble Creek Park	100	2025
Glenview High School	8	2025
Wellwood Elementary School	4	2025
Rangel Park	5	2025
Mountain View Cemetery	37	2025
Sunnyslope Cemetery	On private well	--
Eighth St & Elm Ave Triangle Park	2	2025
Rancho Ready Mix	20	2020
Total	325	

Tukwet Canyon and Oak Valley Golf Courses have not been included in Table 6-22. They are already included in the non-potable water demand forecast tables (Tables 6-19 and 6-20).

Table 6-23 (DWR Table 6-6) lists several projects to expand future recycled water use. Although the current non-potable water demand is about 1,600 AFY and will increase when the facilities in Table 6-22 are connected, additional non-potable water supply is needed to meet peak demands. Furthermore, non-potable water demand will increase as major developments continue to be constructed within BCVWD's service area. These developments are residential, for the most part, and will include park and school facilities, common areas, club houses, etc. which will be connected to the non-potable water system. These will occur and BCVWD will need to increase the supply of non-potable water.

The projects listed in Table 6-23 and will increase the supply by about 3,300 AFY initially. The amount from the City of Beaumont and YVWD connections will likely increase over time as more homes are connected to the wastewater system.

Desalinated Water Opportunities

> *CWC 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.*

As stated above there are opportunities to participate in desalting projects particularly for groundwater in other regions and exchange the water for State Project Water. However, installing desalting facilities within the Beaumont Basin would not be very practical since the existing groundwater water quality is excellent. The TDS is only about 250-275 mg/L. Generally to make desalting practical, the TDS should be in the range of 1500 mg/L or greater. It is probable that desalting will be required on the recycled water available from the City of Beaumont to conform to the maximum benefit commitments. But this would only be partial demineralization to reduce the TDS to the maximum benefit objective of 330 mg/L.

Table 6-23
(DWR Table 6-6) Methods to Expand Future Recycled Water Use

DWR 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.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use, AFY
Add additional rows as needed			
Const. YVWD Connection	Construct connection to YVWD non-potable water system including pumping station	2018	1,043
Const. City of Beaumont Connection	Construct storage and pumping station at City Treatment Plant	2020	1,154
Edgar Canyon Nitrate Wells	Install extraction wells at mouth of Edgar Canyon to extract high nitrate groundwater for non-potable water system	2030	300
San Timoteo Groundwater Capture	Install extraction wells in San Timoteo Canyon to extract wastewater which percolates from 1.8 mgd habitat mitigation flow.	2030	800
		Total AFY	3,297
NOTES: These projects will increase the non-potable water supply which allows BCVWD to serve more non-potable water.			

Exchanges or Transfers

> *CWC10631*
>
> *(d) Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.*

Transfers from South Mesa Water Company

BCVWD had an agreement with South Mesa Water Company (SMWC) to transfer unused rights from SMWC to BCVWD's groundwater storage account in the Beaumont Basin. The transfers first began in 2007 and totaled 13,000 AF. During the period 1994 through 2014, the Beaumont Basin appropriators had access to a temporary surplus, established through the Adjudication to create storage space in the basin for conjunctive use and water banking. During this time, SMWC had excess water in storage and did not need that water to meet its normal demands. They transferred this water to BCVWD to allow BCVWD to build up its own storage account. After 2014, the temporary surplus is not available. As a result, SMWC will likely retain their stored water to meet future demands and will likely not make any further transfers.

Participation in Other Agency Water Supply Projects

BCVWD could participate in a joint project with another Southern California water agency. These projects could include groundwater treatment and desalination.

Many of the groundwater basins in Southern California are impacted by excessive nitrates, high total dissolved solids, and, in some cases volatile organic chemicals (VOCs) and perchlorate. There are a number of agencies constructing or planning to construct desalters and VOC, nitrate and perchlorate removal facilities in the area including the Santa Ana Watershed Project Authority, the Chino Basin Desalting Authority, Eastern Municipal Water District and others. BCVWD could participate in one or more of these projects in exchange for State Project Water. BCVWD understands that they will need to work with the Pass Agency and others to work out the arrangements to bring this exchange about. BCVWD understands there could be transportation (wheeling) charges imposed.

BCVWD sees transfers and exchanges as very viable solution to providing long term water supplies.

Emergency Interties

BCVWD already has a 12-in diameter emergency intertie with the City of Banning at Highland Springs Ave. and Sun Lakes Blvd. (First St.) since the 1990s. The City of Banning's water system pressure zones closely match BCVWD's and mutual exchanges are possible.

The City of Banning also has joint ownership, with BCVWD, in 3 large capacity wells in BCVWD's service area. There are also several large pipeline "stub outs" from BCVWD's potable water system across Highland Springs Ave, to the City of Banning. These "stub outs" will be extended through the Butterfield Ranch development to interconnect with Banning's potable water system. This will occur when Butterfield Ranch develops. These interconnections allow Banning to recharge imported SPW at BCVWD's ground water recharge facility and, using the joint wells and the interconnections, extract that water when needed, and convey it to Banning's water system for use.

Future Water Projects

CWC 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.

Table 6-24 (DWR Table 6-7) presents a list of potential future projects which BCVWD could construct to increase the available water supply.

The Grand Avenue Storm Drain Project is already in the preliminary design phase with work being done by the Riverside County Flood Control and Water Conservation District. This is funded under a DWR grant through SAWPA. BCVWD and YVWD are in discussions on the non-potable water connection with YVWD. BCVWD completed a Facilities Planning report in 2014 for the project which was approved by the SWRCB for potential funding.

These projects, when all are implemented, will yield about 3,900 AFY initially and about 6,100 AFY by year 2040. The large growth is due to increases in recycled water from the City of Beaumont as a result of development and population growth in the City of Beaumont.

Table 6-25, (DWR Table 6-8), summarizes BCVWD's water supply for the year 2015.

Summary of Existing and Planned Sources of Water

CWC 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.

Table 6-26, (DWR Table 6-6), summarizes BCVWD's projected water supply for the years 2020, 2025, 2030, 2035 and 2040.

Table 6-24
(DWR Table 6-7) Expected Future Water Supply Projects or Programs

DWR 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.					
	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, AFY
Grand Ave Storm Drain	Yes	RCFWCD	Const of SD to divert water into BCVWD Rehcharge Facility	2020	All Year Types	185
Misc Urban Runoff Capture	Yes	Beaumont	Various recharge basin enhancements	2025	All Year Types	200-545
Lower Edgar Canyon Non-potable Groundwater	No		Install extraction wells for high nitrate GW for non potable water system	2025	All Year Types	300
San Timoteo Canyon GW Extraction	Yes	Beaumont	Install series of wells to recapture percolated ww used for habitat mitigation	2030	All Year Types	400-800
Non-potable Water interconnection with YVWD	Yes	YVWD	Install interconnecting pipeline, and booster pumping station and pressure regulating stations	2018	All Year Types	1,043
Connection to City of Beaumont for recycled water	Yes	Beaumont	Install storage tank, booster pumping station and interconnecting piping	2020	All Year Types	1,154
Advance Treated Recycled Water	Yes	Beaumont	Construct Advanced Treatment Facility and Brine Line	2025	All Year Types	300-660
NOTES: Yield from City of Beaumont Recycled Water Connection will increae to 3,363 AFY by 2040 due to increases in wastewater flows over time. Expected increase in water supply for Advance Treated Wastewater is based on 80% recovery in the membrane treatment process						

Table 6-25
(DWR Table 6-8) BCVWD Water Supplies – Actual Year 2015

DWR Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
		Actual Volume, AFY	Water Quality	Total Right or Safe Yield, *AFY*
Groundwater	Little San Gorgonio (Edgar Canyon)	1,418	Drinking Water	2,200
Groundwater	Beaumont Basin	2,300	Drinking Water	
Purchased or Imported Water	SGPWA	2,090	Raw Water	
Transfers	From Banked GW storage	3,984	Drinking Water	
	Total AFY	9,792		2,200
NOTES: BCVWD typically receives reallocated unused Overlying Party Rights, forbearance water for supplying potable or non-potable water to Overlying Parties, and return flow credits for importing SPW, groundwater, or recycled water per the Beumont Basin Watermaster. Thsi varies from year to year.				

Climate Change Impacts to Supply

Climate change, according the USEPA[34], refers to any significant changes in temperature, precipitation or other climate patterns lasting for extended periods of time. Throughout history, locations on the earth have experienced climate change – a notable example is the ice age which blanketed much of the Midwestern US with glaciers. These changes are continuing to occur whether impacted by mans' activities or purely a natural phenomenon. There is some evidence the earth's average temperature is rising ever so slowly and this is theorized by some experts to continue for several centuries. Places have experienced changes in rainfall, reduced snowfall, changes from snow to rain, warming of the oceans, melting of icecaps and resulting sea level rises. Even small changes in temperature can result in measureable changes in climate and weather. The cause is theorized to be due to increases in concentration of "greenhouse gases[35]" in the atmosphere.

[34] http://www.epa.gov/climatechange/basics/ accessed 4/2/2013

[35] Water vapor, carbon dioxide, methane, nitrous oxide and other gases which reflect light and infrared radiation back to the earth's surface.

Table 6-26
(DWR Table 6-9) BCVWD Water Supplies – Projected

DWR Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	**Projected Water Supply, AFY** *Report To the Extent Practicable*									
		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	Little San Gorgonio (Edgar Canyon)	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Groundwater	Beaumont Basin	1,765		1,970		2,334		2,782		2,836	
Groundwater	Beaumont Basin GC Forbearance	453		431		416		457		528	
Stormwater Use	Grand Ave Recharged	185		185		185		185		185	
Recycled Water	Advance Treated and Recharged	0		418		491		646		827	
Stormwater Use	Various Urban Runoff Basins	0		245		545		545		545	
Purchased or Imported Water	SGPWA	10,150		11,127		12,503		13,843		15,362	
	Subtotal Potable Water	14,753		16,576		18,674		20,658		22,483	
Recycled Water	YVWD Landscaping	921		977		1,018		1,026		1,032	
Recycled Water	City of Beaumont Landscaping	822		1,117		1,462		1,753		2,019	
Purchased or Imported Water	Raw Water to Supplement Non-potable Water	163		280							
Other	non-potable GW Edgar Canyon	0		0		200		200		200	
Other	Non-potable GW San Timoteo Creek	0		0		251		249		198	
	Subtotal Non-potable Water for Landscaping	1,906		2,374		2,931		3,228		3,449	
Recycled Water	to Golf Courses	453		431		416		457		528	
	Total Non-potable Water	2,359		3,223		3,838		4,331		4,804	
Purchased or Imported Water	SGPWA for Banking	1,000		1,500		2,000		2,500		2,500	
	Total Imported Water from SGPWA	11,313		12,907		14,503		16,343		17,862	
Total Potable + Landscape + GC+ Banked, AFY		18,112	2,200	20,881	2,200	24,021	2,200	26,843	2,200	28,960	2,200
NOTES: Beaumont Basin Groundwater includes forbearance (except golf courses), unused overlier rights and return flow credits.											

A DWR White Paper published in 2008[36] on the climate change strategies for California water stated the following:

> *Climate change is already affecting California's water resources. Bold steps must be taken to reduce greenhouse gas emissions. However, even if emissions ended today, the accumulation of existing greenhouse gases will continue to impact climate for years to come. Warmer temperatures, altered patterns of precipitation and runoff, and rising sea levels are increasingly compromising the ability to effectively manage water supplies, floods and other natural resources. Adapting California's water management*

[36] State of California Department of Water Resources, (2008). Managing an Uncertain Future, Climate Change Adaptation Strategies for California Water, October.

systems in response to climate change presents one of the most significant challenges of this century.

While the exact conditions of future climate change remain uncertain, there is no doubt about the changes that have already happened. Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. The average early spring snowpack in the Sierra Nevada decreased by about 10 percent during the last century, a loss of 1.5 million acre-feet of snowpack storage (one acre-foot of water is enough for one to two families for one year). During the same period, sea level rose seven inches along California's coast. California's temperature has risen 10F, mostly at night and during the winter, with higher elevations experiencing the highest increase. A disturbing pattern has also emerged in flood patterns; peak natural flows have increased on many of the state's rivers during the last 50 years. At the other extreme, many Southern California cities have experienced their lowest recorded annual precipitation twice within the past decade. In a span of only two years, Los Angeles experienced both its driest and wettest years on record.

The Report further goes on to state:

What we know:

- *Historic hydrologic patterns can no longer be solely relied upon to forecast the water future;*
- *Precipitation and runoff patterns are changing, increasing the uncertainty for water supply and quality, flood management, and ecosystem functions;*
- *Significant and ongoing investments must be made in monitoring, researching, and understanding the connection between a changing climate, water resources and the environment;*
- *Extreme climatic events will become more frequent, necessitating improvements in flood protection, drought preparedness and emergency response;*

These changes will bring challenges to water supply agencies like BCVWD and impact BCVWD in both its imported water supply and it local supply – snow fall and rainfall runoff.

Climate Change Impacts on BCVWD Imported Water Supply

The DWR 2011 Reliability Report took climate change into consideration, but there are some specific issues that should be mentioned.

- Reduction in Sierra snow pack
- Rising sea levels on levee integrity

Reduction in Sierra Snowpack

The Sierra snowpack is California's best and least expensive reservoir. The precipitation falls as snow in the winter in the mountains through the winter, building up a large, "on the surface" water reservoir. During the spring and early summer this begins to melt gradually, trickling water into surface reservoirs. These reservoirs are able to capture the water and move it downstream to users maintaining flow releases that do not threaten levees or cause flooding. The peak of the runoff period is late spring or early summer.

In 1989 the USEPA issued a report on what would happen to global temperatures with a two-fold increase in the carbon dioxide concentration in the atmosphere. The report indicated a 1.5 to 4.5°C (2.7 to 8.1°F) increase over the next 100 years if fossil fuel usage continued at the rate at the time. DWR made some very approximate estimates of what that would do to the snowpack based on a rise of 1500 ft elevation in the historical winter snowline. Assuming no change in the amount of precipitation, DWR estimated that spring snowmelt runoff would decrease by 1/3, with more occurring in the northern Sierra versus the southern Sierra where the mountains are higher in elevation and capture more high elevation snow.[37] These are certainly dire predictions; whether this will actually occur is uncertain.

DWR did plot the April to July runoff in both the Sacramento River and San Joaquin River, reflecting the northern and southern Sierras respectively as a percent of the water year runoff. The April to July runoff would represent the snowmelt runoff. These are shown in Figure 6-13 and Figure 6-14.

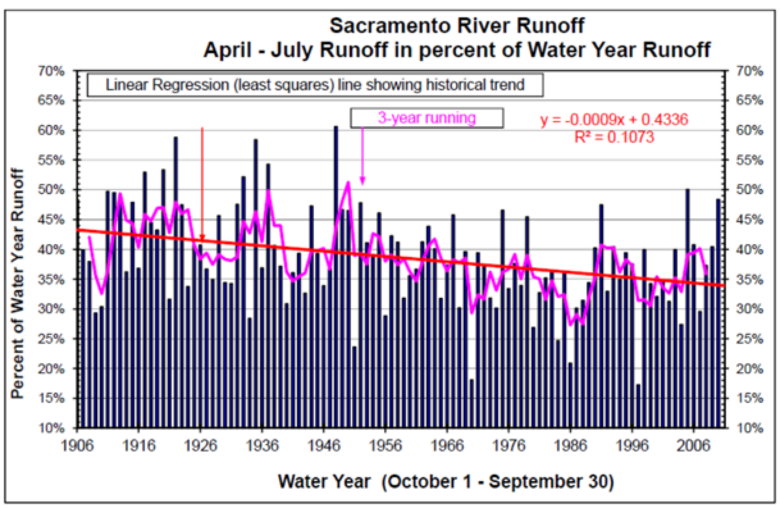

Figure 6-13
Sacramento River Runoff (1906-2010), April-July

[37] Department of Water Resources, State of California, Roos, Maury, Chief Hydrologist. (2012). Snowpack and Snowmelt Changes, January 3.

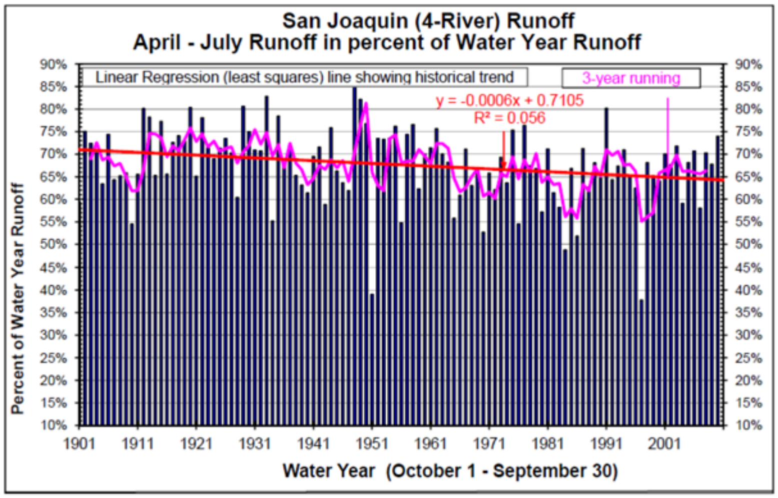

Figure 6-14
San Joaquin River Runoff (1901-2010), April-July

There is a downward trend evident with a steeper slope in the Sacramento River validating at least the general hypothesis determined in 1989.[38] From DWR's data, there appears to be solid evidence that at least some changes are occurring. Maybe these are cyclical; maybe more long term; maybe very long term.

With global warming things will be different. Precipitation will be principally in the form of rain. This will runoff rapidly, quickly filling the surface reservoirs the Department of Water Resources counts on to store water to supply users over the summer and fall till the next "season." The rainfall runoff occurs rapidly and in large quantities bringing with it significant sediment which will eventually silt up the storage reservoirs. The reservoirs will fill up and spill, releasing the high flows into the rivers leading to the Delta, straining levees which are already unstable. This water, which previously was captured as snowfall, will be lost to the ocean. The SWP does not have the storage or conveyance facility capacity to manage all of these high flows and put them to beneficial use or convey the flows to groundwater recharge facilities for storage.

There are many legislators and members of the public opposed to surface storage. This is unfortunate because without additional surface storage, the impacts of climate change will be felt by all of the water users in the State and the Delta ecosystem.

It is likely there will be less Table A water and more Article 21 water available as the reservoirs are quickly filled with rainfall runoff. If this Article 21 can be conveyed to the Pass Area, BCVWD is in a good position to recharge this water with the expanded recharge facility. Perhaps this is sufficient to overcome the reduction in Table A water.

[38] Ibid

Sea Level Impact on Levees

Climate change reportedly will result in sea level rise. The higher sea level will result in greater forces on the existing levees in the Delta. The islands that comprise the Delta are now well below sea level. Levees have broken in the past due to a wide variety of reasons. They are threatened by spring floods and seismic activity. Failure of a levee is akin to a dam break. Water from the Delta rivers will rush in to flood the island. This brings about a corresponding inflow of saline water from San Francisco Bay into the Delta contaminating the imported water flowing through the Delta with salt degrading its quality and making it potentially unusable for extended periods of time.

The levees in the Delta are weak. They were constructed over a century ago with the construction and compaction techniques of the time. They are certainly not up to today's standards and are vulnerable. Higher sea levels and higher spring flows due to the lack of snowpack will exacerbate the problems with the levees. Seismic activity during saturated condition could be devastating.

Because BCVWD can rely on the Beaumont Basin for groundwater, the District should be able to weather any short to medium term interruptions of imported water supply. But it will be important to make sure the storage account has adequate water.

Climate Change Impacts on BCVWD's Local Supply

Locally climate change will have similar effects.

- Reduced snow pack and higher runoff
- Increased wildfire risk
- Water demand increase

Warmer temperatures from climate change will reduce the local snow pack, but not to the degree described above for the Sierra Nevada mountains. The local snow pack is not a major supply source for BCVWD, though it does provide some gradual recharge, particularly the wells in Edgar Canyon. Higher rates of runoff can be expected with more intense storms. This will bring down substantial amounts of sediment. At this point BCVWD is in a good position to deal with the sediment having recently constructed additional desilting basins at the mouth of Edgar Canyon to supplement the numerous percolation ponds and basins along the length of Edgar Canyon. Construction of Phase 2 of the recharge facility is underway, which allows the District to capture any large storm flows which make it "out of the canyon." It is believed the number of larger storm flows will increase over time due to climate change.

Warmer temperatures will bring an increased risk of wildfires in the watershed. Although some may consider wildfires an ecological benefit, there are some devastating consequences to water suppliers such as BCVWD. A burned watershed will result in enormous amounts of sediment moved down into the canyon streams, which could cause flooding in the canyon and flood out some of the District’s well pumps. Wildfires have burned portions of the watershed in the recent past and BCWWD has been able to minimize the impacts. The District has installed a water tank at the 3900 foot elevation between Edgar and Wallace Canyons and a fire protection piping loop in the vicinity of the “middle houses” to respond to brush fires in the canyon.

Water demand is expected to increase due to hotter days and nights. Irrigation water needs will increase due to potential reduction in precipitation and warmer days.

Mitigation

One of the best ways of mitigating climate change is by reducing energy consumption, particularly energy produced by fossil fuels and becoming more energy efficient. Although consumers have no control over the use of energy and fossil fuels by BCVWD directly, consumers can assist BCVWD by reducing water consumption. Supplying water to customers in the District’s service area takes energy to pump the water out of the ground and pressurize it for use. The bulk of the District’s supply is from the Beaumont Basin where the groundwater table is 500 or more feet below the ground surface. To boost the pressure for consumers’ use requires another 200 ft or so of pumping. A substantial amount of energy is expended pumping this water. Saving water at home means saving energy; saving energy reduces greenhouse gas emissions.

Section 7

Water Supply Reliability Assessment

Constraints on Water Sources

> *CWC 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.*
>
> *CWC 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.*
>
> *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.*

Table 7-1 shows a summary of BCVWD's current and future water sources and identifies the factor(s) that affect the specific source's consistency of supply. Climate affects the amount of water available from most of the sources; there are some legal constraints on the Beaumont Groundwater Basin Source due to the Adjudication and contractual and environmental constraints on the imported SPW. BCVWD's sources are not affected by water quality per se, although a case could be made for the imported SPW supply and Delta water quality impacts on pumping.

The following subsections quantify the variability in BCVWD's water sources.

Reliability by Type of Year

> *CWC 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.*

The water supply quantities from BCVWD's sources for the average year were presented in Section 6. This Section 7 will quantify the availability during various drought scenarios over the planning period:

- Single dry year -- the lowest water supply available to BCVWD, a worst case condition

- Two consecutive dry years -- the lowest average available water supply over a 2-year period
- Three consecutive dry years -- the lowest average available water supply over a 3-year period
- Six Consecutive dry years -- the lowest average available water supply over a 3-year period

Table 7-1
Factors Resulting in Inconsistency of Supply

Water Supply Source	Cause of Inconsistent Supply				Additional Information
	Legal	Environmental	Water Quality	Climate	
Edgar Canyon Groundwater				X	
Beaumont Basin Groundwater Appropriator Rights	X				Note 1
Beaumont Basin Groundwater Unused Overlier Rights	X			X	Note 2
Imported State Project Water	X	X		X	Note 3
Recycled Water				X	Note 4
Stormwater Capture and Percolation				X	
Urban Runoff Capture and Percolation				X	
Nitrate-contaminated Groundwater from mouth of Edgar Canyon				X	

Notes to Table 7-1:

1 After 2014 the Appropriator production rights are zero per Adjudication

2 Reallocation of Overlier pumping rights are variable. Estimated to drop to 1000 AFY by 2035

3 SWP reliability discussed in text. 10% of Table A is available 100% of the time; adjusted per draft allocation agreement.

4 Recycled water is not subject to any significant variations; but some drought period reductions in flow are experienced – maybe 10%. Domestic water restrictions typically have the greatest impact on outdoor water use.

In DWR's Guidebook for Urban Water Suppliers Preparing 2015 UWMP Updates, there are a number of standard tables that are to be completed. BCVWD believes these standard tables, if presented in the text of this Section, will be very confusing to the readers. It would be difficult for the reader to follow how the information on water supplies for various durations of dry years was developed. In lieu of the standard tables, BCVWD presents its methodology using similar tables, but not identical tables, which better explain the water source reliability and demonstrate the assessment of impacts of single dry year and multiple dry year on BCVWD's water supply. DWR's standard tables were completed using the information from BCVWD's tables in this section and are presented along with the other DWR standard tables in Appendix C.

As background for the discussion on water supply reliability, BCVWD enjoys the benefits of a groundwater basin, (Beaumont Basin), with very large storage capacity. BCVWD and its neighboring agencies in the San Gorgonio Pass Area can take advantage of this by banking imported water during wet years for use during extended droughts. Complementing the large storage capacity is the fact that percolation and recharge occur at relatively high rates. It is very easy to "bank" water in the Beaumont Basin. It is retained in the Basin due to well-managed groundwater levels, and the ample storage capacity. Figure 7-1 shows the amount of water BCVWD has accumulated in its storage account since 2003. Imported water began to be spread in 2006.

