ATTACHMENT A

CALIFORNIA
AMERICAN WATER

FINAL

URBAN WATER MANAGEMENT PLAN

WSC

CALIFORNIA AMERICAN WATER – MONTEREY COUNTY DISTRICT | JUNE 2021

CALIFORNIA AMERICAN WATER

CALIFORNIA AMERICAN WATER CENTRAL DIVISION – MONTEREY COUNTY DISTRICT

2020 Urban Water Management Plan

JUNE 2021

Prepared by Water Systems Consulting, Inc.

WSC

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ACRONYMS & ABBREVIATIONS

°F	Degrees Fahrenheit
AF	Acre Foot
AFY	Acre Feet per Year
AMBAG	Association of Monterey Bay Area Governments
ASR	Aquifer Storage and Recovery
AWWA	American Water Works Association
BIRP	Begonia Iron Removal Plant
CAW	California American Water
CAWD	Carmel Area Wastewater District
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Irrigation System
CPUC	California Public Utilities Commission
CSA	County Service Area
CSIP	Castroville Seawater Intrusion Project
CWC	California Water Code
DDW	SWRCB Division of Drinking Water
DMM	Demand Management Measure
DRA	Drought Risk Assessment
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ESA	Energy Savings Assistance Program
ETo	Reference Evapotranspiration
GIS	Geographic Information System
GPCD	Gallons per Capita per Day
GPD	Gallons Per Day
IN	Inch
IOU	Investor-Owned Utility
IRWMP	Integrated Regional Water Management Plan
ITP	Independent Technical Panel
kWh	Kilowatt-hour
LOR	Lots of Record
M1W	Monterey One Water
MCWD	Marina Coast Water District
MGD	Million Gallons per Day
MOWRTP	Monterey One Water Regional Treatment Plant

MPWRA	Monterey Peninsula Regional Water Authority
MPWSP	Monterey Peninsula Water Supply Project
NRW	Non-Revenue Water
OPA	Other Public Authority
PBCSD	Pebble Beach Community Services District
PG&E	Pacific Gas and Electric Company
PGLWP	Pacific Grove Local Water Project
PWM	Pure Water Monterey
RHNA	Regional Housing Needs Assessment
RO	Reverse Osmosis
RUWAP	Regional Urban Augmentation Project
RUWMP	Regional Urban Water Management Plan
SB	Senate Bill
SB X7-7	Senate Bill 7 of Special Extended Session 7
SGMA	Sustainable Groundwater Management Act
SRWTP	Satellite Recycled Water Treatment Plant
SWRCB	State Water Resources Control Board
TAZ	Traffic Analysis Zone
TDS	Total Dissolved Solids
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act
WAC	Water Awareness Committee
WBIC	Weather Based Irrigation Controller
WSA	Water Supply Assessment
WSCP	Water Shortage Contingency Plan
WWTP	Wastewater Treatment Plant

Executive Summary

This section summarizes the 2020 Urban Water Management Plan (UWMP) for the California American Water (CAW) Central Division – Monterey County District. It describes the 2020 UWMP in a manner that is accessible to non-technical readers. This summary describes the fundamental purposes of the UWMP, including water service reliability, future challenges, and strategies for managing water reliability risks.

This plan comprises the 2020 UWMP for CAW Central Division - Monterey County District, as required by the California Urban Water Management Planning Act. CAW is a wholly owned subsidiary of the American Water Works Company, one of the largest investor-owned water and wastewater utility companies in the United States, and is regulated by the California Public Utilities Commission.

CAW has coordinated the preparation of its 2020 UWMP with the cities within its service area, Monterey County, nearby water agencies, and community members to develop a UWMP that meets the requirements of the California Water Code and plans for a resilient water future.

IN THIS SECTION

Service Area

The Monterey County District includes the Monterey System and eight satellite systems. This UWMP covers the Monterey System, the Ryan Ranch and Bishop Systems (which are currently supplied by the Monterey System), and the Hidden Hills System (which is expected to be served by the Monterey System in the future). These four systems are referred to as Monterey Main.

The Monterey Main climate is characterized by warm summers and mild winters. The current population in Monterey Main is just under 92,000 and is expected to grow to close to 101,000 by 2045.

Water Use

Monterey Main serves potable water to mostly residential and commercial customers in the service area. The historic water demand for Monterey Main is shown in **Figure E-1**. Since 2007 water demand has declined from a high of 14,600 acre-feet per year (AFY) to the 2016 - 2020 average of 9,300 AFY. Water use has remained steady over the past six years. The decline in water use since 2007 is attributed to highly effective conservation programs and a drought rate structure which has resulted in the substantial drop in water use.

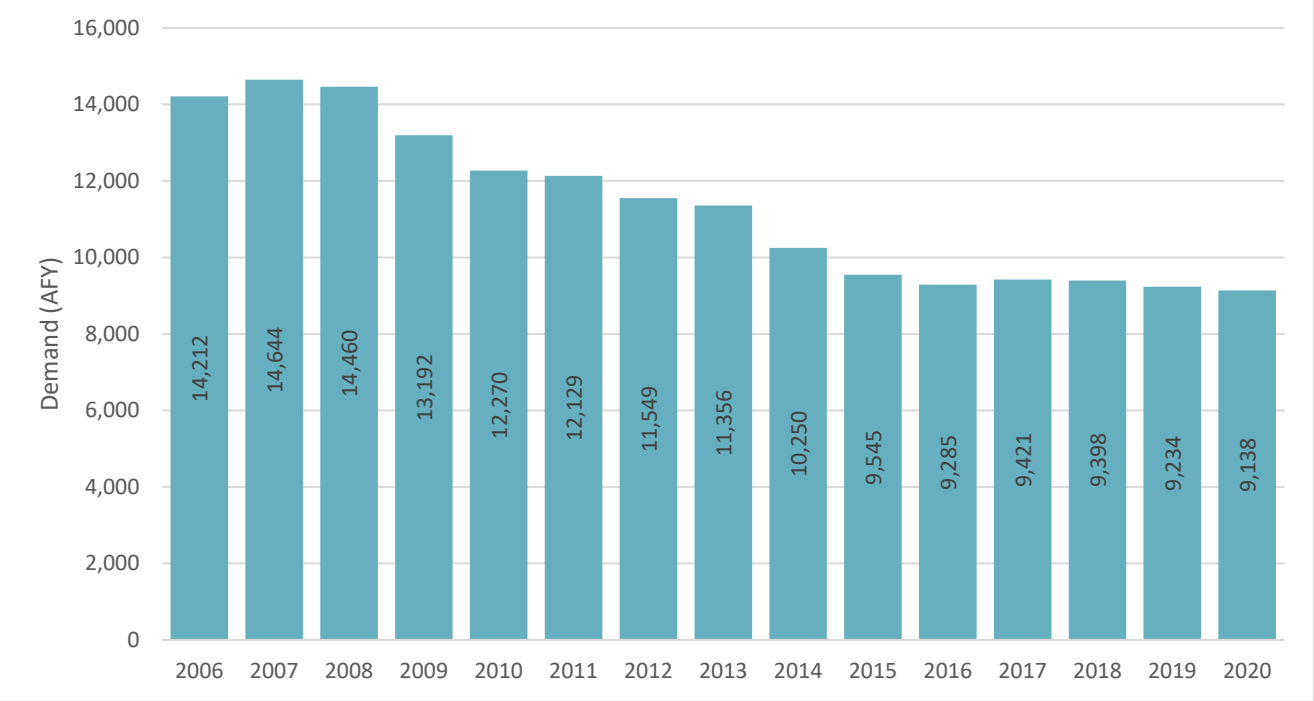

Figure E-1. Monterey Main Historic Annual Demand

The projected water use for Monterey Main is shown in **Figure E-2**. Demand projections incorporated several factors that will affect future water use, including:

1. Changes in behavior by current customers.
2. New government regulations
3. Growth and new development
4. Changes in commercial activity
5. Climate change

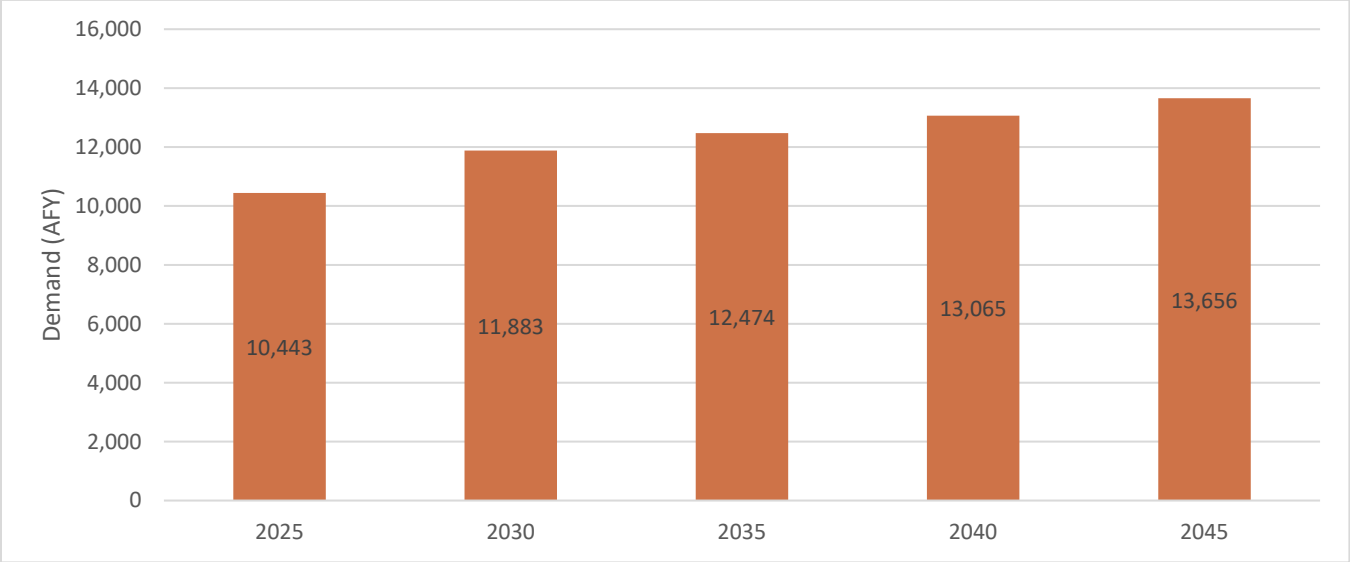

Figure E-2. Monterey Main Projected Water Use

Water Sources

Monterey Main is dependent on local water sources for its supply, including groundwater from the Carmel River Aquifer, Seaside Groundwater Basin, Aquifer Storage and Recovery (ASR), indirect potable reuse from Pure Water Monterey (PWM), and desalinated water from the Sand City Desalination Plant. Future supply sources include water from the PWM Expansion and the Monterey Peninsula Water Supply Project (MPWSP) Ocean Desalination Plant. **Table E-1** lists the projected water supply from each source.

CAW has a contractual agreement for 3,500 AFY from PWM, which treats wastewater to purified levels and injects it into the Seaside Basin for subsequent extraction by CAW. The PWM Project is projected to provide the full contractual amount in normal hydrologic years, but it is not currently 100 percent reliable in dry years due to source water constraints. The PWM Expansion is anticipated to be operational by 2025, however due to the source water constraints it is not projected to be able to provide its design supply of 2,250 AFY in normal years until 2030 when the MPWSP Desalination Plant is operational and will provide the drought-proof supply needed for water demands and wastewater flows to increase. The MPWSP Desalination Plant is expected to produce 6,252 AFY for the Monterey Peninsula.

Table E-1. Projected Water Supplies

		AVAILABLE SUPPLY, AF				
WATER SUPPLY	ADDITIONAL DETAIL ON WATER SUPPLY	2025	2030	2035	2040	2045
Groundwater	Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376
Groundwater	Seaside Basin[1]	1,474	774	774	774	774
Desalinated Water	Sand City Desalination	94	94	94	94	94
Other	Aquifer Storage and Recovery	920	920	920	920	920
Recycled Water	Pure Water Monterey	3,500	3,500	3,500	3,500	3,500
Recycled Water	PWM Expansion	528	2,250	2,250	2,250	2,250
Total		**9,892**	**10,914**	**10,914**	**10,914**	**10,914**
MPWSP Desalination			6,252	6,252	6,252	6,252
Total with MPWSP			**17,166**	**17,166**	**17,166**	**17,166**

Notes:

1. The CAW Monterey Main System has a total entitled right of 1,474 AFY from the Seaside Groundwater Basin, however CAW has an agreement in place to not pump 700 AFY of this right for 25-years once a new supply source is operational. This Plan assumes the reduced pumping will beginning in 2030 and continue through 2055. The reduced pumping repayment volume or duration of payment is subject to increase in the future.
2. The PWM Expansion in 2025 during a normal hydrologic year is only anticipated to supply up to 528 AFY due to source water limitations. The reliability of the project increases in the future once the MPWSP Desalination Plant is operational because it provides a drought-proof supply that allows water demands to increase which will increase wastewater flows and the source water for the PWM Expansion Project.

Water Supply Reliability

The constraints and reliability of each of Monterey Main's water supplies were evaluated to determine the total available supply in a normal year, single-dry year, and five-consecutive dry years. The supply from the Carmel River Aquifer, Seaside Groundwater Basin, Sand City Desalination Plant, and MPWSP Desalination Plant are all anticipated to be reliable and provide their contractual or design supply in all year types. Supplies from the PWM Expansion are expected to be limited by available source water (wastewater flows) until the MPWSP is online (Hazen and Sawyer, 2020). Until the MPWSP is online, it is expected that demands will need to be constrained through the enaction of the Water Shortage Contingency Plan (WSCP).

A comparison of anticipated demands and supplies is shown in Table E-2.

Table E-2. Normal Year Supply and Demand Comparison (AFY)

	2025	2030	2035	2040	2045
Demand Totals	10,443	11,883	12,474	13,065	13,656
Water Supply Without MPWSP Desalination	9,892	10,914	10,914	10,914	10,914
SHORTFALL WITHOUT WSCP ACTION	**-551**	**-969**	**-1,560**	**-2,151**	**-2,742**
ADDITIONAL WATER SUPPLY FROM MPWSP DESALINATION, AFY	0	6,252	6,252	6,252	6,252
Total Water Supply	9,892	17,166	17,166	17,166	17,166
Operational Buffer (10%)	-989	-1,717	-1,717	-1,717	-1,717
Surplus/ Shortfall without WSCP Action	**-1,540**	**3,566**	**2,975**	**2,384**	**1,793**
WSCP Demand Reduction	1,540	0	0	0	0
DIFFERENCE:	**0**	**3,566**	**2,975**	**2,384**	**1,793**
ADDITIONAL WATER SUPPLY FROM MPWSP DESALINATION, AFY	**0**	**6,252**	**6,252**	**6,252**	**6,252**

Demand Management

CAW has implemented an extensive water conservation program and demand management measures to promote water use efficiency, reduce demands, and prepare for future requirements. These include water waste prevention ordinances, metering water use, conservation pricing, public education and outreach, programs to assess and manage distribution system real loss, water conservation program coordination and staffing, and other demand management measures. The water conservation programs that CAW has implemented for the past five years, is currently implementing, and plans to implement to continue meeting its SB X7-7 water use target and position for future water use efficiency standards are described in Chapter 9.

2020 URBAN WATER MANAGEMENT PLAN

1 Introduction

This plan comprises the 2020 Urban Water Management Plan (UWMP) for the California-American Water Company's (CAW) Central Division - Monterey County District, as required by the California Urban Water Management Planning Act (UWMP Act).

The UWMP Act requires all urban water suppliers with more than 3,000 connections or distributing more than 3,000 acre-feet per year (AFY) to complete an UWMP every five years. The UWMP Act is administered by the California Department of Water Resources (DWR), who is responsible for compiling data for statewide and regional analysis and publishing the accepted documents online for public access. This report was prepared according to the requirements of the California Water Code (CWC), UWMP Act, and the 2020 UWMP Guidebook.

The UWMP is a valuable planning document used for multiple purposes:

- Serves as a valuable resource to the community and other interested parties regarding water supply and demand, conservation and water related information
- Meets a statutory requirement of the CWC
- Provides a key source of information for Water Supply Assessments (WSAs) and Written Verifications of Water Supply
- Supports regional long-range planning documents including City and County General Plans
- Provides a standardized methodology for water utilities to assess their water resource needs and availability
- Serves as a critical component in developing Integrated Regional Water Management Plans (IRWMPs)
- Provides a resource for regional involvement in the California Water Plan
- Provides for a plan during water drought situations

IN THIS SECTION

CAW is a privately owned public utility providing water services to over 630,000 people in 50 communities throughout California. CAW is organized into three divisions: Northern, Central and Southern. The Northern Division includes the Sacramento and Larkfield Districts, the Central Division includes the Monterey County District, and the Southern Division includes the Ventura County, Los Angeles County and San Diego County Districts.

The Monterey County District includes the Monterey System and eight satellite systems. This UWMP covers the Monterey System, Ryan Ranch and Bishop Systems (which are currently supplied by the Monterey System), and the Hidden Hills System (which is expected to be served by the Monterey System in the future). These four systems are referred to as Monterey Main.

1.1 The California Water Code

CWC Section 10620 (a) of the UWMP Act, states "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)". These plans are to be updated every five years and submitted to DWR. Requirements for the UWMP include:

- Assessment of current and projected water supplies
- Evaluation of demand and customer types
- Evaluation of the reliability of water supplies
- Description of conservation measures implemented by the urban water supplier
- Response plan, in the event of a water shortage
- Comparison of demand and supply projections

In November of 2009, the State legislation passed Senate Bill (SB) 7 as part of the Seventh Extraordinary Session, referred to as SB X7-7 or the Water Conservation Act of 2009. SB X7-7 set the goal of achieving a 20 percent reduction in urban per capita water use statewide by 2020. Retail water agencies were required to set targets and track progress toward decreasing daily per capita urban water use in their service areas, which would assist the State in meeting its 20 percent reduction goal by 2020. This law requires that every UWMP include:

- Baseline per capita water use
- Urban water use target for 2020
- Compliance daily per capita water use

Since the time the 2015 UWMP was completed and submitted to DWR, the Legislature has passed additional requirements that need to be incorporated in 2020 UWMPs. Major new requirements include:

- A Water Reliability Assessment for five consecutive dry years, more than the three consecutive dry years previously required.
- A Drought Risk Assessment (DRA) that assesses the water supply reliability over a five-year period from 2021 to 2025 under a reasonable prediction for five consecutive dry years.
- A seismic risk assessment and a mitigation plan for a Supplier's infrastructure.
- A Water Shortage Contingency Plan (WSCP) with prescribed elements.
- Coordination on groundwater supply planning with plans being completed to address the Sustainable Groundwater Management Act (SGMA). Most of Monterey Main's groundwater comes from basins that have already been adjudicated, and therefore the SGMA process is not applicable.
- Lay Description to describe the fundamental determinations of the UWMP in lay-person's language.

This 2020 UWMP has been prepared to comply with the UWMP Act and SB X7-7. In addition to meeting the requirements of the Act, this report will be used to support water supply assessments and written verifications of water supply required by SB 610 and SB 221 of 2001. These bills require that water supply information be provided to counties and cities for projects of a certain size, prior to discretionary project approval. Both bills allow an UWMP to be used as a source document to fulfill these legislative requirements.

This 2020 UWMP was developed to incorporate these new requirements, under the guidance of DWR's 2020 UWMPs Guidebook for Urban Water Suppliers. A checklist to document compliance of this 2020 UWMP with the Act and the CWC is provided in **Appendix A**.

This UWMP includes required DWR standardized tables within relevant chapters, and they are compiled in **Appendix B**. Within the UWMP chapters, DWR's standardized tables include the DWR-assigned table number in the caption. This UWMP also includes all required SB X7-7 tables in **Appendix C** to verify compliance with the SB X7-7 targets.

1.2 UWMP Organization

This 2020 UWMP is organized into the following chapters.

- **Chapter 1 - Introduction and Overview**: This chapter provides a discussion of the purpose and content of the 2020 UWMP and the extent of the CAW's water management planning efforts.
- **Chapter 2 - Plan Preparation**: This chapter provides information on the CAW's development of the 2020 UWMP including the basis for plan preparation, planning type, data format, and coordination and outreach to nearby agencies.
- **Chapter 3 - System Description**: This chapter provides a description of Monterey Main's water system including service area maps, climate information, service population and demographic information.
- **Chapter 4 - Customer Water Use**: This chapter describes Monterey Main's historic, current, and projected water uses, system losses, and water use by lower income households.
- **Chapter 5 – Conservation Target Compliance**: This chapter includes a description of Monterey Main's chosen method for calculating their baseline, calculated baseline water use and 2020 target and compliance with the target.
- **Chapter 6 - System Supplies**: This chapter includes a discussion of Monterey Main's water system supplies including groundwater, wastewater, recycled water, desalinated water, and Monterey Main's future water projects. This chapter presents a summary of existing and future water sources.
- **Chapter 7 - Water Supply Reliability Assessment**: This chapter describes the reliability of the water supply through a 25-year planning horizon including a supply and demand assessment and regional reliability. Supply reliability is described for normal, single dry year and five-consecutive dry years.
- **Chapter 8 - Water Shortage Contingency Planning**: This chapter provides an outlined summary of Monterey Main's Water Shortage Contingency Plan.
- **Chapter 9 - Demand Management Measures**: This chapter explains CAW's existing and historic efforts to promote water conservation and CAW's plans to use Demand Management Measures to achieve water use targets.
- **Chapter 10 - Plan Adoption, Submittal, and Implementation**: This chapter details the steps taken by CAW to adopt the 2020 UWMP in accordance with the CWC and make it available to the public and the plan to implement the 2020 UWMP.
- **Appendices:** These include additional information to support and clarify information included within the 2020 UWMP.

1.3 UWMPs in Relation to Other Efforts

CAW previously prepared a 2005 UWMP, 2010 UWMP, and 2015 UWMP for Monterey Main. This 2020 UWMP serves as an update to the 2015 UWMP and complies with new requirements and regulations. CAW participates in other regional planning efforts related to water supply reliability and potential water recycling opportunities.

1.4 UWMPs and Grant or Loan Eligibility

A water supplier must have a completed UWMP on file with DWR to be eligible for some state grant and loan programs.

1.5 Demonstration of Consistency with the Delta Plan for Participants in Covered Actions

Monterey Main does not receive water from the State Water Project or the Sacramento-San Joaquin Delta, and it is therefore not required to demonstrate reduced reliance on supplies from the Delta.

2020 URBAN WATER MANAGEMENT PLAN

2 Plan Preparation

CAW has coordinated the preparation of its 2020 UWMP with the cities within its service area, Monterey County, nearby water agencies, and community members to develop a UWMP that adheres to the requirements of the CWC and plans for a resilient water future.

IN THIS SECTION

- Coordination and Outreach

2.1 Plan Preparation

This plan was prepared based on guidance from DWR's UWMP Guidebook 2020 (UWMP Guidebook), DWR Urban Water Management Plans Public Workshops and Webinars, Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use (SB7 Guidebook), and the 2020 DWR Checklist (**Appendix A**). The 2020 UWMPs are to be submitted by urban water suppliers by July 1, 2021.

2.2 Basis for Preparing a Plan

CAW is an investor-owned utility (IOU) regulated by the California Public Utility Commission (CPUC). Therefore, its facilities, operations, and financial structure are subject to extensive regulation by the CPUC, as well as environmental, health, safety, and water quality regulations by federal, state and local governments. The CPUC sets rules and regulates public utility companies in California. The intent of the regulations set by the CPUC is to ensure provision of high-quality water service at a fair price. All increases in service rates are directly related to the cost of providing quality service and are subjected to a public review process and approval by the CPUC.