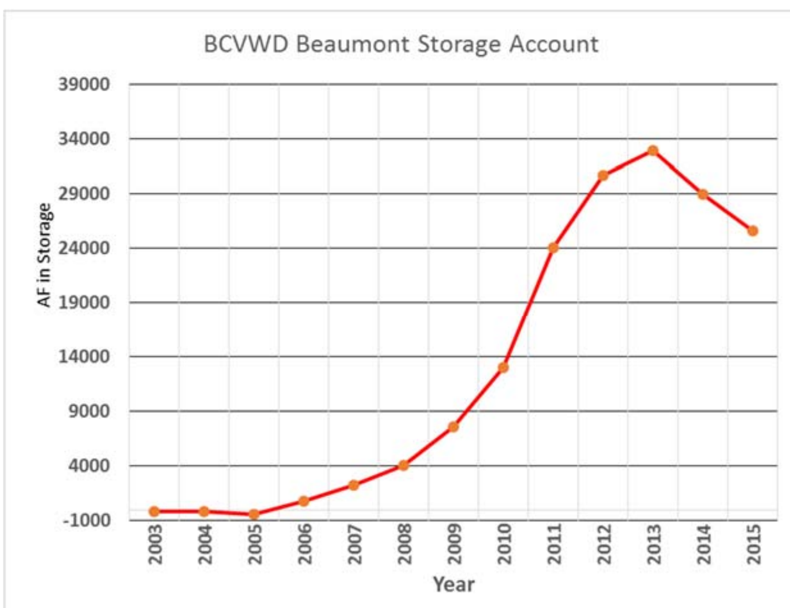

Figure 7-1
BCVWD's Beaumont Basin Storage Account

With the ability to bank water and the large "underground" reservoir, BCVWD and its neighboring agencies can withstand extended periods of drought without severe restrictions.

At the end of 2015, for example, BCVWD had 25,568 AF in storage. This dropped from a maximum in 2013 of nearly 34,000 AF due to the drought and the reduced SWP. BCVWD can store up to 80,000 AF in the Beaumont Basin managed by the Watermaster.

In Section 6, Table 6-25 (DWR Table 6-9), a quantity of BCVWD-purchased imported water was identified as “SGPWA for Banking.” This varied from 1,000 AFY to 2,500 AFY and is over and above the amount of imported water needed to meet demands. The purpose of this “banking water” is to build up BCVWD’s Beaumont Basin Groundwater Storage Account to be used as reserve for drought periods when adequate, (as projected in Table 6-25), SPW is not available.

SGPWA is to supply the imported water requested in Table 6-25 (DWR Table 6-9) to meet BCVWD’s needs plus the anticipated SPW for banking. If in any year(s), either of these quantities cannot be supplied, for any reason, the accumulated shortfall is expected to be delivered to BCVWD by SGPWA as soon as possible once imported water is available. In this way, BCVWD will be able to keep adequate water in storage for current (2015) needs and accommodate growth in BCVWD’s service area. Looking at the quantities in Table 6-25, BCVWD anticipates banking 35,000 AF of water over the next 20 years, which would bring BCVWD’s storage account to about 50,000 AF. This is over 3 years of SPW requirements to meet demand. In other words, BCVWD would be able to meet year 2040 demands with no SPW for over 3 years.

Groundwater

Beaumont Basin

The Beaumont Basin is managed by the Beaumont Basin Watermaster. A discussion of the principles of the Adjudication was presented previously in Section 6.

In any given year, BCVWD can pump out its stored (banked) water. The storage is replenished, at least partially, every year by forbearance water, reallocated unused Overlying Party pumping rights, return flows, and imported water when available. The amount of imported water that can be recharged in any year depends on DWR’s SWP allocation. This varies from year to year. See Figure 6-2 presented previously.

Table 6-9, presented previously, showed the amount the Watermaster credits to BCVWD’s Beaumont Basin Storage Account annually. The amount of unused Overlying Party rights is based on a 5-year moving average and could decrease slightly during drought periods as the Overlying Parties use more well water to compensate for the lack of rainfall. The forbearance water and return flows will decrease during dry periods as users reduce water consumption.

Table 7-2 shows the estimated amount of water credited to BCVWD by Watermaster for a single or multiple dry year analysis. For the dry year analysis, it was estimated that there would be a 15% conservation effect; in other words, for dry year analysis, only 85% of average annual forbearance, reallocated Overlying Party rights, etc. would be available. In Table 7-2, the 15% reduction factor is also applied to the recycled forbearance water to account for a potential reduction in treated wastewater due to water conservation effects. No irrigation of golf courses is assumed to occur during these drought periods since there may not be enough recycled water available with conservation to permit this to occur. This is believed to be conservative.

Table 7-2
Summary of BCVWD's Beaumont Basin Storage Credits

Item	2015	2020	2025	2030	2035	2040
Total Return Flow Credits, Allocated Overlying Party Rights, and Forbearance Water (No Golf Courses), from Table 6-9, AFY	1,927	1,765	1,970	2,334	2,782	2,836
Expected to be Available for Single and Multiple Dry Year Analysis, AFY	1,640	1,500	1,675	1,985	2,330	2,410

Edgar Canyon

Groundwater from Edgar Canyon is affected to some degree by climate as can be seen from the statistics in Table 6-8 presented previously. The average annual extraction from Edgar Canyon is 2,181 AFY based on records from 1983-2015. During that period of time the minimum extracted was 1,117 AFY, which occurred in 1991. This can be considered the "Single Dry Year Water Available." The 2-year, 3-year, and 6-year moving averages for the extractions from 1983 -2015 were determined and are presented in Table 7-3 along with the Base Period for moving averages.

Table 7-3
Groundwater Available from Edgar Canyon for
Single and Multiple Dry Year Analysis

Drought Condition (Base Years)	Average Available over the Drought Period, AFY
Single Dry Year (1991)	1,117
2 Consecutive Dry Years (1990 – 91)	1,173
3 Consecutive Dry Years (1989 – 91)	1,230
6 Consecutive Dry Years (1987 – 92)	1,367

Imported Water

The amount of imported water available from the SGPWA via the State Water Project is very climate dependent. A spreadsheet was developed using the 2015 DWR Delivery Capability Report simulation data (1922 to 2003) for SGPWA to develop an estimate of the delivery capability for the single dry year and multiple dry year reliability analysis. The 2-, 3-, and 6-year moving averages of annual estimated delivery allocations were determined for the period 1922-2003. A summary of the Table A delivery percentages is shown in Table 7-4.

Table 7-4
SGPWA SWP Delivery Capability as Percent of Table A
(Based on 2015 DWR SWP Delivery Capability Report)

Dry Year(s)	Single	2-year	3-year	6-year
Table A Annual Delivery Average Over the Drought Period, %	8	19	22	28

The percentages in Table 7-4 were compared to actual SWP delivery allocations for the period 1992 to 2016, a 24-year period:

Minimum year	5% (2015)
Minimum 2 consecutive years	12.5% (2014-15)
Minimum 3 consecutive years	20% (2013 – 15)
Minimum 6 consecutive years	42.5% (2010 – 15)

As can be seen, the actual minimum year and minimum 2 and 3 consecutive years are less than those from the 2015 DWR SWP Delivery Capability Report. So, for the reliability analysis in this 2015 UWMP Update, the allocation percentages in Table 7-5 will be used.

Table 7-5
SGPWA SWP Delivery Capability as Percent of Table A
(Used for Reliability Analysis)

Dry Year(s)	Single	2-year	3-year	6-year
Table A Annual Delivery Average Over the Drought Period, %	5	12.5	20	28

For the reliability analysis, the percentages in Table 7-5 will be applied to BCVWD's imported water demand for the particular year. The results are shown in Table 7-6. The additional SPW to provide a 5-year emergency supply for droughts per BCVWD Board of Directors Resolution

2014-05 is not included in the SPW Needed in Table 7-6. See Table 6-25, presented previously. (Note that the State's 2016 Emergency Conservation Regulation requires a 3-year supply in order to avoid restrictive water conservation mandates.)

Section 6 described the role of the SGPWA in supplying SWP to BCVWD. The SGPWA has initiated a capacity fee for all new connections. By Resolution 2015-05, the SGPWA Board of Directors established an obligation to meet the future water supply needs of the region, including BCVWD, and recognizes the current allotment of Table A capacity is fully subscribed to current users. BCVWD can rely on the SGPWA to secure and deliver the imported water needed to meet BCVWD's current and future demands as set forth in this 2015 UWMP Update and subsequent UWMP Updates in concert with DWR's Delivery Capability Reports.

Table 7-6
Estimated SWP Deliveries to BCVWD from SGPWA During Extended Dry Periods

	% Table A	Year				
		2020	**2025**	**2030**	**2035**	**2040**
SPW Needed, AFY		10,313	11,407	12,503	13,893	15,367
Single Dry Year	5%	520	570	630	690	770
2-years	12.5%	1,290	1,430	1,560	1,740	1,920
3-years	20%	2,060	2,280	2,500	2,780	3,070
6-years	28%	2,890	3,190	3,500	3,890	4,300

Recycled Water

Recycled water is consistently available; although during droughts, consumers are more aware of water conservation and reduce their indoor water consumption somewhat. They are more aware of the need to do only full loads of laundry, full loads for the dishwasher etc. Agencies, including the City of Beaumont, have observed a reduction in wastewater flows during the current drought.

BCVWD is counting on two separate sources of recycled water: YVWD and the City of Beaumont. For a single dry year, an estimate of 90% of the normal, average recycled water will be available. As the drought becomes more pervasive, the amount of recycled water is estimated to reduce further to 85% of normal. Table 7-7 provides an estimate of the available recycled water during extended dry periods. The amount of recycled water under normal conditions is derived from Tables 6-18 and 6-19, presented previously.

Storm Water and Urban Runoff Reliability (Potential Projects)

Storm water and Urban Runoff quantities are very dependent on rainfall. Review of the rainfall record at Beaumont for the period 1888 – 2006 resulted in the data shown in Table 7-8. To determine the multiple dry year rainfall as a percent of the average rainfall, the 2-, 3-, and 6-year moving averages of the annual rainfall was determined. Table 7-8 also lists the storm water capture projects and their estimated annual "new water" captured from Table 6-13 presented previously.

Table 7-7
Estimated Recycled Water Available During Extended Dry Periods

	% Available	Year				
		2020	2025	2030	2035	2040
YVWD Recycled Water Used on Landscaping, AFY		921	977	1,018	1,028	1,032
City of Beaumont Recycled Water Used on Landscaping, AFY		822	1,117	1,462	1,753	2,019
Recycled Water Advance Treated and Recharged, AFY		-	418	491	646	824
Total Recycled Water Used, AFY		1,743	2,513	2,971	3,427	3,875
Single Dry Year	90%	1,570	2,260	2,670	3,080	3,490
2-years	85%	1,480	2,140	2,530	2,910	3,290
3-years	85%	1,480	2,140	2,530	2,910	3,290
6-years	85%	1,480	2,140	2,530	2,910	3,290

Table 7-8
Ratio of Dry Period Precipitation to Average Precipitation at Beaumont and Estimated New Water from Storm Water Capture Projects

Dry Year(s)	Single	2-year	3-year	6-year
% of Annual Average	36%	45%	45%	65%
Facility and Average Annual Water Capture				
Grand Ave Interceptor, 185 AFY	65	80	80	120
Cherry Ave Basin, 245 AFY	85	110	110	160
Eighth St Basin, 220 AFY	80	100	100	140
Starlight Basin, 80 AFY	25	35	35	50
Total Storm Water, AFY	255	325	325	470

The data from Tables 7-2 through 7-8 will be used in the water supply reliability assessment to follow.

Water Supply Reliability Assessment

CWC 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.

Section 6 presented the Water Supply Assessment for an average or "normal" year (Table 6-25). For the normal year, there is more than enough supply to meet the demand and BCVWD can bank water in the Beaumont Basin which will be needed during dry periods.

Tables 7-9 through 7-12 present the water supply reliability assessment for:

- Single Dry Year (Table 7-9)
- 2 Consecutive Dry Years (Table 7-10)
- 3 Consecutive Dry Years (Table 7-11)
- 6 Consecutive Dry Years (Table 7-12)

Table 7-9
Water Supply Assessment for Single Dry Year

	YEAR				
	2020	**2025**	**2030**	**2035**	**2040**
DEMAND					
Potable Water Demand, AFY	14,753	16,576	18,674	20,658	22,483
Non-Potable Water Demand, AFY	1,906	2,374	2,931	3,228	3,449
Total Water Demand	16,659	18,950	21,605	23,886	25,932
SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,117	1,117	1,117	1,117	1,117
Beaumont Basin, AFY	1,500	1,675	1,985	2,330	2,410
Storm Water, AFY	255	255	255	255	255
Recycled Water, AFY	1,570	2,260	2,670	3,080	3,490
Imported SPW,AFY	520	570	630	690	770
Subtotal Supply, AFY	4,962	5,877	6,657	7,472	8,042
From Banked Beaumont Basin Storage, AF	11,697	13,073	14,948	16,414	17,890

Table 7-10
Water Supply Assessment for Two Consecutive Dry Years

	YEAR				
	2020	2025	2030	2035	2040
DEMAND					
Potable Water Demand, AFY	14,753	16,576	18,674	20,658	22,483
Non-Potable Water Demand, AFY	1,906	2,374	2,931	3,228	3,449
Total Water Demand	16,659	18,950	21,605	23,886	25,932
SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,173	1,173	1,173	1,173	1,173
Beaumont Basin, AFY	1,500	1,675	1,985	2,330	2,410
Storm Water, AFY	325	325	325	325	325
Recycled Water, AFY	1,480	2,140	2,530	2,910	3,290
Imported SPW,AFY	1,290	1,430	1,560	1,740	1,920
Subtotal Supply, AFY	5,768	6,743	7,573	8,478	9,118
From Banked Beaumont Basin Storage, AF	10,891	12,207	14,032	15,408	16,814
Total Withdrawn from Storage Over Dry Period, AF	21,782	24,414	28,064	30,816	33,628

Table 7-11
Water Supply Assessment for Three Consecutive Dry Years

	YEAR				
	2020	2025	2030	2035	2040
DEMAND					
Potable Water Demand, AFY	14,753	16,576	18,674	20,658	22,483
Non-Potable Water Demand, AFY	1,906	2,374	2,931	3,228	3,449
Total Water Demand	16,659	18,950	21,605	23,886	25,932
SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,230	1,230	1,230	1,230	1,230
Beaumont Basin, AFY	1,500	1,675	1,985	2,330	2,410
Storm Water, AFY	325	325	325	325	325
Recycled Water, AFY	1,480	2,140	2,530	2,910	3,290
Imported SPW,AFY	2,060	2,280	2,500	2,780	3,070
Subtotal Supply, AFY	6,595	7,650	8,570	9,575	10,325
From Banked Beaumont Basin Storage, AF	10,064	11,300	13,035	14,311	15,607
Total Withdrawn from Storage Over Dry Period, AF	30,192	33,900	39,105	42,933	46,821

Table 7-12
Water Supply Assessment for Six Consecutive Dry Years

	YEAR				
	2020	**2025**	**2030**	**2035**	**2040**
DEMAND					
Potable Water Demand, AFY	12,540	14,090	15,873	17,559	19,111
Non-Potable Water Demand, AFY	1,906	2,374	2,931	3,228	3,449
Total Water Demand	14,446	16,464	18,804	20,787	22,560
SUPPLY					
Groundwater					
Edgar Canyon, AFY	1,367	1,367	1,367	1,367	1,367
Beaumont Basin, AFY	1,500	1,675	1,985	2,330	2,410
Storm Water, AFY	470	470	470	470	470
Recycled Water, AFY	1,480	2,140	2,530	2,910	3,290
Imported SPW,AFY	2,890	3,190	3,500	3,890	4,300
Subtotal Supply, AFY	7,707	8,842	9,852	10,967	11,837
From Banked Beaumont Basin Storage, AF	6,739	7,622	8,952	9,820	10,723
Total Withdrawn from Storage Over Dry Period, AF	40,434	45,730	53,711	58,922	64,335

For the Single Dry Year and the 2 and 3 Consecutive Years Dry Periods, the potable and non-potable water demands did not reflect any conservation. The 6 Consecutive Years Dry Period assumes that water restrictions will be in place that will result in a 15% reduction in normal water demands. This is a reasonable assumption since there is adequate time to implement water use restrictions. In all of the assessments, water must be extracted from BCVWD's Beaumont Basin Storage Account. BCVWD has an 80,000 AF storage account managed by Watermaster. This volume is adequate to meet the needs of this reliability analysis but should be increased to allow the District to bank 5 years of water to meet future needs as desired by the District's Board of Directors. Tables 7-9 through 7-12 clearly indicate the importance of maintaining substantial amounts of water in the storage account. Based on the assessment, BCVWD should keep 65,000 AF in the account. This will require building up from the year-end 2015 Balance of 25,568 AF.

Regional Supply Reliability

> *CWC 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.*

BCVWD has a very diverse water portfolio that allows it to maintain a reliable water supply to its current and future customers. The existing sources include:

- Unadjudicated groundwater from Little San Gorgonio Creek (Edgar Canyon)

- Adjudicated groundwater from the Beaumont Basin
- Stormwater capture in Edgar Canyon (Little San Gorgonio Creek) and recharge in percolation ponds in Upper and Middle Canyon and at the Canyon mouth in recently added desilting and recharge basins
- Non-potable groundwater supplying the existing non-potable water system
- Imported State Project Water from SGPWA

Potential Future Sources described in this 2015 UWMP Update include:

- Recycled water from the City of Beaumont and YVWD for landscape irrigation and with advanced treatment for indirect potable reuse (groundwater recharge)
- Improved recharge of captured urban runoff from Sundance development
- Non-potable groundwater from the mouth of Edgar Canyon
- Non-potable groundwater from San Timoteo Creek
- Storwater capture and recharge via the Grand Avenue Storm Drain (funded by RCFCWCD, SAWPA grant and currently under design)
- Stormwater capture from Noble and Marshall Creek
- Additional urban runoff capture and recharge from developing areas

These potential sources have been described in Section 6 of this 2015 UWMP Update.

BCVWD's water management strategy since its formation has always been to maximize local water resources including local groundwater and capture and percolate surface flows in Little San Gorgonio Creek for subsequent extraction in the District's Edgar Canyon wells. With the development that occurred starting about year 2000, BCVWD began installation of a non-potable water system with the intent of using recycled water from the City of Beaumont and YVWD. Currently (2015) the water demand in the non-potable system is about 12% of the total water demand. This demand is being partially met by non-potable groundwater. Recycled water could meet the remainder of the demand.

As discussed above BCVWD has an 80,000 AF storage account in the Beaumont Basin to purchase and store imported water when available in ample supply during wet years. In addition to SGPWA's Table A amount, there are two other sources of imported water over and that are available:

- Article 21 Water
- Turn-back Pool Water

SWP Article 21 Water

Article 21 Water refers to a provision in each State Water Contractor's Contract with DWR that allows each Contractor, like SGPWA, to take advantage of excess water flowing through the Delta. The individual Contractor must take the water on short notice and store it within the Contractor's facilities and the delivery of the water cannot interfere with the delivery of Table A allocations, SWP deliveries or operations. DWR has estimated that 82% of the time, the maximum amount of Article 21 Water available will be 20,000 AF. For the period 2001 through 2014, average amount of Article 21 Water available was 176,456 AF with a median amount of 45,630 AF.

There is significant "competition" for Article 21 Water. Generally there are greater demands from the Contractors than there is Article 21 Water available. When this happens, the available Article 21 Water is proportioned according to the Table A allocations of the interested Contractors. Based on the Contractors who typically took delivery of Article 21 Water from 2001 through 2014, the SGPWA would only get about 0.5% of the available Article 21 Water, i.e., about 230 AF of the median amount. During very wet years, it could be over 3,000 AF; 75% of the time the SGPWA would receive less than 1,900 AFY of Article 21 Water based on a statistical analysis performed by BCVWD. Nevertheless, whenever Article 21 Water is available, SGPWA should request as much as can be accommodated in the EBX conveyance system (64 cfs or 3,800 AF/month).

Turn-back Pool Water

Turn-back Pool Water is Table A water that other Contractors requested that they are unable to take delivery of. This is offered for sale at a set price.

For the period 2001 through 2014, the median and average Turn-back Pool amounts were 17,740 and 25,280 AF respectively. This source could yield 500 AF assuming the same competition as for Article 21 Water. SGPWA should be looking at purchasing Turn-back Pool water whenever it is available.

Other Sources

SGPWA should be purchasing water from San Bernardino Valley Municipal Water District (Valley District) on a year-by-year or longer basis. Valley District does not currently need all of their Table A and it is believed that some of this is available for purchase. BCVWD is interested in purchasing some of this for BCVWD's storage account; SGPWA should purchase any that is available. This water would be purchased by BCVWD, YVWD or the City of Banning for storage in their respective Beaumont Basin storage accounts.

Financing of Water Resource Needs

BCVWD has the financing in place and is collecting fees from each new residential unit or "equivalent dwelling unit" for commercial/industrial/institutional facility for new infrastructure, (transmission mains, wells, storage, treatment, local water resource development, and non-potable water facilities). BCVWD's commodity rate structure includes funding for purchase of imported SPW.

BCVWD's 2015 Potable Water Master Plan Update identified the infrastructure needs and funding requirements to replace existing facilities which have reached the end of their useful life and construct new facilities to meet anticipated growth in the service area.

Section 8
Water Shortage Contingency Planning

CWC 10632

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.

Stages of Action

Prohibitions on End Uses

Penalties, Charges, Other Enforcement of Prohibitions

Consumption Reduction Methods

Determining Water Shortage Reductions

Revenue and Expenditure Impacts

Resolution or Ordinance

Catastrophic Supply Interruption

Minimum Supply Next Three Years

Water shortage contingency planning is a strategic planning process to prepare for and respond to water shortages. Good planning and preparation can help maintain reliable supplies and reduce the impacts of supply interruptions.

This section describes BCVWD's water shortage contingency planning. The planning includes staged responses to a water shortage, such as a drought, that occurs over a period of time, as well catastrophic supply interruptions which occur suddenly.

The water shortage contingency plan (WSCP) can be created separately from the UWMP and amended as needed without amending the corresponding UWMP. However, the most current version of the WSCP must be included as part of the UWMP when the UWMP is submitted to DWR.

Stages of Action

10632(a) 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 District proposes a five-stage plan of action in the event of an extended drought condition or loss of supply. The action levels for each stage are presented in the subsections that follow, and the water supply reduction stages are provided in Table 8-1. These stages could be implemented as a result of BCVWD water shortages, including reduction in imported water allocation, or mandatory water conservation targets by the Governor's office.

Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Percent Supply Reduction[1] *Numerical value as a percent*	Water Supply Condition (*Narrative description)*
1	10	Up to a 10% reduction in normal, "long term" water supply; imported waer supply allocation averages approximately 50% over a 2-year (or longer) period
2	20	Up to 20% reduction in normal, "long term" water supply; imported waer supply allocation between 49.9% and 25% over a 3-year (or longer) period
3	25	Up to 25% reduction in normal, "long term" water supply; imported waer supply allocation between 24.9% and 10% over a 3-year (or longer) period
4	30	Up to 30% reduction in normal, "long term" water supply; imported waer supply allocation between 9.9% and 5% over a 3-year (or longer) period
5	50	Up to 50% reduction in normal, "long term" water supply; imported waer supply allocation averages less than 5% over a 4-year (or longer)period
[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*		
NOTES:		

These stages and the percent reductions in demand are based on BCVWD's experience during the state mandated water conservation program targets comparing 2015 with a similar period in 2013. BCVWD was able to reduce consumption by 24.3% for the period May 2015 through April 2016. This was done through the restrictions in Board of Directors Resolution 2015-05 which limited watering to two days per week.

In establishing the "Stages," BCVWD has the advantage of the Beaumont Basin, its large storage capacity for banked water, and BCVWD's 80,000 AF storage account. BCVWD currently has about 28,000 AF in storage, despite an average SWP allocation of only 43% for the period 2012 through 2015. BCVWD's plan is to purchase additional imported water over that needed to meet demands to add to the storage account balance each year including making up for any shortfall that may occur during dry years. The District's goal is to fill the storage account by 2040 or before.

Stage 1

Stage 1 occurs when:

- A 10% water use reduction from the established base year is required, or

- Imported water supply allocation averages approximately 50% over a two year(or longer) period

The District declares a water shortage and imposes voluntary water conservation. In this stage the District shall notify all its customers that water deliveries may be reduced. The District will recommend a voluntary 10% water use reduction based on an established base year to be determined by the District at the time Stage 1 is implemented. At the same time the District shall implement its own public awareness program to encourage the efficient use of water. This will be accomplished by bill stuffers, web site information, and articles in the local newspaper.

Stage 2

Stage 2 occurs when:

- A 20% water use reduction from the established base year is required, or
- The SWP allocation averages between 49.9% and 25% over a three year (or longer) period, or
- Stage 1 voluntary conservation efforts do not yield the 10% reduction in demand.

At this point the District will initiate water restrictions similar to Resolution 2015-05 and require a 20% reduction in demand from an established base year.

Stage 3

Stage 3 occurs when:

- A 25% water use reduction from the established base year is required, or
- The SWP allocation averages between 24.9% and 10% over a three year (or longer) period, or
- The Stage 2 conservation efforts do not result in the required 20 percent reduction

In this stage the District will impose restrictions similar to Resolution 2015-05, but limit lawn watering to one day per week and no filling of swimming pools. Topping off of swimming pools is permitted. No new construction meters will be approved. Use of recycled or non-potable water for construction activities will be encouraged. The District will adopt financial incentives to encourage efficient water use. Public awareness programs will expand to schools.