California water systems are regulated by the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW). The systems included in this UWMP are shown in Table 2-1. Additional details about the plan are shown in Table 2-2 and Table 2-3.

Table 2-1. DWR 2-1R Public Water Systems

PUBLIC WATER SYSTEM NUMBER	PUBLIC WATER SYSTEM NAME	NUMBER OF MUNICIPAL CONNECTIONS 2020	VOLUME OF WATER SUPPLIED 2020 (AFY)
CA2710004	Cal Am Water Company - Monterey	38,644	8,808
CA2701882	Cal Am Water Company - Bishop	418	147
CA2710022	Cal Am Water Company - Hidden Hills	452	134
CA2701466	Ryan Ranch Water System	214	49
	Total:	**39,728**	**9,138**

Table 2-2. DWR 2-2 Plan Identification

TYPE OF PLAN	MEMBER OF RUWMP	MEMBER OF REGIONAL ALLIANCE	NAME OF RUWMP OR REGIONAL ALLIANCE
Individual UWMP	No	No	N/A

Table 2-3. DWR 2-3 Agency Identification

TYPE OF SUPPLIER	YEAR TYPE	FIRST DAY OF YEAR		UNIT TYPE
		DD	MM	
Retailer	Calendar Years	01	01	Acre Feet (AF)

2.3 Coordination and Outreach

CAW coordinated with multiple neighboring and stakeholder agencies in the preparation of this UWMP. The coordination efforts were conducted to: 1) inform the agencies of CAW activities; 2) gather high quality data for use in developing this UWMP; and 3) coordinate planning activities with other related regional plans and initiatives. The coordination activities conducted by CAW are shown in Table 2-4.

Table 2-4. DWR 2-4 Water Supplier Information Exchange

AGENCY	NOTIFIED 60 DAYS PRIOR TO PUBLIC HEARING	NOTIFIED OF PUBLIC DRAFT 14 DAYS PRIOR TO HEARING
County of Monterey	✓	✓
City of Carmel-by-the-Sea	✓	✓
City of Del Rey Oaks	✓	✓
City of Monterey	✓	✓
City of Pacific Grove	✓	✓
City of Sand City	✓	✓
City of Seaside	✓	✓
Presidio of Monterey	✓	✓
Pebble Beach Community Services District	✓	✓
Carmel Area Wastewater District	✓	✓
Monterey Regional Water Pollution Control Agency	✓	✓
Monterey Peninsula Water Management District	✓	✓
Alisal Water Corporation	✓	✓
Monterey County CSA 75	✓	✓

2020 URBAN WATER MANAGEMENT PLAN

3 System Description

This chapter describes the CAW Monterey Main System, including its service area, climate characteristics, demographics, and population.

IN THIS SECTION

- Service Area
- Land Uses
- Water System
- Population and Demographics

CAW is a wholly owned subsidiary of the American Water Works Company (American Water), one of the largest investor-owned water and wastewater utility companies in the United States. American Water is headquartered in Camden, New Jersey, and CAW is headquartered in San Diego, California. CAW was incorporated under California law in 1966 when American Water acquired California Water and Telephone

3.1 General Description

CAW is operated by three Division Offices: the Northern Division; Central Division; and Southern Division. The Central Division includes the Monterey County District, which includes the Monterey System and eight satellite systems. This UWMP covers the Monterey System, Ryan Ranch and Bishop Systems (which are currently supplied by the Monterey System), and the Hidden Hills System (which is expected to be served by the Monterey System in the future). These four systems are referred to as Monterey Main.

Monterey Main provides water service to most of the Monterey Peninsula, including the cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City, and Seaside, and the unincorporated areas of Carmel Highlands, Carmel Valley and Pebble Beach. Over the course of the study period, it is anticipated that there will be some growth within portions of the system. For this UWMP, CAW used the Association of Monterey Bay Area Governments (AMBAG) Regional Growth Forecast to determine the expected growth rate in number of households and number of employees in the service area.

3.2 Service Area Boundary

Monterey Main serves most of the population on the Monterey Peninsula, located along the coast of Central California. Monterey Main includes the incorporated cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City, and Seaside as well as unincorporated communities of Pebble Beach, Carmel Valley, Carmel Highlands, and the Presidio of Monterey. The Monterey Main system encompasses 33,950 acres and can be accessed from Highway 1 or State Route 68 off Highway 101. A map of the Monterey County District and Monterey Main service area can be found in **Figure 3-1**.

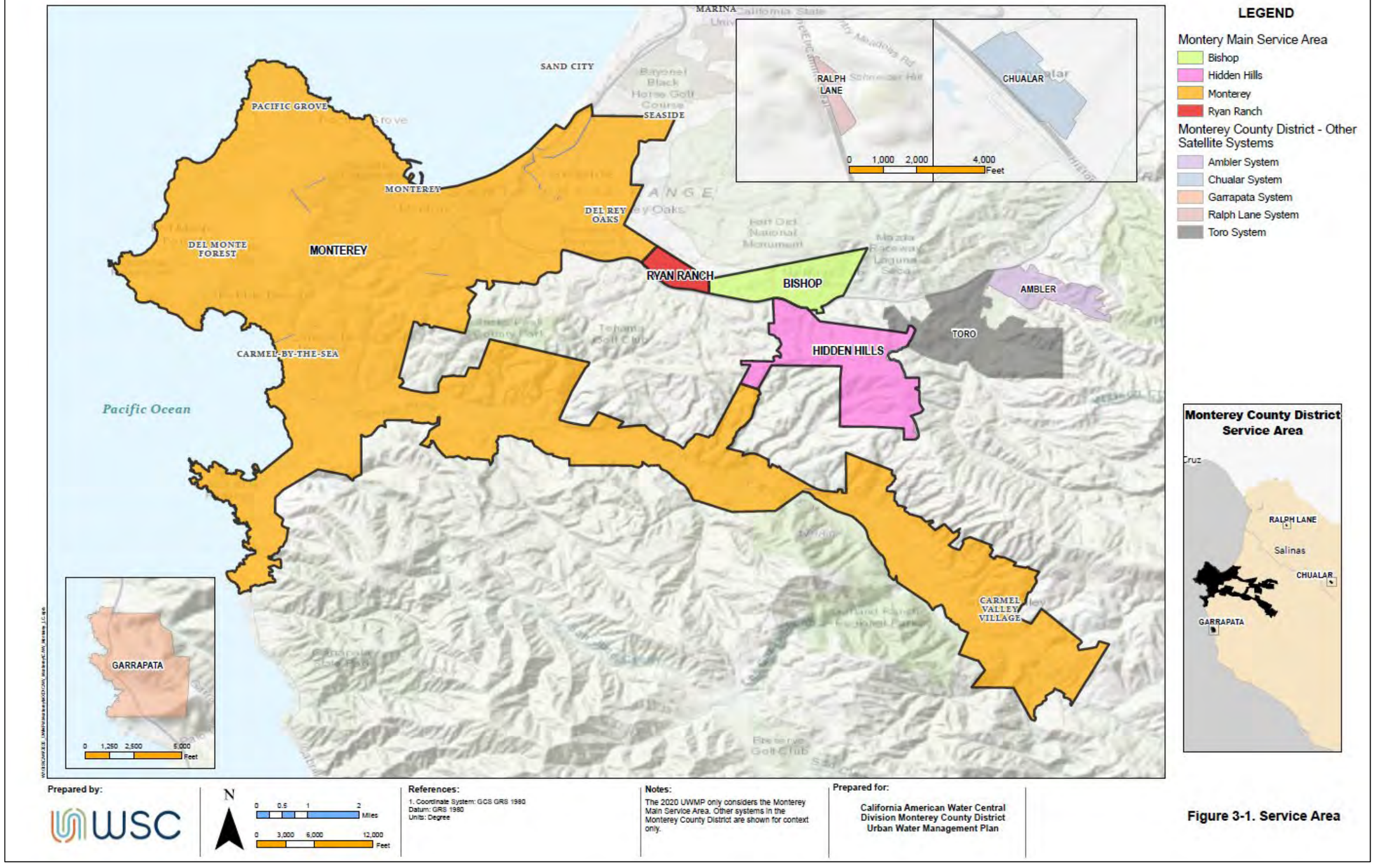

Figure 3-1. Monterey Main Service Area

3.3 Service Area Climate

The climate along the Monterey Peninsula and within the Carmel Valley is characterized as Mediterranean with warm summers and mild winters. The Monterey County District's proximity to the Pacific Ocean and geological features result in several climatic zones within the relatively small service area. The average overall temperature for the coastal areas is 55.5° while the overall average temperature for Carmel Valley is 55.4°. The warmest time of the year for both Monterey and the Carmel Valley falls between August and September, averaging 59.1° and 60.2° respectively. The coolest time of the year is between December and January, averaging for 52.3° and 50.9° for Monterey and the Carmel Valley, respectively.

The average annual precipitation in Monterey is 12.68 inches per year, while the Carmel Valley experiences 16.52 inches per year on average. Being in a coastal zone, a majority of the precipitation is in the form of rainfall with only a few isolated incidences of snowfall. Most of the rain (approximately 90 to 95 percent) falls between November and April. Detailed average monthly precipitation, temperature, and evapotranspiration (ETo) data can be found in Table 3-1.

Table 3-1. Average Climate Data

	PACIFIC GROVE	CARMEL	PACIFIC GROVE	CARMEL	PACIFIC GROVE	CARMEL
MONTH	AVERAGE TEMPERATURE (°F) [1]	AVERAGE TEMPERATURE (°F) [2]	AVERAGE PRECIP (IN.) [1]	AVERAGE PRECIP (IN.) [2]	AVERAGE STANDARD ETO (IN.) [1]	AVERAGE STANDARD ETO (IN.) [2]
January	52.5	51.1	2.46	2.90	1.75	1.75
February	52.8	51.4	1.91	2.33	2.36	2.24
March	53.4	52.7	2.74	3.33	3.34	3.33
April	53.9	53.9	1.06	1.39	4.08	4.18
May	54.8	55.3	0.28	0.53	4.46	4.52
June	57.9	57.4	0.06	0.18	4.31	4.96
July	57.4	59.1	0.05	0.02	3.83	4.86
August	59.0	60.1	0.04	0.03	3.44	4.31
September	59.2	60.2	0.08	0.06	3.31	3.94
October	57.8	58.9	0.46	1.87	2.75	3.37
November	54.8	53.6	1.26	1.34	1.98	2.07
December	52.2	50.7	2.29	2.53	1.76	1.60

Notes:

[1]CIMIS Weather Station 193 Pacific Grove - Monterey; https://cimis.water.ca.gov/. Averages taken for 2011-2020.

[2]CIMIS Weather Station 210 Carmel - Monterey; https://cimis.water.ca.gov/. Averages taken for 2010-2020.

3.4 Service Area Population and Demographics

This section describes projected population in the service area and demographic factors that could impact water use.

3.4.1 Service Area Population

The 2020 population served by Monterey Main is estimated to be 91,717 using the DWR Population tool. Estimates of future population were developed using the regional growth forecast prepared by the Association of Monterey Bay Area Governments (AMBAG). The estimated current and projected populations served by Monterey Main are shown in Table 3-2.

Table 3-2. DWR 3-1R Current and Projected Service Area Population

POPULATION SERVED	2020	2025	2030	2035	2040	2045
Monterey Main	91,717	93,577	95,437	97,297	99,157	101,017

3.4.2 Other Social, Economic, and Demographic Factors

Most recently, the service area is experiencing significant impacts due to the global pandemic caused by COVID-19 (SARS-CoV-2) virus. In March 2020, the State issued a stay-at-home order that forced many businesses to close and other businesses to require residents to continue work only from their home to slow the spread of the virus. Additionally, the forced closure of several businesses caused a historic increase in unemployment across the U.S. and a resulting economic recession. While all the impacts of COVID-19 are not entirely known at this time, it has caused a shift in water use by customer class. In 2020, residential demands increased from 2019 demand, while commercial and industrial water use decreased. This shift is expected to be temporary with an anticipated return to previous levels once all stay at home orders are lifted and businesses can reopen. However, the economic recession could have longer term impacts to the region.

3.5 Land Uses within Service Area

The land uses within Monterey Main include residential, commercial, institutional, and open space conservation areas. AMBAG coordinated with local land use jurisdictions in the development of its regional growth forecast to ensure that local land use was considered. The projections of future water demand have included the expected impact of future changes in land use through the use of the regional growth forecast.

2020 URBAN WATER MANAGEMENT PLAN

4 Water Use Characterization

This chapter describes and quantifies the current and projected water uses within the service area.

IN THIS SECTION

- Distribution System Water Losses
- Past and Current Water Use
- Projected Water Use

4.1 Non-Potable Versus Potable Water Use

Monterey Main serves its customers potable water from a range of supply sources. This chapter focuses on potable demands produced and delivered by CAW. Multiple wastewater agencies provide wastewater collection and treatment within the area. Some of these agencies provide recycled water for use within the service area; the largest, Monterey One Water, operates the Pure Water Monterey (PWM) Project that is used as an important supply source for the Monterey Peninsula. Supply sources and recycled water use are discussed in Chapter 6.

4.2 Past, Current, and Projected Water Use

4.2.1 Water Use Sectors

Records of historical water consumption and meter data serve as the basis for developing the existing water demands by sector. Water consumption is the volume of water measured at each metered service, which includes all water delivered to customers. CAW tracks water consumption across different water use sectors, some of which are listed in the California Water Code (CWC). CAW's billing system changed in 2013, and the new billing system breaks down water use into eight sectors as follows:

- Residential – This encompasses both single- and multi-family residential water use.
- Commercial
- Industrial
- Fire – includes both fire hydrants and fire services.
- Other Public Authority (OPA) – this includes government accounts and schools.
- Co Acct. – This represents the California American Water company account.
- Resale – This includes sales to other agencies
- Miscellaneous – Primarily consists of construction meter usage.
- Distribution System Losses – this is not tracked in Monterey Main's billing database; however, this is a tracked water use based on the difference between produced water and metered usage.

In addition to the water uses listed above, Monterey Main pumps excess Carmel River flows during the winter months and injects them into the Seaside Groundwater Basin as part of its Aquifer Storage and Recovery (ASR) Program to be pumped back out and used in the summer months or stored for dry years. This is a type of conjunctive use management strategy. Monterey Main does not currently provide water for other groundwater recharge activities, saline water intrusion barriers or agricultural uses, exchanges or transfers or provide water for surface water augmentation or wetlands or wildlife habitat.

4.2.2 Past and Current Water Use

The historic water demand for Monterey Main since 2006 is shown in **Figure 4-1**. The water demand is equal to the production, or total amount of water that is pumped into the distribution system. Most of this water is delivered to customers and will appear as metered consumption, however, some production will be lost to leaks and authorized non-metered use. The difference between production and metered consumption is characterized as non-revenue water (NRW). The term "demand" is used to quantify water consumption plus an appropriate allowance for NRW. In this way total demand for all customer types will equal total production.

As shown in **Figure 4-1**, the demand in the Monterey Main peaked at about 14,600 acre-feet per year (AFY) in 2007 and has steadily declined since then. The decline in water use since 2007 is attributed to highly effective conservation programs and a drought rate structure which has resulted in a substantial drop in water use. The five-year average demand between 2016 – 2020 was about 9,300 AFY. In 2020 demands dropped to 9,138 AFY, but the drop from 2019 to 2020 was influenced by reduced tourism and commercial activity during the COVID-19 pandemic, and those restrictions are expected to ease in future years.

Monthly production data since 2010 is shown in **Figure 4-2**. There is a seasonal fluctuation in water use, with higher production during the summer months. The annual trend was declining from 2010 through approximately 2014. Since 2015, water use has been fairly consistent.

Figure 4-1. Monterey Main Historic Annual Demand

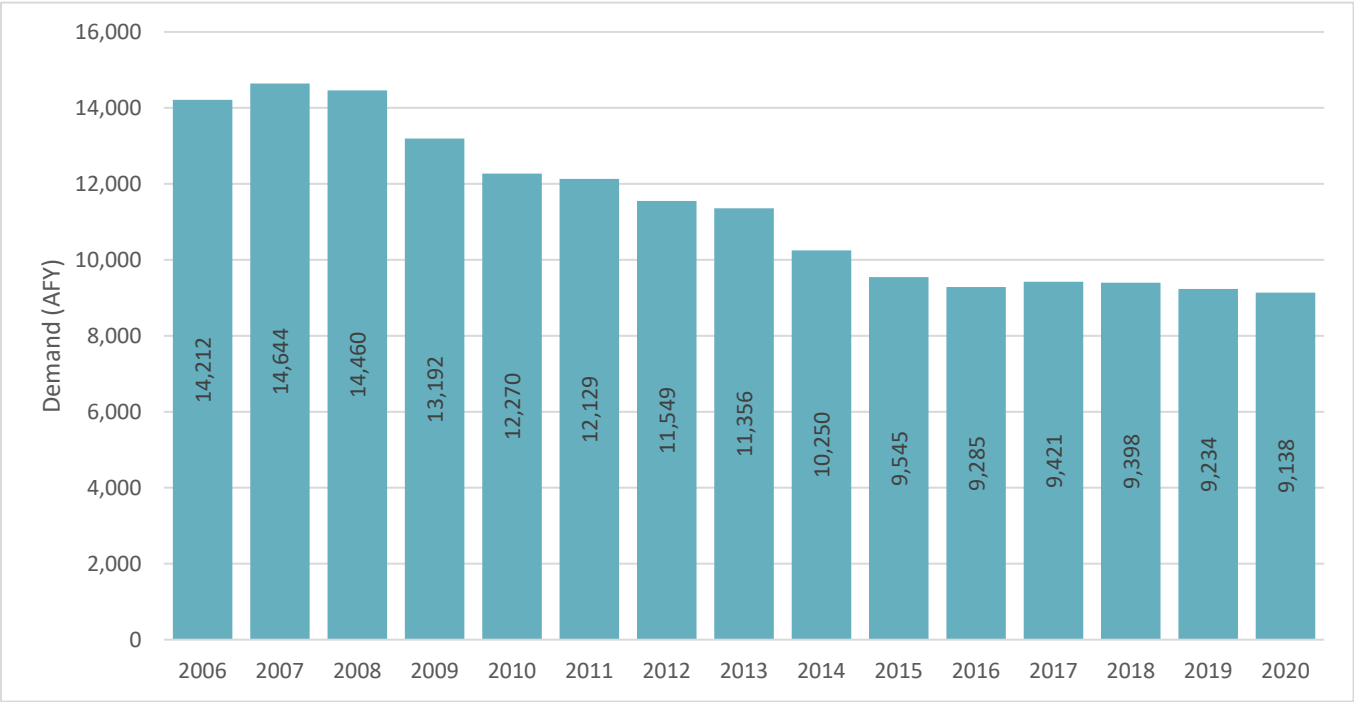

Figure 4-2. Monterey Main Historic Monthly Production

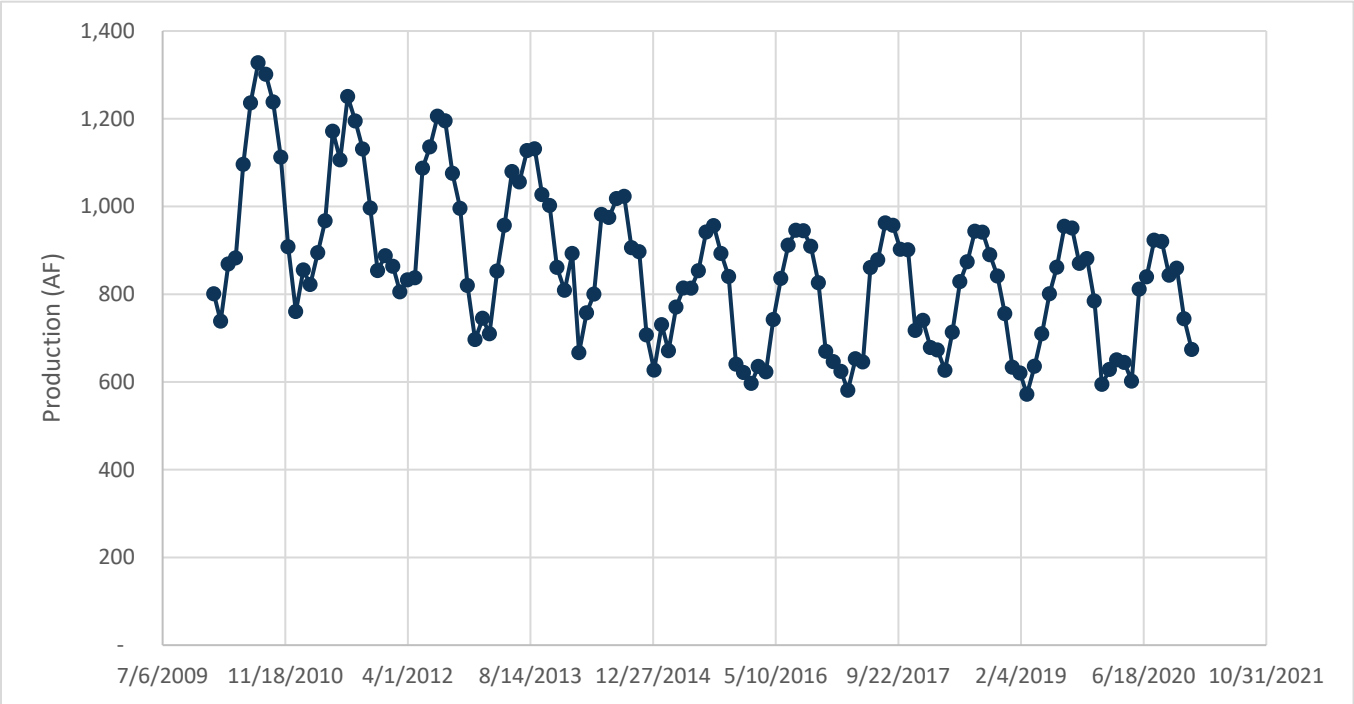

Table 4-1 provides the breakdown of actual water use by sector type in calendar year 2020.

Table 4-1. DWR 4-1R Actual Demands for Water

USE TYPE	ADDITIONAL DESCRIPTION	LEVEL OF TREATMENT WHEN DELIVERED	2020 VOLUME (AFY)
Residential	Single Family and Multifamily Residential	Drinking Water	5,133
Commercial		Drinking Water	3,001
Industrial		Drinking Water	13
Other Public Authority	Institutional/ Governmental. Includes government accounts and schools	Drinking Water	393
Company Accounts	CAW Accounts	Drinking Water	13
Sales for Resale	Sales to other agencies	Drinking Water	6
Fire	Fire Service	Drinking Water	443
Miscellaneous Sales	Construction meter usage	Drinking Water	13
Losses		Drinking Water	124
		Total:	**9,138**

4.2.3 Distribution System Water Losses

The 2016 through 2020 system losses are presented in Table 4-2. The 2016 through 2019 water losses are taken from the validated AWWA Water Audit Software and include both apparent losses and real losses. The AWWA Audits are included in Appendix D. CAW conducts annual water loss calculations and uses these calculations to monitor a number of aspects of the system. The AWWA Audits consider both production and customer meter inaccuracies and system data handling errors to determine the system water losses. The AWWA Audits were not completed for 2020 prior to the submittal of this plan, and the volume of water loss is estimated as the difference between water produced and metered water consumption for the calendar year. These water loss volumes will be updated once the AWWA Water Loss Audit is complete and may explain the negative water loss estimated in the Bishop system in 2020. Based on the losses presented in Table 4-2, the average water losses for the last 5 years in Monterey Main were 406 AFY, which is approximately 4 percent of the total production.

Table 4-2. DWR 4-4R 12 Month Water Loss Audit Reporting

REPORT PERIOD START DATE		VOLUME OF WATER LOSS, AF[1,2]				
MM	YYYY	MONTEREY	HIDDEN HILLS	RYAN RANCH	BISHOP	TOTAL
01	2016	607	27	3.8	-0.4	637
01	2017	290	34	2.5	6.3	332
01	2018	366	26	7.2	7.9	406
01	2019	458	30	5.0	16	509
01	2020	94	32	4.9	-6.8	124

Notes:

1. 2016 through 2019 Water Losses taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.
2. 2020 Water Losses estimated based on metered production and consumption records. These values do not account for metering inaccuracies and data handling errors that are considered in the AWWA Audits, and are likely responsibly for the negative water loss in the Bishop System.

4.2.4 Projected Water Use

In accordance with the CWC, this UWMP provides projections for water use in five-year increments through 2045, providing 20-year projections through the next UWMP cycle (2025).

4.2.4.1 Projection Methodology

Future demands were projected by evaluating monthly historic trends in customer water usage and incorporating estimated future changes in water use due to behavior, new water use regulations, projected growth, and tourism water use. Based on a review of the historic monthly consumption by customer class, the production and consumption have been relatively stable for the past six years. During 2020, the COVID-19 pandemic and government restrictions led to many people spending more time at home and less time at offices and businesses. In addition, many people with second homes in areas like the Monterey Peninsula spent more time at the second home and less time at their primary residence (e.g., in the Bay Area). These factors contributed to an increase in annual residential water use of approximately 500 AF from 2019 to 2020, and a reduction in non-residential use of approximately 600 AF. It is not yet clear whether these changes will persist as pandemic-related restrictions are lifted.

There are several reasons that future water use could be different than seen over the past six years:

1. Changes in behavior by current customers.
    a. CAW has implemented an aggressive water conservation program and has maintained a five-tier rate structure that incentivizes customers to reduce their water use. At some point the conservation program may see diminishing impact as some programs, such as fixture or appliance replacement, reach saturation. Customers may begin to increase their water use, particularly if the tiered rate structure is modified.
2. New government regulations
    a. The State of California is developing water use efficiency standards that will require suppliers to limit water use to allowable levels for indoor use, landscape irrigation, and other categories. The allowable indoor residential use is scheduled to reduce to 50 gallons per capita per day (GPCD) by 2030. The regional residential water use within Monterey Main (counting both indoor and outdoor) ranged from 48 to 52 GPCD from 2016 to 2020. The new State water use efficiency standards are not expected to affect water use in Monterey Main because the current water use is already at or below the State targets.
3. Growth and new development
    a. The Association of Monterey Bay Area Governments (AMBAG) prepares forecasts of regional growth that is expected to bring new population and employment to each jurisdiction. These projections can be analyzed to estimate future increases in population, households, and employment that are expected to occur.
    b. For residential development, a backlog of properties has accumulated that are not able to be developed because of limited water supply. The demand for these Lots of Record (LOR) has been calculated as 1,180 AF. The pace at which these properties could be developed if water were available would depend on economic factors and government policies.
    c. The region has a need for more affordable housing. The Regional Housing Needs Assessment (RHNA) is mandated by the State Housing Law as part of the periodic process of updating local housing elements of the General Plan. The RHNA quantifies the need for affordable housing, and communities must plan to meet low income housing requirements. In February 2020, the City of Monterey projected a future need for 250

AFY of water based on its RHNA allocation, and a need for 255 AFY for additional housing units (40 percent of them affordable) based on a study by Economic Planning Systems. Additionally, MPWMD has recently submitted a request to the State Water Resources Control Board (SWRCB) for relief from the current moratorium on new connections in order to allocate 75 AFY for affordable housing. Because this water use is pending approval from the SWRCB, it has not been incorporated in the projected water demands.

   d. Pebble Beach Entitlements. The Pebble Beach Company has entitlements to approximately 325 AFY that can be sold to other Del Monte Forest property owners. These entitlements constitute an existing obligation by CAW to serve the properties when developed.

4. Changes in Commercial Activity
   a. The region has historically been a popular destination for business and leisure travelers. In recent years, an economic slowdown contributed to reductions in visitor activity. The potential water demand increase due to a tourism bounce-back has been estimated by the CPUC as 500 AFY.
5. Climate change
   a. Future weather patterns may include warmer and dryer conditions on the Monterey Peninsula, and is anticipated to increase outdoor water use by customers and could increase the maximum month and day peak demands in the summer due to higher irrigation demands. More discussion on climate change impacts on water demand is discussed in Chapter 4.4.

The three factors that have previously been quantified in terms of their future demand are summarized in Table 4-3.

Table 4-3. Previously Quantified Factors Impacting Future Demand

FACTOR	ANNUAL DEMAND (AF)
Lots of Record	1,180
Tourism bounce-back	500
Pebble Beach entitlements	325
Total	**2,005**

The timeline over which development may occur to realize the demands shown in Table 4-3 will depend on a variety of factors, including government policies and economic conditions. The projected demands are shown in Table 4-4. The key assumptions in the calculations are listed below:

- For the purposes of this projection, the growth in population and employment projected by AMBAG was used to drive estimates of future water use:
  - For residential customers, the baseline residential water use from the last five years is 48 GPCD, and is anticipated to rebound 10 percent to 52.8 GPCD by 2030 when new supply sources are online, and then remain constant through 2045. The CPUC recommends using a 10-year baseline for conservative demand projections, which equates to an average demand of 10,324 AFY, and estimated residential demand of 53.5 GPCD. However, demands in Monterey Main have reduced significantly over the last 10 years and remained steady for the last six years. Residential use increased approximately 10 percent from 2019 to 2020, likely due to higher occupancy rate of second homes, which may be permanent. For conservative demand projections, a 10 percent residential demand rebound is applied to the baseline 48 GPCD, which increases average residential water use to 52.8 GPCD. This would represent a return of per-capita water use to its 10-year average and corresponds to an additional 500 AFY of

demand by 2030. The residential demand is expected to meet the state water use standard of 50 GPCD for residential indoor use by 2030 since the residential 52.8 GPCD includes both indoor and outdoor water use.

- The service area population will increase at the rate forecasted by AMBAG.
- For non-residential customers, water use will increase at the rate of employment growth forecasted by AMBAG. The 2016 to 2020 average non-residential water use of 4,372 AFY is the baseline for non-residential water projections.

- For the development of previously quantified factors impacting future demand, these are independent and additive to the AMBAG projections. These estimates include:
  - The Pebble Beach Entitlements are anticipated to be developed between 2030 and 2050 at a rate of 65 AFY every five years.
  - The Lots of Record are expected to be developed from 2030 to 2050. Due to pent-up demand, the demand from these lots is expected to be 300 AFY by 2030 and then increase at a rate of 220 AFY every five years between 2035 and 2050 as lots are developed.
  - Tourism activity will bring an increased number of business and leisure travelers to the region, generating economic activity in related businesses. The 500-AFY of tourism rebound determined by the CPUC is expected by 2030, with 250 AFY of tourism rebound by 2025.

Additionally, water use for fire service increased in 2019 and 2020 to an average of 400 AFY, when prior to 2019 the average fire demand was only 3 AFY. The increase is attributed to both better metering of fire services in 2019 and 2020, when some demand may have been tracked as water loss previously, as well as a warmer and drier climate increasing fire potential and lengthening the fire season, resulting in more fire flow use. Water use for fire service is projected to remain at about 400 AFY in the future.

Water losses dropped in year 2019 and 2020, and averaged about 2 percent of the total demand. Prior to 2019, water losses average about 4 percent of the total demand. The drop in water loss is attributed to CAW's investments in reducing water waste and enhanced metering. These investments have been incorporated into the projections by including water losses as 2 percent of the total demand. The projected demands through 2045 are shown in **Table 4-4**.

Table 4-4. Projected Demands, 2025 through 2045

	BASELINE (2016-2020)	2025	2030	2035	2040	2045
Demographics						
Service Area Population	91,717	93,577	95,437	97,297	99,157	101,017
Annual Population Growth Rate		0.41%	0.40%	0.39%	0.38%	0.38%
Service Area Employment	64,307	67,020	69,732	72,445	75,157	77,870
Residential Demand						
Residential Demand (GPCD)	48	48	52.8	52.8	52.8	52.8
Residential Demand (AF)	4,931	5,031	5,644	5,754	5,865	5,975
Non-Residential Demand						
Non-Residential Demand (AF)	4,372	4,556	4,741	4,925	5,110	5,294
Fire Service Demand (AF)		400	400	400	400	400
Other Future Demand						
Pebble Beach Entitlements (AF)		0	65	130	195	260
Tourism Rebound (AF)		250	500	500	500	500
Legal Lots of Record (AF)		0	300	520	740	960
Losses		205	233	245	256	268
Average Annual Demand (AFY)		**10,443**	**11,883**	**12,474**	**13,065**	**13,656**

Table 4-5 lists the total projected demands by customer type based on the projections described above. Monterey Main does not have any significant sales to other agencies as a wholesaler.

Table 4-5. DWR Table 4-2R Projected Demands for Water

USE TYPE	ADDITIONAL DESCRIPTION	PROJECTED WATER USE, AFY				
		2025	2030	2035	2040	2045
Residential[1]	Single Family and Multifamily Residential	5,031	6,009	6,404	6,800	7,195
Commercial		4,212	4,622	4,783	4,943	5,103
Industrial		27	28	29	30	31
Other Public Authority	Institutional/ Governmental. Includes government accounts and schools	533	555	577	598	620
Company Accounts	CAW Accounts	23	24	25	26	27
Sales for Resale	Sales to other agencies	0	0	0	0	0
Fire	Fire Service	400	400	400	400	400
Miscellaneous Sales	Construction meter usage	11	11	12	12	13
Losses		205	233	245	256	268
TOTAL:		**10,443**	**11,883**	**12,474**	**13,065**	**13,656**

Note:

1. Residential demand includes the projected residential demand due to AMBAG population growth plus Pebble Beach Entitlements and the Legal Lots of Record projections in Table 4-4.

Table 4-6 lists the gross water use in Monterey Main and includes potable demand projections plus recycled water use that offsets potable supplies.

In addition to the demand in Table 4-5, the Seaside Basin Watermaster has identified the need for an additional 1,000 AFY for 25 years for the protection of the groundwater basin from seawater intrusion. The Seaside Watermaster Board of Directors has reached out to CAW and Monterey One Water (M1W) to determine whether supplies are available for the basin. CAW is not under obligation to provide this water currently, but future negotiations are expected in an effort to help provide water for the Seaside Basin or further reduce Seaside Basin pumping.

These projections characterize normal water use and are used in Chapter 7 to estimate water supply reliability in the event of a normal year and single dry year.

Table 4-6. DWR Table 4-3R Gross Water Use

	2020	2025	2030	2035	2040	2045
Potable and Raw Water	9,138	10,443	11,883	12,474	13,065	13,656
Recycled Water Demand[1] Non-potable reuse subtotal Table 6-7	1,155	1,178	1,202	1,223	1,243	1,264
Total Water Use:	10,293	11,621	13,085	13,697	14,308	14,920
Other Regional Needs[2] (Seaside Basin)		1,000	1,000	1,000	1,000	1,000

Notes:

1. Recycled Water Demand excludes indirect potable reuse from the Pure Water Monterey and Expansion Projects because this supply contributes to the potable water use.
2. CAW is not under obligation to provide regional water for the Seaside Basin, and this is not included in the total water use. However, the Seaside Basin Watermaster has asked CAW to enter into negotiations to help supply this regional demand.

4.2.4.2 Characteristic Five-Year Water Use

A new component of the 2020 UWMP is to prepare a five-year drought risk assessment (DRA) to evaluate water service reliability for a drought lasting five years from 2021 through 2025. The five-year DRA is presented in Section 7.2. Under this five-year drought scenario, the DRA projects that potable demands would exceed the available supply beginning in year 2022, continuing through 2025. CAW would need to enact the Water Shortage Contingency Plan (WSCP) to reduce demands in every year after 2021 to close the gap between supply and demand.

4.3 Water Use for Lower Income Households

Changes to the CWC section 10631.1 since 2005 require demand projections to include projected water use for residential housing needed for lower income households. Low-income households are defined as households making less than 80 percent of Statewide median income.

The Regional Housing Needs Allocation (RHNA) Plan 2014-2023 for Monterey and Santa Cruz Counties prepared by AMBAG, separated regional housing goals by City and Income Category (Association of Monterey Bay Area Governments, 2014). According to the 2014-2023 RHNA, the percentage of households identified as low-income and very low-income equaled 24.1% and 15.7% of Monterey County, respectively. The Monterey Peninsula has a significant need for more affordable housing to meet the RHNA goals. The demand from the housing goals was estimated by applying the projected growth in residential demand and applying it to the housing goals set by AMBAG. The RHNA 2014-2023 housing goals were also applied to years beyond 2023 to estimate low-income demands beyond the RHNA planning period, however the RHNA will be updated before 2023 and the updated housing goals should be used to update future low-income demands. Table 4-7 shows the anticipated demand from low-income housing using the 2020-2022 RHNA goals applied to future years.

Table 4-7. Projected Low-Income Demands, AFY

	RHNA 2014-2023 FORECAST			PROJECTED LOW-INCOME DEMAND BASED ON CURRENT RHNA HOUSING GOALS				
	2020	2021	2023	2025	2030	2035	2040	2045
Residential Demand Projection[1]	4,931	4,951	4,971	5,031	6,009	6,404	6,800	7,195
Residential Demand Growth[2]	0	20	20	60	978	395	395	395
Low-Income Demand[2]	0	5	5	14	236	95	95	95
Very-Low Income Demand[2]	0	3	3	9	154	62	62	62

Notes:

1. Residential Demand Projection from Table 4-4. Demand for years 2021-2023 are interpolated between 2020 and 2025
2. Demand growth from previous year listed in the table. Growth in residential demand between 2020-2023 is annual residential demand growth. For years 2025-2045 residential demand growth shown is 5-year residential demand increases.

4.4 Climate Change Considerations

Climate change impacts to future water demands were considered in the demand projections. As described in the 2019 Final Draft Monterey Peninsula, Carmel Bay, and South Monterey Bay Integrated Regional Water Management Plan (IRWMP), based on the Cal-Adapt climate model interpretation tool, the projected increase in average temperature by the end of the century in the Monterey Main service area ranges from 6.6 – 6.8°F (Final Draft Monterey Peninsula, Carmel Bay, and South Monterey Bay Integrated Regional Water Management Plan, 2019). There are also studies that predict coastal fog is declining, which will contribute to average temperature and ETo increases.

Different climate models predict varying changes in rainfall, some with increases in average rainfall and other with average decreases in rainfall, but all agree precipitation patterns will change. The Climate Change Report technical study for the Carmel River Floodplain Restoration and Environmental Enhancement Project compares four climate models. Although there is considerable variability in the projected precipitation values, the average projected precipitation suggests an increase in January precipitation of approximately 2.5 inches and slightly less precipitation in the spring and fall months. These results are consistent with the academic literature which indicates that winter storms will likely increase in magnitude and frequency in wet months.

As listed in the IRWMP, the potential impacts to water demand due to climate change include:

- Agricultural water use is expected to increase to offset higher temperatures and ETo.
- Rangelands are expected to be drier.
- Domestic landscaping water needs will be higher due to increased temperatures and ETo and shifting rainfall patterns.
- Sea level rise and higher groundwater extractions will lead to increased rates of saltwater intrusion.
- Droughts will be more frequent and severe.

CAW does not provide water for agricultural use, however, customers within the service area do rely on CAW to provide water for landscaping. There is some recycled water in the service area used for landscape irrigation, discussed in Chapter 6, however, climate change impacts are projected to mainly affect demands for outdoor water use.

DWR's SGMA Data Viewer[1], developed using data previously compiled for the California Water Commission Water Storage Investment Program to assist Groundwater Management Agencies

[1] SGMA.water.ca.gov

incorporate climate change into their Groundwater Sustainability Plans, was leveraged to evaluate climate change impacts to Monterey Main's projected water demand. The SGMA Data Viewer includes the projected change in precipitation and ETo by 2030 and 2070 due to climate change for grid cells across California. A shapefile of the Monterey Main System was uploaded to the Data Viewer and intersected with the grid cells to understand the projected climate change impacts within the service area. The data estimates that ETo will only increase by 3 percent by 2030 and 16 percent by 2070. Using linear interpolation, the estimated increase in ETo in 2045 is about 5 percent. Irrigation demand is estimated to represent 20 percent of the total demand in the service area and applying a 5-percent increase in outdoor water use translates to a total 1 percent increase in water use by 2045 due to climate change. This increase due to climate change is within the range of accuracy of current projections. Climate impacts will increase if irrigation demand increases in the service area.

2020 URBAN WATER MANAGEMENT PLAN

5 SB X7-7 Baseline, Targets and 2020 Compliance

This Chapter describes the Monterey Main SB X7-7 2020 baseline and per capita water use targets. Based on 2020 water use and current population, Monterey Main has met its 2020 per capita water use target.

IN THIS SECTION

- Updated Calculations
- Baselines & Targets
- 2020 Compliance

On November 10, 2009, Governor Arnold Schwarzenegger signed Senate Bill X7-7 (SB X7-7) into law. The legislation requires California to achieve a total reduction in per capita water use of 20 percent by December 31, 2020, with an interim target of 10 percent reduction by December 31, 2015. The legislation requires each urban water supplier to develop and include in its UWMPs, estimates of:

2. Baseline daily per capita water use;
3. Daily per capita water use target;
4. Daily per capita water use interim target; and
5. Compliance daily per capita water use.

The UWMP must also include bases for determining the estimates, with references to supporting data. However, SB X7-7 did not include a detailed description of the allowable methodologies for determining the required values. Instead, it required DWR to develop appropriate methodologies and criteria, and to make them available to water suppliers.

The baseline per capita water use and targets were calculated in the 2015 UWMP and are provided in **Appendix C**. There have not been significant changes in the Monterey County District's service area since 2015, thus the calculations of baselines and targets included in the 2015 Plan are still valid for compliance in this 2020 UWMP.

5.1 SB X7-7 Forms and Summary Tables

CAW has completed the standard forms required by DWR to document calculation of the baseline, targets, and 2020 compliance. These forms are included in **Appendix C**.

5.2 Baseline and Target Calculations for 2020 UWMP

The Monterey County District has multiple service areas. Consistent with the requirements outlined in DWR's *Guidebook to Urban Water Management Guidebook 2020*, compliance is calculated for the Monterey County District as a whole. Methodologies consistent with those described in the Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use guidebook (Methodologies Guidebook) were used in developing baselines and targets. The selected procedure used to develop the required SB X7-7 estimates includes the following basic steps:

1. Calculate baseline water use, which is the average gross daily water use per capita, reported in gallons per capita per day, based on gross water use and service area population for a continuous 10-year period ending no earlier than December 31, 2004
2. Calculate urban water use target using one of the four methods described below
3. Check and confirm the urban water use target using the five-year running average
4. Calculate the interim urban water use target (equal to the average of the baseline and confirmed urban water use target)
5. Calculate the compliance daily per capita water use (equal to the gross daily water use per capita during the final year of the reporting period (i.e. 2010)

CAW prepared updated calculations of its baseline and targets for the 2015 UWMP cycle. CAW used the DWR Population Tool to re-calculate its service area population, baseline per-capita use, and compliance targets in the 2015 UWMP.

In the 2015 UWMP, per capita water use was calculated using gross water use values and the population estimates. The per capita water use baseline value was averaged across 10-year periods ranging from 1998-2007 through 2001-2010. The water use target was then calculated by subtracting total savings including residential indoor, metering, commercial industrial institutional (CII), and landscape and water loss savings. The water use target for 2020 was calculated at 118 GPCD with an interim target of 131 interpolated for 2015.

For the 2020 UWMP, CAW is not recalculating its baselines or targets. Monterey Main's baselines and targets are summarized in **Table 5-1**.

Table 5-1. DWR 5-1R Baselines and Targets Summary

BASELINE PERIOD	START YEAR	END YEAR	AVERAGE BASELINE GPCD[1]	CONFIRMED 2020 TARGET[2]
10-15 Year	1996	2005	144	118
5 Year	2004	2008	143	

Notes:

1. All values are in Gallons per Capita per Day (GPCD)
2. All cells in this table are populated manually from the supplier's SB X7-7 Verification Form.

5.3 Population and Gross Water Use

5.3.1 Service Area Population

To accurately calculate the compliance of the 2020 GPCD target, the population served by Monterey Main must be determined. In the 2015 UWMP, the population estimates for California American Water's service areas were calculated using DWR's online Population Tool, which utilizes Geographical Information Systems (GIS) service area boundaries, service connection data and Census data. The DWR Population Tool overlaps GIS shapefiles with Census populations by Census block for 1990, 2000 and 2010. The calculated population of each block within California American Water's service area is summed up to provide populations for 1990, 2000, and 2010. Populations are divided by the total service connections in each respective census year to come up with a persons per connection factor for the purposes of projecting populations from 2010-2015. Linear interpolation was used to determine the population for years in between the census years.

To stay consistent with the 2015 UWMP while also utilizing Association of Monterey Bay Area Governments (AMBAG) growth projections from Traffic Analysis Zones (TAZ) data, the DWR population tool was used to determine the 2020 service area population and then projected through 2050 using the growth percentages calculated from the AMBAG TAZ data.

5.3.2 Gross Water Use

SB X7-7 defines gross water use as:

> "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."

The gross water use is calculated as the sum of the production into the potable system from all supply sources.

5.4 2020 Compliance Daily Per-Capita Water Use (GPCD)

The determination of 2020 Target compliance is based on gross water use for the 2020 calendar year.

In 2020, Monterey Main had a gross water use of 9,138 AFY and a service area population of 91,717. Utilizing the noted gross water use and service area population values, the resultant actual per capita water use for Monterey Main in calendar year 2020 was 89 GPCD. As such, Monterey Main has met the 2020 target of 118 GPCD.

No extraordinary events or economic adjustments have taken place that would cause any adverse effects with regards to overall water usage. As was previously mentioned, no adjustments to the 2020 gross water use were made as is permissible with Water Code 10608.24 cited above.

The overall water usage trends have been greatly reduced due to the drought and the conservation measures that have been enacted. Attainment of the 2020 target has been influenced by: proactive education and outreach to the citizens and by the mandated water use reductions from the State Water Resources Control Board. These factors have played a significant role in the CAW's ability to meet and surpass the 2020 target. The values are summarized in **Table 5-2**.

Table 5-2. DWR 5-2R 2020 Compliance

ACTUAL 2020 GPCD*	2020 GPCD		2020 CONFIRMED TARGET GPCD	SUPPLIER ACHIEVED TARGETED REDUCTION IN 2020
	2020 TOTAL ADJUSTMENTS	ADJUSTED 2020 GPCD*		
89	0	89	118	Yes

*All values are in Gallons per Capita per Day (GPCD)

5.5 Regional Alliance

CAW calculated compliance with SB X7-7 as an individual agency and did not participate in a Regional Alliance.

2020 URBAN WATER MANAGEMENT PLAN

6 Water Supply Characterization

The Monterey Main System is entirely dependent on local water sources for its supply. This chapter identifies and quantifies, to the extent practicable, the existing and planned sources of water supplies for the Monterey Main System through 2045.

IN THIS SECTION

- Existing Water Supply Sources
- Future Water Projects
- Projected Water Supplies

CAW's current and planned sources of supply for the Monterey Main System are:

1) Groundwater from Upper and Lower Carmel Valley Aquifers,
2) Groundwater from the Seaside Groundwater Basin and its sub-basins;
3) Aquifer Storage and Recovery (ASR);
4) Pure Water Monterey, a water recycling project;
5) Sand City Desalination; and
6) A New Ocean Desalination Plant as part of the Monterey Peninsula Water Supply Project (MPWSP).