Stage 4

Stage 4 occurs when:

- A 30 % water use reduction from the established base year is required, or
- The SPW allocation averages between 9.9% and 5%, over a three year (or longer) period, or
- The Stage 3 conservation efforts do not result in the required 25 percent reduction

In this stage the District will impose restrictions similar to Resolution 2015-05, but make more stringent including prohibit lawn watering except for lawns and turf irrigated with recycled or non-potable water. No filling of swimming pools; topping off of swimming pools may be permitted. Hand watering of plantings is permitted two days per week if using a hose with a shut-off nozzle. Use of potable water for construction activities will be prohibited; only recycled or non-potable water, if available, can be used for construction activities. Trucking recycled water may be necessary. The District will adopt financial incentives to encourage efficient water use. Stricter enforcement penalties will be developed. At this Stage, the District will appoint a water conservation advisory committee. This committee will comprise of officials from the District, the City of Beaumont, and the Cherry Valley community. Public awareness in schools will continue. District staff will work with high water using commercial/retail and industrial facilities to develop programs to reduce water use.

Stage 5

Stage 5 occurs when:

- A 50% water use reduction from the established base year is required, or
- The SWP allocation averages less than 5% for four consecutive years

In this stage the District will impose restrictions similar to Resolution 2015-05, but prohibit lawn watering except for lawns and turf irrigated with recycled or non-potable water. No filling of swimming pools; topping off only permitted on covered pools. Hand watering of plantings is permitted one day per week if using a hose with a shut-off nozzle. Use of potable water for construction will be prohibited; only recycled or non-potable water may be used for construction activities, as determined by the Board of Directors. Trucking recycled water may be necessary. “Will serve” letters or annexations will not be approved by the Board of Directors. The District will adopt financial incentives to encourage efficient water use. Stricter enforcement penalties will be developed. The water conservation advisory committee will continue to function. This committee will comprise of officials from the District, the City of Beaumont, and the Cherry Valley community. Public awareness in schools will continue. District staff will work with high water using commercial/retail and industrial facilities to develop programs to reduce water use.

Implementation

Implementation of any of the above stages will require action by the Board of Directors and should only be considered after a public hearing wherein the conditions that bring about the reduction in supply and current consumption are discussed, options considered, and impacts on the revenue stream and public are presented. The public will generally be provided an opportunity to provide public input on implementation of water shortage contingency stages.

Prohibitions on End Users

CWC 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.

Table 8-2 provides a list of water use prohibitions and the various stages when they would be implemented. The list is "fixed" by DWR; other prohibitions may be considered by the Board. Note that if a prohibition is listed for a given stage, it would be applicable to all higher numbered stages. For example, a prohibition in Stage 2 would be prohibited in Stages 3, 4, and 5 also.

Except in extreme sudden emergencies, the Board of Directors would normally hold a public hearing to discuss the conditions requiring prohibitions in water use. Comments from the public will be taken and considered before making a decision. Some of the restrictions could include one or more of the above depending on the water shortage and its duration. A resolution would be adopted identifying the course of action and mandatory restrictions.

It is possible that the initial recommended prohibitions may not result in the desired reduction and more restrictive measures need to be taken. The Board would then call for another public hearing, present the facts and the results to-date of the implementation of the water restrictions and the need for further reductions. Further reductions could then be implemented through a resolution.

The list presented in Table 8-2 is not intended to include all possible restrictions; other measures may be identified during the public hearing and implemented.

Customers would be notified in writing of any prohibitions set by the Board and notices would be posted on the District's website, and the local newspapers and cable TV (English and Spanish versions.

Water Features and Swimming Pools

CWC 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.

In Table 8-2, swimming pools are separate and distinct from "water features." Water features include decorative ponds, water hazards on golf courses, artificial waterfalls and fountains. Golf course water hazard ponds that serve as irrigation reservoirs or balancing ponds, supplied with private wells are not covered by BCVWD's water restrictions. BCVWD water restrictions do not apply to water features supplied by private wells.

Stock ponds for animal watering are not covered under the swimming pool or water feature restrictions. Recycled and non-potable water may be used without restriction in water features and ponds if approved for use.

Penalties, Charges, and Enforcement of Provisions

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

BCVWD has provisions within its Rules and Regulations to establish charges for excessive water use. Currently there is 2-tiered rate structure in effect which increases the unit cost (per one hundred cubic feet (HCF) for water use in a billing period over 44 HCF. BCVWD could increase these charges, initiate consumption surcharges for excessive use to cover the additional cost of imported replacement water, and/or provide for additional tiers upon proper notification and following the procedures established by Proposition 218. This is not something that can be done on short notice however.

BCVWD has "water waster" provisions in Part 15 of its Rules and Regulations.

> "15-1 PROHIBITION OF WATER WASTER – No person, firm, or corporation shall use, deliver, or apply waters received from this District in any manner that causes the loss, waste, or the applications of water for unbeneficial purposes. Within the meaning of this Regulation, any waters that are allowed to escape, flow, and run into areas which do not make reasonable beneficial use of such water, including but not limited to streets, gutters, drains, channels, and uncultivated lands, shall be presumed to be wasted contrary to the prohibitions of these Rules and Regulations.
>
> 1) Upon the first failure of any person, firm, or corporation to comply, this District shall serve or mail a warning notice upon any person determined to be in violation of these Rules and Regulations.

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users *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?
Add additional rows as needed			
All	Landscape - Restrict or prohibit runoff from landscape irrigation	Part of BCVWD's Water Waste Provisions	Yes
2	Landscape - Limit landscape irrigation to specific times		Yes
2	Landscape - Limit landscape irrigation to specific days	2 days per week	Yes
2	CII - Lodging establishment must offer opt out of linen service		Yes
2	CII - Restaurants may only serve water upon request		Yes
2	Landscape - Prohibit all landscape irrigation	Prohibit irrigation of street median turf only	Yes
2	Water Features - Restrict water use for decorative water features, such as fountains		Yes
2	Other - Prohibit use of potable water for washing hard surfaces		Yes
3	Other - Require automatic shut of hoses		Yes
3	Landscape - Limit landscape irrigation to specific days	1 day per week	Yes
3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner		Yes
4	Landscape - Prohibit certain types of landscape irrigation	Hand watering only with auto nozzle	Yes
4	Pools and Spas - Require covers for pools and spas		Yes
4	Pools - Allow filling of swimming pools only when an appropriate cover is in place.		Yes
4	Other - Prohibit use of potable water for construction and dust control		Yes
4	Other - Prohibit use of potable water for construction and dust control		Yes
5	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water		Yes
	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner		Yes
NOTES:			

2) Upon the second failure of any person, firm or corporation to so comply, the water charges of any such consumer shall be doubled until full compliance with these Rules or Regulations has been established to the satisfaction of the Board of Directors of the District.

3) Upon the third failure of any person, firm, or corporation to so comply, the District shall terminate water service to any connection through which waters delivered by the District are wasted in violation of these Rules and Regulations."

In Resolution 2016-05, there was a list of financial penalties for violation of the water restrictions in the Resolution.

- Upon the first failure of any person, firm, or corporation to comply, the District shall serve or mail a warning notice upon any person determined to be in violation of the District's Rules and Regulations
- Upon the second failure of any person, firm, or corporation to so comply, the water charges of any such customer shall be doubled until full compliance with the District's Rules and Regulations has been established to the satisfaction of the Board of Directors of the District.
- Upon the second failure of any person, firm, or corporation to so comply, the District shall terminate water service to any connection through which waters delivered by the District are wasted in violation of the District's Rules and Regulations.

Consumption Reduction Methods

> ***CWC 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.*

Table 8-4 presents some consumption reduction methods, separate from the restrictions and prohibitions presented previously. The list in Table 8-5 is limited by DWR and so does not include all possible methods.

- **Expand Public Information** – BCVWD should work with SGPWA and the other retailers in the San Gorgonio Pass to develop a consistent, region-wide message that could include regular articles in the local newspapers, displays at major events, low water using garden workshops, etc. Expand into the schools and service clubs. Work with the high volume water users in the commercial/retail/industrial area to determine if there are water reduction opportunities.

- **Improved Customer Billing** – Provide customers with their historic usage for the past year in graphical format (bar charts) with target levels for water conservation. Provide data on other typical customers in the District's service area.

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier *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		
2	Expand Public Information Campaign	
3	Improve Customer Billing	Provide Historic Record and comparison of use on similar properties. Show targets and actual reductions
4	Provide Rebates for Landscape Irrigation Efficiency	Consider rebates on smart controllers with SGPWA
3	Provide Rebates for Turf Replacement	Work with SGPWA to develop replacement programs
NOTES:		

- **Rebates for Irrigation Efficiency Improvements** – BCVWD should work with SGPWA to provide rebates to improve irrigation efficiency including drip systems and smart controllers. Replacement of spray nozzles with rotating nozzles reduces water consumption significantly and prevents overspray.
- **Rebates for Turf Replacement** -- BCVWD should work with SGPWA to provide rebates to convert turf areas to low water using drought tolerant plantings.
- **Other Methods Not on DWR's List:**
    - Work with the City of Beaumont and developers to install drought tolerant, low water using plantings in common areas and street medians. Reduce turf and planted areas in new home construction.
    - Convert existing street median and common area turf areas to drought tolerant, low water using plantings.
    - Begin using recycled water for landscape irrigation. This method has the greatest potential for reducing potable water use in the BCVWD service area.
    - Restrict construction water use to non-potable water

- Implement more tiers in the rate structure to reflect the cost for purchase of imported water as a result of higher use.

BCVWD does not perform extensive main flushing or any hydrant flow testing. All water taken from fire hydrants is metered and billed.

Determining Water Shortage Reductions

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

The District keeps historic and current pumping records on all of its wells. The imported water delivered by the Pass Agency is metered both by the Pass Agency/DWR Meter and BCVWD's own meter. All of the District's customers are metered. BCVWD's customer billing system retains customer water usage by billing period. Except for water used from hydrants to fight fires or water lost due to accidents breaking fire hydrants, all water taken from hydrants for construction, street sweeping, vactor trucks, etc. is metered. These records are used to determine seasonal and annual fluctuations in water use.

BCVWD can compare pumping records from one year to the next to determine actual reductions in water use. The District, through its billing system, is able to track historic and current use by service account and therefore track customer usage during a drought and evaluate the effectiveness of each conservation measure implemented under this plan.

Revenue and Expenditure Impacts

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

Drought Rate Structures and Surcharges

BCVWD does not have a drought rate structure or surcharge in place at this time.

Use of Financial Reserves

Rather than identify the financial impacts of each prohibition on BCVWD's financial position, the impacts will be assessed on a "percent reduction in water demand" basis.

The District's current water rate structure includes a service (meter) charge (bimonthly, regardless of how much water is used), and a 2-tiered commodity charge per 100 cu ft of water used. In addition there is a power surcharge and an imported water surcharge per 100 cu ft of water used.

During times of drought, the revenue from the commodity charge and the power and imported water surcharges would be reduced by an amount equal to the water conservation effort. The meter charge would not be affected. But the reduction in water consumption will also reduce the power consumption needed to pump and produce water and reduce the need for imported water, essentially balancing out the reduction in surcharge revenue.

For 2016, the proposed budget estimated $2.6 million in fixed meter (service) charges and $3.79 million in water sales revenue including agricultural water sales and construction water sales (commodity charge). Water importation surcharges were budgeted at $1.75 million and SCE power surcharge at $1.55 million. So total “variable” revenue would be $7.09 million. The expenses budgeted for chemicals and treatment, electricity and imported water was $2.33 million. The fixed meter (service) charges would not be affected by a reduction in water sales. All of the other revenues and expenses would be.

It is important to note the 2016 budget was based on 8,700 AFY of water sales, which is about 10% less than year 2015 projected ending. So this already represents a conservative position.

Assuming a water reduction of 25% is required for a 2-month long-term interruption, the annual reduction would be (2/12) * 25% or 4.2%. The resultant loss in water sales revenue would be $298,000, i. e, 0.042 *$7.09 million; the reduction in chemicals, electricity and imported water purchase would be $98,000. The net would be an annual loss of revenue of $200,000.

A 50% reduction in water demand for a period of 1 month would result in a similar net annual revenue loss of $200,000.

The costs above do not include additional staff overtime that may be required providing notifications, production, publication, and mailing of notices; updates, water conservation messages, inspection and enforcement. An estimate of $25,000 for each “event” is reasonable to cover these costs. So the total annual impact could be in the $225,000 to $250,000 range.

If water reduction of another 10% on an annual basis were required, i.e., water sales at 7,900 AFY versus the 8,700 AFY budgeted, the impact would be a net loss of $476,000.

The BCVWD audited Financial Report for 2014 showed BCVWD with over $131.6 million in net assets of which $13.5 million was in unrestricted funds. The impact of a net $175,000 loss due to a water reduction of 25% over a 2 month period (or 50% for a 1 month period), or even another 10% reduction on an annual basis will not affect BCVWD’s operation. The $476,000 is less than 4% of the District’s unrestricted cash assets. As a result, no special action is needed.

Other Measures

BCVWD will be looking a performing a rate review in 2017. The last rate review was in 2010, and the Board of Directors established rates from 2010 through 2015. The 2015 rates are currently in effect. The financial analysis presented above was based on reduced consumption and the 2015 rates.

Resolution or Ordinance

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

A draft water shortage contingency resolution is included at the end of this Section.

Catastrophic Supply Interruption

Water Shortage Contingency Planning

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

Water supplies may be interrupted or reduced significantly in a number of ways –regional and local power outage, an earthquake that damages water delivery or storage facilities, or a contaminated well or water source. This section describes how BCVWD will meet the maximum day demands of their customers and their plans to respond to such emergencies so that emergency needs are met promptly and equitably. Table 8-4 presents the average day and maximum day demands for the period 2005 through 2035 based on BCVWD's maximum day/average day ratio of 2.0. The data was taken from BCVWD's 2015 Potable Water Master Plan and represents a very conservative approach to growth and does not consider any lingering water conservation effect. This provides the backdrop for the sub-sections to follow.

Table 8-4
Historic and Projected Average and Maximum Day Potable Water Demands
(source: 2015 Potable Water Master Plan)--(no conservation effect)

Year	Average Day Demand, AFY	Average Day Demand, mgd	Maximum Day Demand, mgd
2005	9,306[1]	7.4	17.0 actual
2010	11,023[1]	8.3	19.7 actual
2015	10,252[2]	9.2	15.3 actual
2020	14,753	13.17	26.34
2025	16,576	14.80	29.59
2030	18,674	16.67	33.34
2035	20,658	18.44	36.88
2040	22,483	20.07	40.14

[1] Total water demand since potable water used in non-potable system

[2] Total potable water demand and potable water into non-potable system

Regional and Local Power Outage

To meet emergency water needs BCVWD has both gravity storage and wells. Storage can provide for short term power outages; wells, equipped with standby generators or emergency power connections can meet longer term power outages.

Storage

The storage can provide short term water supply for regional or local power outage, i.e., a few hours to one day depending on the time of year and water demand. Approximately 24 MG (72.5 acre-feet) of gravity storage is available as listed in Table 8-5.

The reservoir storage capacity in Table 8-5 does not include the Twelfth and Palm Reservoir (0.4 MG). This serves as an equalization tank for the Twelfth and Palm Boosters. The almost 23.45 MG of gravity storage is more than 2.5 x maximum day based on 2015 conditions. Considering the vast amount of water storage in the Beaumont Basin aquifer, the need for large amounts of above-ground gravity storage is not warranted– provided, of course, there is adequate well capacity to meet the maximum day demands. BCVWD has such well capacity on standby power or capable of being connected to portable standby generators.

Table 8-5
Gravity Storage Reservoirs in BCVWD System

Available Reservoirs	Total Aboveground Storage (MG)	Total Aboveground Storage (AF)
Upper Edgar	0.75	1.5
Lower Edgar	1.0	3.1
Noble & Highland Springs	3.0	9.2
Vineland I, II & III	5.5	18.5
Cherry I,II, and III	4.1	12.3
Taylor	3.9	12.0
Hannon (2650 Zone)	5.0	15.3
3900 Zone (not yet operational)	0.2	0.6
TOTAL	23.45	72.5

Wells

Wells equipped with emergency power or emergency power connections can supply up to a maximum of 14,880 gpm, or 65.7 acre-feet per day (AF/day) or 21.4 mgd and assumes all wells in service. See Table 8-6. This capacity only includes BCVWD's share of the joint wells with the City of Banning. (If there was a regional power outage, the City of Banning would likely need water too, and would rely on their share of the well capacity.)

The District has three portable generators. The portable units have the capability of running up to 50, 350 and 550 horsepower (hp) motors respectively.

BCVWD's wells with standby power or standby power connections can provide water to meet the maximum day demand to the year 2018 assuming all wells with standby power or standby power connections are in service and growth occurs as projected. With conservation, the wells should have capacity to beyond 2020. So a local or regional power outage should have little or no impact. If, however, Well 29, BCVWD's largest well, is out of service for any reason due to mechanical failure, BCVWD will only be able to supply 15.4 mgd and will not be able to meet the maximum day demand during a regional power outage of extended duration. During such an event, water use, e.g., irrigation, will have to be restricted. It should be noted that 15.4 mgd **will** be able to supply an average day to well beyond the year 2035; so the impacts of a regional power outage will depend on the time of year.

BCVWD has plans for the rehabilitation/replacement of Well 2 which should boost capacity by 1,500 gpm (2.2 mgd) or more. This well should be equipped with a generator or standby power connection. As other wells are constructed, they should have standby power to provide back-up and reliability.

Pressure Zone Transfers and Boosting

BCVWD is able to move water between pressure zones through pressure regulators and booster pumping stations. Except for the Cherry Yard Boosters (21A, 21B and 21C), which are used regularly, the other boosters are usually used only for emergency transfers when gravity transfer from higher pressure zones cannot be made.

Boosters 21A and 21B which pump from the Cherry Reservoir (2750 Zone) to Noble Reservoir (3040 Zone) have transfer switches so a portable generator can be connected. Booster 21C has a natural gas driven pump that has a capability of pumping 1,500 gpm from the Cherry reservoir (2750 Zone) to the Noble reservoir (3040 Zone).

Table 8-6
BCVWD Wells with Standby Power or Connections for Standby Power

Well No.	Location	Total Capacity		Remarks
		GPM	AF/Day	
12	Upper Edgar Canyon	130	0..6	Auxiliary engine drive
14	Upper Edgar Canyon	200	0.9	Portable generator connection
6	Middle Edgar Canyon	250	1.1	Portable generator connection
4A	Lower Edgar Canyon	300	1.3	Portable generator connection
16	BSU (Vineland)	800	3.5	Portable generator connection
21	BSU (Cherry Ave)	2,100	9.3	Portable generator connection
22	BSU (Michigan Ave)	1,700	7.5	Portable generator connection
23	BSU (Recharge Site)	2,700	11.9	Standby Generator
24	BSU (Brookside)	1,250	5.5	Standby Generator (only BCVWD's Share of Capacity Shown – total = 2500 gpm)
25	BSU (Starlight)	1,250	5.5	Standby Generator (only BCVWD's Share of Capacity Shown – total = 2900 gpm)
26	BSU (Snapdraggon)	825	3.6	Standby Generator (only BCVWD's Share of Capacity Shown – total = 1650 gpm) Pumps to Potable and Non-potable System
29	BSU (Sunny Cal Egg)	4,000	17.7	Standby Generator
Total Wells with Standby Power or Standby Power Connections		15,505	68.4	22.3 mgd capacity
Total Wells with Standby Power or Standby Power Connections with Well 29 out of service and 26 to Non-potable System		10,680	47.2	15.4 mgd capacity
Total All Wells incl. Edgar Canyon		18,935	83.7	27.3 mgd capacity

There is an emergency booster at the Well 4A site with a 100 hp motor; which is rated at 500 gpm and can boost water from the 3040 Zone to the Upper Edgar Tank (3620 Zone), BCVWD's highest active pressure zone. In addition, the 50 hp Noble Tank Booster, which has a rated capacity of 500 gpm, can boost water from the 3040 Zone to the 3330 Mesa Pressure Zone.

Stationary backup generators with automatic transfer switches were installed at the headquarters building and at Highland Springs Hydropneumatic system.

Summary

BCVWD is well positioned with a combination of ground storage, wells with standby power or standby power connections and pressure zone boosters to weather extended local or regional power outages. If BCVWD's largest well is out of service for mechanical reasons and demands are high due to climatic conditions, there will be a need to initiate water restrictions to reduce the demands.

As population increases as projected, additional well capacity will be needed to keep pace with the maximum day demand. New wells will be equipped with standby power generators.

Earthquake or Other Natural Disasters

BCVWD Facilities

The San Andreas Fault passes through the San Gorgonio Pass area about 8 to 10 miles north of the center of BCVWD's service area. If a major earthquake were to occur along the San Andreas Fault in the Pass area many of the BCVWD's facilities could be affected.

The Cherry Tanks, Upper Edgar Tank, Taylor Tank, the Vineland Tanks and the Hannon Tank are all equipped with flexible connectors (EBBA Iron Flex-tends) for movement during an earthquake. Upper Edgar, Cherry Tank III, Vineland II and III, and Taylor Tank are all anchored to their ring wall foundation and have been designed to resist seismic shaking. These are all relatively new tanks constructed since year 2000 and designed and constructed to recent AWWA standards. These tanks should be capable of resisting significant earthquake shaking. BCVWD's other tanks were designed according to AWWA standards in effect at the time they were constructed; but over time the design standards have improved and become more stringent. The greatest vulnerability will be with the older steel tanks.

Experience with other earthquakes, e.g., Landers, magnitude 7.3 (1992), has shown steel water tanks survive but do suffer some minor structural damage. Observations of some of the water tanks showed the inlet/outlet piping sheared off and some "elephant footing" of the side wall occurred but the tanks remained intact. This is what would be expected with BCVWD's older tanks. The newer tanks should survive with little or no damage. The older tanks should be able to be put back into service within a week, if not sooner.

Wells and well pumps could be damaged during a very severe earthquake but they should be able to be returned to service within a month depending on the availability of replacement parts and equipment to repair the pumps.

Piping breaks could be expected to occur, but these can be repaired fairly quickly. BCVWD has an inventory of repair clamps, fittings and pipe as well as staff and equipment to make these repairs.

BCVWD has also constructed emergency "interties" at various locations along Highland Springs Road so that water can be supplied in either direction between the City of Banning and BCVWD.

Another threat is fire in the watershed which could cause damage to wells in Little San Gorgonio Canyon (Edgar Canyon). A severe fire could damage and make inoperable some or all of the eleven active wells in the canyon. Damage could occur to power and telemetry poles, electrical panels, pump house roofs etc. If all of the wells in Edgar Canyon were put out of service, BCVWD would lose about 2.2 mgd (or about 8 percent) of its well capacity. This can be made up by the Beaumont Basin wells; so the impact from a water supply standpoint would be minimal. In this case there would be a financial impact since the replacement water from the Beaumont Basin would be more costly to pump.

Each well is in a concrete masonry block building, but the roof and electrical power lines/poles are vulnerable to fires. A severely burned watershed could present a problem if heavy rains cause mud and debris flows that make access into the canyon difficult. One of the largest fires in the District was the Repplier Fire 11/2/1993 to 11/4/1993 which burned 8,000 acres and caused 2,000 people to be evacuated from Cherry Valley[1]. The cause was determined to be arcing power lines. No District facilities were impacted though the fire did surround the District's "middle houses." No water supply outages occurred. In fact the fire fighters relied on BCVWD water supply facilities to fight the fires.

The bulk of the watershed where the wells are located is owned by BCVWD. BCVWD rigorously controls entry which minimizes the fire danger; but the threat is always there. BCVWD has established procedures for fires in the watershed with a number of the staff actually experiencing them in the past.

Imported Water Interruptions

The SWP California Aqueduct could be interrupted for a number of reasons including:

- Earthquake or extremely high floods destroying levees in the Sacramento-San Joaquin Delta
- Earthquake damage to the aqueduct or any of its major pumping stations
- Subsidence/slippage/flooding of the aqueduct

[1] The Southland Firestorm: Week 2: Latest Southland Fires (1993). Los Angeles Times, Cecilia Rasmussen, researcher, Nov. 3.

Levee Destruction

The U.S. Geological Survey indicated a 63 percent chance of a magnitude 6.7 quake in the next 30 years in the Bay/Delta Area. A 6.7 quake could create a collapse of the 100-year-old levees that channel Delta water, causing saltwater to flood in (dam break in reverse) and contaminate the supply [2] A seismic event creating levee breeches could create an outage of 1 to 2 years[3] A report by the U.S. Department of the Interior, indicated a large earthquake with significant levee breaches could cause disruption in the water supply for 28 months.[4] Based on this, it is not unreasonable to assume the SWP would not be delivering water for at least 2.3 years or say 2.5 years minimum.

Land subsidence in the Delta has been on-going since the 1800s as the peat soil dries and oxidizes. The land subsidence creates increased water level differences and increased water pressures on the levees which increases the risk of breach from causes other than seismic events.

Since 1900 there have been 163 levee breaches which flooded 114 islands. Fifty-one of the breaches have occurred since 1970 about the time the SWP began operation and Oroville Dam was constructed. One levee break occurred in 2004 at the Jones Tract. The cause of the failure was unknown. It happened in June and took about 1 month to “seal” the breach and almost six months to pump out the flooded island.[5] These breaches have not caused significant disruption in the SWP delivery up until now.

Climate is always changing which will bring its own stresses on the Delta levees. Sea level rise will exacerbate the water level differential over time, increasing hydrostatic pressures on the levees. Climate changes will affect the hydrologic response of the Sacramento-San Joaquin River watersheds resulting in higher peak flows and less snowmelt. This will mean higher peak

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[2] SCWC (Southern California Water Committee) Blog (2012). April is Earthquake Preparedness Month in California--Time to Protect California's Water Supply from a Quake, Richard Atwater, April 12.