The following sections characterize each supply source.

6.1 Carmel River Aquifer

The Monterey Main System extracts water from wells located in the Carmel Valley Aquifer. The Carmel Valley Aquifer is located along the Carmel River, southeast of the Monterey Peninsula. The Monterey Main system's service area overlies the Carmel Valley Aquifer. The aquifer is comprised of the alluvial deposits that form the valley floor underlying the Carmel River. **Figure 6-1** shows the Carmel Valley Aquifer and the Monterey Main Service Area. The Carmel Valley Aquifer is identified by DWR as a high-priority basin. Because withdrawals are being regulated by the SWRCB through surface water rights, the basin is not currently being managed through SGMA.

Prior to 1995, the CAW diverted on average about 14,106 AFY from the Carmel River. In 1995, following three years of hearings, the State Water Resources Control Board (SWRCB) found CAW to be diverting on average 10,730 AFY from the river without a valid basis of right under Order No. WR-95-10, provided in **Appendix E** (California State Water Resources Control Board, 1995). The Carmel Valley Aquifer underlies, and closely parallels, the surface water course of the Carmel River, flowing in a subterranean stream subject to the jurisdiction of the SWRCB. In 1995, the SWRCB issued order WR 95-10, requiring CAW to reduce its Carmel River diversions from an estimated 14,000 AFY to its authorized diversion limits totaling 3,376 AFY, based on CAW's pre-1914 appropriative rights, riparian rights, and License #0011866.

On October 20th, 2009, the SWRCB issued an order to CAW to cease and desist all unauthorized diversions of water from the Carmel River (California State Water Resources Control Board, 2009). Among the conditions from the order, CAW will diligently implement actions to terminate its unlawful diversions and ultimately terminate all unlawful diversions by December 31, 2016.

In October 2013, the SWRCB authorized the additional diversion and use of water from the Carmel River by issuing a permit number 21330 to CAW. The water appropriated from the permit is limited to the quantity which can be beneficially used from December 1 of each year to May 31 of the succeeding year and cannot exceed a rate of 4.1 cubic feet per second (cfs) and a maximum annual diversion of 1,488 AF. The seasonal diversion under the permit is subject to specific minimum mean daily instream flow requirements, and as such may not always be available year to year.

In 2014, it became clear that more time was required to develop a CPUC-approved lawful alternative supply before all unlawful diversion of the Carmel River could be stopped. In April 2016, a coalition of stakeholders, including California American Water, the Monterey Peninsula Regional Water Authority (MPWRA), Monterey Peninsula Water Management District (MPWMD), Pebble Beach Company, and the City of Pacific Grove, submitted a revised request to the SWRCB seeking more time to develop alternative water supplies for the communities of the Monterey Peninsula before significant cutbacks on pumping from the Carmel River took effect. In July 2016, the SWRCB issued Order WR 2016-0016 (**Appendix F**) to amend the 2009 order and extended the deadline to terminate all unlawful diversions from the river to no later than December 31, 2021. Starting with a base of 8,310 AFY for water year 2015-2016, CAW was required to follow a scheduled diversion reduction structure, reducing their diversions by 1,000 AFY until the legal limit of 3,376 AFY would be reached by December 31, 2021.

The 2016 Order also included a schedule of milestones and deadlines for the purposes of calculating the diversion reductions, including construction and completion milestones for the MPWSP Desalination Plant. In September 2020, CAW missed a milestone because of Coastal Commission delays, and a court-ordered stay on construction of the desalination plant facility. Nevertheless, the SWRCB responded that regardless of fault a 1,000 AFY reduction was an appropriate and intended consequence of missing the milestone. CAW determined that sufficient supplies were available to meet demand in water year 2020-2021 even with the 1,000 AF cutback, and continues its efforts to move forward with the MPWSP to provide a reliable and permanent long-term water supply for the Peninsula.

The Monterey Main System pumps from both the Upper and Lower Carmel River Aquifer. State Board Order 95-10 has placed seasonal limits on the allowable production from the wells in the Upper Carmel Valley aquifer. The wells are operated during the winter months (November through April) and when the Carmel River flows are above 40 cfs. If the river flow at Don Juan Bridge is less than 20 cfs for five consecutive days, then a "low flow period" is triggered, and the upper valley wells cannot be used. If the river flow is above 40 cfs between November and April, then CAW is able to operate the upper valley wells but is required to minimize extractions from the Seaside aquifer to the maximum extent possible. The wells in the Upper Carmel River Aquifer are of good water quality and discharge directly into the distribution system with disinfection at the wellhead. The wells in the Lower Carmel River Aquifer do not have seasonal production limitations, but they pump into a common raw water transmission main, which transfers the groundwater to the Begonia Iron Removal Plant (BIRP) for treatment and removal of iron and manganese before being pumped into the distribution system.

Table 6-1 shows the historic and current supply from the Carmel River Aquifer. **Table 6-2** shows the projected supply for the Carmel River Aquifer to be 3,376 AFY as authorized under the SWRCB cease and desist order.

6.2 Seaside Groundwater Basin

After the Carmel River, the Monterey Main's next largest source of supply is the Seaside Groundwater Basin. The Seaside Groundwater Basin overlies and is a subbasin to the Salinas Groundwater Basin, however it is adjudicated and has a different defined boundary in the adjudication than as defined by DWR.

The Salinas Valley Basin is made up of eight subbasins that span Monterey County and northern San Luis Obispo County. The Monterey and Laguna Seca Systems are located within and utilize water from the Seaside Area Subbasin of the Salinas Valley Groundwater Basin (California Department of Water Resources, 2004). **Figure 6-1** shows the Salinas Valley Groundwater Basin and its subbasins with the Monterey Main service area. The Seaside Area Subbasin, as described by DWR and shown in Figure 6-1, is bounded by 180/400 Foot Aquifer subbasin to the north, the Corral de Tierra sub-basin to the south and east, and by the Pacific Ocean to the west.

The Seaside Basin Adjudication Order, filed in March 2006, defines the boundaries of the Seaside Groundwater Basin Aquifer as shown in **Figure 6-2**, which differ from the boundaries defined by DWR. The Seaside Groundwater Basin is located at the northwest corner of the Salinas Valley, adjacent to the Monterey Peninsula. The total surface area of the aquifer covers approximately 19-square miles. The southern boundary of the Seaside Groundwater Basin follows the Chupines fault, a relatively impermeable formation uplifted to near sea level. The western boundary of the basin extends to the shoreline. The eastern boundary of the basin is defined by the flow divide in the Paso Robles aquifer, which approximately coincides with surface drainage between the Canyon del Rey and El Toro Creek watersheds. Finally, the northern boundary of the basin also follows a groundwater flow divide from the Salinas Valley groundwater basin. The Seaside Groundwater Basin was subdivided into several subbasins as shown in **Figure 6-2** including the Laguna Seca, Coastal, and Inland subareas; these divisions were created for planning purposes and not hydrogeological formations (Monterey Peninsula Water Management District, 2008). The Monterey and Ryan Ranch System both overlie the Coastal Subarea, and the Bishop and Hidden Hills Systems overlie the Laguna Seca Subarea.

In the adjudication, the CAW shares of the operating yield in water year 2020 for the Coastal and Laguna Seca subbasins were reduced to 1,820 and 0 AFY, respectively (California American Water v. City of Seaside, et al., 2006). Under the terms of the adjudication, CAW's share of the Seaside Basin operating yield decreased in Water Year 2021 to the ultimate safe yield of 1,474 AFY for the Coastal subbasin and 0 AFY for the Laguna Seca subbasin.

However, due to years of over pumping the Seaside Groundwater Basin prior to the 2006 adjudication, CAW has agreed to an over pumping repayment plan and to reduce their pumping from the basin by

700 AFY once a new reliable water supply source is operational for a 25-year period to help balance the basin. This Plan assumes a new reliable water supply source for the Peninsula will be online by 2030, and CAW's share from the Seaside Groundwater Basin will be reduced to 774 AFY from 2030 through 2055 as part of the over pumping repayment plan. The repayment could increase in volume or the duration of repayment could lengthen due to additional over pumping as a result of delays in securing a new reliable water supply not accounted for when the agreement was reached. The adjudication is included in **Appendix G.**

Historically, seawater intrusion had not been observed in existing monitoring and production wells in the Seaside Basin. In 2020, as detailed in the 2020 Seawater Intrusion Analysis Report, increased chloride concentrations were reported in two monitoring wells for the first time, which may be a precursor to seawater intrusion. The 2019 updated Water Quality, Seawater Intrusion Analysis Report, and Basin Management Action Plan found that despite recent pumping at levels less than the decision-established natural safe yield of 3,000 AFY, water levels in some portions of the Basin are continuing to drop. Water levels and chloride concentrations are expected to improve once a new supply source is secured for the Peninsula and CAW can reduce its pumping from the Seaside Groundwater Basin. As described in Chapter 4, the Seaside Basin Watermaster has projected the need to provide 1,000 AFY to protect the Seaside Basin.

The historic and projected Seaside Groundwater Basin supplies are listed in **Table 6-1** and **Table 6-2** respectively. Similar to the Carmel River, the Seaside Basin is vulnerable to climate impacts, notably after years of over pumping. The main climate vulnerability is continued seawater intrusion in the basin as seawater levels rise, plus increased agricultural water use and more severe and frequent droughts that may result in over pumping and further stress the basin. As shown, CAW is excepted to significantly reduce reliance on both the Carmel River and Seaside Basin in the future.

Table 6-1 DWR 6-1R Groundwater Volume Pumped

GROUNDWATER TYPE	LOCATION OR BASIN NAME	2016	2017	2018	2019	2020
Alluvial Basin	Carmel Valley Aquifer[1]	6,181	5,619	5,954	6,249	5,317
Alluvial Basin	Seaside Groundwater Basin	2,471	3,532	2,296	2,378	2,802
Total:		8,652	9,152	8,249	8,627	8,119

Notes:

1. The Carmel River Aquifer volume excludes water that was injected into the Seaside Basin for ASR. This volume is counted as ASR storage and supply.

Table 6-2. Projected Groundwater Volume

GROUNDWATER TYPE	LOCATION OR BASIN NAME	2025	2030	2035	2040	2045
Alluvial Basin	Carmel Valley Aquifer[1]	3,376	3,376	3,376	3,376	3,376
Alluvial Basin	Seaside Groundwater Basin[2]	1,474	774	774	774	774
Total:		4,850	4,150	4,150	4,150	4,150

Notes:

1. The CAW Monterey Main System has a total entitled right of 3,376 AFY from the Carmel River Aquifer. This volume does not include water for ASR injection to the Seaside Basin, which is reliant on seasonal diversions from the Carmel River.
2. The CAW Monterey Main System has a total entitled right of 1,474 AFY from the Seaside Groundwater Basin, however CAW has an agreement in place to not pump 700 AFY of this right for 25-years once a new supply source is operational. This Plan assumes the reduced pumping will beginning in 2030 and continue through 2055. The reduced pumping repayment volume or duration of payment is subject to increase in the future.

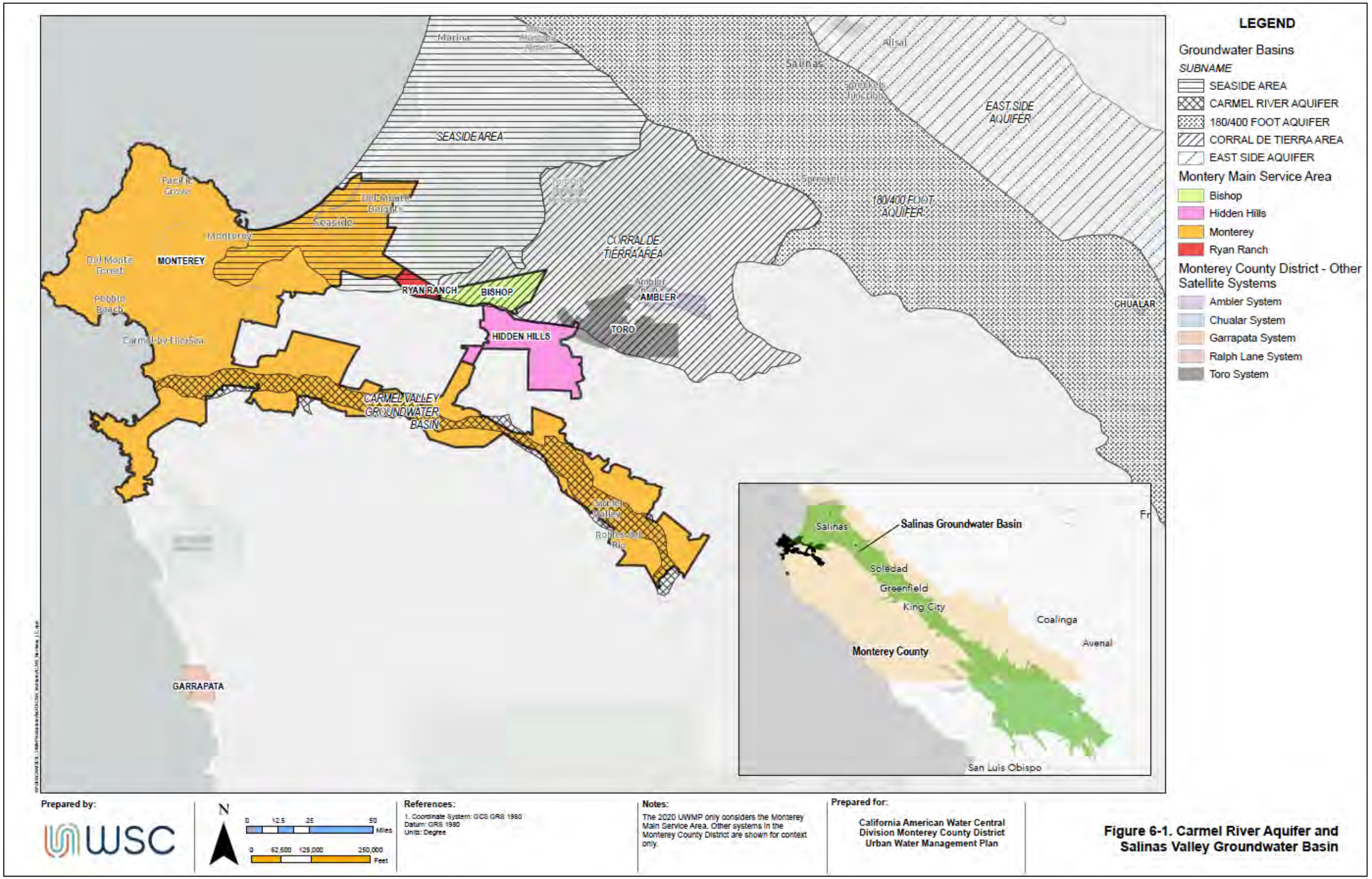

Figure 6-1. Carmel River Aquifer and Salinas Valley Groundwater Basin

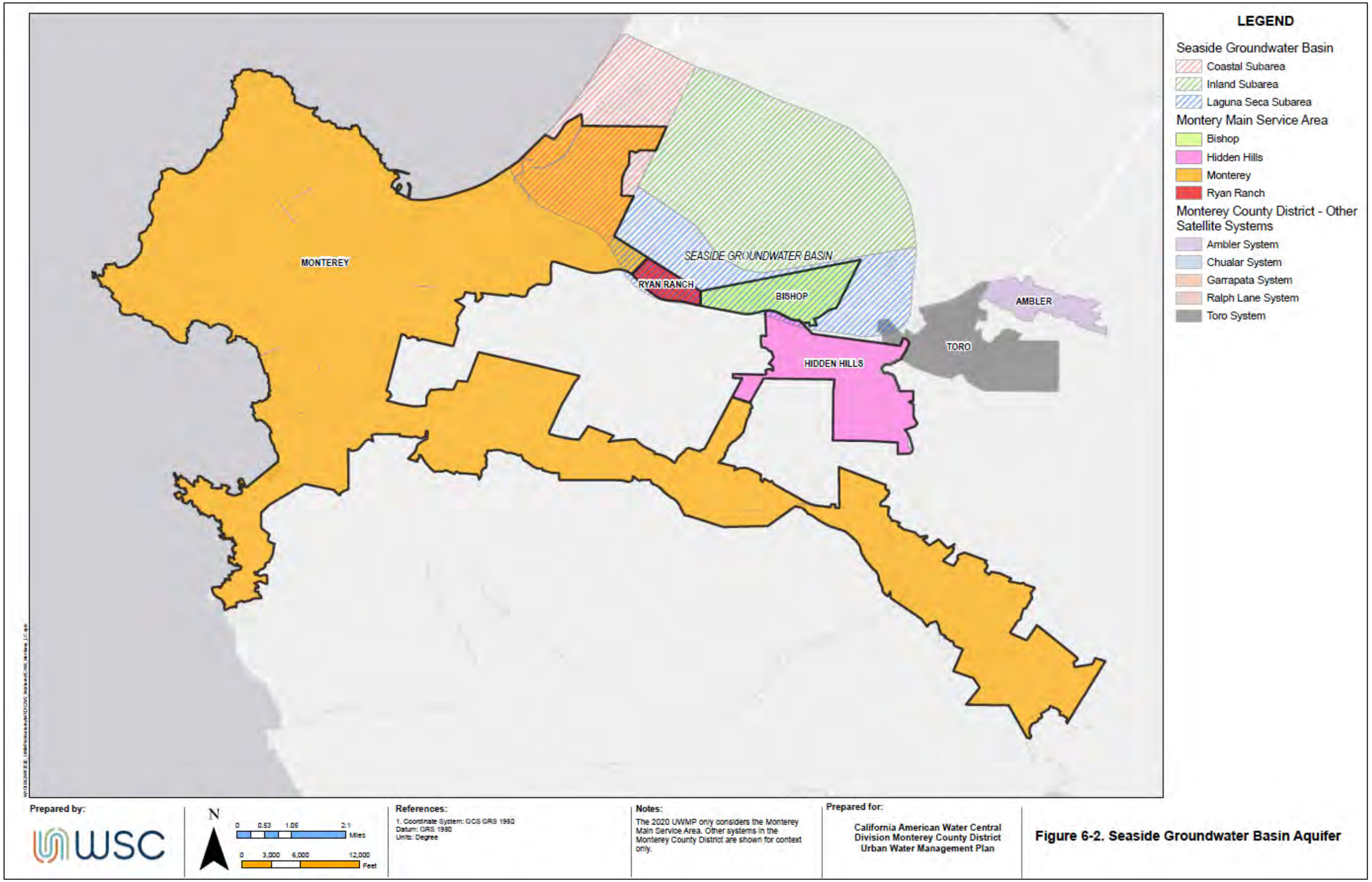

Figure 6-2. Seaside Groundwater Basin Aquifer

6.3 Aquifer Storage and Recovery (ASR)

The Aquifer Storage and Recovery (ASR) program allows for the storage of excess Carmel River flows in the Seaside Groundwater Basin Coastal Subbasin for later extraction during summer months. The ASR program is a joint program between CAW and the MPWMD.

In 1996, MPWMD began investigating the feasibility of ASR in the local setting. MPWMD constructed a "proof-of-concept" demonstration project in 1997, followed by a pilot test well in 1998 in the shallower aquifer of the Seaside Basin, the Paso Robles aquifer. After several years of successful pilot-well testing, MPWMD acquired property and approvals to construct a full-scale, 700-foot deep test well in 2001 in the deeper aquifer, the Santa Margarita Sandstone aquifer. The subsequent results of extensive water quality and quantity testing led to planning for a permanent ASR project.

In 2006, MPWMD and CAW developed an ASR Management and Operations Agreement to construct, operate and maintain ASR and ASR-related support facilities for the recharge, storage, and recovery of water. The ASR program was developed in two phases. CAW began utilization of ASR recovery in 2008. The wells inject excess river flows from December to May and extract water as needed (mainly between July and November).

The Phase 1 ASR operation is regulated under SWRCB Permit No. 20808A, which permits the withdrawal of 2,426 AFY from Santa Margarita Well Nos. 1 and 2. The Phase 2 ASR operation is regulated under SWRCB Permit No. 20808C, which permits the withdrawal of 2,900 AFY from the Seaside Middle School Well Nos. 3 and 4. The SWRCB permits allow for the ASR program to divert about 5,326 AFY from the Carmel River. Diversions are limited by river flow conditions and can only occur from December 1 of each year to May 31 at a maximum instantaneous rate of 3,000 gallons per minute (gpm) for each permit, or a total of 6,000 gpm.

CAW is currently receiving water produced at its Santa Margarita Well No. 1. MPWMD has recently completed the construction of the disinfection facility at the ASR 1 & 2 site that can be used to disinfect water from all current ASR wells. It is expected that all four ASR wells will be operational for future planning.

Because diversions for the ASR system are contingent on maintaining minimum daily instream Carmel River flows, and precipitation and streamflow can vary substantially from year to year, the actual supply from the ASR project can vary substantially. In wet years with high streamflow, CAW is able to inject a significant volume of water for ASR.

Due to climate change, in the future a larger percentage of precipitation is expected to come from intense single-day events, which may limit CAW's ability to maximize ASR injections (United States Environmental Protection Agency, 2021). In recent years, a larger percentage of precipitation has come in the form of intense single-day events.

Figure 6-3 shows the volume of water injected and extracted through the ASR program by water year since the program began in 2006, which has averaged 790 AFY of injection and 713 AFY of extraction. Also shown is the calculated storage over time, not including losses within the Seaside Basin, and the average storage over the period which is about 580 AF.

In dry years the Monterey Main System can only inject small volumes of excess flows for ASR. As shown, in the last drought ASR injection rates dropped and the built up storage was nearly depleted by 2013, only the second year into the drought. The ASR extraction declined in a drought and reduced to zero in 2014 and 2015. In wet years with high streamflow, like 2017 and 2019, CAW is able to inject a significant volume of water for ASR. However, the storage has not been shown to last through a multi-year drought. At the end of water year 2020, CAW had about 1,170 AF in the ASR storage balance. ASR deliveries can vary drastically year to year based on the availability of excess Carmel River flows.

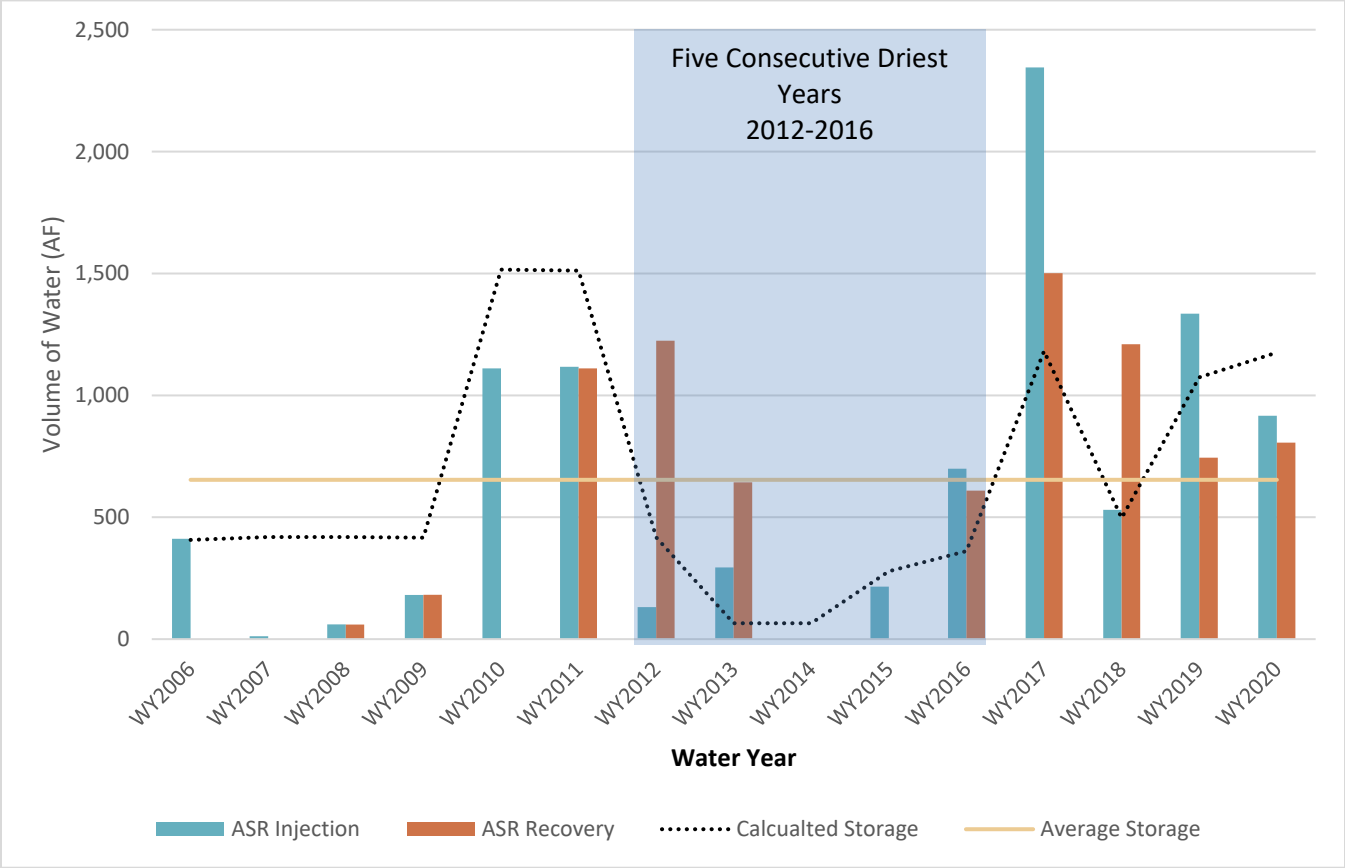

Figure 6-3. Injection and Recovery Volumes from ASR

Table 6-3 shows the historic and projected yield from ASR under normal years. Historically, the yield from ASR has varied significantly based on the hydrology and the available storage. The project has not been effective at building long term storage, and the average annual volume stored since 2006 is 84 AFY with multiple years of no stored water.

The projected ASR supply is 920 AFY based on the last three years, chosen to exclude the exceptionally wet year of 2017 and five preceding dry years from 2012-2016. From 2017 to 2020, the average ASR injection volume was 927 AFY. This suggests that in most normal years the injection volume from seasonal Carmel River flows beyond CAW's entitled rights, up to 1,488 AFY, is only slightly greater than the extraction volume and there is little to no excess supply available to build ASR storage. CAW is projected to build ASR storage only in wet years. In dry years, if storage is available, CAW could draw down the ASR storage when the excess Carmel River flows are unavailable, but it is not anticipated to last through a multi-year drought based on the previous drought. Additional ASR storage would allow the ASR supply to last longer in a multi-year drought, though increased demands and climate impacts, including shifting rainfall patterns and hotter summers, will increase the difficulty of building ASR storage.

Table 6-3. Historic and Projected Normal Year Supply from ASR (AFY)

	HISTORIC SUPPLY					PROJECTED SUPPLY				
	2016	2017	2018	2019	2020	2025	2030	2035	2040	2045
ASR Extraction	914	1,196	1,210	744	806	920	920	920	920	920

6.4 Surface Water

The Monterey Main System does not supply any surface water. Wells pumped from the Carmel River Aquifer are influenced by flows in the Carmel River. More information on the Carmel River is presented in Section 6.2.

6.5 Stormwater

Stormwater is not currently used directly as a supply source, although precipitation helps replenish local groundwater basins and both the cities of Pacific Grove and Seaside both operate stormwater diversion projects to divert dry weather flows to the Monterey One Water treatment plant.

CAW and MPMWD offered programs to support and incentivize onsite water capture and reuse through various rainwater and graywater programs available to water customers and landscape professionals, including a Cistern Water Tanks Rebate program that provides $50 per 50 gallons of water storage capacity (up to 500 gallons) in a Cistern, then $25 per 100 gallons of water storage capacity up to a maximum storage capacity of 25,000 gallons per qualifying property. They also provide educational materials for outdoor water savings, rainwater harvesting, and offer rebates for soil moisture sensors. More information can be found at https://www.montereywaterinfo.org/.

6.6 Wastewater and Recycled Water

Wastewater is treated by multiple agencies within the Monterey Main System, including:

- **Monterey One Water (M1W)** treats wastewater collected in Pacific Grove, Monterey, Del-Rey-Oaks, Seaside, Sand City, and Ryan Ranch.
- **Carmel Area Wastewater District (CAWD) and Pebble Beach Community Services District (PBCSD)** collect and treat wastewater in Pebble Beach, Carmel-by-the-Sea, and parts of Carmel Valley.
- **California American Water (CAW)** collects wastewater from the remainder of sewer served locations within the service area and provides treatment at four wastewater facilities.

There are also locations within the service area where wastewater is disposed of through on-site septic systems, including all the Hidden Hills System.

Table 6-5 and Table 6-6 summarize the wastewater collected and treated in the Monterey Main's service area along with the volume that meets recycled water standards. These wastewater quantities exclude those on private septic systems.

6.6.1 Monterey One Water

M1W, formerly Monterey Regional Water Pollution Control Agency, serves Del Rey Oaks, Monterey, Pacific Grove, Sand City, Ryan Ranch, and Seaside, which are within the CAW service area, as well as Salinas, Boronda, Castroville, Moss Landing, Fort Ord, Marina, and parts of Monterey County that are not serviced by CAW.

M1W operates a treatment plant that produces varying levels of recycled water. The M1W Regional Treatment Plant treats all collected wastewater through secondary treatment. Some secondary treated wastewater is treated to higher levels including Title 22 tertiary disinfected level for raw food crop irrigation or purified using advanced treatment as part of the PWM Project (About Monterey One Water, 2021). The tertiary treated recycled water is currently used to irrigate edible food crops in the northern Salinas Valley, outside of the Monterey Main service area. The remainder of the water that is not recycled or purified is discharged to the ocean.

6.6.1.1 Pure Water Monterey

The MPWMD and M1W recently completed the construction and startup of the PWM Project. The PWM Project provides purified recycled water for injection into the Seaside Groundwater Basin and ultimate potable use in Monterey Main. The PWM Project also provides purified recycled water for landscape irrigation for the Marina Coast Water District (MCWD) and recycled water to augment the existing Castroville Seawater Intrusion Project's agricultural irrigation supply.

CAW has a water purchase agreement to secure water from the project, which would deliver 3,500 AFY of advanced-treated recycled water for injection to the Seaside Groundwater Basin. The advanced treated recycled water will mix with the existing groundwater and will be pumped as a potable supply source. The PWM Project is a key component of CAW's MPWSP to reduce diversions from the Carmel River and will serve as a key component of the future water supply for the Monterey Peninsula.

Phase 1 of the project began operation near the end of 2019 and is intended to provide 3,500 AFY of water to Monterey Main once it is fully operational. MPWMD and M1W updated and certified the Supplemental EIR for the expansion of the PWM Project in April 2021. The PWM Expansion is envisioned to deliver an additional 2,250 AFY of water to the Seaside Basin that would be available to CAW. However, the PWM Expansion project has not been proven to have an adequate volume of source water to provide the full 2,250 AFY, especially during dry years.

In 2020, Hazen and Sawyer, contracted by CAW, completed a supply and demand analysis evaluating the wastewater source supply for PWM and the proposed PWM Expansion Project. The Hazen analysis, provided in **Appendix H**, reviewed the latest PWM Supplemental EIR and wastewater flows (source water) for the PWM and PWM Expansion projects. It found that the Supplemental EIR uses wastewater flows based on the period from 2009 to 2013, which is an average flow of 21,764 AFY. Wastewater flows and water use correlate closely, and as described in **Chapter 4**, water use on the Peninsula has significantly declined over the last ten years. The analysis updated wastewater flows for the project using more recent flow data and showed that the Supplemental EIR overstates the availability of wastewater flows for PWM and the PWM Expansion (Hazen and Sawyer, 2020). **Figure 6-4** below (Figure 3 from the Hazen and Sawyer analysis) shows the correlation between wastewater flows and water demand. As shown the current wastewater flows are projected to be much less than the 2009 to 2013 average flows used in the Supplemental EIR.

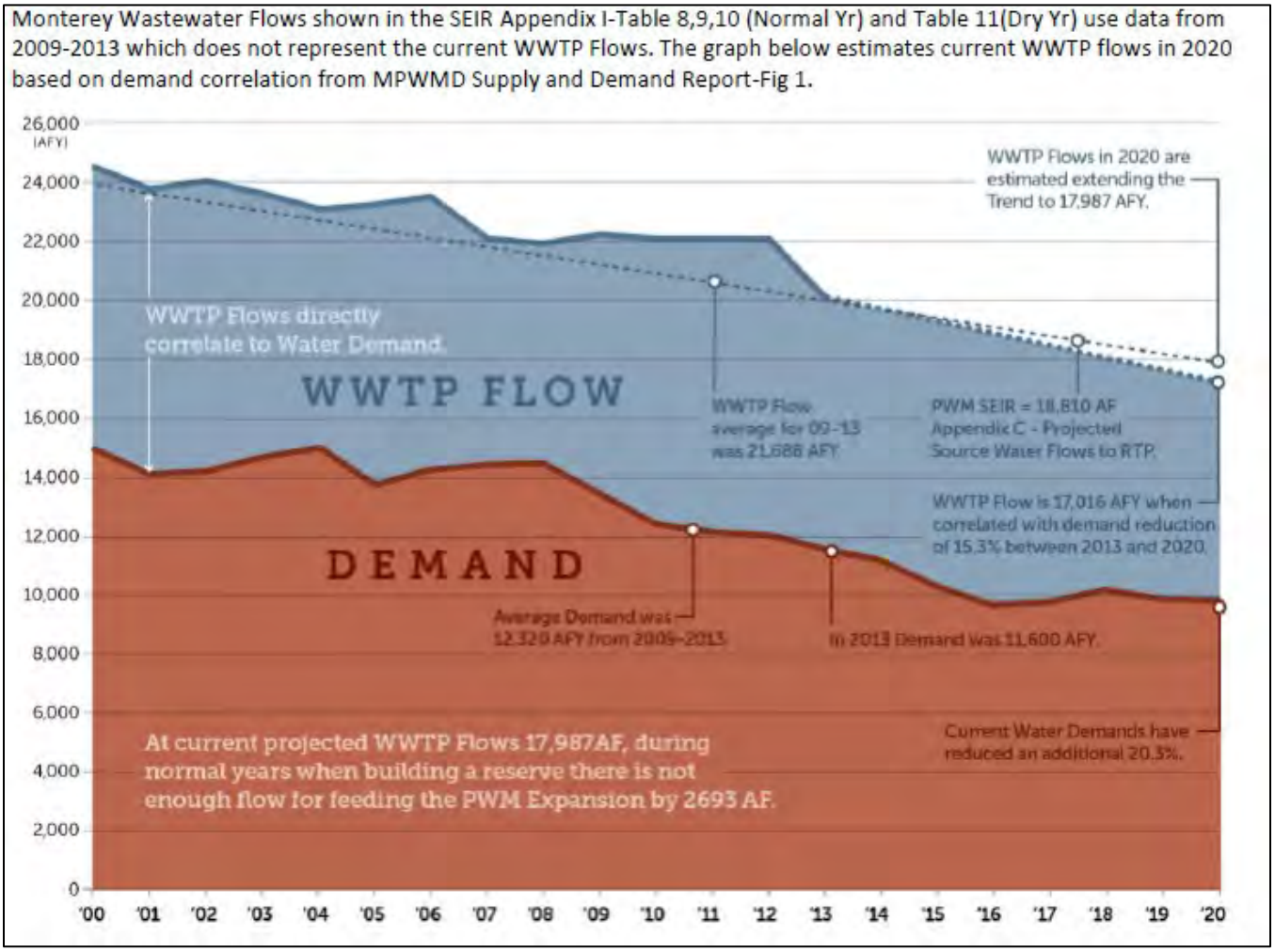

Figure 6-4. Correlation between Water Demand and Wastewater Flows and Reduced Source Water for PWM (Hazen and Sawyer, 2020)

Based on updated wastewater flows, the analysis updated the Supplemental EIR flow balance to understand the impacts of reduced flows on the water available to use for PWM, the PWM Expansion, and other promised water uses of the project including the Castroville Seawater Intrusion Project (CSIP) and the Regional Urban Water Augmentation Project (RUWAP). Figure 6-5 (Figure 5 in the Hazen and Sawyer analysis) show both the best-case normal year supply and worst-case dry year supply and demand balance on a monthly basis. The analysis found that with the current 2020 wastewater flows, in normal water years only 84 AFY is available to be fed to the PWM Expansion after meeting demands for the PWM Phase 1, CSIP and RUWAP. In the worst-case dry year conditions, there is no flow available for either the PWM Project or the PWM Expansion Project, and flow to CSIP would be reduced. Flow to the RUWAP could be taken as a water right to serve the PWM flows in dry years.

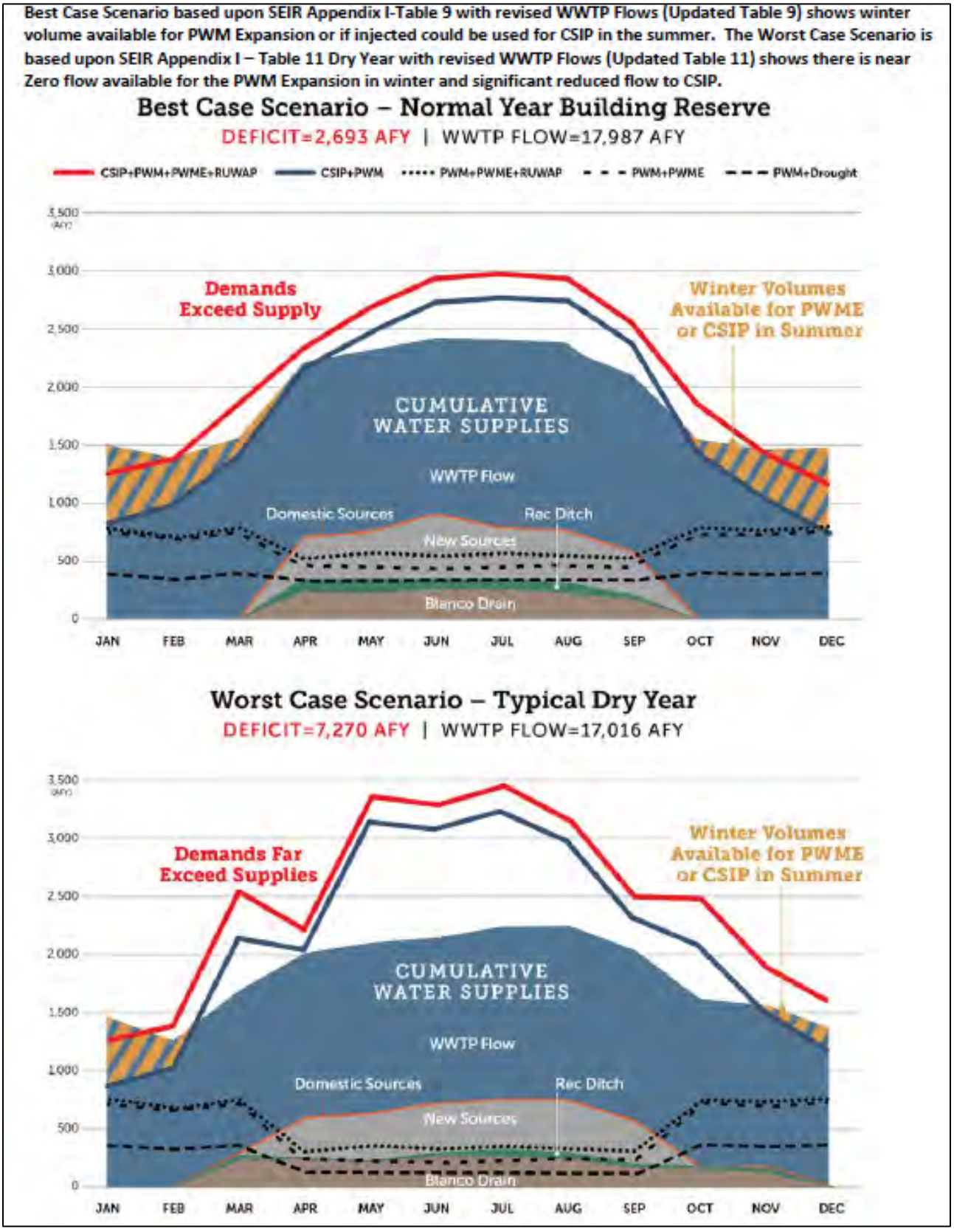

Figure 6-5. Seasonal Supply and Demand Balance for PWM, PWM Expansion, CSIP, and RUWAP (Hazen and Sawyer, 2020)

This analysis is based on 2020 water demands and estimated wastewater flows. As described in Chapter 4, water demands are anticipated to rebound by 2030 and allow for demand growth once the MPWSP Desalination Plant is online. To understand the available water for the PWM and PWM Expansion projects in normal and dry years through the planning period, the 2020 Hazen and Sawyer analysis was updated for future conditions using water demand projections presented in Chapter 4.

Table 6-4 shows the normal year and worst-case dry-year reliability for both projects. While M1W currently forecasts that the PWM Expansion will be operational in 2025, there are regulatory approvals and other obstacles that must be resolved before operations may commence, including obtaining CPUC approval of an agreement between M1W and CAW. Assuming the PWM Expansion is able to obtain all necessary approvals and commence operations in 2025, without the benefit of additional wastewater streams or other secure source waters, the 2020 Hazen and Sawyer analysis confirms that the PWM Expansion would be able to provide only 528 AF in a normal year. During a dry year, there would not be adequate source waters available for either the PWM Phase 1 or the PWM Expansion to produce any water. (Hazen & Sawyer, Sept. 2020, Appendix A.) The analysis presented in this UWMP projects that when the MPWSP becomes operational in 2030, the newly available desalinated water will increase water demand, which in turn will result in increased quantities of wastewater that would serve as a source water supply for both the PWM Phase 1 and the PWM Expansion during normal and dry years. Under these assumptions, starting in 2030 when the MPWSP desalination plant is operational, in a normal water year the PWM Phase 1 would be expected to provide 3,500 AF and the PWM Expansion would be expected to provide 2,250 AF. In 2030 during a dry year, the PWM Phase 1 would provide 3,500 AF and the PWM Expansion would provide 528 AFY, about 23 percent of its designated capacity as shown in Table 6-4. The overall reliability of the PWM Expansion would increase to 100 percent in dry years by 2040 due to anticipated increasing use of desalinated water from the MPWSP and associated wastewater production.

Table 6-4. PWM and PWM Expansion Projected Supply Reliability

	2020	2025	2030	2035	2040	2045
PWM Phase 1 Contractual Supply, AFY	**3,500**	**3,500**	**3,500**	**3,500**	**3,500**	**3,500**
Normal Year Reliability	3,500	3,500	3,500	3,500	3,500	3,500
Worst-Case Scenario Multi-Dry Year Reliability	0	0	3,500	3,500	3,500	3,500
PWM Expansion Design Supply, AFY[1]		**2,250**	**2,250**	**2,250**	**2,250**	**2,250**
Normal Year Reliability		528	2,250	2,250	2,250	2,250
Worst-Case Scenario Dry Year Reliability		0	503	1,388	2,250	2,250

Notes:

1. PWM Expansion is not anticipated to be operational until 2025

6.6.2 Carmel Area Wastewater District

The Carmel Area Wastewater District (CAWD) owns and operates approximately 81 miles of sewer collection pipelines to collect wastewater in Carmel-by-the-Sea and parts of Carmel Valley (CAWD Facilties, 2021). The Pebble Beach Community Services District (PBCSD) owns and maintains approximately 75 miles of sewer collection and interceptor lines to collect wastewater in Pebble Beach (PBCSD About Us, 2021). Wastewater collected by both agencies is treated at the CAWD Wastewater Treatment Plant (WWTP) and Reclamation Plant. The CAWD WWTP has a permitted capacity of 3.0 million gallons per day (MGD) of dry weather flow, and the current average dry weather flow is approximately 1.1 MGD. The WWTP consists of headworks, primary and secondary treatment, and disinfection. On average, about 90 percent of the flows through the WWTP are treated at the 1.5-MGD Reclamation Plant. The Reclamation Plant includes tertiary treatment, microfiltration and reverse

osmosis (RO) treatment to produce recycled water for irrigation at the Pebble Beach golf course and other recreational open spaces within Pebble Beach. The recycled water from the Reclamation Plant offsets approximately 1,000 AFY of potable demand within the CAW service area (Reclamation Plan, 2021). Any wastewater that is not recycled is discharged to the ocean.

CAWD was granted approval to discharge RO reject water to the Carmel River Lagoon in 2008. The anticipated volume of water is 300 AFY per year, with 150 AFY discharged during the summer months when water levels are at their lowest.

6.6.3 California American Water Wastewater

CAW operates a total of seven small wastewater facilities in the Monterey County area, and four are operated within the Monterey Main water service area. Carmel Valley Ranch is the largest treatment facility, serving about 260 housing units. The treatment plant operates with an average inflow of 58,000 gallons per day (GPD) and the plant's maximum capacity is rated at 100,000 GPD. The facility's treatment process consists of primary and secondary treatment, sand filters, and chlorine disinfection. Treated effluent is discharged into two ponds adjacent to the treatment plant. The treated wastewater is subsequently used to irrigate two golf courses in the service area.

The Pasadera or Laguna Seca Ranch wastewater treatment facility serves around 250 housing units. This plant receives an average inflow of about 48,000 GPD and a maximum flow of 91,000 GPD. The treatment process consists of screening, a biological trickling filter, clarification, flocculation, filtration, and chlorine disinfection. The reclaimed water is stored in a reservoir and is eventually used for golf course irrigation near the plant (California American Water, 2007).

White Oaks and Village Green are septic systems that serve approximately 38-unit and 22-unit condominiums, respectively. The average flow to the septic tanks is 5,700 and 3,300 GPD for the White Oaks and Village green systems, respectively (California American Water, 2007). There is no anticipated increase in flow.

6.6.4 City of Pacific Grove

The City of Pacific Grove completed the Pacific Grove Local Water Project (PGLWP) in 2017, which consists of a new satellite recycled water treatment plant (SRWTP) that recycles a portion of Pacific Grove's municipal wastewater. The SRWTP includes screening, activated sludge secondary biological treatment, membrane filtration, and ultraviolet disinfection, along with chemical disinfection to maintain a chlorine residual within the storage tanks and recycled water distribution system. Recycled water produced at the SRWTP (located at the retired Point Pinos WWTP) is used primarily for landscape irrigation at the Pacific Grove Golf Links and El Carmelo Cemetery, owned by the City of Pacific Grove and located adjacent to the SRWTP. All recycled water waste is discharged back into the sewer and is delivered to the M1W Plant. The Project is currently offsetting approximately 85 AFY of potable water use for irrigation purposes.