[3] Jack R. Benjamin and Assoc. in assoc. with Resource Management Associates and Economics Insight (2005). Preliminary Seismic Risk Analysis Associated with Levee Failures in the Sacramento – San Joaquin Delta. Prepared for California Bay-Delta Authority and California Department of Water Resources (June)

[4] US Dept of Interior (undated). Anticipating California Levee Failure: Government response strategies for protecting natural resources from freshwater oil spills, Office of Environmental Policy and Compliance, Region IX, prepared by: Melissa Blach, Karen Jurist, and Sara Morton

[5] DWR (undated). Levee Failures in the Sacramento-San Joaquin Delta, Water Conference Poster, prepared by URS Consultants.

flows earlier in the season than the levees have historically experienced. This in combination with sea level rise will cause increased water pressure on the levees.[6]

In summary, climate change, subsidence, and aging levees will increase the risk of levee breach and the "Jones Tract" experiences can be expected to become more frequent and more severe. However, these should be less catastrophic than a significant seismic event causing an outage of supply due to numerous levee breaches and salt water intrusion shutting down deliveries for as much as 2.5 years or perhaps longer.

Aqueduct or Pump Station Damage

The California Aqueduct could be ruptured by displacement on the San Andreas Fault, and supply may not be restored for a three to six week period or perhaps even longer. The situation would be further complicated by physical damage to the pumping equipment of the electrical switchgear. These repairs could take a number of months depending on the severity.

One of the SWP's important design engineering features is the ability to isolate parts of the system. The Aqueduct is divided into "pools." Thus, if one reservoir or portion of the California Aqueduct is damaged in some way, other portions of the system can still remain in operation and supply water. For example, if the Banks Pumping Plant in Tracy were to be out of service or the aqueduct out of service between Banks Pumping Plant and San Luis Reservoir, water could be delivered into the East Branch from water stored in San Luis Reservoir or Silverwood Reservoir. Similarly if the Edmonston Pumping Plant or the aqueduct either upstream or downstream of Edmonston Pumping Plant were out of service, water to the East Branch could be delivered from water stored in Silverwood Reservoir.

If however, there was damage to the Devil Canyon Power Generating Station or the penstocks leading to it, the East Branch Extension bringing water to the Pass Water Agency would be out of service. The length of service outage could be 6 months or more depending on the severity.

Aqueduct Subsidence, Slippage and Flooding

The Aqueduct is subject to damage from a wide variety of causes. Past examples include slippage of aqueduct side panels into the California Aqueduct near Patterson in the mid-1990s, the Arroyo Pasajero flood event in 1995 (which also destroyed part of Interstate 5 near Los Banos), and various subsidence repairs needed along the East Branch of the Aqueduct since the 1980s. All these outages were short-term in nature (on the order of weeks), and DWR's Operations and Maintenance Division worked diligently to devise methods to keep the Aqueduct in operation while repairs were made. Thus, the SWP contractors experienced no significant

[6] Lund, J. et. al. (2007). Envisioning Futures for the Sacramento-San Joaquin Delta, Public Policy Institute of California.

interruption in deliveries.[7] These events would not have a significant impact on water deliveries to the Pass Agency assuming there is adequate storage in Silverwood Reservoir.

Summary

In the event of a major catastrophe which caused an outage of the State Water Project for an extended period of time, e.g., a year or more, BCVWD would be relying on its own Beaumont Basin storage account to make up the difference. In the event the outage is long enough to deplete the District's storage account, BCVWD could request Watermaster to temporarily waive the need for immediate replenishment and give permission to draw on the Basin. There is over 2 million acre-ft of water in storage in the basin, and short term "mining" will have little impact on the overall water levels in the basin. In this event, BCVWD would begin to implement some water use restrictions. BCVWD is in a unique position that interruptions in supply can easily be accommodated.

Water Supply Contamination

Contamination of BCVWD's water supply could occur as a result of past or current industrial/commercial operations, old dumps and landfills, on-site wastewater disposal systems, cross-connections, vandalism or terrorism. A cross-connection or bacteriological contamination would be the most serious and require immediate action once detected. The actions that are to be taken and the required notification procedures are in the BCVWD's Emergency Response Plan (ERP). The ERP was developed in 2004 and most recently updated in 2011. It is currently (2016) being reviewed and adjustments are made as needed.

Past Industrial/Commercial Operations etc.

Lockheed Martin Corporation[8]`

Lockheed Martin Corporation used two remote sites near Beaumont, Calif., to test solid rocket propellant and motors, weapons, and ballistics. Contamination related to these operations has been identified at both sites—Potrero Canyon and Laborde Canyon. Although the sites are owned or managed by entities other than Lockheed Martin today, Lockheed Martin has assumed responsibility for environmental cleanup at both locations.

The Potrero Canyon site is south of Beaumont and not overlying any of the Beaumont Basin. BCVWD is not extracting any groundwater from this area. Laborde Canyon is located

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[7] Kern County Water Agency (2010). Urban Water Management Plan Update.

[8] http://www.lockheedmartin.com/us/who-we-are/sustainability/remediation/beaumont.html Accessed 09052012

southwest of the City of Beaumont in the San Timoteo Badlands and also does not overly the Beaumont Groundwater Basin.

Other Contaminated Sites

The Regional Board's Geographic Environmental Information Management System (GEIMS/GeoTracker) was reviewed for contaminated sites in the BCVWD service area. There are 3 "open" sites in Beaumont; two are in the remediation phase; one is in the site assessment phase. There are 8 "closed" sites which means the Regional Board has approved the remediation or the site was not considered to need remediation. There were 4 sites identified in Cherry Valley; all have been closed.

On-site Wastewater Disposal Systems

BCVWD has been monitoring the nitrate concentration in its wells over the years and has noticed a gradual increase in some wells. At this point in time, no wells are shut down because of nitrate contamination.

The University of California Riverside (UCR), under contract with the SWRCB, conducted a water quality assessment of Beaumont Management Zone with the specific objective of looking at nitrate contamination from on-site wastewater disposal systems.[9]

Forty wells and 11 surface water sites were sampled and analyzed in the UCR study. In the central part of the BMZ, i.e., generally in Cherry Valley, several wells "showed clear signs of contamination by septic systems. The groundwater within the central part of Cherry Valley appeared to be more strongly affected by septic systems than groundwater on the periphery of Cherry Valley. Several wells had measureable concentrations of pharmaceuticals and personal care products (PPCPs) and major anions and cations suggesting septic waste was entering the groundwater system.[10]"

Figure 8-1 shows historical trends in the nitrate concentrations in the BCVWD's wells; wells 1, 16 and 21 are in the Beaumont Basin; wells 4 and 5 are in lower Edgar Canyon.

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[9] Univ. of California Riverside (2012). Final Report: Water Quality Assessment of the Beaumont Management Zone: Identifying Sources of Groundwater Contamination Using Chemical and Isotope Tracers. SWRCB Agreement No. R*-2010-0022, Department of Environmental Sciences, Riverside, CA 92521, Feb 3.

[10] Ibid, pg 27

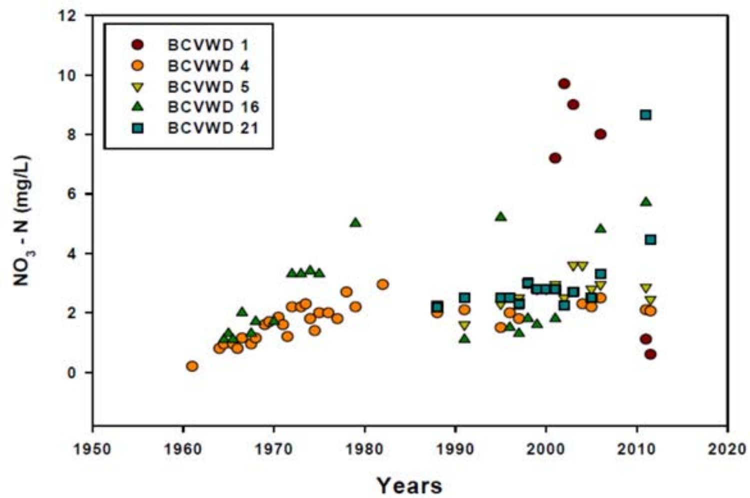

Figure 8-1
Historical Trends in Nitrate-N Concentration in Selected BCVWD Wells11
(MCL for NO3-N = 10 mg/L)

BCVWD has been able to deal with the nitrate concentrations by blending with other lower nitrate source waters when it has become an issue. The last time was in 2006-07 when the District was required by CDDW to monitor nitrate concentration in Well 16 and the 2850 zone reservoir on a regular basis. It is believed that the nitrate incidents may occur again. At some point in time it may be necessary to either install well-head treatment for nitrate removal (ion exchange or reverse osmosis) if blending alone cannot mitigate the problem. If the problem gets worse, sewers may need to be installed in the more densely developed portions of Cherry Valley.

Vandalism and Terrorism

Vandalism and terrorism-related contamination are remote possibilities; nevertheless they could occur. BCVWD has installed intrusion alarms on its new well pump buildings and reservoirs and other critical facilities. Cameras have been installed at the District headquarters and elsewhere. Vandalism has not been a cause for concern in the past; terrorism can be cause for concern; however, BCVWD did have a Vulnerability Assessment and Emergency Response Plan prepared as required by the US EPA after 9/11/2001 attacks. The Vulnerability Assessment is a sensitive document and is kept confidential on file with BCVWD's Director of Operations. The document outlines steps and procedures to be implemented to prevent or minimize terror incidents.

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[11] Ibid

BCVWD Actions Needed During Water Supply Interruption

BCVWD has a water system Emergency Response Plan which is reviewed annually. It was last updated in May 2011 and is currently under review. This ERP identifies the actions to be taken, emergency reporting stations, notification and alert process, and procedures for various emergencies. These actions will not be repeated here.

Impact of Local Interruptions of Supply, Vandalism and Terrorism

BCVWD has its own field crews, equipment and materials to respond promptly and make emergency repairs to the water system should vandalism occur. Several of BCVWD's operations staff live on District property in Little San Gorgonio Canyon and so are able to respond to emergencies quickly. There is always an on-call staff person. Operations staff can "poll" the telemetry system remotely with laptop computers to make adjustments and identify problems. When an interruption occurs, such as a pipeline main break, BCVWD staff will immediately respond and isolate the main and stop the leak. That is their first duty. They then assess the situation and determine what needs to be done next. Time permitting they will notify the affected customers of the outage and its expected duration.

BCVWD's Emergency Response Plan contains the procedures to be followed and the required notification process when cross-connections, bacteriological contamination, or other emergency action is required by the CDDW.

The ERP provides specific details on dealing with terror attacks on the water system. This is confidential.

Impact of Longer Term Aqueduct Interruptions

As stated previously, BCVWD is fortunate to have the Beaumont Groundwater Basin available to meet demands even during extended periods of imported water supply outages. BCVWD has an 80,000 AF authorized storage account. As of December 31, 2015, BCVWD's storage account had a balance of 25,568 AF[12]. At the current demand (2015) of about 6,100 AFY for imported water, the amount of water presently in storage is sufficient to meet BCVWD's imported water demands for about four years even if no imported water is available. (Note this does not include the District's additional demand for imported water banking.)

Outage Due to Contamination

Well outage due to contamination, not terrorism-related and not bacteriological, typically occurs gradually. Because of regulatory testing, these problems are identified quickly and appropriate action is taken in accordance with the District's Emergency Response Plan.

[12] 2015 Annual Report (2016). Beaumont Basin Watermaster, Draft, August.

The most serious incident in the past occurred at Wells 1, 16 and 21 where nitrate spiking occurred. Well 1 pumps into a small reservoir at 12th and Palm Avenue which receives water from another well (Well 3 and ultimately Well 2 when it is put back into service). Both Wells 2 and 3 are low in nitrate, so the nitrate spike can easily be blended down to meet the MCL before it is introduced into the distribution system by the 12th and Palm Boosters. Well 16 and 21 pump into a reservoir (Vineland and Cherry respectively). These reservoirs receive water indirectly from a number of other low nitrate wells. Blending is carefully monitored to ensure there is ample low-nitrate water in the reservoir to meet the MCL. So far this has not been an issue and the system blending has complied with CDDW requirements. If these wells increase in nitrates, blending may not be a solution and treatment will be required.

On July 1, 2014 the SWRCB DDW established an MCL for hexavalent chromium (Cr+6) at 0.010 mg/L (10 µg/L). The first step in the implementation was sampling of the District's wells. Amounts just over the MCL were detected in several wells. This hexavalent chromium is due to natural causes. In response to state-mandated hexavalent chromium testing, Well 25 was rehabilitated and Well 26 was modified to pump to the non-potable water system in lieu of providing wellhead treatment at this time. In the future, well head treatment may be installed.

Actions taken during outages due to cross-connection or bacteriological contamination are in the Emergency Response Plan and were discussed above.

Advisory Reductions for Short-term Interruptions

A short-term interruption could result in district-wide water shortage, e.g., several major production wells out of service for maintenance, bacteriological contamination etc., or a localized water shortage, e.g., transmission main break, reservoir out of service, etc. In the latter case, reduction in demand would only be required in a small (localized) portion of the service area.

Localized Interruption

If the interruption is localized, BCVWD staff would typically go "door to door" in the affected area notifying the affected customers of the interruption and the estimated time to get the water supply "back to normal." The purpose is to request the customers to voluntarily reduce their water use until the situation can be remedied. Staff will suggest that they do the following:

1. Avoid watering lawns, washing cars (except at commercial car washes), and filling or adding make-up water to swimming pools
2. Minimize use of water using appliances, e.g., automatic washing machines and dishwashers, i.e., full loads only.
3. Use water wisely within the house, shorten showers, minimize faucet running time, etc.
4. Stop using water from hydrants for construction and dust control

5. Reduce park, school and street median landscape watering to the minimum needed to sustain plant life.

Once the short term emergency is over, BCVWD staff will again notify the customers that the water supply is “back to normal,” thank them for using water wisely and encourage them to continue to do so.

District-wide Interruption

If the interruption is District-wide, individual customer notification is not practical. A more extensive outreach program is needed.

BCVWD management will notify the District’s Board of Directors, City of Beaumont elected officials and management, and the Riverside County Supervisor whose district covers the service area of the District-wide interruption, as appropriate. In addition BCVWD will notify the newspapers, e.g., Riverside Press-Enterprise, Banning Record Gazette, etc., cable TV provider (Time Warner), and local radio stations in Riverside, San Bernardino, and the Coachella Valley, including the Spanish language stations In addition a notice will be posted on the BCVWD website.

Consumers will be urged to conserve water by taking the steps listed above for a localized interruption. Once the short term emergency is over, BCVWD staff will again notify all of the local elected officials, newspapers and cable TV and radio stations that the water supply is “back to normal,” thank them for their conservation efforts and encourage customers to continue to use water wisely.

Minimum supply Next Three Years

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

Table 8-7 (DWR Table 8-4) presents a summary of the water supply available over the next 3 years (2016, 2017, and 2018). Table 8-8 provides the back-up for Table 8-7.

Table 8-7
(DWR Table 8-4) Minimum Water Supply Next Three Years (2016 – 2018)

DWR Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	10,956	9,650	4,508
NOTE: 2016 based on BCVWD receiving 9,870 AF per SGPWA email. Year 2017 and 2018 assumes 35% and 5% SWP Allocation as used in Stress Test. SPW amounts per SGPWA for Stess Test Analysis.			

Table 8-8
Minimum Water Supply Available Next 3 Years

	YEAR		
	2016	**2017**	**2018**
DEMAND			
Potable Water Demand, AFY	11,110	12,020	12,930
Non-Potable Water Demand, AFY	1,410	1,530	1,660
Recycled Water Into Non-potable System, AFY	-	-	775
Total Water Demand Supplied from Groundwater, AFY	12,520	13,550	15,365
SUPPLY			
Groundwater			
Edgar Canyon, AFY	1,117	1,117	1,117
Beaumont Basin, AFY	2,839	2,791	2,826
Imported SPW,AFY	9,870	5,742	565
Subtotal Supply, AFY	13,826	9,650	4,508
From (to) Banked Beaumont Basin Storage, AF	(1,306)	3,900	10,857
BCVWD Beaumont Basin Storage Account Balance, AF	26,874	22,974	12,117

The assumptions in Table 8-8 are:

- The non-potable water system is supplied by non-potable water from the Beaumont Basin. Non-potable water extractions from the Beaumont Basin are assumed to be considered as extractions from BCVWD's storage account.
- The Edgar Canyon extractions represent the smallest 3-year moving average of pumping from 1983 through 2015.
- For the SPW supply for 2016, the allocation to each Contractor is 60%; so the Pass Agency will receive 60% of 17,300 AFY, their Table A amount, or 10,380 AF. Communication from SGPWA indicated BCVWD would receive 9,870 AF for 2016[13]. For the succeeding years, the allocation will follow the period 2013 (35%) and 2014 (5%) as assumed in BCVWD's Self-certification provided to DWR in response to the Drought Emergency Water Conservation directive. These amounts, (5,742 AFY and 565 AFY), were provided to BCVWD by SGPWA.
- Recycled water delivery is assumed to start in 2018.

[13] Email. J. Davis GM SGPWA to E. Fraser, GM BCVWD, April 26, 2016.

- Banked storage in BCVWD's account at the end of 2015 was 25,568 AF.[14]
- An increase in demand of 22.7% from 2016 to 2020.
- Beaumont Basin available groundwater is determined by Watermaster based on a projection of reallocation of unused overlier rights.[15]

The result shows that BCVWD will still have over 12,000 AF in storage at the end of 2018. Even if recycled water has not started, there will still be over 11,300 AF in storage. With some conservation, there will be even more water remaining in storage. This is close to a 1-year supply.

Reconciliation with Self-certification Report

BCVWD submitted a Self-certification Report to DWR in response to the Drought Emergency Water Conservation directive. The Self-certification Report covered the 3-year period 2017 through 2019. The assumptions in the Self-certification Report were slightly different that in Table 8-8. In the Self-certification Report:

- The water was the average of 2013 and 2014 demands demand and remained constant for the 3-year period rather than increasing as in Table 8-8.
- Edgar Canyon supply was the average of years 2013 through 2015 as opposed to the minimum 3-year moving average used in Table 8-8.
- BCVWD did not include any recycled water.
- The reallocated unused overlier rights were based on the 2014 Watermaster Annual Report vs. the 2015 Watermaster Annual Report in Table 8-8.
- The amount of water in banked storage in January 2017, the start of the Self-certification Report evaluation, was estimated to be 27,576 AF.
- The amount of groundwater in banked storage at the end of the 3-year Self-certification period was 16,831 AF

The analysis presented in Table 8-8 represents a more severe drought analysis although in either case, BCVWD has water, in storage, even after the extension of the drought.

---

[14] Beaumont Basin Watermaster (2016). 2015 Annual Report – Draft., August

[15] Ibid

DRAFT

RESOLUTION _______

RESOLUTION OF THE BOARD OF DIRECTORS
OF THE BEAUMONT CHERRY VALLEY WATER DISTRICT
WATER SHORTAGE CONTINGENCY REGULATIONS

The Board of Directors of the Beaumont Cherry Valley Water District (District) does hereby resolve:

WHEREAS, the Urban Water Management Plan (UWMP), 2015 Update, adopted by the Board contains provisions relating to water shortages and contingencies due to catastrophic outage of state, regional and District supply facilities, hydrologic conditions resulting in lower than normal water supply or other factors which prevent the District from providing as much water as is customary; and

WHEREAS, the District endeavors to supply water in sufficient quantities to protect public health; and

WHEREAS, the District has established four stages of action in the UWMP 2015 Update which impose both voluntary and mandatory reductions in water use depending on the severity of the shortage,

NOW, THEREFORE, BE IT RESOLVED, by the Board of Directors of the District as follows:

1. The General Manager is hereby authorized to declare a Water Shortage according to the Water Shortage Contingency Plan in the UWMP 2015 Update
2. The General Manager is hereby authorized and directed to implement the various stages identified in the UWMP 2015 Update
3. The General Manager shall monitor water use and recommend to the Board of Directors additional measures as may be required to conserve water resources and ensure public health.

ADOPTED this ________________________

BEAUMONT CHERRY VALLEY WATER DISTRICT

____

President of the Board of Directors of the
Beaumont Cherry Valley Water District

Section 9

Demand Management Measures

The goal of this Demand Management Measures (DMM) section is to provide a comprehensive description of the water conservation programs that BCVWD has implemented, is currently implementing, or plans to implement in order to ensure its customers use water wisely and the District meets its urban water use targets. During the period May 2015 through April 2016, BCVWD was able to reduce water consumption by 24% from the same period in 2013; but this was still below the target value of 32%. This was accomplished with two days per week landscape irrigation and Stage 2 water restrictions.

The section on the California Water Code (CWC) addressing DMMs was significantly modified in 2014 to simplify, clarify and update the DMM reporting requirements. This was done by reducing the 14 specific measures in previous UWMPs to 6 more general requirements plus an "other" category.

Demand Management Measures for Retail Agencies

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.

CWC 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.

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

Water waste prevention ordinances.

Metering.

Conservation pricing.

Public education and outreach.

Programs to assess and manage distribution system real loss.

Water conservation program coordination and staffing support.

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.

Water Waste Prevention Ordinances

Section 9.6 of the District's Rules Governing Water Service states the following:

> *It is a violation of these Regulations:*
>
> *3) To cause or permit the waste of water from the water system or to maintain or cause or permit to be maintained any leaky outlets, apparatus or plumbing fixtures through which water is permitted to waste;*
>
> *4) To use water for washing sidewalks and driveways in a manner that prevents the usual and customary use of public streets and sidewalks by others;*
>
> *5) To permit water sprinklers to spray onto sidewalks and streets or to permit water to run from the consumer's property onto public sidewalks and streets to cause risk and/or damage to the public or to public and private property;*

Section 15 of the District's Rules Governing Water Service states the following:

> *No person, firm or corporation shall use, deliver, or apply waters received from this District in any manner that causes the loss, waste, or the application of water for unbeneficial purposes. Within the meaning of this Regulation, any waters that are allowed to escape, flow, and run into areas which do not make reasonable beneficial use of such waters, including but not limited to streets, gutters, drains, channels, and uncultivated lands, shall be presumed to be wasted contrary to the prohibitions of these Rules and Regulations.*

The Regulations for Water Service have a series of warnings/penalties. The first notice is a written warning; the second offense results in a doubling of the water charges until full compliance is attained. After the third offense, the District can terminate water service to the customer.

BCVWD Board of Directors adopted Resolution No. 2016-05 implementing new water use restrictions. The new resolution prohibited, among others:

- Use of potable water on driveways and sidewalks
- No washing of cars unless the hose had an shutoff valve
- Serving of water to restaurant guests unless specifically requested
- No irrigation within a rain event or 48 hours afterwards
- Giving hotel/motel guests the option of reusing their own towels
- No fountain use except recirculating type

In addition the District set up a "water waster hotline" which would accept anonymous calls. Customer Service Representatives would respond to these calls and request one of the District's operations staff to investigate. Calls were taken for leaks, water running in gutters, etc.

<u>Implementation</u>: The District already has the ordinance in place. Also, recycled water shall be used wherever available.

Metering

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

All of BCVWD's services are metered. This includes all residential, commercial/retail, industrial, institutional and landscape irrigation connections. In addition BCVWD meters construction water taken from hydrants and street sweeping and vactor truck water. On-site fire services are metered to prevent theft. BCVWD has a regular program of replacing meters. Meters are read every other month; landscape and other high volume users are read monthly.

BCVWD had some Automatic Meter Reading (AMR) systems installed when they first came available. These are now in the process of being replaced on a gradual basis with newer, more effective AMR devices. These can be very effective at identifying leaks at the customer service side and reduce meter reading time.

<u>Implementation:</u> This is already in place with AMR starting to be installed.

Conservation Pricing

BCVWD has rate schedule (effective 1/1/2013) that includes a:

- Service (meter) charge which depends on the size of the meter. The larger the meter, the larger the bi-monthly service charge
- Commodity charge which is two tiered. For single family residences from 0 – 44 HCF and greater than 45 HCF. The unit price for water use over 45 HCF is a little over 9% more than the unit price from 0 to 44 HCF. For multi-family residential, the first block rate is from 0 – 35 HCF; the second is over 36 HCF. The unit price for the second block rate is about 2% more than the first block rate. This accounts for the generally lower family incomes in multi-family residences.
- SCE Power Charge per HCF to cover a portion of the cost of pumping power. This is applied to all water sold.
- State Project Water Charge per HCF to cover the cost of importing SPW.

Implementation: BCVWD will be evaluating its rate structure late in 2016 or earl 2017 to eliminate non-conserving pricing structures and consider including additional tiers for more incentives.

Public Education and Outreach

BCVWD provides water conservation literature in the lobby where customers pay their bills or enter for District Board Meetings. The District's web site http://www.bcvwd.org/tips.html has over one hundred water conservation tips. In addition the District constructed its own demonstration water conservation garden that is open 24/7 at the District's groundwater recharge facilities. Many of the plants are identified. There are marked trails and pathways through the garden and picnic tables and barbecue pits. The public is free to enjoy the gardens anytime. An annual fishing derby is held at the site in cooperation with the Parks and Recreation District.

All new customers requesting water service are told about water conservation and water restrictions by the customer service representatives.

The District presently does not make a special effort to promote water conservation at local schools. District staff are available on an "as requested" basis to explain the benefits of water conservation and its importance on the community.