Table 6-5. DWR 6-2R Wastewater Collected within Service Area in 2020

WASTEWATER COLLECTION			RECIPIENT OF COLLECTED WASTEWATER			
NAME OF WASTEWATER COLLECTION AGENCY	WASTEWATER VOLUME METERED OR ESTIMATED	WASTEWATER VOLUME COLLECTED FROM UWMP SERVICE AREA IN 2020 (AFY)	NAME OF WASTEWATER AGENCY RECEIVING COLLECTED WASTEWATER	WASTEWATER TREATMENT PLANT NAME	WASTEWATER TREATMENT PLANT LOCATED WITHIN UWMP AREA	WWTP OPERATION CONTRACTED TO A THIRD PARTY
City of Pacific Grove	Estimated	1,250	Monterey One Water	Monterey One Water Regional Treatment Plant	No	No
City of Monterey	Estimated	3,596	Monterey One Water	Monterey One Water Regional Treatment Plant	No	No
City of Seaside, City of Sand City, City of Del Rey Oaks	Estimated	2,825	Monterey One Water	Monterey One Water Regional Treatment Plant	No	No
Pacific Beach Community Services District	Metered	477	Carmel Area Wastewater District	Carmel Area Wastewater District Wastewater Treatment Plant	Yes	No
Carmel Area Wastewater District	Metered	919	Carmel Area Wastewater District	Carmel Area Wastewater District Wastewater Treatment Plant	Yes	No
California American Water	Estimated	69	California American Water	Carmel Valley Ranch WWTP	Yes	No
California American Water	Estimated	61	California American Water	Pasadera/ Laguna Seca Ranch WWTP	Yes	No
California American Water	Estimated	6	California American Water	White Oaks Septic System	Yes	No
California American Water	Estimated	4	California American Water	Village Green Septic System	Yes	No
City of Pacific Grove	Estimated	85	Monterey One Water	Pacific Grove Satellite Recycled Water Treatment Plant	Yes	No
Total		9,293				

Table 6-6. DWR 6-3R Wastewater Treatment and Discharge within Service Area in 2020

WASTEWATER TREATMENT PLANT NAME	DISCHARGE LOCATION NAME OR IDENTIFIER	DISCHARGE LOCATION DESCRIPTION	WASTEWATER DISCHARGE ID NUMBER	METHOD OF DISPOSAL	PLANT TREATS WASTEWATER GENERATED OUTSIDE THE SERVICE AREA	TREATMENT LEVEL	WASTEWATER TREATED (AFY)	DISCHARGED TREATED WASTEWATER (AFY)	RECYCLED WITHIN SERVICE AREA (AFY)	RECYCLED OUTSIDE OF SERVICE AREA (AFY)	INSTREAM FLOW PERMIT REQUIREMENT (AFY)
Monterey One Water Regional Treatment Plant	Pacific Ocean	Monterey Bay Ocean Outfall	NPDES No. CA0048551	Ocean outfall	Yes	Advanced	7,672	405	1,710	3,766	-
Carmel Area Wastewater District Wastewater Treatment Plant	Pacific Ocean	Carmel Bay Ocean Outfall	NPDES No. CA0047996	Ocean outfall	No	Tertiary	1,396	457	939	-	-
Carmel Valley Ranch Wastewater Treatment Plant	Carmel Valley Golf Course and Golf Course Lakes	Storage Pond for Recycled Water Use	WRR No. 01-083	Other	No	Tertiary	69	-	69	-	-
Pasadera / Laguna Seca Ranch Wastewater Treatment Plant	Laguna Seca Golf Course	Storage Pond for Recycled Water Use	WDR No. 98-58	Other	No	Tertiary	61	-	61	-	-
Pacific Grove Satellite Recycled Water Treatment Plant	Collection System	Collection System conveyed to the M1W Regional Treatment Plant	WRR No. R3-2016-0044	Collection System	No	Tertiary	85	-	85	-	-
Total							9,283	862	2,865	3,766	-

Note: Total wastewater treated excludes approximately 10 AF collected at the White Oaks and Village Green Septic Systems

6.6.5 Potential, Current, and Projected Recycled Water Uses

Table 6-7 shows the total amount of recycled water that is projected to be utilized in CAW's Main Monterey service area through 2045.

Table 6-7. Projected Uses of Recycled Water in CAW's Service Area (AFY)

TREATMENT FACILITY	ACTUAL USE	2020	2025	2030	2035	2040	2045
CAWD	Golf Course Irrigation	939	954	969	985	1,000	1,015
PGLWP	Golf Course and Cemetery Irrigation	85	85	85	85	85	85
California American Water	Golf Course Irrigation	130	139	147	153	159	165
Subtotal	**Non-potable reuse for irrigation**	**1,155**	**1,178**	**1,202**	**1,223**	**1,243**	**1,264**
M1W	Pure Water Monterey (Indirect Potable Reuse)	788	3,500	3,500	3,500	3,500	3,500
M1W	Pure Water Monterey Expansion (Indirect Potable Reuse)	0	528	2,250	2,250	2,250	2,250
Total		**1,943**	**5,206**	**6,952**	**6,973**	**6,993**	**7,014**

Table 6-8 summarizes 2020 projected water recycling uses from the 2015 UWMP and compares the previous estimates with actual recycled use in 2020. The table only shows estimated recycled water use in 2015 for the Main Monterey System. As shown, the 2015 UWMP projection is close to the actual 2020 recycled water use for golf course irrigation. The 2015 UWMP did not anticipate PWM to begin providing recycled water for groundwater recharge until after 2020, which is the largest difference between the 2015 projection and actual use.

Table 6-8. DWR 6-5R 2015 Recycled Water Use Projection Compared to 2020 Actual

USER TYPE	2015 PROJECTION FOR 2020 (AFY)	2020 ACTUAL USE (AFY)[1]
Agriculture	-	-
Golf Course Irrigation	1,414	1,155
Wildlife Habitat	-	-
Wetlands	-	-
Industrial	-	-
Groundwater Indirect Potable Reuse	-	788
Other	-	-
Total	1,414	1,943

Note: Estimated recycled water use from CAWD and California American Water used within service area.

CAW is an investor-owned utility and therefore does not have the authority to issue a mandatory recycled water use ordinance. However, due to a heavily weather dependent water supply and strong pressures to maintain the Monterey Peninsula's natural habitat, the governing bodies and wastewater agencies have developed an aggressive water recycling program.

6.7 Sand City Desalination

Construction of the Sand City Water Supply Project, shown in Figure 6-6, was completed in 2009. CAW began operating and distributing water from the plant in April 2010. The project includes a RO desalination plant, a pipeline to deliver the treated water to Sand City users, two water storage tanks, and a connection to CAW's Monterey Main distribution system.

The source for the desalination plant is brackish water from the Aroma Sands Formation aquifer near Monterey Bay. The brackish water is obtained through 4 brackish water feed wells. Concentrate is disposed through a below sea-level horizontal well.

The desalination facility is designed to produce up to 300 AFY, though it does not typically produce this volume and the 2016-2020 average deliveries were about 190 AFY as shown in Table 6-9. CAW has an allocation of 94 AFY from this facility and the remaining allocation of 206 AFY is reserved for future development and redevelopment. CAW may use the remaining supply available until new development utilizes the available remaining supply. CAW's allocation of 94 AFY is used for the estimated future supply from the desalination plant for 2025 through 2045, as shown in Table 6-10.

Figure 6-6. Sand City Desalination Plant (Desalination Plant Helps Save a California Coastal Community, 2010).

Table 6-9. DWR 6-8DS Source Water Desalination

PLANT NAME OR WELL ID	PLANT CAPACITY	INTAKE TYPE	SOURCE WATER TYPE	INFLUENT TDS	BRINE DISCHARGE	VOLUME OF WATER DESALINATED IN AFY				
						2016	2017	2018	2019	2020
Sand City Desalination Plant	300	Vertical Well	Groundwater	35,000 ppm	Note 1	185	256	194	106	213
-					Total:	185	256	194	106	213

Note 1: Brine is disposed via injection to a below sea-level horizontal concentrate well beneath the coastal bluff. The brine salinity does not exceed the seawater salinity. Source: https://www.mpwmd.net/water-supply/desalination/in-operation/

Table 6-10. Projected Supply from Sand City Desalination Plant (AFY)

	2025	2030	2035	2040	2045
Sand City Desalination Plant	94	94	94	94	94

6.8 Water Exchanges and Transfers

CAW has completed interconnections between the Monterey System and the Ryan Ranch and Bishop System which are now both supplied from the Monetary System. CAW is also working to complete an interconnection between the Monterey System and Hidden Hills System. The interconnections provide greater supply reliability for all systems. CAW does not have plans for other exchanges, transfers, or interties.

6.9 Future Water Projects

6.9.1 Monterey Peninsula Water Supply Project Ocean Desalination

CAW completed the Final EIR/EIS for the MPWSP Desalination Plant in March 2018. The proposed desalination plant would produce 6,252 AFY (6.4 mgd) of potable water. The desalination plant would be constructed near the Monterey One Water Regional Treatment Plant (MOWRTP). It would treat seawater that was filtered through the ocean floor, then collected through slant wells and piped to the desalination plant. The slant well approach would draw water from under the sea floor past the average high tide line and would avoid the impacts to marine life posed by open ocean intakes.

At the plant, seawater would be treated using various treatment technologies including RO. Brine would be blended with other treated effluent and discharged to the ocean via the existing outfall at MOWRTP.

Portions of the project have been constructed or are currently under construction, including 5,300 new feet of transmission main. The final permit to begin facility slant wells construction was refiled in November 2020 and is pending a hearing and approval by the California Coastal Commission. This plan assumes the MPWSP Desalination Plant will be fully operational by 2030.

6.9.2 Pure Water Monterey Expansion

The PWM Expansion project is currently designed to deliver an additional 2,250 AFY of water to the Seaside Basin that would be available to CAW. The project's Supplemental EIR was adopted by MPWMD and M1W in April 2021, and M1W anticipates the project to be operational by 2025. Based on the 2020 Hazen and Sawyer PWM and PWM Expansion supply and demand analysis with updated wastewater flows, discussed in **Section 6.6.1.1**, there is not currently enough source water to support the PWM Expansion project at this time. However, when the MPWSP Desalination Plant is online in 2030, it will provide a drought proof supply and allow increased water use and increase wastewater flows, which will provide more source water for the PWM Expansion project. In 2025, approximately 528 AFY of water is expected to be available from the PWM Expansion Project in normal years, and is expected to provide no water in the worst-case dry years, but will increase up to its design supply of 2,250 AFY in normal years by 2030 when the MPWSP Desalination Plant is online. Without the MPWSP Desalination Plant, the PWM Expansion Project is not expected to be able to provide its design supply in normal year types.

6.10 Summary of Existing and Planned Sources of Water

Summaries of the existing and planned sources of water are provided in **Table 6-11** and **Table 6-12.** The volumes shown for each supply source are projected for normal years and can vary in dry hydrologic years, as discussed in **Chapter 7**.

Table 6-11. DWR 6-8R Actual Water Supplies

		2020		
WATER SUPPLY	ADDITIONAL DETAIL ON WATER SUPPLY	ACTUAL VOLUME (AFY)	WATER QUALITY	TOTAL RIGHT OR SAFE YIELD
Groundwater	Carmel River Aquifer[1]	5,317[1]	Drinking Water	6,060[2]
Groundwater	Seaside Basin	2,802	Drinking Water	2,183[3]
Desalinated Water	Sand City Desalination	213	Drinking Water	300[4]
Other	Aquifer Storage and Recovery	806[5]	Drinking Water	1,300
Total		**9,138**		**9,843**

Notes:

1. CAW's total volume extracted from the Carmel River in 2020 was 5,977 AF, however, 660 AF was injected into the Seaside Basin for ASR. This volume is accounted for in the total ASR supply.
2. CAW's allowable diversion from the Carmel River Aquifer was 6,310 AFY in WY 2019-2020 and 5,310 AFY in WY 2020-2021, which equates to 6,060 AFY in calendar year 2020 based on equal diversion each month.
3. CAW's Seaside Groundwater Basin allocation was 1,820 AFY in WY 2019-2020 and 1,474 AFY in WY 2020-2021, which equates to 1,734 AFY in calendar year 2020. The total right is 1,734 AFY plus 136.23 AF carryover storage credits from WY 2019 and 845.93 AF storage credits for WY 2020 (calculated as 449 AF combined storage carryover credits for calendar year 2020). Note CAW did overproduce 334.21 AF beyond the Natural Safe Yield and 229.63 AF beyond the Operating Safe Yield in WY 2020 and paid an overproduction assessment (Source: Seaside Groundwater Basin Watermaster Annual Report WY 2020)
4. CAW's total rights from the Sand City Desalination Plant is 94 AFY, however the plant's capacity is 300 AFY and CAW may purchase available capacity.
5. In 2020 the ASR extraction volume was 806 AF, which includes 660 AF of injection volume from Carmel River seasonal flows plus 146 AF of ASR storage water.

Table 6-12. Projected Water Supplies

		REASONABLY AVAILABLE VOLUME, AF				
WATER SUPPLY	ADDITIONAL DETAIL ON WATER SUPPLY	2025	2030	2035	2040	2045
Groundwater	Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376
Groundwater	Seaside Basin[1]	1,474	774	774	774	774
Desalinated Water	Sand City Desalination	94	94	94	94	94
Other	Aquifer Storage and Recovery	920	920	920	920	920
Recycled Water	Pure Water Monterey	3,500	3,500	3,500	3,500	3,500
Recycled Water	PWM Expansion	528	2,250	2,250	2,250	2,250
Desalinated Water	MPWSP Ocean Desalination Project	0	6,252	6,252	6,252	6,252
Total		**9,892**	**17,166**	**17,166**	**17,166**	**17,166**

Notes:

1. The CAW Monterey Main System has a total entitled right of 1,474 AFY from the Seaside Groundwater Basin, however CAW has an agreement in place to not pump 700 AFY of this right for 25-years once a new supply source is operational. This Plan assumes the reduced pumping will beginning in 2030 and continue through 2055. The reduced pumping repayment volume or duration of payment is subject to increase in the future.

6.10.1 Climate Change Effects

There are numerous climate change impacts that may affect the Monterey Main's supply sources as described in the 2019 Final Draft Monterey Peninsula, Carmel Bay, and South Monterey Bay IRWMP, including:

- Shifting rainfall patterns may make Carmel River Aquifer supply less available in the spring and summer. Lower seasonal surface flows will likely lead to higher pollutant concentrations in the river.
- Increased flood recurrence along creeks, rivers, and coastal structures could inundate infrastructure, including production facilities. More intense rainfalls could increase sediment loading into the Carmel River and reduce water quality.
- Increased drought recurrence and severity could strain existing supply source availability further.
- Rising sea levels could impact groundwater quality and increase rates of seawater intrusion. The Seaside Groundwater Basin is especially vulnerable.

CAW is aware of the significant climate change impacts to its existing supply sources and is expected to reduce its reliance on the more vulnerable Carmel River Aquifer and Seaside Groundwater Basin in the future.

The increased recurrence of floods may impact CAW's ability to capture and inject more water for ASR storage during the rainy season, and a warmer and drier climate will make building up ASR storage more difficult because most, if not all, of the annual stored water could be needed each year. More severe droughts will also deplete any built-up ASR storage quicker, making it more difficult to build ASR storage in the future.

PWM and the PWM Expansion project rely on multiple source waters, each of which are impacted differently by climate warming and increased frequency of drought. As discussed in **Section 6.6.1.1**, during dry years there is limited source water available for PWM and the PWM Expansion project after meeting other contracted demands until demands and wastewater flows on the Peninsula increase. The increased frequency of droughts due to climate change will continue to reduce the reliability of source supply for these projects and as a water supply for the Monterey Main System.

After the MPWSP Ocean Desalination Plant is operational, CAW will have another large supply source, up to 6,252 AFY, that is less vulnerable to climate change impacts. The investments in new supply will allow CAW to reduce reliance on the existing vulnerable supply sources in the future.

6.10.2 Regulatory Conditions and Project Development

For Monterey Main's two main existing supply sources, the Carmel River and the Seaside Groundwater Basin, water rights are defined and protected by the SWRCB and the Seaside Groundwater Basin adjudication. Future supplies will predominantly shift toward ocean desalination and purified recycled water through PWM. The PWM project is in operation, and CAW has contractual amount of 3,500 AFY through 2050 (Water Purchase Agreement Pure Water Monterey, 2016). CAW's ocean desalination plant is awaiting final permit approval from the California Coastal Commission to begin construction of the slant wells that supply the plant. All other major permits have been received. If the Coastal Commission denies the permit or requires additional studies to approve the permit, it would further delay the startup of the ocean desalination plant.

6.11 Energy Intensity

CAW has compiled data for the energy used to pump, treat, and distribute potable water to its customers from 2016 through 2020. The data are summarized in Table 6-13, and show the average energy intensity to produce, treat, and deliver water in the Monterey Main is about 1,220 kilowatt-hour per acre-foot (kWh/AF).

Table 6-13. Energy Use and Estimated Energy Intensity

	2016	2017	2018	2019	2020
Volume of Water Entering Process (AF)	9,285	9,421	9,398	9,234	9,138
Energy Consumed (kWh)	11,064,588	12,621,066	10,895,231	11,378,044	10,671,334
Energy Intensity (kWh/AF)	1,192	1,340	1,159	1,232	1,168

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7 Water Service Reliability and Drought Risk Assessment

This section discusses the long-term reliability of supplies for the Monterey Main System. Anticipated supplies and demands through 2045 are compared for a normal year, single-dry year, and multiple-dry year period.

IN THIS SECTION

- Water Source Constraints
- Water Service Reliability Assessment
- Drought Risk Assessment

7.1 Water Service Reliability Assessment

This section describes the existing constraints on Monterey Main's existing and proposed supply sources and reliability in different hydrologic year types.

7.1.1 Constraints on Water Sources

7.1.1.1 Carmel River Aquifer

Under SWRCB Orders, CAW's Monterey County System Carmel River diversions are limited to 3,376 AFY based on its pre-1914 appropriative rights, riparian rights, and License #0011866. While CAW has historically pumped more than this volume, it is expected to reduce its diversion by December 31, 2021, as described in Chapter 6. For future supply projections, 3,376 AFY is expected to be reliably available from the Carmel River Aquifer through 2045.

Additional seasonal diversion, up to 1,488 AF, may also be available in normal to wet years between December 1 and May 31, depending on the stream flowrate, through CAW's permit 21330. These flows are expected to be injected in the Seaside Basin for ASR. Climatic changes that increase the frequency of droughts may reduce the availability of these seasonal flows.

While the Carmel River Aquifer is of generally good water quality and meets all primary drinking water standards, the lower aquifer wells are treated for iron and manganese, secondary contaminants that impact taste and color, at the Begonia Iron Removal Plant. Climate impacts due to more intense rainfalls and lower spring and summer flows may impact the good water quality in the Carmel River in the future through increased sedimentation or higher pollutant concentrations. Water quality impacts are expected to be short term vulnerabilities and CAW is able to construct additional treatment if needed.

7.1.1.2 Seaside Groundwater Basin

CAW has a right to pump 1,474 AFY of water from the Seaside Basin. CAW has a stipulation to reduce pumping by 700 AFY once a new sufficient and reliable water supply source for the Monterey Peninsula is operational for a 25-year period to help replenish the basin and protect it from seawater intrusion. The supply projections assume CAW will only pump up to 774 AFY from the Seaside Basin beginning in 2030 when new sufficient and reliable supply sources are online. The repayment could increase in volume or the duration of the repayment could lengthen due to additional over pumping as a result of delays in securing a new reliable water supply not accounted for when the agreement was reached.

Water quality issues caused by secondary contaminants are a constraint on the Seaside Basin. Groundwater produced at two of CAW's seaside wells is treated at the Ord Grove Ozone Treatment Facility to address taste and odor concerns caused by the presence of high sulfides (Water Systems Consulting, 2018). The Seaside Basin is also susceptible to seawater intrusion due to its coastal location and climate impacts of sea level rise. Historically, seawater intrusion has not been an issue in the basin. However increased chloride concentrations were reported in two monitoring wells in 2020, which may be an indication of incipient seawater intrusion. CAW and other stakeholders in the basin work collaboratively with the Seaside Groundwater Basin Watermaster to manage, protect, and promote sustainability of the basin.

7.1.1.3 Sand City Desalination

Currently CAW has an allocation of 94 AFY from the 300 AFY Sand City Desalination Plant, and the remaining 206 AFY are reserved for future development and redevelopment. Until new development utilizes the reserved supply, CAW can use the remaining supply. However, for conservative supply planning only 94 AFY is included as a reliable supply from the Sand City Desalination Plant in the future.

7.1.1.4 Aquifer Storage and Recovery

The ASR Program is currently limited by the availability of excess seasonal Carmel River flows. In normal and wet years, CAW can divert excess Carmel River flows in the winter and spring months for injection into the Seaside Groundwater Basin and later extraction in the summer months. In most years, the volume injected is subsequently extracted in the summer and little to none is left for longer-term storage except in exceptionally wet years. The average annual stored volume since 2006 when ASR became operational is 84 AFY. ASR reliability decreases during dry hydrologic periods when excess Carmel River Flows are reduced or unavailable, and the program has not built a significant storage volume to continue to provide its normal year volume for a single dry year or a multiple dry year period.

7.1.1.5 Pure Water Monterey and Pure Water Monterey Expansion

California American Water's 2015 UWMP noted that unlike groundwater and surface water supplies, groundwater replenishment sources are generally consistent, and assumed for purposes of the 2015 UWMP that the water supply produced by the PWM Project would be 100% reliable. However, this assumption has been revised based on new source water supply information that became available since the 2015 UWMP. Specifically, new information on the PWM Project's source water supplies was

presented in the Supplemental EIR for the expansion of the PWM Project, and as discussed in Hazen and Sawyer's 2020 analysis of those source water supplies, the supplies are not 100% reliable.

The PWM project began injecting purified recycled water into the Seaside Basin in 2020. As listed in Table 6-7, 788 AF was injected into the basin in calendar year 2020. CAW has a contractual allocation of 3,500 AFY from PWM that it could pump from the Seaside Basin. The PWM Expansion Project's Supplemental EIR was certified in April 2021, and the expansion is designed to provide an additional 2,250 AFY of water to the Seaside Basin that CAW could pump for delivery.

PWM and PWM Expansion rely on municipal wastewater, industrial processing water, crop drainage water, and urban stormwater runoff as the source waters to treat to purified levels before injection in the basin. Stormwater runoff and wastewater flows generally decline during drought periods due to less rainfall and the robust water conservation programs in place. These factors would reduce the available source water for PWM and PWM Expansion during a drought.

As described in Chapter 6, PWM is on track to deliver the contractual volume this year but may have source water constraints in future dry years. The PWM Expansion project is only expected to provide 528 AFY by 2025 in normal years, which will decline to zero in the worst-case dry years due to source water constraints. The reliability from PWM and PWM Expansion will increase when the MPWSP Desalination Plant comes online because it will provide sufficient drought proof supply to allow demands and wastewater flows to increase, relieving some of the source water constraints.

7.1.1.6 Ocean Desalination

Desalination is a highly reliable source of supply. Once CAW's MPWSP Ocean Desalination Plant is operational, it is expected to supply 6,252 AFY of water for the Monterey Main System. There are no anticipated reliability issues due to varying hydrologic conditions.

Progress on the project is currently behind schedule due to the California Coastal Commission delays, and a court-ordered stay on construction of the desalination plant facility. The supply projections in this plan assume that the desalination plant will be operational by 2030.