Implementation: The public information programs are ongoing and information is provided as needed. District staff may consider coordinating with School District staff, events where information packets on water conservation and water savings techniques can be distributed to students. Once recycled water is provided to the schools, BCVWD will be much more active with the schools as part of the on-site inspections and working with the school's on-site recycled water site supervisor. This could evolve into a regular presentation to all entering freshmen and transfer students to educate them in the recycled water system and the need for water conservation programs.

Programs to Assess and Manage Distribution System Real Loss

Much of the BCVWD water system is new having been installed within the last 15 years or so with the housing boom. Older leak-prone lines are replaced; BCVWD has developed and funded a Capital Improvement Program to replace aging and leaking pipes over the next 5 to 19 years. Water distribution lines are routinely checked and/or tested for leaks; when leaks are found they are promptly repaired.

BCVWD annually performs a distribution system water audit comparing the amount of water produced from wells to the amount of water used by consumers (as reported by metering readings). The District meters construction water and private fire systems. Very little water is unmetered. After allowing for authorized unmetered uses such as fire fighting, main flushing, and public use, it can be assumed that the remaining unmetered water is explained by inaccurate meter readings, malfunctioning valves and leakage, and theft. The District has very little unaccounted-for or non-revenue water.

To save water, the District does not perform hydrant flow testing. Fire flow verification is performed on the District's calibrated computer model.

<u>Implementation</u>: The District has an ongoing schedule to inspect facilities and periodically calibrate master water meters. The District has already implemented leak detection measures. Water system audits are generally done at least once a year

Water Conservation Program Coordination and Staffing Support

The District presently does not have a designated conservation coordinator. All conservation and water use restriction information is provided by the District's Customer Service Representatives. BCVWD has been operating at reduced staff levels to keep expenditures to a minimum so that water rates do not have to be raised. During these economic times, it is very difficult to justify such a position when BCVWD staff has been reduced to a minimum.

<u>Implementation</u>: The District is a small agency and funding a full time water conservation coordinator would have significant financial impacts – perhaps as much as $5 per household per year for just salary and benefits. The District will investigate opportunities regionally through the Pass Agency.

Both Beaumont and Cherry Valley have been classified by the Santa Ana Watershed Project Authority (SAWPA) as disadvantaged or partially disadvantaged communities so it is important to keep rates as low as possible.

Other Demand Management Measures

Conversion to Recycled Water. Currently there are about 300 landscape irrigation connections connected to a non-potable (untreated and recycled) water system. The District has installed over 30 miles of recycled water transmission mains and a 2 MG reservoir for recycled water. The system is separated such that one part (larger part) is currently served by non-potable water Well No. 26, supplemented as needed by potable water discharged through an air gap into the 2 MG reservoir.

The portion of the system with is south of I-10 is pressurized with potable water from the Hannon (2650 Zone Potable Water Tank).

A facilities planning grant application to bring in recycled water from YVWD has been approved by the SWRCB. Discussions are on-going with YVWD for non-potable water from the Henry Wochholz Water Reclamation Facility. Negotiations are on-going with the City of Beaumont for recycled water from their treatment plant. Any recycled water which is introduced into the system will offset the existing potable water demand on a gallon for gallon basis. Currently about 1700 acre-ft/yr (measured through the irrigation meters) is supplied to the landscape irrigation services. The potable demand will be reduced once recycled water is available.

Implementation or Scheduled Implementation

Recycled water will most likely be introduced into the non-potable water system by 2018 to 2020.

Planned Implementation to Achieve Water Use Targets

To achieve the SB7x7 water use targets in Section 5, BCVWD intends to continue and expand implementation of the DMMS presented above. In the future the District may look to partnering and possibly cost sharing with SGPWA for rebate programs. Large and small wholesalers have provided and managed rebate programs on behalf of their member retailers. Both parties benefit.

Within BCVWD's service area, 68 percent of the housing units have been built since 1990; so they have reduced water use plumbing fixtures. In Cherry Valley, the residences have on-site wastewater disposal systems; those homeowners tend to be very frugal with indoor water use anyway. Consequently, low flush toilet rebate programs would not be effective.

With over 60 percent of the housing stock in Beaumont constructed since 2000, there is likely not much opportunity for replacement of dishwashers or washing machines with more water efficient machines. Most of the developers are very conscious of water use and are installing these high efficient devices in their new models.

There may be opportunity for replacement of dishwashers and washing machines in Cherry Valley where the housing stock is older and the residences are on septic tanks.

The implementation of new landscape ordinances at the state and local level will help reduce outdoor water use. Requirements for smart irrigation controllers on new housing will go a long way to reduce outdoor water use. BCVWD believes the greatest opportunity for water savings is conversion of street medians and common area turf areas to more drought tolerant planting materials and converting these irrigated areas to recycled water. The use of recycled water for landscape irrigation is key to BCVWD meeting the water use target.

Section 10
Plan Adoption, Submittal and Implementation

This section describes the public notification, plan adoption, submittal and implementation of BCVWD's 2015 UWMP Update.

The draft 2015 UWMP Update was completed on __________, 2016 and was available for a 10-day public review prior to the public hearing. Copies of the draft 2015 UWMP Update were available at the BCVWD District Office, 560 Magnolia Avenue, Beaumont, CA 92223 during regular business hours and was posted on BCVWD's website http://www.bcvwd.org/.

A public hearing was held on ___________, 2016 at BCVWD's Board Room, 560 Magnolia Avenue, Beaumont, CA 92223. Board member and public comments and testimony were taken and staff considered all comments and revised the 2015 UWMP Update as necessary. The final UWMP was adopted by the Board of Directors through a resolution at a meeting at the BCVWD office held on ___________, 2016. The final 2015 UWMP Update was submitted to DWR within 30 days of Board approval. The final adopted 2015 UWMP Update was available to the public and was posted on the District's website within 60 days of submission to DWR.

The 2015 UWMP Update is intended to serve as a general, flexible, open-ended document that periodically can be updated to reflect changes in service area growth and demands, available water supply and conservation policies and practices. The plan will guide the Board and staff through the year 2020 when the UWMP is required to be updated again.

Inclusion of All 2015 Data

BCVWD's 2015 UMWP Update includes all water use and planning data from calendar year 2015

Notice of Public Hearing

BCVWD will be holding a public hearing prior to having the Board of Directors adopt the Plan. The public hearing will provide an opportunity for the public to provide input to the plan before it is adopted. The Board of Directors will consider all public input. The hearing will be noticed to the nearby cities, the County of Riverside, the County of San Bernardino, and public.

Notice of 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…

Table 10-1 is a checklist for the notification of cities and counties.

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Beaumont	☑	☑
	☐	☐
	☐	☐
County Name	60 Day Notice	Notice of Public Hearing
Riverside County	☑	☑
San Bernardino County	☑	☑

The 60-day Notification was sent out ___________, 2016 more than 60 days prior to the public hearing. A copy of the Notification Letter is included in an Appendix. A public hearing for written and oral comments on the 2015 UWMP Update was held on __________, 2016. Notice of the hearing followed Government Code 6066. Copies of the Notices are in the Appendix.

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.

Copies of the Public Hearing Notice and dates of publication are included in an Appendix. The Public Hearing was held on _______________, 2016 at the BCVWD District Office, Board Room, 560 Magnolia Avenue, Beaumont CA 92223. Copies of the 2015 UWMP Update were available at the office during regular business hours. It was also published on BCVWD's websitehttp://www.bcvwd.org/ .

Table 10-2
Coordination with Appropriate Agencies, Groups and Organizations

Agency, Group or Organization	Participated in developing UWMP Update	Sent Public Hearing Notice	Sent copy of draft UWMP Update	Attended public meetings	Commented on the draft UWMP Update	Sent notice of intention to adopt UWMP	Sent Final UWMP Update
City of Beaumont		•					
City of Banning		•					
City of Yucaipa		•					
City of Calimesa		•					
YVWD		•					
South Mesa WC		•					
County of Riverside		•					
County of San Bernardino		•					
Eastern MWD		•					
SGPWA		•					
Beaumont Basin Watermaster		•					
Riverside County LAFCO		•					
San Bernardino County LAFCO		•			•		
CVAN		•					
Riverside BIA		•					
General public		•					On Website

Public Hearing and Adoption

> ***CWC 10642***
>
> *…Prior to adopting a plan, the urban water supplier shall hold a public hearing thereon.*
>
> ***CWC 10608.26***
>
> *In complying with this part, an urban retail water supplier shall conduct at least one public hearing to accomplish all of the following:*
>
> *Allow community input regarding the urban retail water supplier's implementation plan for complying with this part.*
>
> *Consider the economic impacts of the urban retail water supplier's implementation plan for complying with this part.*
>
> *Adopt a method, pursuant to subdivision (b) of Section 10608.20 for determining its urban water use target.*

BCVWD provided information on their baseline water use targets and implementation plan required in the Urban Water Conservation Act of 2009.

The public hearing was held on __________________, 2016. In attendance were ______________ from the cities, ____________from the counties, __________from neighboring water agencies, _______________from other organizations, and _____________ members of the general public.

Both oral and written comments were taken; when the public hearing was closed, the Board gave direction to staff to consider all comments and make revisions to the 2016 UWMP Update as required.

The 2015 UWMP Update was revised by staff to incorporate comments from the public hearing. The revised UWMP Update was made available at the District Office and posted on the District's website prior to the date of adoption. On ________________, 2016 at a regular meeting of the Board of Directors, the 2015 UWMP Update was adopted. The meeting was duly noticed per Government Code.

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.*

BCVWD's 2015 UWMP Update will be submitted to DWR within 30 days of adoption and as close to July 1, 2016 as practical. The submittal will be electronic using DWR's WUEdata submittal tool.

A hard copy or CD will be submitted to the California State Library within 30 days of adoption. The addresses are:

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

Or if hand carried --

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

Public Availability

> *§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.*

BCVWD will, within 30 days of filing with DWR, make the plan available to the public at the District's office at 560 Magnolia St., Beaumont, CA 92223 during normal business hours. It will also be posted on the District's website in pdf form for reading/downloading by the public.

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 2015 UWMP Update needs to be amended, any amendments or changes will be adopted and filed as described above.

APPENDICES

Appendix A	California Water Code, Urban Water Management Planning
Appendix B	California Water Code, Sustainable Water Use and Demand Reduction (SB X7-7)
Appendix C	UWMP Tables
Appendix D	SB X7-7 Verification Form
Appendix E	Beaumont Basin Adjudication
Appendix F	Notices to Cities and Counties, Notice of Public Hearing, Meeting Minutes, Comments, and Resolution of Adoption
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Appendix A
California Water Code
Urban Water Management Planning

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
California Water Code
Sustainable Water Use and Demand Reduction (SB X7-7)

California Water Code Division 6, Part 2.55.

Chapter 1. General Declarations and Policy

SECTION 10608-10608.8

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

SECTION 10608.12

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

SECTION 10608.16-10608.44

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 paragraph (1) 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 due in 2010 pursuant to Part 2.6 (commencing with Section 10610) 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) (1) An urban retail water supplier is 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 the 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.

(2) An urban wholesale water supplier whose urban water management plan prepared pursuant to Part 2.6 (commencing with Section 10610) was due and not submitted in 2010 is granted an extension to July 1, 2011, to permit coordination between an urban wholesale water supplier and urban retail water suppliers.

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 conservation of that military installation under federal Executive Order 13514.

(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.(a) The department shall review the 2015 urban water management plans and report to the Legislature by July 1, 2017, 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 to achieve the 20-percent reduction and to reflect updated efficiency information and technology changes.

(b) A report to be submitted pursuant to subdivision (a) shall be submitted in compliance with Section 9795 of the Government Code.

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 at facilities it operates to support urban retail water suppliers in meeting the target identified in Section 10608.16.

Chapter 4 Agricultural Water Suppliers

SECTION 10608.48

10608.48.(a) On or before July 31, 2012, an agricultural water supplier shall implement efficient water management practices pursuant to subdivisions (b) and (c).

(b) Agricultural water suppliers shall implement all of the following critical efficient management practices:

(1) Measure the volume of water delivered to customers with sufficient accuracy to comply with subdivision (a) of Section 531.10 and to implement paragraph (2).

(2) Adopt a pricing structure for water customers based at least in part on quantity delivered.

(c) Agricultural water suppliers shall implement additional efficient management practices, including, but not limited to, practices to accomplish all of the following, if the measures are locally cost effective and technically feasible:

(1) Facilitate alternative land use for lands with exceptionally high water duties or whose irrigation contributes to significant problems, including drainage.

(2) Facilitate use of available recycled water that otherwise would not be used beneficially, meets all health and safety criteria, and does not harm crops or soils.

(3) Facilitate the financing of capital improvements for on-farm irrigation systems.

(4) Implement an incentive pricing structure that promotes one or more of the following goals:

(A) More efficient water use at the farm level.

(B) Conjunctive use of groundwater.

(C) Appropriate increase of groundwater recharge.

(D) Reduction in problem drainage.

(E) Improved management of environmental resources.

(F) Effective management of all water sources throughout the year by adjusting seasonal pricing structures based on current conditions.

(5) Expand line or pipe distribution systems, and construct regulatory reservoirs to increase distribution system flexibility and capacity, decrease maintenance, and reduce seepage.

(6) Increase flexibility in water ordering by, and delivery to, water customers within operational limits.

(7) Construct and operate supplier spill and tailwater recovery systems.

(8) Increase planned conjunctive use of surface water and groundwater within the supplier service area.

(9) Automate canal control structures.

(10) Facilitate or promote customer pump testing and evaluation.

(11) Designate a water conservation coordinator who will develop and implement the water management plan and prepare progress reports.

(12) Provide for the availability of water management services to water users. These services may include, but are not limited to, all of the following:

(A) On-farm irrigation and drainage system evaluations.

(B) Normal year and real-time irrigation scheduling and crop evapotranspiration information.

(C) Surface water, groundwater, and drainage water quantity and quality data.

(D) Agricultural water management educational programs and materials for farmers, staff, and the public.

(13) Evaluate the policies of agencies that provide the supplier with water to identify the potential for institutional changes to allow more flexible water deliveries and storage.

(14) Evaluate and improve the efficiencies of the supplier's pumps.

(d) Agricultural water suppliers shall include in the agricultural water management plans required pursuant to Part 2.8 (commencing with Section 10800) a report on which efficient water management practices have been implemented and are planned to be implemented, an estimate of the water use efficiency improvements that have occurred since the last report, and an estimate of the water use efficiency improvements estimated to occur five and 10 years in the future. If an agricultural water supplier determines that an efficient water management practice is not locally cost effective or technically feasible, the supplier shall submit information documenting that determination.

(e) The data shall be reported using a standardized form developed pursuant to Section 10608.52.

(f) An agricultural water supplier may meet the requirements of subdivisions (d) and (e) by submitting to the department a water conservation plan submitted to the United States Bureau of Reclamation that meets the requirements described in Section 10828.

(g) On or before December 31, 2013, December 31, 2016, and December 31, 2021, the department, in consultation with the board, shall submit to the Legislature a report on the agricultural efficient water management practices that have been implemented and are planned to be implemented and an assessment of the manner in which the implementation of those efficient water management practices has affected and will affect agricultural operations, including estimated water use efficiency improvements, if any.

(h) The department may update the efficient water management practices required pursuant to subdivision (c), in consultation with the Agricultural Water Management Council, the United States Bureau of Reclamation, and the board. All efficient water management practices for agricultural water use pursuant to this chapter shall be adopted or revised by the department only after the department conducts public hearings to allow participation of the diverse geographical areas and interests of the state.

(i) (1) The department shall adopt regulations that provide for a range of options that agricultural water suppliers may use or implement to comply with the measurement requirement in paragraph (1) of subdivision (b).

(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.

Chapter 5 Sustainable Water Management

Section 10608.50

10608.50.(a) The department, in consultation with the board, shall promote implementation of regional water resources management practices through increased incentives and removal of barriers consistent with state and federal law. Potential changes may include, but are not limited to, all of the following:

(1) Revisions to the requirements for urban and agricultural water management plans.

(2) Revisions to the requirements for integrated regional water management plans.

(3) Revisions to the eligibility for state water management grants and loans.

(4) Revisions to state or local permitting requirements that increase water supply opportunities, but do not weaken water quality protection under state and federal law.

(5) Increased funding for research, feasibility studies, and project construction.

(6) Expanding technical and educational support for local land use and water management agencies.

(b) No later than January 1, 2011, and updated as part of the California Water Plan, the department, in consultation with the board, and with public input, shall propose new statewide targets, or review and update existing statewide targets, for regional water resources management practices, including, but not limited to, recycled water, brackish groundwater desalination, and infiltration and direct use of urban stormwater runoff.

Chapter 6 Standardized Data Collection

SECTION 10608.52

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 and an agricultural water supplier's compliance with implementation of efficient water management practices pursuant to subdivision (a) of Section 10608.48. The form shall accommodate reporting by urban water suppliers on an individual or regional basis as provided in subdivision (a) of Section 10608.28.

Chapter 7 Funding Provisions

Section 10608.56-10608.60

10608.56.(a) On and after July 1, 2016, an urban retail water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(b) On and after July 1, 2013, an agricultural water supplier is not eligible for a water grant or loan awarded or administered by the state unless the supplier complies with this part.

(c) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail 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 achieving the per capita reductions. The supplier may request grant or loan funds to achieve the per capita reductions to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(d) Notwithstanding subdivision (b), the department shall determine that an agricultural water supplier is eligible for a water grant or loan even though the supplier is not implementing all of the efficient water management practices described in Section 10608.48, if the agricultural 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 efficient water management practices. The supplier may request grant or loan funds to implement the efficient water management practices to the extent the request is consistent with the eligibility requirements applicable to the water funds.

(e) Notwithstanding subdivision (a), the department shall determine that an urban retail water supplier is eligible for a water grant or loan even though the supplier has not met the per capita reductions required pursuant to Section 10608.24, if the urban retail water supplier has submitted to the department for approval documentation demonstrating that its entire service area qualifies as a disadvantaged community.

(f) The department shall not deny eligibility to an urban retail water supplier or agricultural water supplier in compliance with the requirements of this part and Part 2.8 (commencing with Section 10800), 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 requirements of this part or Part 2.8 (commencing with Section 10800).

10608.60.(a) It is the intent of the Legislature that funds made available by Section 75026 of the Public Resources Code should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for grants to implement this part. In the allocation of funding, it is the intent of the Legislature that the department give consideration to disadvantaged communities to assist in implementing the requirements of this part.

(b) It is the intent of the Legislature that funds made available by Section 75041 of the Public Resources Code, should be expended, consistent with Division 43 (commencing with Section 75001) of the Public Resources Code and upon appropriation by the Legislature, for direct expenditures to implement this part.

Chapter 8 Quantifying Agricultural Water Use Efficiency

SECTION 10608.64

10608.64. The department, in consultation with the Agricultural Water Management Council, academic experts, and other stakeholders, shall develop a methodology for quantifying the efficiency of agricultural water use. Alternatives to be assessed shall include, but not be limited to, determination of efficiency levels based on crop type or irrigation system distribution uniformity. On or before December 31, 2011, the department shall report to the Legislature on a proposed methodology and a plan for implementation. The plan shall include the estimated implementation costs and the types of data needed to support the methodology. Nothing in this section authorizes the department to implement a methodology established pursuant to this section.

Appendix C
UWMP 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, AF
3310002	Beaumont Cherry Valley Water District	16,799	9,293
	TOTAL	16,799	9,293
NOTES:			

<table>
<tr><th colspan="4">Table 2-2: Plan Identification</th></tr>
<tr><th>Select Only One</th><th colspan="2">Type of Plan</th><th>Name of RUWMP or Regional Alliance</th></tr>
<tr><td>☑</td><td colspan="3">Individual UWMP</td></tr>
<tr><td rowspan="2"></td><td>☐</td><td>Water Supplier is also a member of a RUWMP</td><td></td></tr>
<tr><td>☑</td><td>Water Supplier is also a member of a Regional Alliance</td><td>Other</td></tr>
<tr><td>☐</td><td colspan="2">Regional Urban Water Management Plan (RUWMP)</td><td></td></tr>
<tr><td colspan="4">NOTES: BCVWD is a memer of, the San Gorgonio Pass Regional Water Alliance, which was formed in 2015; they did not prepare a 2015 UWMP</td></tr>
</table>

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)	
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)*
San Gorgonio Pass Water Agency
NOTES:

DWR Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040
	48,377	61,386	69,306	78,393	86,949	94,804
NOTES: See Table 3-6 and text for description of methodology						

Table 4-1 Retail: Demands for Potable and Raw Water - Actual			
Use Type *(Add additional rows as needed)*	2015 Actual		
	Additional Description *(as needed)*	Level of Treatment When Delivered	Volume, AF
Single Family		Drinking Water	6,612
Multi-Family		Drinking Water	287
Commercial	estimated	Drinking Water	118
Industrial		Drinking Water	169
Institutional/Governmental	estimated	Drinking Water	611
Landscape	potable water only	Drinking Water	772
Agricultural irrigation		Drinking Water	49
Other	Metered construction, street sweeping, etc.	Drinking Water	160
Losses	estimated	Drinking Water	500
Groundwater recharge	Imported Water Banked for future extractions during dry periods. During 2015, 2090 AF imported water recharged and extracted in 2015	Raw Water	0
Landscape	non-potable water	Raw Water	514
		TOTAL	9,792
NOTES:			

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, AF *Report To the Extent that Records are Available*				
		2020	2025	2030	2035	2040
Single Family		12,702	14,191	16,084	17,878	19,533
Multi-Family		400	625	710	785	855
Commercial		126	135	145	155	165
Industrial		180	190	200	210	220
Institutional/Governmental		650	685	730	770	820
Agricultural irrigation		60	55	50	45	40
Other	Metered construction and street sweeping water, etc.	300	315	325	340	350
Losses		335	380	430	475	500
	Total Potable Water	14,753	16,576	18,674	20,658	22,483
Groundwater recharge	Imported Raw Water Banked for future extractions during dry periods. Does NOT Include Imported Water to Meet Replacement Obligations	1,000	1,500	2,000	2,500	2,500
	Subtotal Potable and Raw Water	15,753	18,076	20,674	23,158	24,983
Landscape	Non-potable Water	1,906	2,374	2,931	3,228	3,449
	TOTAL	17,659	20,450	23,605	26,386	28,432

NOTES: Groundwater recharge quantities are planned quanties to build 5-year supply per BCVWD Resolution 2014-05 ; Landscape demand does not include golf course demands. Golf courses are on private wells and will only be supplemented with non-potable water.

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*	9,792	15,753	18,076	20,674	23,158	24,983
Non-potable Water Demand	0	1,906	2,374	2,931	3,228	3,449
TOTAL WATER DEMAND	9,792	17,659	20,450	23,605	26,386	28,432

**Recycled water demand fields will be blank until Table 6-4 is complete.*

NOTES: Non-potable demand does not include Golf Courses. Total Golf Course Demand is 2000 AFY; BCVWD will only supplement the GC demand.

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	500
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: : BCVWD believes the amount calculated in the Water Audit Spreadsheet is not correct due to change in the this method of accounting for the 2 month lag between production (measured daily) and consumption (meter read time -- most bimonthly, but some monthly). TheDstrict believes the Water Loss Volume is really about 500 AF	

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook)	No
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.	
Are Lower Income Residential Demands Included In Projections?	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 GPCD *	Confirmed 2020 Target GPCD*
10-15 year	*1999*	*2008*	*302*	*289*	*276*
5 Year	*2004*	*2008*	*291*		
*All values are in Gallons per Capita per Day (GPCD)					
NOTES:					

Table 5-2: 2015 Compliance
Retail Agency or Regional Alliance Only

Actual 2015 GPCD*	2015 Interim Target GPCD*	Optional Adjustments to 2015 GPCD Enter "0" if no adjustment is made *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*		
180	289	0	0	0	0	180	180	Yes

**All values are in Gallons per Capita per Day (GPCD)*

NOTES: The persistent drought and Stage 2 Water Use Restrictions imposed by BCVWD resulted in a 24.3% water savings year 2015-16 vs comparable period in 2013. Without the water savings the year 2015 per capita would have been closer to 223 GPCD

DWR 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 (1)	2015 (1)
Add additional rows as needed						
Alluvial Basin	Little San Gorgonio Creek	2158	1990	1732	1325	1418
Alluvial Basin	Beaumont Basin	9431	10162	11097	10806	8833
	TOTAL	11,589	12,152	12,829	12,131	10,251

NOTES: Little San Gorgonio Creek, also known as Edgar Canyon, is mix of shallow aluvial deposits and fractured rock aquifer.
(1) 2014 and 2015 extractions were low, partially due to larger canyon wells (Well No. 6 and Well No. 14) being out of service.

DWR Table 6-2 Retail: Wastewater Collected Within Service Area in 2015. Cherry Valley is unsewered.						
☐	There is no wastewater collection system. The supplier will not complete the table below.					
39	Percentage of 2015 service area covered by wastewater collection system *(optional)*					
86	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?	Volume of Wastewater Collected from UWMP Service Area 2015, mgd	Name of Wastewater Treatment Agency Receiving Collected Wastewater	Treatment Plant Name	Is WWTP Located Within UWMP Area?	Is WWTP Operation Contracted to a Third Party? *(optional)*
Add additional rows as needed						
City of Beaumont	Metered	3	City of Beaumont	Plant No. 1	Yes	Yes
Total Wastewater Collected from Service Area in 2015, mgd:		3				
NOTES: Wastewater volume based on monthly reports to RWQCB. Except for Highland Springs Village, which is sewered by the City of Beaumont, the remainder of Cherry Valley is unsewered						

DWR 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.									
Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number *(optional)*	Method of Disposal	Does This Plant Treat Wastewater Generated Outside the Service Area?	Treatment Level	2015 volumes, mgd			
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area
Add additional rows as needed										
City of Beaumont	DP-001	Cooper's Creek	8 330101001	River or creek outfall	No	Tertiary	3	3	0	0
City of Beaumont	DP-007	Trib of Marshal Creek	8 330101001	Bay or estuary outfall	No	Tertiary	0	0	0	0
City of Beaumont	R-001	Tukwet GC	8 330101001	Other	No	Tertiary	0	0	0	0
City of Beaumont	R-002	Oak Valley GC	8 330101001	Other	No	Tertiary	0	0	0	0
City of Beaumont	R-003	BCVWD RW	8 330101001	Other	No	Tertiary	0	0	0	0
						Total, mgd	3	3	0	0
NOTES: City of Beaumont claims that a portion of the effluent discharged at DP-001 and DP-007 incidently recharge the Beaumont Groundwater Basin. Watermaster is still awaiting proof. The effluent does not comply with planned groundwater recharge regulations.										

DWR Table 6-4A Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area								
Name of Agency Producing (Treating) the Recycled Water:		Yucaipa Valley Water District						
Name of Agency Operating the Recycled Water Distribution System:		Beaumont Cherry Valley Water District						
Supplemental Water Added in 2015		none						
Source of 2015 Supplemental Water		NA						
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015 AFY	2020 AFY	2025 AFY	2030 AFY	2035 AFY	2040 AFY
Agricultural irrigation	none		0	0	0	0	0	0
Landscape irrigation (excludes golf courses)	none	Advanced	0	921	977	1,018	1,028	1,032
Golf course irrigation	none	Advanced	0	121	66	25	16	11
Commercial use	none		0	0	0	0	0	0
Industrial use	none		0	0	0	0	0	0
Geothermal and other energy production	none		0	0	0	0	0	0
Seawater intrusion barrier	none		0	0	0	0	0	0
Recreational impoundment	none		0	0	0	0	0	0
Wetlands or wildlife habitat	none		0	0	0	0	0	0
Groundwater recharge (IPR)*	none		0	0	0	0	0	0
Surface water augmentation (IPR)*	none			0	0	0	0	0
Direct potable reuse	none			0	0	0	0	0
Other *(Provide General Description)*	none		0	0	0	0	0	0
		Total AFY:	0	1,042	1,043	1,043	1,044	1,043

**IPR - Indirect Potable Reuse*

NOTES: YVWD must provide some amount of effluent discharge to maintain habitat. Per DWR instructions this is not considered recycled water beneficial use. YVWD provides membrane treatment using reverse osmosis. Supply is based on correspondence from YVWD and is assume to not change over time to be conservative. Supply includes some filter washwater during summer months.

DWR Table 6-4A Retail: Current and Projected Recycled Water Direct Beneficial Uses Within Service Area								
Name of Agency Producing (Treating) the Recycled Water:		City of Beaumont						
Name of Agency Operating the Recycled Water Distribution System:		Beaumont Cherry Valley Water District						
Supplemental Water Added in 2015		none						
Source of 2015 Supplemental Water		NA						
Beneficial Use Type	General Description of 2015 Uses	Level of Treatment	2015 AFY	2020 AFY	2025 AFY	2030 AFY	2035 AFY	2040 AFY
Agricultural irrigation	none		0	0	0	0	0	0
Landscape irrigation (excludes golf courses)	none	Secondary, Disinfected - 2.2	0	822	1,117	1,462	1,753	2,019
Golf course irrigation	none	Secondary, Disinfected - 2.2	0	332	365	387	441	517
Commercial use	none		0	0	0	0	0	0
Industrial use	none		0	0	0	0	0	0
Geothermal and other energy production	none		0	0	0	0	0	0
Seawater intrusion barrier	none		0	0	0	0	0	0
Recreational impoundment	none		0	0	0	0	0	0
Wetlands or wildlife habitat	none		0	0	0	0	0	0
Groundwater recharge (IPR)*	none	Advanced	0	0	418	491	646	827
Surface water augmentation (IPR)*	none			0	0	0	0	0
Direct potable reuse	none			0	0	0	0	0
Other *(Provide General Description)*	none		0	0	0	0	0	0
		Total AFY:	0	1,154	1,900	2,340	2,840	3,363

**IPR - Indirect Potable Reuse*

NOTES: City of Beaumont is required to dischage 1.8 mgd (2,000 AFY) to maintain habitat in Coopers Creek. Per DWR instructions this is not considered a beneficial use. Recycled Water for GW Recharge (IPR) assumes 80% recovery.

DWR Table 6-5 Retail: 2013 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		**2013 Projection for 2015, AFY**	**2015 Actual Use, AFY**
Agricultural irrigation			
Landscape irrigation (excludes golf courses)		1,500	0
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 AFY	1,500	0
NOTES: City of Beaumont is rquired to discharge 1.8 mgd (2,000 AFY) to maintain habitat in Cooper's Creek. Per DWR instructions, this is not considered a beneficial use.			

DWR 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.		
	Provide page location of narrative in UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use, AFY
Add additional rows as needed			
Const. YVWD Connection	Construct connection to YVWD non-potable water system including pumping station	2018	1,043
Const. City of Beaumont Connection	Construct storage and pumping station at City Treatment Plant	2020	1,154
Edgar Canyon Nitrate Wells	Install extraction wells at mouth of Edgar Canyon to extract high nitrate groundwater for non-potable water system	2030	300
San Timoteo Groundwater Capture	Install extraction wells in San Timoteo Canyon to extract wastewater which percolates from 1.8 mgd habitat mitigation flow.	2030	800
		Total AFY	3,297
NOTES: These projects will increase the non-potable water supply which allows BCVWD to serve more non-potable water.			

DWR 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.					
	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, AFY
Grand Ave Storm Drain	Yes	RCFWCD	Const of SD to divert water into BCVWD Rehcharge Facility	2020	All Year Types	185
Misc Urban Runoff Capture	Yes	Beaumont	Various recharge basin enhancements	2025	All Year Types	200-545
Lower Edgar Canyon Non-potable Groundwater	No		Install extraction wells for high nitrate GW for non potable water system	2025	All Year Types	300
San Timoteo Canyon GW Extraction	Yes	Beaumont	Install series of wells to recapture percolated ww used for habitat mitigation	2030	All Year Types	400-800
Non-potable Water interconnection with YVWD	Yes	YVWD	Install interconnecting pipeline, and booster pumping station and pressure regulating stations	2018	All Year Types	1,043
Connection to City of Beaumont for recycled water	Yes	Beaumont	Install storage tank, booster pumping station and interconnecting piping	2020	All Year Types	1,154
Advance Treated Recycled Water	Yes	Beaumont	Construct Advanced Treatment Facility and Brine Line	2025	All Year Types	300-660

NOTES: Yield from City of Beaumont Recycled Water Connection will increae to 3,363 AFY by 2040 due to increases in wastewater flows over time. Expected increase in water supply for Advance Treated Wastewater is based on 80% recovery in the membrane treatment process

DWR Table 6-8 Retail: Water Supplies — Actual				
Water Supply	Additional Detail on Water Supply	2015		
		Actual Volume, AFY	Water Quality	Total Right or Safe Yield, *AFY*
Groundwater	Little San Gorgonio (Edgar Canyon)	1,418	Drinking Water	2,200
Groundwater	Beaumont Basin	2,300	Drinking Water	
Purchased or Imported Water	SGPWA	2,090	Raw Water	
Transfers	From Banked GW storage	3,984	Drinking Water	
	Total AFY	9,792		2,200
NOTES: BCVWD typically receives reallocated unused Overlying Party Rights, forbearance water for supplying potable or non-potable water to Overlying Parties, and return flow credits for importing SPW, groundwater, or recycled water per the Beumont Basin Watermaster. Thsi varies from year to year.				

DWR Table 6-9 Retail: Water Supplies — Projected											
Water Supply	Additional Detail on Water Supply	**Projected Water Supply, AFY** *Report To the Extent Practicable*									
		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	Little San Gorgonio (Edgar Canyon)	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200	2,200
Groundwater	Beaumont Basin	1,765		1,970		2,334		2,782		2,836	
Groundwater	Beaumont Basin GC Forbearance	453		431		416		457		528	
Stormwater Use	Grand Ave Recharged	185		185		185		185		185	
Recycled Water	Advance Treated and Recharged	0		418		491		646		827	
Stormwater Use	Various Urban Runoff Basins	0		245		545		545		545	
Purchased or Imported Water	SGPWA	10,150		11,127		12,503		13,843		15,362	
	Subtotal Potable Water	14,753		16,576		18,674		20,658		22,483	
Recycled Water	YVWD Landscaping	921		977		1,018		1,026		1,032	
Recycled Water	City of Beaumont Landscaping	822		1,117		1,462		1,753		2,019	
Purchased or Imported Water	Raw Water to Supplement Non-potable Water	163		280							
Other	non-potable GW Edgar Canyon	0		0		200		200		200	
Other	Non-potable GW San Timoteo Creek	0		0		251		249		198	
	Subtotal Non-potable Water for Landscaping	1,906		2,374		2,931		3,228		3,449	
Recycled Water	to Golf Courses	453		431		416		457		528	
	Total Non-potable Water	2,359		3,223		3,838		4,331		4,804	
Purchased or Imported Water	SGPWA for Banking	1,000		1,500		2,000		2,500		2,500	
	Total Imported Water from SGPWA	11,313		12,907		14,503		16,343		17,862	
Total Potable + Landscape + GC+ Banked, AFY		18,112	2,200	20,881	2,200	24,021	2,200	26,843	2,200	28,960	2,200
NOTES: Beaumont Basin Groundwater includes forbearance (except golf courses), unused overlier rights and return flow credits.											

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 Tables 7-2 thru 7-8	
		☐ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	**% of Average Supply**
Average Year			100%
Single-Dry Year			
Multiple-Dry Years 1st Year			
Multiple-Dry Years 2nd Year			
Multiple-Dry Years 3rd Year			
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)*	18,112	20,881	24,021	26,843	28,960
Demand totals *(autofill from Table 4-3)*	17,659	20,450	23,605	26,386	28,432
Difference	453	431	416	457	528
NOTES: The demand total includes "Imported SGPWA Water Banked by BCVWD". The difference between supply and demand is the supplemental non-potable water provided to Golf Courses					

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	7,707	8,842	9,852	10,967	11,837
Demand totals	14,446	16463.6	18,804	20,787	22,560
Difference	(6,739)	(7,622)	(8,952)	(9,820)	(10,723)
NOTES: The Difference between Supply and Demand will be provided from Banked Water in the Beaumont Basin.					

Table 7-4 Retail: 2-year Dry Period Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	5,768	6,743	7,573	8,478	9,118
	Demand totals	16,659	18,950	21,605	23,886	25,932
	Difference	(10,891)	(12,207)	(14,032)	(15,408)	(16,814)
Second year	Supply totals	5,768	6,743	7,573	8,478	9,118
	Demand totals	16,659	18,950	21,605	23,886	25,932
	Difference	(10,891)	(12,207)	(14,032)	(15,408)	(16,814)
Third year	Supply totals					
	Demand totals					
	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:

Table 7-4 Retail: 3-year Dry Period Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	6,595	7,650	8,570	9,575	10,325
	Demand totals	16,659	18,950	21,605	23,886	25,932
	Difference	(10,064)	(11,300)	(13,035)	(14,311)	(15,607)
Second year	Supply totals	6,595	7,650	8,570	9,575	10,325
	Demand totals	16,659	18,950	21,605	23,886	25,932
	Difference	(10,064)	(11,300)	(13,035)	(14,311)	(15,607)
Third year	Supply totals	6,595	7,650	8,570	9,575	10,325
	Demand totals	16,659	18,950	21,605	23,886	25,932
	Difference	(10,064)	(11,300)	(13,035)	(14,311)	(15,607)
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:						

Table 7-4 Retail: 6-year Dry Period Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	7,707	8,842	9,852	10,967	11,837
	Demand totals	14,446	16,464	18,804	20,787	22,560
	Difference	(6,739)	(7,622)	(8,952)	(9,820)	(10,723)
Second year	Supply totals	7,707	8,842	9,852	10,967	11,837
	Demand totals	14,446	16,464	18,804	20,787	22,560
	Difference	(6,739)	(7,622)	(8,952)	(9,820)	(10,723)
Third year	Supply totals	7,707	8,842	9,852	10,967	11,837
	Demand totals	14,446	16,464	18,804	20,787	22,560
	Difference	(6,739)	(7,622)	(8,952)	(9,820)	(10,723)
Fourth year *(optional)*	Supply totals	7,707	8,842	9,852	10,967	11,837
	Demand totals	14,446	16,464	18,804	20,787	22,560
	Difference	(6,739)	(7,622)	(8,952)	(9,820)	(10,723)
Fifth year *(optional)*	Supply totals	7,707	8,842	9,852	10,967	11,837
	Demand totals	14,446	16,464	18,804	20,787	22,560
	Difference	(6,739)	(7,622)	(8,952)	(9,820)	(10,723)
Sixth year *(optional)*	Supply totals	7,707	8,842	9,852	10,967	11,837
	Demand totals	14,446	16,464	18,804	20,787	22,560
	Difference	(6,739)	(7,622)	(8,952)	(9,820)	(10,723)
NOTES:						

Table 8-1 Retail
Stages of Water Shortage Contingency Plan

Stage	Percent Supply Reduction[1] *Numerical value as a percent*	Water Supply Condition (*Narrative description)*
1	10	Up to a 10% reduction in normal, "long term" water supply; imported waer supply allocation averages approximately 50% over a 2-year (or longer) period
2	20	Up to 20% reduction in normal, "long term" water supply; imported waer supply allocation between 49.9% and 25% over a 3-year (or longer) period
3	25	Up to 25% reduction in normal, "long term" water supply; imported waer supply allocation between 24.9% and 10% over a 3-year (or longer) period
4	30	Up to 30% reduction in normal, "long term" water supply; imported waer supply allocation between 9.9% and 5% over a 3-year (or longer) period
5	50	Up to 50% reduction in normal, "long term" water supply; imported waer supply allocation averages less than 5% over a 4-year (or longer)period

[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*

NOTES:

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses			
Stage	Restrictions and Prohibitions on End Users *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?
Add additional rows as needed			
All	Landscape - Restrict or prohibit runoff from landscape irrigation	Part of BCVWD's Water Waste Provisions	Yes
2	Landscape - Limit landscape irrigation to specific times		Yes
2	Landscape - Limit landscape irrigation to specific days	2 days per week	Yes
2	CII - Lodging establishment must offer opt out of linen service		Yes
2	CII - Restaurants may only serve water upon request		Yes
2	Landscape - Prohibit all landscape irrigation	Prohibit irrigation of street median turf only	Yes
2	Water Features - Restrict water use for decorative water features, such as fountains		Yes
2	Other - Prohibit use of potable water for washing hard surfaces		Yes
3	Other - Require automatic shut of hoses		Yes
3	Landscape - Limit landscape irrigation to specific days	1 day per week	Yes
3	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner		Yes
4	Landscape - Prohibit certain types of landscape irrigation	Hand watering only with auto nozzle	Yes
4	Pools and Spas - Require covers for pools and spas		Yes
4	Pools - Allow filling of swimming pools only when an appropriate cover is in place.		Yes
4	Other - Prohibit use of potable water for construction and dust control		Yes
4	Other - Prohibit use of potable water for construction and dust control		Yes
5	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water		Yes
	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner		Yes
NOTES:			

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier *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		
2	Expand Public Information Campaign	
3	Improve Customer Billing	Provide Historic Record and comparison of use on similar properties. Show targets and actual reductions
4	Provide Rebates for Landscape Irrigation Efficiency	Consider rebates on smart controllers with SGPWA
3	Provide Rebates for Turf Replacement	Work with SGPWA to develop replacement programs
NOTES:		

DWR Table 8-4 Retail: Minimum Supply Next Three Years			
	2016	2017	2018
Available Water Supply	10,956	9,650	5,283
NOTE: 2016 based on 60% SWP Allocation with BCVWD receiving 68% of SGPWA. Year 2017 and 2018 assumes 35% and 5% SWP Allocation as used in Stress Test. SPW amounts per SGPWA for Stess Test Analysis.			

Table 10-1 Retail: Notification to Cities and Counties		
City Name	60 Day Notice	Notice of Public Hearing
Beaumont	☑	☑
	☐	☐
	☐	☐
County Name	60 Day Notice	Notice of Public Hearing
Riverside County	☑	☑
San Bernardino County	☑	☑

Appendix D
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	12,607	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	1999	
	Year ending baseline period range[3]	2008	
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:

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: U.S. Census Data for decade years, incl 2010 for City of Beaumont and Cherry Valley CDP.	

SB X7-7 Table 3: Service Area Population		
Year		Population
10 to 15 Year Baseline Population		
Year 1	1999	17,131
Year 2	2000	17,298
Year 3	2001	18,014
Year 4	2002	19,223
Year 5	2003	22,390
Year 6	2004	24,612
Year 7	2005	30,994
Year 8	2006	35,745
Year 9	2007	39,013
Year 10	2008	40,894
Year 11		
Year 12		
Year 13		
Year 14		
Year 15		
5 Year Baseline Population		
Year 1	2004	24,612
Year 2	2005	30,994
Year 3	2006	35,745
Year 4	2007	39,013
Year 5	2008	40,894
2015 Compliance Year Population		
2015		48,377
NOTES:		

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	1999	5,887	-		-	-	-	5,887
Year 2	2000	6,308	-		-	-	-	6,308
Year 3	2001	5,063	-		-	-	-	5,063
Year 4	2002	8,896	-		-	-	-	8,896
Year 5	2003	7,109	-	-	-	-	-	7,109
Year 6	2004	8,308	-	-	-	-	-	8,308
Year 7	2005	9,306	-	-	-	-	-	9,306
Year 8	2006	11,503	-	-	-	164	-	11,339
Year 9	2007	13,164	-	-	-	110	-	13,054
Year 10	2008	13,554	-	-	-	113	-	13,441
Year 11	0	-			-		-	-
Year 12	0	-			-		-	-
Year 13	0	-			-		-	-
Year 14	0	-			-		-	-
Year 15	0	-			-		-	-
10 - 15 year baseline average gross water use								**8,871**
5 Year Baseline - Gross Water Use								
Year 1	2004	8,308	-	-	-		-	8,308
Year 2	2005	9,306	-	-	-		-	9,306
Year 3	2006	11,503	-	-	-		-	11,503
Year 4	2007	13,164	-	-	-		-	13,164
Year 5	2008	13,554	-	-	-		-	13,554
5 year baseline average gross water use								**11,167**
2015 Compliance Year - Gross Water Use								
2015		9,792	-		-	49	-	**9,743**

* NOTE that the units of measure must remain consistent throughout the UWMP, as reported in Table 2-3

NOTES: year 2015 includes 305 AF potable water make up into the non-potable system

SB X7-7 Table 4-A: Volume Entering the Distribution System(s)

Complete one table for each source.

Name of Source	Groundwater Beaumont and Edgar Canyon
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	1999	5,887		5,887
Year 2	2000	6,308		6,308
Year 3	2001	5,063		5,063
Year 4	2002	8,896		8,896
Year 5	2003	7,109		7,109
Year 6	2004	8,308		8,308
Year 7	2005	9,306		9,306
Year 8	2006	11,503		11,503
Year 9	2007	13,164		13,164
Year 10	2008	13,554		13,554
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	8,308		8,308
Year 2	2005	9,306		9,306
Year 3	2006	11,503		11,503
Year 4	2007	13,164		13,164
Year 5	2008	13,554		13,554
2015 Compliance Year - Water into Distribution System				
2015		9,792		9,792

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source	Source 2			
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution			
Name of Source	Source 3		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Source 4		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source		Source 5		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Source 6		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Source 7		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Source 8		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0
** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*				
NOTES:				

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Source 9		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Source 10		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution				
Name of Source		Source 11		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source		Source 12		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Source 13			
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source	Source 14			
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: Volume Entering the Distribution

Name of Source		Source 15		
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	1,999			0
Year 2	2,000			0
Year 3	2,001			0
Year 4	2,002			0
Year 5	2,003			0
Year 6	2,004			0
Year 7	2,005			0
Year 8	2,006			0
Year 9	2,007			0
Year 10	2,008			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	2,004			0
Year 2	2,005			0
Year 3	2,006			0
Year 4	2,007			0
Year 5	2,008			0
2015 Compliance Year - Water into Distribution System				
2015				0

** Meter Error Adjustment - See guidance in Methodology 1, Step 3 of Methodologies Document*

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	1999	17,131	5,887	307
Year 2	2000	17,298	6,308	326
Year 3	2001	18,014	5,063	251
Year 4	2002	19,223	8,896	413
Year 5	2003	22,390	7,109	283
Year 6	2004	24,612	8,308	301
Year 7	2005	30,994	9,306	268
Year 8	2006	35,745	11,339	283
Year 9	2007	39,013	13,054	299
Year 10	2008	40,894	13,441	293
Year 11	0	-	-	
Year 12	0	-	-	
Year 13	0	-	-	
Year 14	0	-	-	
Year 15	0	-	-	
10-15 Year Average Baseline GPCD				**302**

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	24,612	8,308	301
Year 2	2005	30,994	9,306	268
Year 3	2006	35,745	11,503	287
Year 4	2007	39,013	13,164	301
Year 5	2008	40,894	13,554	296
5 Year Average Baseline GPCD				**291**
2015 Compliance Year GPCD				
2015		48,377	9,743	**180**

NOTES:

SB X7-7 Table 6: Gallons per Capita per Day *Summary From Table SB X7-7 Table 5*	
10-15 Year Baseline GPCD	302
5 Year Baseline GPCD	291
2015 Compliance Year GPCD	180

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**
302	**242**
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
☑		South Coast	149	142
☐		Colorado River	211	200
Target *(If more than one region is selected, this value is calculated.)*				**0**

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**
291	276		**276**

[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**
276	302	**289**
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				
180	289	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	*From Methodology 8 (Optional)*	-	180	180	**YES**
NOTES:								

Appendix E
Beaumont Basin Adjudication

ORIGINAL COPY

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NO FILING FEE REQUIRED PER GOVERNMENT CODE, SEC. 6103

FILED
SUPERIOR COURT OF CALIFORNIA
COUNTY OF RIVERSIDE

FEB - 4 2004

Attorneys for Plaintiff, SAN TIMOTEO WATERSHED MANAGEMENT AUTHORITY

SUPERIOR COURT OF THE STATE OF CALIFORNIA

FOR THE COUNTY OF RIVERSIDE, RIVERSIDE COURT

SAN TIMOTEO WATERSHED MANAGEMENT AUTHORITY, a public agency, Plaintiff, vs. CITY OF BANNING, a municipal corporation; BEAUMONT-CHERRY VALLEY WATER DISTRICT, an irrigation district; YUCAIPA VALLEY WATER DISTRICT, a county water district; PLANTATION ON THE LAKE LLC, a California limited liability company; SHARONDALE MESA OWNERS ASSOCIATION, an unincorporated association; SOUTH MESA MUTUAL WATER COMPANY, a mutual water company; CALIFORNIA OAK VALLEY GOLF AND RESORT LLC, a California limited liability company; OAK VALLEY PARTNERS LP, a Texas limited partnership; SOUTHERN CALIFORNIA SECTION OF THE PROFESSIONAL GOLFERS ASSOCIATION OF AMERICA, a California corporation; SUNNY-CAL EGG AND POULTRY COMPANY, a California corporation; MANHEIM, MANHEIM & BERMAN, a California General Partnership; WALTER M. BECKMAN, individually and as Trustee of the BECKMAN FAMILY TRUST dated December 11, 1990; THE ROMAN CATHOLIC BISHOP of San Bernardino,	CASE NO. RIC 389197 JUDGMENT PURSUANT TO STIPULATION ADJUDICATING GROUNDWATER RIGHTS IN THE BEAUMONT BASIN

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a California corporation; MERLIN PROPERTIES, LLC; LEONARD M. STEARNS and DOROTHY D. STEARNS, individually and as Trustees of the LEONARD M. STEARNS FAMILY TRUST OF 1991; and DOES 1 through 500, inclusive,

Defendants.

I. INTRODUCTION

1. Pleadings, Parties and Jurisdiction

The complaint herein was filed on February 20, 2003, seeking an adjudication of water rights, injunctive relief and the imposition of a physical solution. The defaults of certain defendants have been entered, and certain other defendants dismissed. Other than defendants who have been dismissed or whose defaults have been entered, all defendants have appeared herein. This Court has jurisdiction of the subject matter of this action and of the parties herein.

2. Stipulation for Judgment

Stipulation for Entry of Judgment has been filed by and on behalf of all defendants who have appeared herein.

3. Definitions

As used in this Judgment, these terms shall have the following meanings:

A. Appropriator or Appropriator Parties: the pumpers identified in Exhibit "C" attached hereto.

B. Appropriator's Production Right: consists of an Appropriator's share of Operating Yield, plus (1) any water acquired by an Appropriator from an Overlying Producer or other Appropriator pursuant to this Judgment, (2) any water

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withdrawn from the Appropriator's storage account, (3) and New Yield created by the Appropriator.

C. Appropriative Water: the amount of Safe Yield remaining after satisfaction of Overlying Water Rights.

D. Appropriative Water Right: each Appropriator's share of Appropriative Water, such share expressed as a percentage as shown on Exhibit "C".

E. Beaumont Basin or Beaumont Storage Unit: the area situated within the boundaries shown on Exhibit "A" attached hereto.