7.1.2 Water Supply Management

Currently CAW relies on Carmel River Aquifer supply in the winter and spring months to comply with minimum stream flows in the Carmel River. Typically pumping from the Carmel River in the summer months is lower than the winter months, but in dry years the monthly diversions from the Carmel River could be constant throughout the year. In the Seaside Basin, the typical seasonal pattern is reversed. CAW injects excess available water from the Carmel River Aquifer into the Seaside Groundwater Basin from December to May as part of the ASR Program, and generally pumps less native groundwater from the basin in these same months. In the summer and fall when CAW diverts less from the Carmel River, it pumps higher volumes from the Seaside Groundwater Basin and typically extracts most of the stored ASR water. While the ASR injection and extraction season is limited seasonally, normal groundwater production from the Seaside Basin is not seasonally constrained, and CAW could pump equal amounts of water each month throughout the year if needed.

Water from the Sand City Desalination plant is used year-round at the same rate. Water from PWM and the future ocean desalination plant are assumed to be available year-round and in all year types.

7.1.3 Year Type Characterization

Normal water year, single-dry water year, and five-consecutive-year drought period supply projections were developed for existing and projected supply sources. The basis for water year data and anticipated supply reliability for each supply source excepted the PWM and PWM Expansion Project is presented in Table 7-1.

CAW has entitled rights from the Carmel River and Seaside Groundwater Basin can be reliably pumped in all year types. Desalination is not affected by hydrology, and as such both desalination plants are anticipated to be 100 percent reliable in all water year types.

The historic injection and extraction volumes for ASR were analyzed to understand ASR reliability for a single-dry year and consecutive five-year drought. As described in Chapter 6, the five driest year for ASR were 2012 through 2016, where no water was available from ASR in 2014 and 2015 when the storage was depleted. In 2012, the first year of the drought, CAW was able to pull 100 percent of the average ASR supply using mostly stored water because the two previous water years were wet and CAW was able to build significant storage. Due to climate change it will be more difficult for CAW to build ASR storage volume in the future. For this reason, in a single-dry year ASR supply is assumed to be 67 percent of the average volume and supplied from storage. For the five-consecutive dry years, the first year is assumed to be 67 percent of the average supply and similar to a single-dry year because it can rely on built up storage. In the following years ASR supply declines linearly, and no supply is available from ASR by year three of a five-consecutive year drought similar to the 2012-2016 drought when the ASR storage volume was depleted by year three. No ASR supply is assumed in year three, four, and five of the five-year drought.

Table 7-1. DWR 7-1R Basis for Water Year Data and Supply Reliability

		PERCENT OF AVERAGE SUPPLY BY WATER YEAR TYPES						
				CONSECUTIVE DRY YEARS				
BASE YEAR	WATER RIGHT, CONTRACTUAL/ DESIGN SUPPLY, AFY	NORMAL YEAR	SINGLE-DRY YEAR	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR
		2004	2015	2012	2013	2014	2015	2016
Carmel River Aquifer	3,376	100%	100%	100%	100%	100%	100%	100%
Seaside Groundwater Basin[1]	774	100%	100%	100%	100%	100%	100%	100%
Sand City Desalination	94	100%	100%	100%	100%	100%	100%	100%
Aquifer Storage and Recovery	920	100%	67%	67%	33%	0%	0%	0%
MPWSP Ocean Desalination	6,252	100%	100%	100%	100%	100%	100%	100%

Note:

1. The CAW Monterey Main System has a total entitled right of 1,474 AFY from the SGWB, however it plans to only pump 774 AFY, leaving 700 AFY of this right in the Basin for 25-years once a new supply source is operational. In year 2025 new supplies will not be online and CAW plans to pump the full right of 1,474 AFY.

The supply reliability for PWM and PWM Expansion is presented in Table 7-2 and Table 7-3. The reliability of both projects varies by the hydrologic year type and the future year because it is dependent on wastewater flows which are projected to increase as demands increase. As described in Section 6.6.1 and Table 6-4, PWM and the PWM Expansion project are not reliable during the worst-case scenario dry year due to reduced wastewater flows, but when the MPWSP Desalination Plant becomes operational, the demands are projected to increase on the Peninsula and the wastewater flows will also increase, improving the PWM and PWM Expansion project's supply reliability.

In normal years PWM is projected to provide 100 percent of the contractual supply volume. The PWM Expansion project can only provide up to 528 AFY in normal year types until the MPWSP Desalination

Plant comes online in 2030. The worst-case dry year supply reliability presented in Table 6-4 is used to represent the last year of a consecutive five-year drought. The water supply available from PWM and PWM Expansion are projected to decline during a drought as conservation is increased and source flows for the projects decline. For years one through four of the consecutive five-year drought, the supply reliability is assumed to decline linearly until the worst-case dry year availability in year five. The single-dry year reliability is the same as year one of a five-year drought. Based on the projected increase in water use and wastewater flows once the MPWSP Desalination Plant is online, the PWM Phase 1 project and PWM Expansion project are expected to be reliable in all hydrologic year types by 2030 and 2040, respectively. Without the MPWSP Desalination Plant, PWM and PWM Expansion reliability would decline in a drought and during the worst-case dry year would continue to be zero. More information on how the reliability of PWM and PWM Expansion are calculated is included in Appendix H.

Table 7-2. Pure Water Monterey Basis for Supply Reliability

		2025	2030	2035	2040	2045
PWM CONTRACTUAL SUPPLY, AFY		3,500	3,500	3,500	3,500	3,500
NORMAL YEAR		100%	100%	100%	100%	100%
SINGLE-DRY YEAR		80%	100%	100%	100%	100%
CONSECUTIVE DRY YEARS	**1ST YEAR**	80%	100%	100%	100%	100%
	2ND YEAR	60%	100%	100%	100%	100%
	3RD YEAR	40%	100%	100%	100%	100%
	4TH YEAR	20%	100%	100%	100%	100%
	5TH YEAR	0%	100%	100%	100%	100%

Table 7-3. Pure Water Monterey Expansion Basis for Supply Reliability

		2025	2030	2035	2040	2045
PWM EXPANSION DESIGN SUPPLY, AFY		2,250	2,250	2,250	2,250	2,250
NORMAL YEAR		23%	100%	100%	100%	100%
SINGLE-DRY YEAR		19%	84%	92%	100%	100%
CONSECUTIVE DRY YEARS	**1ST YEAR**	19%	84%	92%	100%	100%
	2ND YEAR	14%	69%	85%	100%	100%
	3RD YEAR	9%	53%	77%	100%	100%
	4TH YEAR	5%	38%	70%	100%	100%
	5TH YEAR	0%	22%	62%	100%	100%

Note:

The Hazen analysis identified a reliability of zero for Pure Water Monterey Expansion during a worst-case dry year. It is expected that reliability would decrease gradually over a number of dry years as water use, wastewater flows, and supply available for PWM Expansion decreased. It was assumed that over a five-year period, the reliability would decrease linearly from its value in a normal year to zero in the fifth dry year.

7.1.4 Water Service Reliability

This section compares projected supplies and demands for a normal year, single-dry year, and five-dry year period. In each year type a 10 percent operational buffer is subtracted from the total supplies for conservative planning purposes. The operational buffer incorporates a safety factor in the supply and demand analysis to account for production facilities down time due to maintenance or other reasons. This analysis assumes both the MPWSP desalination plant and the PWM Expansion are operational by 2030.

Table 7-4 and Table 7-5 compare the normal and single dry year water supply and demand. Each table lists each available supply based on the projected reliability and compares the projected demand to the total supply both with and without the MPWSP Desalination Plant. As shown, there is a shortfall in supply in all years when excluding additional supplies from the MPWSP Desalination Plant. Not only does the desalination plant provide 6,252 AFY of drought proof supply, but it also allows the demands and wastewater flows to increase on the Monterey Peninsula, which results in more source water and greater supply from the PWM and PWM Expansion projects in dry years. After 2030, when the MPWSP Desalination Plant is projected to be online, the available supply exceeds unrestricted demands. In 2025 before the new supply sources are online, the projected demand is anticipated to exceed the available supply. To close the gap between supply and demand CAW will need to reduce demands through the Water Shortage Contingency Plan (WSCP) until the new supply sources are online. In a normal year, demands will need to be reduced by approximately 15 percent in 2025 to close the supply gap. In the single-dry year, the demand will need to be reduced by about 24 percent.

Table 7-4. DWR 7-2R Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Demand Totals, AFY	**10,443**	**11,883**	**12,474**	**13,065**	**13,656**
WATER SUPPLY WITHOUT MPWSP DESALINATION, AFY	**9,892**	**10,914**	**10,914**	**10,914**	**10,914**
Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376
Seaside Groundwater Basin	1,474	774	774	774	774
Sand City Desalination	94	94	94	94	94
ASR	920	920	920	920	920
Pure Water Monterey	3,500	3,500	3,500	3,500	3,500
Pure Water Monterey Expansion[1]	528	2,250	2,250	2,250	2,250
Shortfall without MPWSP Desalination	-551	-969	-1,560	-2,151	-2,742
ADDITIONAL WATER SUPPLY FROM MPWSP DESALINATION, AFY	**0**	**6,252**	**6,252**	**6,252**	**6,252**
Total Water Supply, AFY	**9,892**	**17,166**	**17,166**	**17,166**	**17,166**
Operation Buffer (10%)	-989	-1,717	-1,717	-1,717	-1,717
Surplus/ Shortfall without WSCP Action	-1,540	3,566	2,975	2,384	1,793
WSCP Savings	1,540	0	0	0	0
DIFFERENCE:	**0**	**3,566**	**2,975**	**2,384**	**1,793**

Note:

1. PWM Expansion during a normal hydrologic year is only anticipated to supply up to 528 AFY.
2. When the MPWSP Desalination Plant comes online, it will provide a drought-proof supply that will allow the demands to increase to the projected levels, wastewater flows to increase, which provides more source water for the PWM Expansion Project and improve its supply reliability.

Table 7-5. DWR 7-3R Single-Dry Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Demand Totals, AFY	**10,443**	**11,883**	**12,474**	**13,065**	**13,656**
WATER SUPPLY WITHOUT MPWSP DESALINATION, AFY	**8,783**	**8,083**	**8,083**	**8,083**	**8,083**
Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376
Seaside Groundwater Basin	1,474	774	774	774	774
Sand City Desalination	94	94	94	94	94
ASR	616	616	616	616	616
Pure Water Monterey	2,800	2,800	2,800	2,800	2,800
Pure Water Monterey Expansion	422	422	422	422	422
Shortfall without MPWSP Desalination	-1,660	-3,800	-4,391	-4,982	-5,573
ADDITIONAL WATER SUPPLY FROM MPWSP DESALINATION, AFY	**0**	**8,430**	**8,609**	**8,780**	**8,780**
MPWSP Ocean Desalination	0	6,252	6,252	6,252	6,252
Pure Water Monterey[1]	0	700	700	700	700
Pure Water Monterey Expansion[1]	0	1,478	1,657	1,828	1,828
Total Water Supply, AFY	**8,783**	**16,513**	**16,691**	**16,862**	**16,862**
Operation Buffer (10%)	-878	-1,651	-1,669	-1,686	-1,686
Surplus/ Shortfall without WSCP Action	-2,539	2,979	2,548	2,111	1,520
WSCP Savings	2,539	0	0	0	0
DIFFERENCE:	**0**	**2,979**	**2,548**	**2,111**	**1,520**

Note:

1. When the MPWSP Desalination Plant comes online, it will provide a drought-proof supply that will allow the demands to increase to the projected levels, wastewater flows to increase, which provides more source water for the PWM and PWM Expansion Project and improve both projects supply reliability. This excess supply is only available in dry years if the MPWSP is operational.
2. Reductions in availability for Pure Water Monterey are applied proportionately to PWM and PWM Expansion.

Table 7-6 compares the average annual supply and demand in a five-consecutive year drought. As shown, the total supply declines each year into the drought. Like the normal and single dry year scenarios, without the MPWSP Desalination Plant there is a supply deficit every year and the unrestricted demands exceed the supply until the MPWSP Desalination Plant is online in 2030. In year 2025, the tables show unrestricted demands and the WSCP savings needed to close the gap between supply and demand. As the supplies decline each year into the drought, the conservation required to reduce demands also increases. In year 2025, the demand reduction needed to meet the available supplies is about 2,539 AFY, or about a 24% percent reduction in projected demand. By the fifth year of a drought in 2025 conditions, the WSCP savings increases to about 5,990 AFY, or upwards of a 57 percent reduction in projected demands.

The new supply sources, including the desalination plant providing 6,252 AFY of drought proof supply and the PWM Expansion project, are both needed to provide a secure and reliable water supply for the Monterey Peninsula, and eliminate the need for stringent demand reduction measures to close the gap between supply and demand. But with the PWM Expansion project alone there will continue to be shortfalls in supplies as shown in the tables, and water use will need to continue to be restricted in the future. Without the MPWSP Desalination Plant, the PWM Expansion project is not expected to supply its full design supply and will continue to have supply source limitations. Beginning in 2022, when the Carmel River supply is reduced to its lawful diversions, CAW will need to reduce demands through the WSCP until the future supply sources are online in all year types. The WSCP stage and required

demand reduction from customers increases in dry years as supply reliability and available volume are also reduced.

Table 7-6. DWR 7-4R Multiple Dry Years Supply and Demand (Average Annual, AFY)

		2025	2030	2035	2040	2045
First Year	**Water Demand**	**10,443**	**11,883**	**12,474**	**13,065**	**13,656**
	WATER SUPPLY WITHOUT MPWSP DESALINATION	**8,783**	**8,083**	**8,083**	**8,083**	**8,083**
	Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376
	Seaside Groundwater Basin	1,474	774	774	774	774
	Sand City Desalination	94	94	94	94	94
	ASR	616	616	616	616	616
	Pure Water Monterey	2,800	2,800	2,800	2,800	2,800
	Pure Water Monterey Expansion	422	422	422	422	422
	Supply Shortfall without MPWSP Desalination	-1,660	-3,800	-4,391	-4,982	-5,573
	ADDITIONAL SUPPLY WITH MPWSP DESALINATION	**0**	**8,430**	**8,609**	**8,780**	**8,780**
	MPWSP Ocean Desalination	0	6,252	6,252	6,252	6,252
	Pure Water Monterey	0	700	700	700	700
	Pure Water Monterey Expansion	0	1,478	1,657	1,828	1,828
	Total Water Supply	**8,783**	**16,513**	**16,691**	**16,862**	**16,862**
	Operation Buffer (10%)	-878	-1,651	-1,669	-1,686	-1,686
	Surplus/ Shortfall without WSCP Action	-2,539	2,979	2,548	2,111	1,520
	WSCP Savings, AFY	2,539	0	0	0	0
	DIFFERENCE	**0**	**2,979**	**2,548**	**2,111**	**1,520**
Second Year	**Water Demand**	**10,443**	**11,883**	**12,474**	**13,065**	**13,656**
	WATER SUPPLY WITHOUT MPWSP DESALINATION	**7,669**	**6,969**	**6,969**	**6,969**	**6,969**
	Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376
	Seaside Groundwater Basin	1,474	774	774	774	774
	Sand City Desalination	94	94	94	94	94
	ASR	308	308	308	308	308
	Pure Water Monterey	2,100	2,100	2,100	2,100	2,100
	Pure Water Monterey Expansion	317	317	317	317	317
	Supply Shortfall without MPWSP Desalination	-2,774	-4,914	-5,505	-6,096	-6,687
	ADDITIONAL SUPPLY WITH MPWSP DESALINATION	**0**	**8,886**	**9,243**	**9,585**	**9,585**
	MPWSP Ocean Desalination	0	6,252	6,252	6,252	6,252
	Pure Water Monterey	0	1,400	1,400	1,400	1,400
	Pure Water Monterey Expansion	0	1,234	1,591	1,933	1,933
	Total Water Supply	**7,669**	**15,855**	**16,212**	**16,554**	**16,554**
	Operational Buffer (10%)	-767	-1,586	-1,621	-1,655	-1,655
	Surplus/ Shortfall without WSCP Action	-3,541	2,387	2,117	1,834	1,243
	WSCP Savings, AFY	3,541	0	0	0	0
	DIFFERENCE	**0**	**2,387**	**2,117**	**1,834**	**1,243**

		2025	2030	2035	2040	2045
Third Year	**Water Demand**	**10,443**	**11,883**	**12,474**	**13,065**	**13,656**
	WATER SUPPLY WITHOUT MPWSP DESALINATION	**6,555**	**5,855**	**5,855**	**5,855**	**5,855**
	Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376
	Seaside Groundwater Basin	1,474	774	774	774	774
	Sand City Desalination	94	94	94	94	94
	ASR	0	0	0	0	0
	Pure Water Monterey	1,400	1,400	1,400	1,400	1,400
	Pure Water Monterey Expansion	211	211	211	211	211
	Supply Shortfall without MPWSP Desalination	-3,888	-6,028	-6,619	-7,210	-7,801
	ADDITIONAL SUPPLY WITH MPWSP DESALINATION	**0**	**9,342**	**9,878**	**10,391**	**10,391**
	MPWSP Ocean Desalination	0	6,252	6,252	6,252	6,252
	Pure Water Monterey	0	2,100	2,100	2,100	2,100
	Pure Water Monterey Expansion	0	990	1,526	2,039	2,039
	Total Water Supply	**6,555**	**15,198**	**15,733**	**16,246**	**16,246**
	Operational Buffer (10%)	-656	-1,520	-1,573	-1,625	-1,625
	Surplus/ Shortfall without WSCP Action	-4,543	1,795	1,686	1,556	965
	WSCP Savings, AFY	4,543	0	0	0	0
	DIFFERENCE	**0**	**1,795**	**1,686**	**1,556**	**965**
Fourth Year	**Water Demand**	**10,443**	**11,883**	**12,474**	**13,065**	**13,656**
	WATER SUPPLY WITHOUT MPWSP DESALINATION	**5,750**	**5,050**	**5,050**	**5,050**	**5,050**
	Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376
	Seaside Groundwater Basin	1,474	774	774	774	774
	Sand City Desalination	94	94	94	94	94
	ASR	0	0	0	0	0
	Pure Water Monterey	700	700	700	700	700
	Pure Water Monterey Expansion	106	106	106	106	106
	Supply Shortfall without MPWSP Desalination	-4,693	-6,833	-7,424	-8,015	-8,606
	ADDITIONAL SUPPLY WITH MPWSP DESALINATION	**0**	**9,798**	**10,512**	**11,196**	**11,196**
	MPWSP Ocean Desalination	0	6,252	6,252	6,252	6,252
	Pure Water Monterey	0	2,800	2,800	2,800	2,800
	Pure Water Monterey Expansion	0	746	1,460	2,144	2,144
	Total Water Supply	**5,750**	**14,848**	**15,562**	**16,246**	**16,246**
	Operational Buffer (10%)	-575	-1,485	-1,556	-1,625	-1,625
	Surplus/ Shortfall without WSCP Action	-5,268	1,480	1,532	1,556	965
	WSCP Savings, AFY	5,268	0	0	0	0
	DIFFERENCE	**0**	**1,480**	**1,532**	**1,556**	**965**

		2025	2030	2035	2040	2045
Fifth Year	**Water Demand**	**10,443**	**11,883**	**12,474**	**13,065**	**13,656**
	WATER SUPPLY WITHOUT MPWSP DESALINATION	**4,944**	**4,244**	**4,244**	**4,244**	**4,244**
	Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376
	Seaside Groundwater Basin	1,474	774	774	774	774
	Sand City Desalination	94	94	94	94	94
	ASR	0	0	0	0	0
	Pure Water Monterey	0	0	0	0	0
	Pure Water Monterey Expansion	0	0	0	0	0
	Supply Shortfall without MPWSP Desalination	-5,499	-7,639	-8,230	-8,821	-9,412
	ADDITIONAL SUPPLY WITH MPWSP DESALINATION	**0**	**10,255**	**11,147**	**12,002**	**12,002**
	MPWSP Ocean Desalination	0	6,252	6,252	6,252	6,252
	Pure Water Monterey	0	3,500	3,500	3,500	3,500
	Pure Water Monterey Expansion	0	503	1,395	2,250	2,250
	Total Water Supply	**4,944**	**14,499**	**15,391**	**16,246**	**16,246**
	Operational Buffer (10%)	-494	-1,450	-1,539	-1,625	-1,625
	Surplus/ Shortfall without WSCP Action	-5,993	1,166	1,378	1,556	965
	WSCP Savings, AFY	5,993	0	0	0	0
	DIFFERENCE	**0**	**1,166**	**1,378**	**1,556**	**965**

7.2 Drought Risk Assessment

A new provision of the Water Code directs Suppliers to prepare a DRA. The DRA considers a drought period lasting five consecutive years, starting from the year following the when the assessment is conducted. For this plan, the DRA considers five consecutive dry years from 2021 through 2025. CAW may conduct an interim update or updates to this DRA within the five-year cycle of its UWMP update.

The DRA analysis allows CAW to examine the management of its supplies during stressed hydrologic conditions and provides an opportunity to evaluate the functionality of its WSCP during the next actual drought period lasting at least five years. To help evaluate the impacts of a multi-year drought, the DRA was performed using the DWR Planning Tool to evaluate supply and demand on a monthly basis. The supply and demand assumptions used in the DRA are described in Table 7-7.

Table 7-7. 2021-2025 DRA Supply and Demand Assumptions

	DEMAND/ SUPPLY SOURCE	ASSUMPTIONS
Demand	**Customer Demand**	WSCP is enacted to reduce customer demands in all years of the 5-year drought
Supply	**Carmel River Aquifer**	5,060 AF available in 2021 based on cut back schedule. 3,376 AF available in 2022-2025.
	Seaside Basin	1,474 AFY available every year
	Sand City Desalination	94 AFY available every year
	ASR	ASR supply is based on the current ASR storage volume of 1,170 AF multiplied by the five-consecutive dry year reliability percentages in Table 7-1: 780 AFY in year one, 390 AFY in year two, and no ASR supply in year three, four, and five.
	PWM	The contractual supply amount from PWM based on contract amount of 3,500 AFY multiplied by the five-consecutive dry year reliability percentages in Table 7-2: 2,800 AFY in year one, 2,100 AFY in year two, 1,400 AFY in year three, 700 AFY in year four, and no water available in year five.
	PWM Expansion	No supply from PWM Expansion. Although this is projected to be online in 2025, the supply from PWM Expansion during the fifth year of a drought (2025) is 0 AFY.
	MPWSP Ocean Desalination	No supply from Ocean Desalination
	Operational Buffer	A 10% operational buffer is subtracted from the total supplies to account for production facilities down time due to maintenance or other reasons.

The annual DRA summary is provided in Table 7-8. As shown, without the future supply sources, CAW would need to enact its WSCP to reduce demands in the service area if a five-year drought occurred beginning 2021. Customer demands would need to be restricted in all years, ranging from 29 percent reduction in year one to 57 percent in year five of the drought. This would require aiding the MPWMD to implement all water rationing measures listed in the WSCP. At this stage water will be prioritized to ensure the health, safety and welfare of the community only.