F. Conjunctive Use: the storage of water in a Groundwater Basin for use at a later time.

G. Groundwater: water beneath the surface of the ground within the zone below the water table in which soil is saturated with water.

H. Groundwater Basin: an area underlain by one or more permeable formations capable of furnishing a substantial water supply.

I. Groundwater Storage Agreement: a standard form of written agreement between the Watermaster and any Person requesting the storage of Supplemental Water.

J. Groundwater Storage Capacity: the space available in a Groundwater Basin that is not utilized for storage or regulation of Safe Yield and is reasonably available for Stored Water and Conjunctive Use.

K. Minimal Producer: any Producer who pumps 10 or fewer acre feet of Groundwater from the Beaumont Basin per year.

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L. New Yield: increases in yield in quantities greater than historical amounts from sources of supply including, but not limited to, capture of available storm flow, by means of projects constructed after February 20, 2003, as determined by the Watermaster.

M. Operating Yield: the maximum quantity of water which can be produced annually by the Appropriators from the Beaumont Basin, which quantity consists of Appropriative Water plus Temporary Surplus.

N. Overdraft: a condition wherein the total annual production from a Groundwater Basin exceeds the Safe Yield thereof.

O. Overlying Parties: the Persons listed on Exhibit "B", who are owners of land which overlies the Beaumont Basin and have exercised Overlying Water Rights to pump therefrom. Overlying Parties include successors in interest and assignees.

P. Overlying Water Rights: the quantities decreed to Overlying Parties in Column 4 of Exhibit "B" to this Judgment.

Q. Overproduction: by an Appropriator, measured by an amount equal to the Appropriator's actual annual production minus the Appropriator's Production Right. By a new overlying producer, an amount equal to what the overlying producer pumped during the year.

R. Party (Parties): any Person(s) named in this action, or who has intervened, or has become subject to this Judgment either through stipulation, trial or otherwise

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S. Person: any individual, partnership, association, corporation, governmental entity or agency, or other organization.

T. Physical Solution: the physical solution set forth in Part V of this Judgment.

U. Produce, Producing, Production, Pump or Pumping: the extraction of groundwater.

V. Producer or Pumper: any Person who extracts groundwater.

W. Recycled Water: has the meaning provided in Water Code Section 13050(n) and includes other nonpotable water for purposes of this Judgment.

X. Safe Yield: the maximum quantity of water which can be produced annually from a Groundwater Basin under a given set of conditions without causing a gradual lowering of the groundwater level leading eventually to depletion of the supply in storage. The Safe Yield of the Beaumont Basin is 8650 acre feet per year in each of the ten (10) years following entry of this Judgment.

Y. San Timoteo Watershed Management Authority: a joint powers public agency whose members are the Beaumont-Cherry Valley Water District, the City of Beaumont, the South Mesa Mutual Water Company and the Yucaipa Valley Water District.

Z. Stored Water: Supplemental Water stored in the Beaumont Basin pursuant to a Groundwater Storage Agreement with the Watermaster.

AA. Supplemental Water: water imported into the

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Beaumont Basin from outside the Beaumont Basin including, without limitation, water diverted from creeks upstream and tributary to Beaumont Basin and water which is recycled and useable within the Beaumont Basin.

BB. Temporary Surplus: the amount of groundwater that can be pumped annually in excess of Safe Yield from a Groundwater Basin necessary to create enough additional storage capacity to prevent the waste of water.

CC. Watermaster: the Person appointed by the Court to administer and enforce the Physical Solution.

4. <u>List of Exhibits</u>

The following exhibits are attached to this Judgment and made a part hereof:

Exhibit "A" -- "Location Map of Beaumont Basin"
Exhibit "B" -- "Overlying Owners and Their Water Rights"
Exhibit "C" -- "Appropriators and Their Water Rights"
Exhibit "D" -- "Legal Description of Lands of the Overlying Parties"
Exhibit "E" -- "Location of Overlying Producer Parcels and Boundary of the Beaumont Basin"

II. <u>INJUNCTIONS</u>

1. <u>Injunction Against Unauthorized Production of Beaumont Basin Water</u>

Each party herein is enjoined, as follows:

A. <u>Overlying Parties</u>: Each defendant who is an Overlying Party, and its officers, agents, employees, successors and assigns, is hereby enjoined and restrained from producing groundwater from the Beaumont Basin in any five-year period hereafter in excess of five times the share of the Safe Yield assigned to the Overlying Parties as set

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forth in Column 4 of Exhibit "B", as more fully described in the Physical Solution.

B. Appropriator Parties: Each defendant who is an Appropriator Party, and its officers, agents, employees, successors and assigns, is hereby enjoined and restrained from producing groundwater from the Beaumont Basin in any year hereafter in excess of such party's Appropriator's Production Right, except as additional annual Production may be authorized by the provisions of the Physical Solution.

2. Injunction Against Unauthorized Storage or Withdrawal of Stored Water

Each and every Party, and its officers, agents, employees, successors and assigns, is hereby enjoined and restrained from storing Supplemental Water in the Beaumont Basin for withdrawal, or causing withdrawal of water stored by that Party, except pursuant to the terms of a written Groundwater Storage Agreement with the Watermaster and in accordance with Watermaster Rules and Regulations. Any Supplemental Water stored in the Beaumont Basin, except pursuant to a Groundwater Storage Agreement, shall be deemed abandoned and not classified as Stored Water.

III. DECLARATION AND ADJUSTMENT OF RIGHTS

8650

1. Overlying Rights

The Overlying Parties are currently exercising Overlying Water Rights in the Beaumont Basin. As shown on Exhibit "B", the aggregate Projected Maximum Production of water from the Beaumont Basin pursuant to Overlying Water Rights is 8610 acre feet and the Overlying Water Rights are individually decreed, in Column 4 of Exhibit "B", for each Overlying Party. The Overlying Parties

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shall continue to have the right to exercise their respective Overlying Water Right as set forth in Column 4 of Exhibit "B" except to the extent their respective properties receive water service from an Appropriator Party, as contemplated by Paragraph III.3 of this Judgment.

2. Appropriator's Share of Operating Yield

Each Appropriator Party's share of Operating Yield is shown on Exhibit "C". Notwithstanding any other provision of this Judgment, each Appropriator Party may use its Appropriator's Production Right anywhere within its service area.

3. Adjustment of Rights

A. The Overlying Parties shall have the right to exercise their respective Overlying Water Rights except as provided in this Paragraph 3.

B. To the extent any Overlying Party requests, and uses its Exhibit "B", Column 4 water to obtain water service from an Appropriator Party, an equivalent volume of potable groundwater shall be earmarked by the Appropriator Party which will serve the Overlying Party, up to the volume of the Overlying Water Right as reflected in Column 4 of Exhibit "B" attached hereto, for the purpose of serving the Overlying Party. The intent of this provision is to ensure that the Overlying Party is given credit towards satisfying the water availability assessment provisions of Government Code, Section 66473.7 et seq. and Water Code, Section 10910 et seq. or other similar provisions of law, equal to the amount of groundwater earmarked hereunder.

C. When an Overlying Party receives water service as

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provided for in subparagraph III.3.B the Overlying Party shall forebear the use of that volume of the Overlying Water Right earmarked by the Appropriator Party. The Appropriator Party providing such service shall have the right to produce the volume of water foregone by the Overlying Party, in addition to other rights otherwise allocated to the Appropriator Party.

D. Should the volume of the Overlying Water Right equal or exceed the volume of potable groundwater earmarked as provided in subparagraph 3.B, the Appropriator Party which will serve the Overlying Party shall (i) impose potable water charges and assessments upon the Overlying Party and its successors in interest at the rates charged to the then-existing regular customers of the Appropriator Party, and (ii) not collect from such Overlying Party any development charge that may be related to the importation of water into the Beaumont Basin. The Appropriator Party which will serve the Overlying Party pursuant to Subparagraph III.3.B shall also consider, and negotiate in good faith regarding, the provision of a meaningful credit for any pipelines, pump stations, wells or other facilities that may exist on the property to be served.

E. In the event an Overlying Party receives Recycled Water from an Appropriator Party to serve an overlying use served with groundwater, the Overlying Water Right of the Overlying Party shall not be diminished by the receipt and use of such Recycled Water. Recycled Water provided by an Appropriator Party to an Overlying Party shall satisfy the

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criteria set forth in the California Water Code including, without limitation, the criteria set forth in Water Code Sections 13550 and 13551. The Appropriator Party which will serve the Recycled Water shall have the right to use that portion of the Overlying Water Right of the Overlying Party offset by the provision of Recycled Water service pursuant to the terms of this subparagraph; provided, however, that such right of use by the Appropriator Party shall no longer be valid if the Recycled Water, provided by the Appropriator Party to the Overlying Party, does not satisfy the requirements of Sections 13550 and 13551 and the Overlying Party ceases taking delivery of such Recycled Water.

F. Nothing in this Judgment is intended to impair or adversely affect the ability of an Overlying Party to enter into annexation or development agreements with any Appropriator Party.

G. Oak Valley Partners LP ("Oak Valley") is developing its property pursuant to Specific Plans 216 and 216A adopted by the County of Riverside ("County") in May 1990, and Specific Plan 318 adopted by the County in August, 2001, (Specific Plans 216, 216A and 318 are collectively referred to as the "Specific Plans"). The future water supply needs at build-out of the Specific Plans will greatly exceed Oak Valley's Projected Maximum Production, as reflected in Exhibit "B" to the Judgment, and may be as much as 12,811 acre feet per year. Oak Valley has annexed the portion of its property now within the City of Beaumont into the Beaumont-Cherry Valley Water District ("BCVWD"), and is in

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the process of annexing the remainder portion of its property into the Yucaipa Valley Water District ("YVWD"), in order to obtain retail water service for the development of the Oak Valley property pursuant to the Specific Plans (for purposes of this subparagraph BCVWD and YVWD are collectively referred to as the "Water Districts", and individually as a "Water District"). YVWD covenants to use its best efforts to finalize the annexation of the Oak Valley property within the Calimesa City limits. Oak Valley, for itself and its successors and assigns, hereby agrees, by this stipulation and upon final annexation of its property by YVWD, to forbear from claiming any future, unexercised, overlying rights in excess of the Projected Maximum Production of Exhibit "B" of 1806 acre feet per year. As consideration for the forbearance, the Water Districts agree to amend their respective Urban Water Management Plans ("UWMP") in 2005 as follows: BCVWD agrees that 2,400 acre feet per year of projected water demand shall be included for the portion of Oak Valley to be served by BCVWD in its UWMP, and YVWD agrees to include 8,000 acre feet per year of projected water demand as a projected demand for the portion of Oak Valley to be served by YVWD in its UWMP by 2025. The Water Districts agree to use their best judgment to accurately revise this estimate to reflect the projected water demands for the UWMP prepared in 2010. Furthermore, the Water Districts further agree that, in providing water availability assessments prior to 2010, as required by Water Code §10910 and water supply verifications as required by Government Code §§66455.3 and

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66473.7, or any similar statute, and in maintaining their respective UWMP, each shall consider the foregoing respective projected water demand figures for Oak Valley as proposed water demands. The intent of the foregoing requirements is to ensure that Oak Valley is credited for the forbearance of its overlying water rights and is fully accounted for in each Water District's UWMP and overall water planning. The Water Districts' actions in performance of the foregoing planning obligations shall not create any right or entitlement to, or priority or allocation in, any particular water supply source, capacity or facility, or any right to receive water service other than by satisfying the applicable Water District's reasonable requirements relating to application for service. Nothing in this subparagraph G is intended to affect or impair the provision of earmarked water to Overlying Parties who request and obtain water service from Appropriator Parties, as set forth in subparagraph III.3.B, above.

H. Persons who would otherwise qualify as Overlying Producers based on an interest in land lying within the City of Banning's service area shall not have the rights described in this Paragraph III.3.

4. Exemption for Minimal Producers

Unless otherwise ordered by the Court, Minimal Producers are exempt from the provisions of this Judgment.

IV. CONTINUING JURISDICTION

Full jurisdiction, power and authority is retained and reserved to the Court for purposes of enabling the Court, upon

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application of any Party, by a motion noticed for at least a 30-day period (or consistent with the review procedures of Paragraph VII.6 herein, if applicable), to make such further or supplemental order or directions as may be necessary or appropriate for interim operation of the Beaumont Basin before the Physical Solution is fully operative, or for interpretation, or 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 hereof consistent with the rights herein decreed; except that the Court's jurisdiction does not extend to the redetermination of (a) Safe Yield during the first ten years of operation of the Physical Solution, and (b) the fraction of the share of Appropriative Water of each Appropriator.

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V. THE PHYSICAL SOLUTION

1. Purpose and Objective

In accordance with the mandate of Section 2 of Article X of the California Constitution, the Court hereby adopts, and orders the parties to comply with, a Physical Solution. The purpose of the Physical Solution is to establish a legal and practical means for making the maximum reasonable beneficial use of the waters of Beaumont Basin, to facilitate conjunctive utilization of surface, ground and Supplemental Waters, and to satisfy the requirements of water users having rights in, or who are dependent upon, the Beaumont Basin. Such Physical Solution requires the definition of the individual rights of all Parties within the Beaumont Basin in a manner which will fairly allocate the native water supplies and which will provide for equitable sharing of costs of Supplemental Water.

2. Need for Flexibility

The Physical Solution must provide maximum flexibility and adaptability in order that the Watermaster and the Court may be free to use existing and future technological, social, institutional and economic options. To that end, the Court's retained jurisdiction shall be utilized, where appropriate, to supplement the discretion granted herein to the Watermaster.

3. Production and Storage in Accordance With Judgment

This Judgment, and the Physical Solution decreed herein, address all Production and Storage within the Beaumont Basin. Because the Beaumont Basin is at or near a condition of Overdraft, any Production outside the framework of this Judgment and Physical Solution will potentially damage the Beaumont Basin, injure the rights of all Parties, result in the waste of water and interfere with the Physical Solution. The Watermaster shall bring an action or a motion to enjoin any Production that is not in accordance with the terms of this Judgment.

4. General Pattern of Operation

One fundamental premise of the adjudication is that all Producers shall be allowed to pump sufficient water from the Beaumont Basin to meet their respective requirements. Another fundamental premise of the adjudication is that Overlying Parties who pump no more than the amount of their Overlying Water Right as shown on Column 4 of Exhibit "B" hereto, shall not be charged for the replenishment of the Beaumont Basin. To the extent that pumping exceeds five (5) times the share of the Safe Yield assigned to an Overlying Party (Column 4 of Exhibit "B") in any five (5) consecutive years, or the share of Operating Yield

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Right of each Appropriator Party, each such Party shall provide funds to enable the Watermaster to replace such Overproduction.

5. Use of Available Groundwater Storage Capacity

A. There exists in the Beaumont Basin a substantial amount of available Groundwater Storage Capacity. Such Capacity can be reasonably used for Stored Water and Conjunctive Use and may be used subject to Watermaster regulation to prevent injury to existing Overlying and Appropriative water rights, to prevent the waste of water, and to protect the right to the use of Supplemental Water in storage and Safe Yield of the Beaumont Basin.

B. There shall be reserved for Conjunctive Use a minimum of 200,000 acre feet of Groundwater Storage Capacity in the Beaumont Basin provided that such amount may be reduced as necessary to prevent injury to existing water rights or existing uses of water within the Basin, and to prevent the waste of water. Any Person may make reasonable beneficial use of the Groundwater Storage Capacity for storage of Supplemental Water; provided, however, that no such use shall be made except pursuant to a written Groundwater Storage Agreement with the Watermaster. The allocation and use of Groundwater Storage Capacity shall have priority and preference for Producers within the Beaumont Basin over storage for export. The Watermaster may, from time-to-time, redetermine the available Groundwater Storage Capacity.

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VI. ADMINISTRATION

1. Administration and Enforcement by Watermaster

The Watermaster shall administer and enforce the provisions of this Judgment and any subsequent order or instructions of the Court.

2. Watermaster Control

The Watermaster is hereby granted discretionary powers to develop and implement a groundwater management plan and program for the Beaumont Basin, which plan shall be filed with and shall be subject to review and approval by, the Court, and which may include water quantity and quality considerations and shall reflect the provisions of this Judgment. Except for the exercise by Overlying Parties of their respective Rights described in Column 4 of Exhibit "B" hereto in accordance with the provisions of the Physical Solution, groundwater extractions and the replenishment thereof, and the storage of Supplemental Water, shall be subject to procedures established and administered by the Watermaster. Such procedures shall be subject to review by the Court upon motion by any Party.

3. Watermaster Standard of Performance

The Watermaster shall, in carrying out its duties and responsibilities herein, act in an impartial manner without favor or prejudice to any Party or purpose of use.

4. Watermaster Appointment

The Watermaster shall consist of a committee composed of persons nominated by the City of Banning, the City of Beaumont, the Beaumont-Cherry Valley Water District, the South Mesa Mutual Water Company and the Yucaipa Valley Water District, each of

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which shall have the right to nominate one representative to the Watermaster committee who shall be an employee of or consultant to the nominating agency. Each such nomination shall be made in writing, served upon the other parties to this Judgment and filed with the Court, which shall approve or reject such nomination. Each Watermaster representative shall serve until a replacement nominee is approved by the Court. The nominating agency shall have the right to nominate that representative's successor.

5. Powers and Duties of the Watermaster

Subject to the continuing supervision and control of the Court, the 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: The adoption of appropriate rules and regulations for the conduct of Watermaster affairs, copies of which shall be provided to all interested parties.

B. Wellhead Protection and Recharge: The identification and management of wellhead protection areas and recharge areas.

C. Well Abandonment: The administration of a well abandonment and well destruction program.

D. Well Construction: The development of minimum well construction specifications and the permitting of new wells.

E. <u>Mitigation of Overdraft</u>: The mitigation of conditions of uncontrolled overdraft.

F. <u>Replenishment</u>: The acquisition and recharge of Supplemental Water.

G. <u>Monitoring</u>: The monitoring of groundwater levels, ground levels, storage, and water quality.

H. <u>Conjunctive Use</u>: The development and management of conjunctive-use programs.

I. <u>Local Projects</u>: The coordination of construction and operation, by local agencies, of recharge, storage, conservation, water recycling, extraction projects and any water resource management activity within or impacting the Beaumont Basin.

J. <u>Land Use Plans</u>: The review of land use plans and coordination with land use planning agencies to mitigate or eliminate activities that create a reasonable risk of groundwater contamination.

K. <u>Acquisition of Facilities</u>: The purchase, lease and acquisition of all necessary real and personal property, including facilities and equipment.

L. <u>Employment of Experts and Agents</u>: The employment or retention of such technical, clerical, administrative, engineering, accounting, legal or other specialized personnel and consultants as may be deemed appropriate. The Watermaster shall maintain records allocating the cost of such services as well as all other expenses of Watermaster administration.

M. <u>Measuring Devices</u>: Except as otherwise provided

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by agreement the Watermaster shall install and maintain in good operating condition, at the cost of the Watermaster, such necessary measuring devices or meters as Watermaster may deem appropriate. Such devices shall be inspected and tested as deemed necessary by the Watermaster and the cost thereof borne by the Watermaster. Meter repair and retesting will be a Producer expense.

N. Assessments: The Watermaster is empowered to levy and collect the following assessments:

(1) Annual Replenishment Assessments

The Watermaster shall levy and collect assessments in each year, in amounts sufficient to purchase replenishment water to replace Overproduction by any Party.

(2) Annual Administrative Assessments

a. Watermaster Expenses: The expenses of administration of the Physical Solution shall be categorized as either "General Watermaster Administration Expenses", or "Special Project Expenses".

i. General Watermaster Administration Expenses: shall include office rent, labor, supplies, office equipment, incidental expenses and general overhead. General Watermaster Administration Expenses shall be assessed by the Watermaster equally against the Appropriators who have appointed representatives to the Watermaster.

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ii. Special Project Expenses: shall include special engineering, economic or other studies, litigation expenses, meter testing or other major operating expenses. Each such project shall be assigned a task order number and shall be separately budgeted and accounted for. Special Project Expenses shall be allocated to the Appropriators, or portion thereof, on the basis of benefit.

O. Investment of Funds; Borrowing: The Watermaster may hold and invest Watermaster funds as authorized by law, and may borrow, from time-to-time, amounts not exceeding annual receipts.

P. Contracts: The Watermaster may enter into contracts for the performance of any of its powers.

Q. Cooperation With Other Agencies: The Watermaster may act jointly or cooperate with other local, state and federal agencies.

R. Studies: The Watermaster may undertake relevant studies of hydrologic conditions and operating aspects of the management program for the Beaumont Basin.

S. Groundwater Storage Agreements: The Watermaster shall adopt uniform rules and a standard form of agreement for the storage of Supplemental Water, provided that the activities undertaken pursuant to such agreements do not injure any Party.

T. Administration of Groundwater Storage Capacity: Except for the exercise by the Overlying Parties of their

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respective Overlying Water Rights described in Part III, above, in accordance with the provisions of the Physical Solution, all Groundwater Storage Capacity in the Beaumont Basin shall be subject to the Watermaster's rules and regulations, which regulations shall ensure that sufficient storage capacity shall be reserved for local projects. Any Person or entity may apply to the Watermaster to store water in the Beaumont Basin.

U. <u>Accounting for Stored Water</u>: The Watermaster shall calculate additions, extractions and losses and maintain an annual account of all stored water in the Beaumont Basin, and any losses of water supplies or Safe Yield resulting from such stored water.

V. <u>Accounting for New Yield</u>: Recharge of the Beaumont Basin with New Yield water shall be credited to the Party that creates the New Yield. The Watermaster shall make an independent scientific assessment of the estimated New Yield created by each proposed project. New Yield will be allocated on an annual basis, based upon monitoring data and review by the Watermaster.

W. <u>Accounting for Acquisitions of Water Rights</u>: The Watermaster shall maintain an accounting of acquisitions by Appropriators of water otherwise subject to Overlying Water Rights as the result of the provision of water service thereto by an Appropriator.

X. <u>Annual Administrative Budget</u>: The Watermaster shall prepare an annual administrative budget for public review, and shall hold a public hearing on each such budget

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prior to adoption. The budget shall be prepared in sufficient detail so as to make a proper allocation of the expenses and receipts. Expenditures within budgeted items may thereafter be made by the Watermaster as a matter of course.

Y. Redetermining the Safe Yield: The Safe Yield of the Beaumont Basin shall be redetermined at least every 10 years beginning 10 years after the date of entry of this Judgment.

6. Reports and Accounting

(a) Production Reports: Each Pumper shall periodically file, pursuant to Watermaster rules and regulations, a report showing the total production of such Pumper from each well during the preceding report period, and such additional information as the Watermaster may reasonably require.

(b) Watermaster Report and Accounting: The Watermaster shall prepare an annual report of the preceding year's operations, which shall include an audit of all assessments and Watermaster expenditures.

7. Replenishment

Supplemental Water may be obtained by the Watermaster from any source. The Watermaster shall seek the best available quality of Supplemental Water at the most reasonable cost for recharge in the Basin. Sources may include, but are not limited to:

(a) Recycled Water;

(b) State Water Project Water;

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(c) Other imported water.

Replenishment may be accomplished by any reasonable method including:

(a) Spreading and percolation, or injection of water in existing or new facilities; and/or

(b) In-lieu deliveries for direct surface use, in lieu of groundwater extraction.

VII. MISCELLANEOUS PROVISIONS

1. Designation of Address for Notice and Service

Each Party shall designate, in writing to the plaintiff, the name and address to be used for purposes of all subsequent notices and service herein, such designation to be delivered to the plaintiff within 30 days after the Judgment has been entered. The plaintiff shall, within 45 days after judgment has been entered, file the list of designees with the Court and serve the same on the Watermaster and all Parties. Such designation may be changed from time-to-time by filing a written notice of such change with the Watermaster. 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 the Watermaster. The Watermaster shall maintain, at all times, a current list of Parties to whom notices are to be sent and their addresses for purposes of service. The Watermaster shall also maintain a full current list of names and addresses of all Parties or their successors, as filed herein. Copies of such lists shall be available to any Person. If no designation is made, a Party's designee shall be deemed to be, in order of priority: (i) the Party's attorney of record; or (ii) if the Party does not have an

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attorney of record, the Party itself at the address on the Watermaster list.

2. <u>Intervention After Judgment</u>

Any Person who is neither a Party to this Judgment nor a successor or assignee of a Party to this Judgment may seek to become a party to this Judgment by filing a petition in intervention.

3. <u>Interference with Pumping</u>

Nothing in this judgment shall be deemed to prevent any party from seeking judicial relief against any other party whose pumping activities constitute an unreasonable interference with the complaining party's ability to extract groundwater.

4. <u>Successors and Assigns</u>

This Judgment and all provisions herein shall be binding on and shall inure to the benefit of the heirs, executors, administrators, successors and assigns of the parties hereto.

5. <u>Severability</u>

The provisions of this Judgment are severable. If any provision of this Judgment is held by the Court to be illegal, invalid or unenforceable, that provision shall be excised from the Judgment. The remainder of the terms of the Judgment shall remain in full force and effect and shall in no way be affected, impaired or invalidated by such excision. This Judgment shall be reformed to add, in lieu of the excised provision, a provision as similar in terms to the excised provision as may be possible and be legal, valid and enforceable.

6. <u>Review Procedures</u>

Any action, decision, rule or procedure of the Watermaster pursuant to this Judgment shall be subject to review by the Court on its own motion or on timely motion by any Party, as follows:

A. Effective Date of Watermaster Action: Any order, decision or action of the Watermaster pursuant to this Judgment on noticed specific agenda items shall be deemed to have occurred on the date of the order, decision or action.

B. Notice of Motion: Any Party may, by a regularly-noticed motion, petition the Court for review of the Watermaster's action or decision pursuant to this Judgment. The motion shall be deemed to be filed when a copy, conformed as filed with the Court, has been delivered to the Watermaster, together with the service fee established by the Watermaster sufficient to cover the cost to photocopy and mail the motion to each Party. The Watermaster shall prepare copies and mail a copy of the motion to each Party or its designee according to the official service list which shall be maintained by the Watermaster according to Part VII, paragraph 1, above. A Party's obligation to serve the notice of a motion upon the Parties is deemed to be satisfied by filing the motion as provided herein. Unless ordered by the Court, any petition shall not operate to stay the effect of any Watermaster action or decision which is challenged.

C. Time for Motion: A motion to review any Watermaster action or decision shall be filed within 90 days after such Watermaster action or decision, except that motions to review Watermaster assessments hereunder shall be filed within 30 days of mailing of notice of the assessment.

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D. De Novo Nature of Proceeding: Upon filing of a petition to review a Watermaster action, the Watermaster shall notify the Parties of a date when the Court will take evidence and hear argument. The Court's review shall be de novo and the Watermaster decision or action shall have no evidentiary weight in such proceeding.

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.

Dated: FEB - 4 2004

GARY TRANBARGER

JUDGE OF THE SUPERIOR COURT

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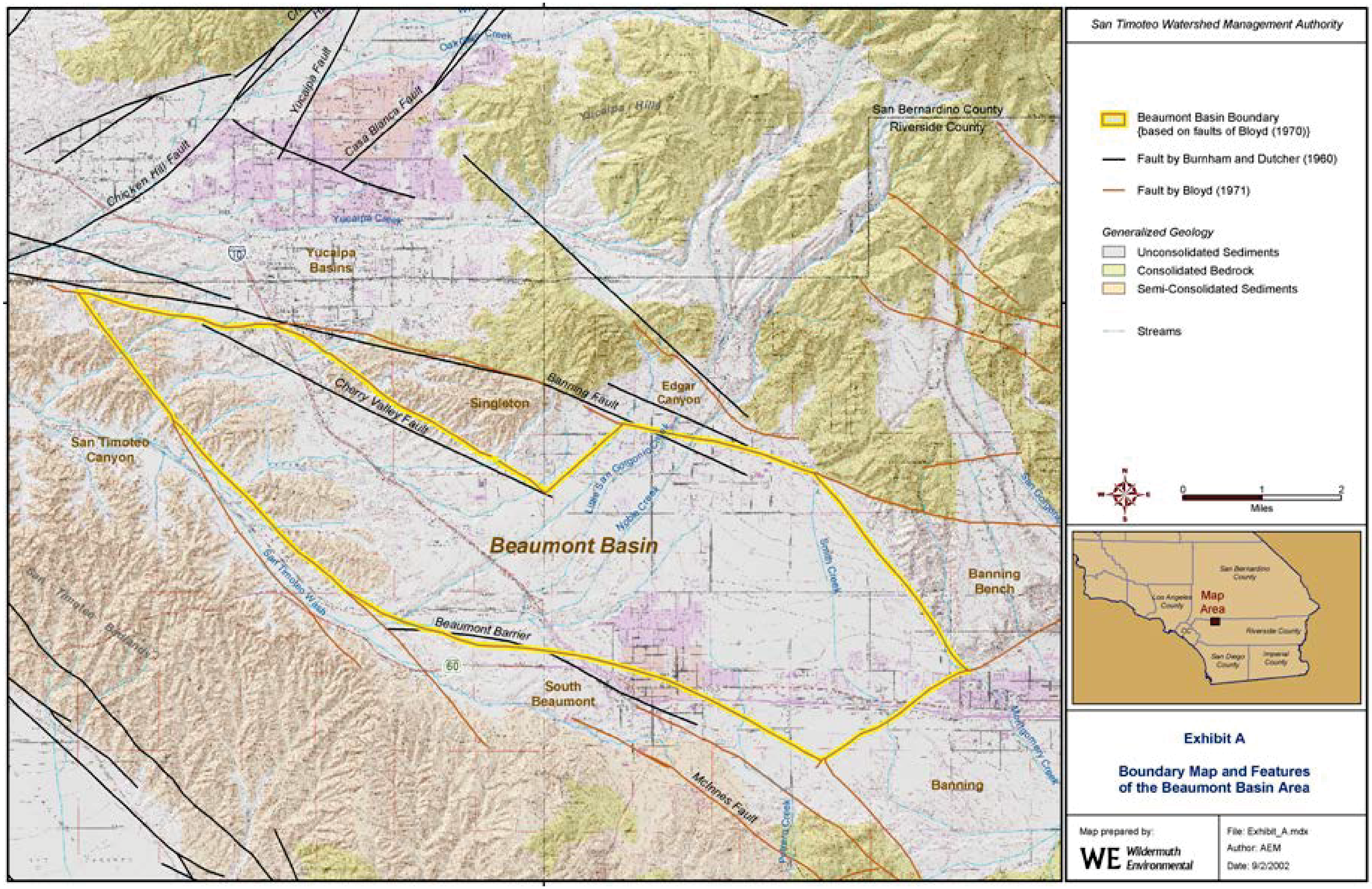
Chicken Hill Fault
Yucaipa Fault
Casa Blanca Fault
Oak Glen Creek
Yucaipa Creek
Yucaipa Basins
Yucaipa Hills
San Bernardino County
Riverside County
Banning Fault
Cherry Valley Fault
Singleton
Edgar Canyon
San Timoteo Canyon
Little San Gorgonio Creek
Noble Creek
Smith Creek
Beaumont Basin
San Timoteo Wash
San Timoteo Badlands
Beaumont Barrier
60
South Beaumont
McInnes Fault
Potrero Creek
Banning Bench
Banning
Montgomery Creek
San Gorgonio
San Timoteo Watershed Management Authority
Beaumont Basin Boundary
{based on faults of Bloyd (1970))
Fault by Burnham and Dutcher (1960)
Fault by Bloyd (1971)
Generalized Geology
Unconsolidated Sediments
Consolidated Bedrock
Semi-Consolidated Sediments
Streams
0
1
2
Miles
San Bernardino County
Los Angeles County
Map Area
Riverside County
San Diego County
Imperial County
OC
Exhibit A
Boundary Map and Features
of the Beaumont Basin Area
Map prepared by:
WE Wildermuth Environmental
File: Exhibit_A.mdx
Author: AEM
Date: 9/2/2002

Exhibit B
Overlying Producers and Their Rights

(1) Producer	(2) Average Production during 1997-2001 (acre-ft/yr)	(3) Exercised Rights[1] (acre-ft/yr)	(4) Projected Maximum Production (acre-ft/yr)
Beckman, Walt	0	0	75
Roman Catholic Bishop of San Bernardino	104	114	154
Rancho Calimesa Mobile Home Park	60	150	150
Merlin Properties, LLC.	540	550	550
Sunny-Cal Egg and Poultry Company[2]	1,340	1,340	1,439.5
Sunny-Cal North - Manheim, Manheim & Berman[2]			300
Nick Nikodinov[3]			20
Ronald L. McAmis[4]			5
Nicolas and Amalia Aldama[5]			7
Hector Gutierrez, Luis Gutierrez and Sebastian Monroy[6]			10
Boris and Miriam Darmont[7]			2.5
California Oak Valley Golf and Resort LLC	692	950	950
Leonard Stearn	0	0	200
Oak Valley Partners	510	553	1,806
So. California Professional Golf Association	680	1,688	2,200
Sharondale Mesa Owners Association	184	200	200
Plantation on the Lake	271	300	581
Totals	4,381	5,845	8,650

Note 1 -- Maximum Reported Production during 1997-2001

Note 2 -- The *Exercised Right* and *Projected Maximum Production* were an aggregate right for defendents *Sunny-Cal Egg and Poultry*, and *Manheim, Manheim and Berman(MMB). As requested, Watermaster action designated 300 af of the aggregate right to MMB aka Sunny-Cal North on February 7, 2006.*

Note 3 -- The *Exercised Right* and *Projected Maximum Production* were an aggregate right for defendents *Sunny-Cal Egg and Poultry*, and *Manheim, Manheim and Berman(MMB). As requested, Watermaster action designated 20 af of aggregate right to Nick Nikodinov on April 17, 2006.*

Note 4 -- The *Exercised Right* and *Projected Maximum Production* were an aggregate right for defendents *Sunny-Cal Egg and Poultry*, and *Manheim, Manheim and Berman(MMB). As requested, Watermaster action designated 5 af of aggregate right to Ronald L. McAmis on June 13, 2006.*

Note 5 -- The *Exercised Right* and *Projected Maximum Production* were an aggregate right for defendents *Sunny-Cal Egg and Poultry*, and *Manheim, Manheim and Berman(MMB). As requested, Watermaster action designated 7 af of aggregate right to Nicolas and Amalia Aldama on June 13, 2006.*

Note 6 -- The *Exercised Right* and *Projected Maximum Production* were an aggregate right for defendents *Sunny-Cal Egg and Poultry*, and *Manheim, Manheim and Berman(MMB). As requested, Watermaster action designated 10 af of aggregate right to Hector Gutierrez, Luis Gutierrez and Sebastian Monroy on June 13, 2006.*

Note 7 -- The *Exercised Right* and *Projected Maximum Production* were an aggregate right for defendents *Sunny-Cal Egg and Poultry*, and *Manheim, Manheim and Berman(MMB). As requested, Watermaster action designated 2.50 af of aggregate right to Boris and Miriam Dermont on June 13, 2006.*

Exhibit C
Appropriators and Their Water Rights

(1) Producer	(2) Average Production during 1997-2001 (acre-ft/yr)	(3) Share of Safe Yield Allocated to Appropriators	(4) Initial Estimate of Appropriate Rights[1] (acre-ft/yr)	(5) Controlled Overdraft and Supplemental Water Recharge Allocation[2] (acre-ft/yr)	(6) Operating Yield (acre-ft/yr)
Banning, City of	2,170	31.43%	882	5,029	5,910
City of Beaumont	0	0.00%	0	0	0
Beaumont Cherry Valley Water District	2,936	42.51%	1,193	6,802	7,995
South Mesa Water Company	862	12.48%	350	1,996	2,346
Yucaipa Valley Water District	938	13.58%	381	2,173	2,554
Totals	6,906	100.00%	2,805	16,000	18,805

Note 1 – Based on a 8,650 acre-ft/yr safe yield

Note 2-- Controlled overdraft will not exceed 160,000 acre-ft during for first ten years of operation under the physical solution.

Exhibit D

Overlying Producers and the Parcels Upon Which Their Overlying Rights are Exercised[1]

(1) Overlying Producer	(3) Assessors Parcel Number(s)	(4) Area (Acres)
Beckman, Walt	405250004	19.04
	405250005	19.00
Total Area		38.04
California Oak Valley Golf and Resort	406070041	209.71
Total Area		209.71
Manheim, Manheim & Berman[2]	407200009	20.35
	407200011	20.00
	407200012	20.04
	407210001	45.41
	407210002	12.04
	407210004	4.16
Total Area		122.00
Roman Catholic Bishop of San Bernardino	413280016	16.78
	413280030	2.06
	413280036	12.42
Total Area		31.26
Oak Valley Partners	406060010	115.82
	406060015	4.00
	406060017	19.03
	406230020	4.26
	411210003	2.40
	411210005	105.41
	411210010	15.14
	411210016	9.77
	411210017	8.94
	413030011	315.30
	413040001	493.40
	413040002	137.00
	413040003	74.48
	413040004	6.50
	413040005	80.02
	413040006	75.54
	413040007	76.22

(1) Overlying Producer	(3) Assessors Parcel Number(s)	(4) Area (Acres)
Oak Valley Partners (cont'd)	413040008	144.48
	413040009	10.00
	413040010	78.22
	413060003	1.70
	413160003	80.00
	413160004	106.92
	413160005	53.08
	413160006	64.47
	413160007	15.53
	413170020	40.26
	413170021	27.62
	413170023	12.38
	413170027	14.19
	413170028	4.11
	413170029	2.35
	413170030	20.28
	413170031	66.63
	413170033	2.79
	413170035	11.74
	413180017	556.91
	413180019	9.77
	413190001	111.31
	413190003	5.64
	413190005	10.35
	413190008	12.40
	413190011	138.92
	413200002	0.23
	413200003	0.15
	413200010	5.94
	413200014	10.61
	413200015	11.36
	413200020	5.00
	413200023	14.47
	413200024	5.00
	413200026	32.86
	413200027	42.90
	413200028	116.62
	413200029	6.39
	413200030	19.01
	413200034	2.18
	413200035	10.99
	413200036	10.42
	413200037	4.95
	413270021	0.31
	413280034	2.37
	413280039	13.61
	413280040	1.91

(1) Overlying Producer	(3) Assessors Parcel Number(s)	(4) Area (Acres)
Oak Valley Partners (cont'd)	413280041	2.24
	413280042	6.86
	413290003	510.57
	413290004	16.08
	413290006	8.40
	413290007	103.68
	413450019	74.85
	413450020	169.96
	413450021	146.99
	413450024	48.25
	413450025	50.83
	413450026	122.59
	413450029	108.92
	413460036	199.12
	413460037	23.51
	413460038	19.58
	413460039	45.23
	413460039	45.23
	414090005	1.59
	414090007	1.38
	414090013	31.60
	414090017	20.00
	414090018	4.50
	414100002	42.13
	414100003	65.00
Total Area		5,331.65
Plantation on the Lake	407230031	12.36
	407230010	1.25
	406050018	156.85
	406050002	5.12
	406050003	1.81
Total Area		177.39
Rancho Calimesa Mobile Home Park	413270001	29.66
Total Area		29.66
Merlin Properties, LLC.	407230014	48.52
Total Area		48.52
Sharondale Mesa Owners Association	413330014	1.55
	413330015	2.14
	413331022	0.48
	413331035	0.22
	413340021	0.04
	413340022	0.04
	413340023	1.53
	413340024	2.52
	413341033	0.29

(1) Overlying Producer	(3) Assessors Parcel Number(s)	(4) Area (Acres)
Sharondale Mesa Owners Association (cont'd)	413341034	0.81
	413341036	0.35
	413342004	0.35
	413350011	1.04
	413350012	1.44
	413351018	17.08
	413351019	0.16
	413360032	1.92
	413360033	2.30
	413360035	0.90
	413361001	0.14
	413361008	0.12
	413361010	0.18
	413370027	0.39
	413370028	5.34
	413370030	0.69
	413371018	2.07
	413372019	1.39
Total Area		45.48
So. California Professional Golf Association	406060011	146.59
	406060013	2.83
	406060014	4.58
	406060016	10.35
	413450016	99.66
	413450022	95.15
	413450023	2.89
	413450027	91.53
Total Area		453.58
Stearns, Leonard	413221001	0.25
	413221002	0.34
	413260018	49.33
	413260025	0.37
	413270007	10.58
	413280010	1.27
	413280018	9.37
	413280021	4.26
	413280027	3.80
	413280037	14.32
Total Area		93.89
Sunny-Cal Egg and Poultry Company[2]	406080013	0.07
	407190016	4.95
	407190017	31.32
	407230022	20.03
	407230023	20.03
	407230024	20.03
	407230025	21.99

(1) Overlying Producer	(3) Assessors Parcel Number(s)	(4) Area (Acres)
Sunny-Cal Egg and Poultry Company[2] (cont'd)	407230026	25.94
	407230027	21.63
	407230028	21.56
Total Area		187.55
Nikodinov, Nick[4]	407180004	9.35
Total Area		9.35
McAmis, Ronald L.[5]	407190018	0.93
Total Area		0.93
Aldama, Nicolas and Amalia[6]	407190015	1.35
Total Area		1.35
Hector Gutierrez, Luis Gutierrez and Sebastian Monroy[7]	407190013	2.01
Total Area		2.01
Darmont, Boris and Miriam[8]	407190014	0.50
Total Area		0.50
Total Area for All Overlying Producers[3]		**6,782.87**

Note 1 -- Parcels as of June 1, 2003; updated to include Nick Nikodinov per April 17, 2006 Watermaster action; updated to include Ronald L. McAmis, Nicolas and Amalia Aldama, Hector Gutierrez, Luis Guiterrez, and Sebastian Monroy, and Boris and Miriam Darmont per June 13, 2006 Watermaster actions.

Note 2 -- Parcels owned by Sunny-Cal Egg & Poultry Company include the overlying water rights of Manheim, Manheim and Berman (MMB) and is aggregated as shown in Column 4 of Exhibit B as attributable to Sunny-Cal Egg & Poultry Company. As requested, Watermaster designated a portion of these aggregated rights to MMB on February 7, 2006.

Note 3 -- The Watermaster shall recognize adjustments in parcel boundaries that result in de minimus changes in water use

Note 4 -- Parcels owned by Sunny-Cal Egg & Poultry Company include the overlying water rights of Manheim, Manheim and Berman (MMB) and is aggregated as shown in Column 4 of Exhibit B as attributable to Sunny-Cal Egg & Poultry Company. As requested, Watermaster designated a portion of these aggregated rights to Nick Nikodinov on Aprin 17, 2006.

Note 5 -- Parcels owned by Sunny-Cal Egg & Poultry Company include the overlying water rights of Manheim, Manheim and Berman (MMB) and is aggregated as shown in Column 4 of Exhibit B as attributable to Sunny-Cal Egg & Poultry Company. As requested, Watermaster designated a portion of these aggregated rights to Ronald L. McAmis on June 13, 2006.

Note 6 -- Parcels owned by Sunny-Cal Egg & Poultry Company include the overlying water rights of Manheim, Manheim and Berman (MMB) and is aggregated as shown in Column 4 of Exhibit B as attributable to Sunny-Cal Egg & Poultry Company. As requested, Watermaster designated a portion of these aggregated rights to Nicolas and Amalia Aldama on June 13, 2006.

Note 7 -- Parcels owned by Sunny-Cal Egg & Poultry Company include the overlying water rights of Manheim, Manheim and Berman (MMB) and is aggregated as shown in Column 4 of Exhibit B as attributable to Sunny-Cal Egg & Poultry Company. As requested, Watermaster designated a portion of these aggregated rights to Hector Gutierrez, Luis Gutierrez and Sebastian Monroy on June 13, 2006.

Note 8 -- Parcels owned by Sunny-Cal Egg & Poultry Company include the overlying water rights of Manheim, Manheim and Berman (MMB) and is aggregated as shown in Column 4 of Exhibit B as attributable to Sunny-Cal Egg & Poultry Company. As requested, Watermaster designated a portion of these aggregated rights to Boris and Miriam Durmont on June 13, 2006.

RESOLUTION NO. 2015 – 01

A RESOLUTION OF THE BEAUMONT BASIN WATERMASTER ADOPTING THE 2013 REEVALUATION OF THE BEAUMONT BASIN SAFE YIELD REPORT AND REDETERMINATION OF THE SAFE YIELD OF THE BEAUMONT BASIN

WHEREAS, the Stipulated Judgment filed February 4, 2004 establishing the Beaumont Basin Watermaster (Riverside Superior Court Case No. 389197) empowers Watermaster to adopt appropriate rules and regulations for the conduct of Watermaster affairs; and

WHEREAS, the Stipulated Judgment, per section VI.5.Y. requires Watermaster to redetermine the Safe Yield of the Beaumont Basin at least every 10 years beginning 10 years after the date of entry of the Stipulated Judgment; and

WHEREAS, a special projects committee, consisting of representatives from the City of Banning, the Beaumont-Cherry Valley Water District, the South Mesa Mutual Water Company, and the Yucaipa Valley Water District was commissioned to provide Watermaster with a recommendation concerning the redetermination of safe yield; and

WHEREAS, the special projects committee commissioned Thomas Harder & Co. in association with Alda, Inc. to prepare a report analyzing and recommending a redetermined Safe Yield as defined by Rule 4.1 of the Beaumont Basin Watermaster Rules and Regulations; and

WHEREAS, the special projects committee conducted several public workshops concerning the redetermination of the Safe Yield of the Beaumont Basin during which considered and analyzed studies and draft reports prepared by Thomas Harder & Co. in association with Alda, Inc., and also received and considered comments submitted by overlyers, appropriators and members of the public; and

WHEREAS, Thomas Harder & Co. in association with Alda, Inc. conducted studies and prepared a report entitled "Final 2013 Reevaluation of the Beaumont Basin Safe Yield" based on the projected water balance for the 10 year period between 2013 to 2022; and

WHEREAS, the Thomas Harder & Co. in association with Alda, Inc. report recommended the redetermined Safe Yield of the Beaumont Basin to be 6,700 acre-feet/yr for the next 10 years of operations within the Beaumont Basin; and

WHEREAS, the special projects committee has recommended to Watermaster that the Final 2013 Reevaluation of the Beaumont Basin Safe Yield report be approved and adopted, and that the redetermined Safe Yield of the Beaumont Basin be 6,700 acre-feet/yr;

NOW, THEREFORE, BE IT HEREBY RESOLVED BY THE BEAUMONT BASIN WATERMASTER that:

1. The Beaumont Basin Watermaster does accept and adopt the Final 2013 Reevaluation of the Beaumont Basin Safe Yield report; and
2. The Beaumont Basin Watermaster redetermines the Safe Yield of the Beaumont Basin to be 6,700 acre-feet/yr.

PASSED AND ADOPTED this 1st day of April, 2015.

Appendix F
Notices to Cities and Counties, Notice of Public Hearing, Meeting Minutes, Comments, and Resolution of Adoption

Appendix G

DWR UWMP Checklist

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	Pg 10-4
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	Pg 10-1 thru 10-3
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	Table 10-2
10631(a)	Describe the water supplier service area.	System Description	Section 3.1	Pg 3-2
10631(a)	Describe the climate of the service area of the supplier.	System Description	Section 3.3	Pg 3-8
10631(a)	Provide population projections for 2020, 2025, 2030, and 2035.	System Description	Section 3.4	Table 3-10
10631(a)	Describe other demographic factors affecting the supplier's water management planning.	System Description	Section 3.4	Pg 3-27
10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	Sections 3.4 and 5.4	Table 3-3, Table 3-10
10631(e)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	Section 4.2	Pg 4-4 and Table 4-1 and Table 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	Pg 4-8
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	Table 4-4A, pg 4-11

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	Pg 5-6
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	Pg 5-6 and Table 5-1 and SB X7-7 Verification Tables
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	Pg 5-6
10608.24(a)	Retail suppliers shall meet their interim target by December 31, 2015.	Baselines and Targets	Section 5.8 and App E	Pg 5-7
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	N/A, no adjustment made
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	BCVWD is not Wholesale Agency
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	See SB X7-7 Verification Tables
10631(b)	Identify and quantify the existing and planned sources of water available for 2015, 2020, 2025, 2030, and 2035.	System Supplies	Chapter 6	Table 6-25
10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	Section 6.2	Section 6
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	Basin is Adjudicated
10631(b)(2)	**Describe the groundwater basin.**	**System Supplies**	**Section 6.2.1**	P 6-16 to 6-24

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	Appendix E and Pg 6-24
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	Edgar Canyon not adjudicated and not in overdraft See Table 6-8
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	Table 6-7
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	Table 6-8 and Table 6-9, Table 6-25
10631(d)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System Supplies	Section 6.7	Pg 6-57
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	Table 6-23
10631(h)	Describe desalinated water project opportunities for long-term supply.	System Supplies	Section 6.6	Pg 6-56
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	Pg 2-4
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	BCVWD is a Retailer
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	Pg 2-5

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	Pg 6-42
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	Pg 6-45 and Table 6-14,
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	Table 6-17
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	Tble 6-18 and 6-19
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	Table 6-19
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	Pg 6-53
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	Pg 6-54 to 6-55, Table 6-22
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	See Storm Water pg 6-35 and Recycled Water pg 6-40
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, Table 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	Pg 7-5 to 7-8
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	Pg 7-11

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	Pg 6-16, 6-20 and 6-44
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	Tables 7-9 through 7-12
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	Pg 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	Pg 8-25 and 8-26
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	Pg 8-12 thru 8-25
10632(a)(4)	Identify mandatory prohibitions against specific water use practices during water shortages.	Water Shortage Contingency Planning	Section 8.2	Pg 8-24
10632(a)(5)	Specify consumption reduction methods in the most restrictive stages.	Water Shortage Contingency Planning	Section 8.4	Pg 8-1 thru 8-5
10632(a)(6)	Indicated penalties or charges for excessive use, where applicable.	Water Shortage Contingency Planning	Section 8.3	Pg 8-6
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	Pg 8-10
10632(a)(8)	Provide a draft water shortage contingency resolution or ordinance.	Water Shortage Contingency Planning	Section 8.7	See Pg 8-28
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	Pg 8-10

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	Pg 9-1 thru 9-5
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	BCVWD is a Retailer
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	BCVWD is not a CUWCC member
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	Pg 10-4 as part of UWMP adoption
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	Pg 10-2
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	Submitted before end of 2016
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	Provided with copy of 2015 UWMP Update
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 about the plan.	Plan Adoption, Submittal, and Implementation	Sections 10.2.2, 10.3, and 10.5	See Appendix F of 2015 UWMP Update
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	See Appendix F of 2015 UWMP Update

10642	Provide supporting documentation that the plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	Section 10.3.1	See Appendix F of 2015 UWMP Update
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	See Appendix F of 2015 UWMP Update
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	See Appendix F of 2015 UWMP Update
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	It will on completion
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	On BCVWD Website www.bcvwd.org