Table 7-8. Five-Year Drought Risk Assessment, AFY

WATER USE TYPE	2021	2022	2023	2024	2025
Total Water Use	**9,399**	**9,660**	**9,920**	**10,181**	**10,442**
Total Supply	**10,208**	**7,434**	**6,344**	**5,644**	**4,944**
Carmel River Aquifer[1]	5,060	3,376	3,376	3,376	3,376
Seaside Groundwater Basin[2]	1,474	1,474	1,474	1,474	1,474
Sand City Desalination[3]	94	94	94	94	94
ASR[4]	780	390	0	0	0
Pure Water Monterey[5]	2,800	2,100	1,400	700	0
Operation Buffer (10%)	-1,021	-743	-634	-564	-494
Surplus/ Shortfall without WSCP Action	-212	-2,969	-4,211	-5,102	-5,992
WSCP Demand Reduction	212	2,969	4,211	5,102	5,992
Revised Surplus/ Shortfall	0	0	0	0	0
Percent Reduction from WSCP Action	**2%**	**31%**	**42%**	**50%**	**57%**

Notes:

1. Carmel River Supply in year 2021 is 5,060 AFY based on the Carmel River pump back schedule. Beginning in 2022, CAW will only be allowed to pump up to their lawful diversion of 3,376 AFY.
2. CAW has a right to 1,474 AFY from the Seaside Basin.
3. CAW has a right to 94 AFY from Sand City Desalination.
4. ASR supply is based on the current ASR storage volume of 1,170 AF multiplied by the five-consecutive dry year reliability percentages in Table 7-1 (100% in year 1, 67% in year 2, 33% in year 3, and 0% in year 4 and 5).
5. Pure Water Monterey supply is based on the contractual supply of 3,500 AFY multiplied by the five-consecutive dry year reliability percentages in Table 7-2 in 2025 (80% in year 1, 60% in year 2, 40% in year 3, 20% in year 4, and 0% in year 5).

2020 URBAN WATER MANAGEMENT PLAN

8 Water Shortage Contingency Plan

The WSCP is a detailed plan for how CAW intends to respond to foreseeable and unforeseeable water shortages.

IN THIS SECTION

- Summary of Plan

A water shortage occurs when the water supply is reduced to a level that cannot support typical demand at any given time. The WSCP is used to provide guidance to the Monterey County District's governing body, staff, and the public by identifying response actions to allow for efficient management of any water shortage with predictability and accountability. Preparation provides the tools to maintain reliable supplies and reduce the impacts of supply interruptions due to extended drought or catastrophic supply interruptions. The WSCP describes the following:

1. **Water Supply Reliability Analysis:** Summarizes Monterey Main's water supply analysis and reliability and identifies any key issues that may trigger a shortage condition.
2. **Annual Water Supply and Demand Assessment Procedures:** Describes the key data inputs, evaluation criteria, and methodology for assessing the system's reliability for the coming year and the steps to formally declare any water shortage levels and response actions.
3. **Six Standard Shortage Stages:** Establishes water shortage levels to clearly identify and prepare for shortages.
4. **Shortage Response Actions:** Describes the response actions that may be implemented or considered for each stage to reduce gaps between supply and demand as

well as minimize social and economic impacts to the community.

5. **Compliance and Enforcement:** Defines compliance and enforcement actions available to administer demand reductions.

6. **Legal Authority:** Lists the legal documents that grant CAW the authority to declare a water shortage and implement and enforce response actions.

7. **Financial Consequences of WSCP Implementation:** Describes the anticipated financial impact of implementing water shortage stages and identifies mitigation strategies to offset financial burdens.

8. **Monitoring and Reporting:** Summarizes the monitoring and reporting techniques to evaluate the effectiveness of shortage response actions and overall WSCP implementation. Results are used to determine if additional shortage response actions should be activated or if efforts are successful and response actions should be reduced.

9. **WSCP Refinement Procedures:** Describes the factors that may trigger updates to the WSCP and outlines how to complete an update.

10. **Special Water Features Distinctions**: Identifies exemptions for ponds, lakes, fountains, pools, and spas, etc.

11. **Plan Adoption, Submittal, and Availability:** Describes the process for the WSCP adoption, submittal, and availability after each revision.

The 2021 WSCP is a standalone document that can be modified as needed and is included as **Appendix I**.

2020 URBAN WATER MANAGEMENT PLAN

9 Demand Management Measures

This chapter describes Monterey Main's efforts to promote water use efficiency, reduce demands, and prepare for future requirements.

IN THIS SECTION

- Demand Management Measures
- Reporting Implementation

This chapter describes the water conservation programs that CAW has implemented for the past five years, is currently implementing, and plans to implement to continue meeting its SB X7-7 water use target and position for future State mandated water use efficiency standards that are currently under development. The section of the CWC addressing Demand Management Measures (DMM) was significantly modified in 2014, based on recommendations from the Independent Technical Panel (ITP) to the legislature. The ITP was formed by DWR to provide information and recommendations to DWR and the Legislature on new DMMs, technologies and approaches to water use efficiency. The ITP recommended, and the legislature enacted, streamlining the requirements from the 14 specific measures reported on in the 2010 UWMP to six more general requirements plus an "other" category for measures agencies implemented in addition to the required elements. The required measures are summarized in Table 9-1.

Table 9-1. Demand Management Measures

	MEASURE
1	Water waste prevention ordinances
2	Metering
3	Conservation pricing
4	Public education and outreach
5	Programs to assess and manage distribution system real loss
6	Water conservation program coordination and staffing
7	Other demand management measures

9.1 Existing Demand Management Measures for Retail

The DMM section provides a comprehensive description of the water conservation programs that CAW has implemented for the past five years, is currently implementing, and plans to implement. These measures help reduce overall water consumption and aided in Monterey Main's attainment of the water use reduction targets discussed in **Chapter 5**. Consistent with the requirements of the CWC, this section describes the DMMs that have been implemented to meet water use targets pursuant to Section 10608.20 of the CWC. The following sections provide a description of the DMM including the nature and extent of each.

9.1.1 Water Waste Prevention Ordinances

CAW does not have the legal authority to create ordinances as a public utility company and must obtain approval from the CPUC to implement its WSCP, including voluntary and/or mandatory measures. Rule 14.1 defines water conservation measures and the approval process that CAW must follow to implement mandatory water conservation (**Appendix I, Attachment 1**).

Section D of Rule 14.1 (B) defines water conservation requirements that are effective at all times until deactivated by the CPUC. These conservation requirements define non-essential uses of water and limit water waste from new developments and existing customers. Although these are considered requirements, they are voluntary and serve as the CAW's Voluntary Water Conservation Program.

Sections E through H of Rule 14.1 list the specific requirements of CAW's three mandatory conservation stages. CAW must receive authorization from the CPUC before implementing mandatory conservation measures.

The mandatory conservation stages listed in Rule 14.1 shall remain dormant until Monterey Main submits a letter to the CPUC and receives authorization to declare mandatory conservation. The mandatory conservation request letter to the CPUC shall include justification for activating the particular mandatory conservation stage, as well as the expected duration the mandatory conservation will be in effect. The WSCP contains a more in-depth discussion of these prohibitions and consequences associated with them.

9.1.2 Metering

All connections in Monterey Main are metered with the exception of a few unmetered free water accounts in Carmel Valley that are planned to have meters installed by end of the year. CAW performs meter reading on a bi-monthly basis and consequently bills customers on a bi-monthly basis. All customers, with the exception of private fire connections, are billed a service charge and a usage rate/commodity charge for each unit of water consumed.

CAW maintains a database to track meters and record years in service. Monterey Main follows a program to test, repair, and replace water meters. CAW replaces 5/8-inch and 1-inch meters on a 15-year cycle. CAW tests 1 ½-inch and 2-inch meters on a four-year cycle; meters that do not pass testing requirements are replaced. The number of meters replaced each year varies due to varying installation dates.

9.1.3 Conservation Pricing

Conservation pricing sends a signal to customers regarding their water use. The type of rate structure used by Monterey Main for each connection type is shown in **Table 9-2** and is described here:

- **Residential Connections:** Monterey Main's water rate structure encourages residential customers to conserve water by using tiered rates. Monterey Main has a five-tiered rate structure. The tiered rate structure establishes volumetric rates; that is the more water a customer consumes, the more

expensive the water becomes. In addition, Monterey Main's rates include a monthly service charge per meter depending on the size of the connection.

- **Non-Residential Connections (except private fire):** Monterey Main has a four-tier rate structure for commercial, public authority, irrigation, and industrial customers. In addition, rates include a monthly service charge per meter depending on the size of the connection.
- **Private Fire Connections:** Private fire protection systems and private fire hydrants are charged a fixed monthly fee per hydrant or connection.

Table 9-2. Water Rate Structures

CUSTOMER TYPE	WATER RATE STRUCTURE
Residential	Five Tier Volumetric Rate
Commercial	Four Tier Volumetric Rate
Industrial	Four Tier Volumetric Rate
Institutional/Government	Four Tier Volumetric Rate
Irrigation	Four Tier Volumetric Rate
Private Fire	Fixed

9.1.4 Public Education and Outreach

Monterey Main has participated in a variety of public outreach meetings, community events, and educational campaigns. All public outreach and educational efforts are managed by CAW's local external affairs and conservation departments in cooperation with Monterey Peninsula water Management District's (MPWMD's) conservation department.

9.1.4.1 Public Information Program

California American Water in partnership with MPWMD continued its Monterey Water Conservation Facebook page to keep local contacts informed about conservation efforts. The page provides timely conservation tips and news about upcoming events and local water issues.

Email Blasts and Social Media

California American Water continued encouraging customers to maintain high levels of conservation throughout the year and provided educational emails on what conservation resources and activities customers can undertake.

Three focused campaigns took place in 2019 -- surrounding Earth Day, summer conservation and fall conservation. The materials shared water saving tips for indoor and outdoor use as well as promoting available rebates, water wise house calls and other offerings. These themes were echoed through concurrent radio advertising and accompanying handouts were created to share at the front office and at community events.

Additional online ads were employed to encourage customers to turn off their sprinklers at the start of the rainy season. This message was additionally promoted through newspaper advertising, direct mail and an email blast.

Mailers/Bill Inserts

Two postcards were sent to customers in 2019 which focused specifically on conservation, the first advising customers to call California American Water's conservation department to schedule a free yearly season sprinkler check-up at the start of the irrigation season; and the second promoting the company's rain sensor program. Three bill inserts were sent themed around Earth Day, summer

conservation tips and fall conservation tips. Each piece contained information on rebates, water conservation tips and further resources available from California American Water and the Monterey Peninsula Water Management District.

Local Community Events

CAW also participates in a multitude of local community events throughout the year where they host a booth and provide information such as conservation tips to the community as well devices to promote conservation. However, due to the COVID-19 Pandemic many of these events were canceled in 2020 and continue to be postponed.

9.1.4.2 School Education Program

In 2019, California American Water continued reaching its key objectives for ongoing school education and outreach in water conservation.

The key goals included:

• Ongoing relationship building with the Water Awareness Committee (WAC);

• Outreach to students at community events offering free educational materials;

• Outreach to students in-class and at afterschool activities to offer education regarding water conservation.

Zun Zun School Performances

California American Water, through the Water Awareness Committee of Monterey County, offered school presentations by the Zun Zun performance group. In 2019, Zun Zun provided fifteen 45-minute performances within California American Water's service territory. The performances reached a total of 2,762 students and covered topics such as the water cycle, watershed, indoor conservation and conservation tips, including information about fixing leaks. In addition, we continued to sponsor Zun Zun to perform at the Monterey County Fair which it is estimated that 1,250 children, teenagers and adults attended the event.

Students were encouraged to participate during the event through a song and dance presentation of the water cycle. Conservation tips were also presented to the students such as taking shorter showers, not letting the faucet run when brushing teeth, using a positive shut off nozzle at the end of a hose when watering the plants, and to notify their parents when they see leaks at home or their school teacher when they see leaks at school.

9.1.5 Programs to Assess and Manage Distribution System Real

Monterey Main's system water audits, leak detection, and repair programs are ongoing and focus on high probability leak areas. **Table 4-2** in Chapter 4 of the 2020 UWMP documents the total system losses.

9.1.6 Water Conservation Program Coordination and Staffing Support

CAW has conservation staff to coordinate and implement the programs described in this chapter. Most Monterey Main conservation staff were compensated as part of regular operating expenses and not through the conservation surcharge.

9.1.7 Other Demand Management Measures

CAW is committed to implementing cost-effective programs that will increase water efficiency throughout the entire service area. Though not required, CAW has implemented the following demand management measures during the past five years and will continue implementation into the future in order to increase the overall water efficiency of the Monterey Main's customers.

9.1.7.1 Residential Water Audits

California American Water continued its Water Wise House Call Program in 2019 utilizing in house trained certified audit staff at no cost to the conservation budget. The program has been in effect since 2008 and consists of offering free residential audits for single and multi-family properties to identify ways the customer can save water indoors and out and detect leaks.

California American Water's conservation staff completed 481 Water Wise House Calls in 2019 and 125 irrigation sprinkler checks at the beginning of the spring season. Residential customers are sent a postcard at the beginning of the irrigation season offering a free sprinkler check up. The program is becoming more popular each year where customers' irrigation systems were evaluated to ensure there were no leaks and to identify root causes of possible high water use. Outdoor tips and recommendations were also provided to customers, as well as the offering of free rain sensors installed by California American Water Company's contractors.

California American Water promoted the Water Wise House Call program through bill inserts, rebate brochures, offering the service to customers who visited the office to make payments and by targeting customers who had received high water bills and had been billed in the higher tiers of California American Water's five-tiered rate design.

During the Water Wise House Calls and high bill investigations, California American Water identified common inefficiencies and water waste in many of the Monterey residences. The most common occurrences were:

- Toilet and faucet leaks
- Irrigation controllers set to run too long resulting in water waste
- Water softener issues
- Misaligned and broken sprinkler heads
- Customer service line leaks

California American Water's conservation staff assisted customers by showing them how to read their water meters and properly convert cubic feet units to gallons so that customers can better monitor their daily usage and also compare the meter readings to the billing units identified on their water bills. In addition, conservation staff also assisted customers by properly adjusting their irrigation controllers to meet the plant water needs and to irrigate in compliance with MPWMD's two day a week watering schedule. Conservation staff also provided free water conserving devices to customers. The audit reports also include recommendations on utilizing the rebate program for the replacement of high water-use fixtures and appliances at customers' homes.

The effectiveness of the Water Wise House Call program was measured through the evaluation of water savings, as well as by inclusion of an evaluation survey form along with a pre-stamped envelope in the customer report package. Many evaluation surveys were returned from the Water Wise House Call service showed high customer appreciation.

Leak Detection

CAW's conservation staff utilizes data logging technology to assist in evaluating difficult to diagnose high water hills by downloading up to 180 days of usage, hour by hour, from the company's radio read meters. By evaluating hourly usage patterns, usage data reports have aided in identifying the date range in which high usage occurred, and resulted in the identification of issues including improperly programmed irrigation controllers, leaks in the irrigation system, toilet leaks, service line leaks, and hoses been left running. A total of 695 Data Log reports were evaluated by Conservation staff in Monterey in 2019.

9.1.7.2 Residential Plumbing Retrofit

CAW has been offering various free water savings devices for its residential and commercial customers including showerheads and kitchen faucet aerators with a flow rate of 1.5 gallons per minute, bathroom faucet aerators with a flow rate of 0.5 gallons per minute, leak detection tablets/kits and outdoor water saving tools such as soil moisture meters and hose nozzles that automatically shut off when not in use.

The residential plumbing retrofit program was funded out of the conservation surcharge one-way balancing account. Items provided through MPWMD were funded out of MPWMD's conservation budget.

9.1.7.3 Residential and Commercial Rebates (MPWMD Rebates)

Monterey Main's rebate program is funded by CAW but administered by MPWMD. CAW has been working closely with MPWMD to implement advertising campaigns and press releases that draw customers' attention to the rebate program benefits. MPWMD is in the process of creating an online rebate application that would be available from the "montereywaterinfo.org" website http://www.montereywaterinfo.org/ .

The rebate program was funded out of the conservation surcharge one-way balancing account.

9.1.7.4 Large Landscape Grant Program

CAW's successful landscape grant program, implemented in 2011, continues to reduce the water demand of municipal properties by changing landscaping and upgrading irrigation systems. CAW marketed the large landscape grant program with a focus on replacing turf on city properties and schools with low water use plants, and/or installation of water saving irrigation technology. The grant award was intended to provide funding for a demonstration project with high visibility, water savings, exemplary landscaping, and/or use of water-saving irrigation technology.

9.1.7.5 WBIC, Rain Sensor Install Program and Soil Moisture Sensors

CAW continued its Rain Sensor Installation Program and has installed 523 rain sensors since the program began in 2011 for residential and non-residential customers. In addition, soil moisture sensors were offered to select customers who have landscapes which would benefit from this add-on to the Sensor Program. The rain sensor has a shut off device which automatically signals the irrigation controller to curtail irrigation when it rains and allows watering to resume when needed. The rain sensor can be programmed to halt irrigation for up to 72 hours after a rainfall event. The soil moisture sensor can be used throughout the year to assist customers in monitoring their usage and to refrain from overwatering their landscapes.

9.1.7.6 CII Audits

CAW continued its commercial audit program established in 2009 along with its contract with WaterWise Consulting to conduct commercial, institutional, and industrial audits. Water Wise Consulting completed 32 audits with an estimated potential savings of 60.99 acre feet following the implementation of the audit recommendations. Since the program began in 2009, over 200 commercial customers have been reached with great potential water savings as the result.

CAW's conservation staff followed up with the customers on site and in person to review the audit reports and provide free devices, such as faucet aerators and pre-rinse spray valves.

Customers were given audit reports that focused on applicable water-saving devices, and estimated water and cost savings together with expected payback periods for such upgrades. The payback period calculations included the rebate incentives available to CII customers through the CAW and MPWMD Rebate Program.

9.1.7.7 Low Income Water/Energy Joint Direct Install Program

California American Water partnered with Pacific Gas and Electric Company (PG&E) to offer a first of its kind Water-Energy Joint Partnership Direct Install Program for its Low Income customers. The program provides low income residential customers with free home improvements to make their home more energy and water efficient. Partnering with PG&E allowed both utilities to share costs as part of an Energy Savings Assistance Program (ESA) Water pilot where California American Water provided funding for the cold water conservation measures (Toilets, Toilet Flappers, Hose nozzles) and water conservation education. PG&E provided funding for all hot water measures (Faucet aerators, showerheads, thermostatic valves, water heater leak repair, etc.). This joint program provided participating customers the convenience of a single contractor visit and single contact to the program administrator instead of separate water and energy audits and multiple installation visits.

In addition to the energy, home weatherization and water measures, California American Water customers also received an indoor and outdoor home water audit and received a brief water conservation education at their home. In 2019, a total of 115 low income households in Monterey were retrofitted through this program.

This partnership was the first Water/Energy Joint program of its kind in California and served as a model for similar programs now developed in other areas of California. Funding for California American Water's portion of the program came from CPUC authorized conservation program funds for low income direct install programs.

9.2 Reporting Implementation

9.2.1 Implementation Over the Past Five Years

Table 9-3 summarizes the DMM implementation over recent years.

Table 9-3. DMM Implementation

NAME OF MEASURE	2016	2016	2017	2017	2018	2018	2019	2019	2020	2020
	Number of Units	Estimated Annual Savings (AFY)	Number of Units	Estimated Annual Savings	Number of Units	Estimated Annual Savings	Number of Units	Estimated Annual Savings	Number of Units	Estimated Annual Savings
Conservation Staff / Training								n/a		
Public Information Programs					35			n/a		
School Education Programs	14		14		12			n/a		
Residential Water Audits	350	14	476	17.0	437	17.48	606	24.24		
Low Flow Fixtures	25,181		25,181	40.3	30,752	34.5	20,876	23.1		
Rebates			2,076		1,148	152.	1,023	15.7		
Soil Moisture and Rain Sensor Install Program	46		46	unknown	28		39			
Low Income Water/Energy Direct Install			189		0		115	2.8		
Landscape Upgrade Grant Program	1		1				1			
CII and Large Landscape Conservation (Audits)	25	16.5	25	16.5	7	4.62	6	3.96		
Sustainable Landscape Programs					1		0			
Total				73.5		208.8		69.7		

9.2.2 Implementation to Achieve Water Use Targets

As discussed in **Chapter 5**, CAW has met its 2020 water use target. However, Monterey Main also realizes a portion of the observed conservation is due to the strict water use restrictions imposed during the drought. If those restrictions are lifted, Monterey Main will remain diligent in continuing use of the above described DMMs. The extensive metering program, ongoing public outreach, and education programs, and assessing and managing distribution system losses over the last several years has helped Monterey Main to maintain overall lower water consumption.

9.3 Water Use Objectives (Future Requirements)

New water use objectives are currently being developed that will define an efficient standard for indoor water use per person. The final water use objectives for Monterey Main have not yet been determined.

10 2020 URBAN WATER MANAGEMENT PLAN
Plan Adoption, Submittal, and Implementation

This chapter describes the steps taken to adopt and submit the UWMP and to make it publicly available. This chapter also includes a discussion of the agency's plan to implement the UWMP.

IN THIS SECTION

- Public Hearing Notices
- Adoption
- Public Availability
- Amendment Process

10.1 Inclusion of all 2020 Data

This UWMP update has been prepared on a calendar year basis and includes all water use and planning data for the 2020 calendar year.

10.2 Notice of Public Hearing

CAW has notified all necessary Cities, Counties, and Districts within its service area of its intent to review the UWMP and consider changes to the plan. These governmental entities as well as a host of local water purveyors and agencies were notified of the preparation of the UWMP and public hearing and encouraged to participate in the development of this plan update, as shown in **Table 2-1**. Copies of the notifications are included in **Appendix J**.

10.3 Public Hearing and Adoption

CAW held a public hearing and adopted the 2020 UWMP on June 17, 2021. Prior to the public hearing notices were published notifying the public of the date of time of the hearing.

CAW adopted the 2020 UWMP after the hearing on June 17, 2021. A copy of the adopting resolution is included in **Appendix K**.

10.4 Plan Submittal

Once the 2020 UWMP and WSCP have been adopted, copies of the 2020 UWMP and WSCP and any subsequent amendments will be submitted to DWR (electronically using the WUEdata reporting tool), the State Library, and all necessary Cities and Counties, within 30 days of adoption.

10.5 Public Availability

Once the plan has been adopted, a hardcopy will be made available for public review at CAW's local Monterey Peninsula office at 511 Forest Lodge Road, Suite 100, Pacific Grove, CA 93950 (subject to office closures due to COVID-19 restrictions). Additionally, an electronic copy will be uploaded to the CAW webpage and available for public reference.

10.6 Notification to Public Utilities Commission

Per Water Code Section 10621(c), those Suppliers that are regulated by the California Public Utilities Commission (CPUC) must submit their UWMP and WSCP to the CPUC as part of their general rate case filings.

CAW will include these plans as part of its general rate case filings.

10.7 Amending an Adopted UWMP or WSCP

If CAW revises its UWMP after approved by DWR, the public notice, hearing, and adoption process will be repeated and an electronic copy of the revised UWMP will be submitted to DWR within 30 days of its adoption.

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Appendix A. 2020 UWMP Checklist

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and Overview	Executive Summary
x	x	Chapter 1	10630.5	Each plan shall include a simple description of the supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a supplier may also choose to include a simple description at the beginning of each chapter.	Summary	Executive Summary
x	x	Section 2.2	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	Chapter 1 Description, 2.2 Basis for Preparing a Plan
x	x	Section 2.6	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	2.3 Coordination and Outreach
x	x	Section 2.6.2	10642	Provide supporting documentation that the water supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan	Plan Preparation	10.2 Notice of Public Hearing and 10.3 Public Hearing and Adoption
x		Section 2.6, Section 6.1	10631(h)	Retail suppliers will include documentation that they have provided their wholesale supplier(s) - if any - with water use projections from that source.	System Supplies	Not Applicable
	x	Section 2.6	10631(h)	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	Not Applicable
x	x	Section 3.1	10631(a)	Describe the water supplier service area.	System Description	3.2 Service Area Boundary
x	x	Section 3.3	10631(a)	Describe the climate of the service area of the supplier.	System Description	3.3 Service Area Climate
x	x	Section 3.4	10631(a)	Provide population projections for 2025, 2030, 2035, 2040 and optionally 2045	System Description	3.4.1 Service Area Population
x	x	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the supplier's water management planning.	System Description	3.4.2 Other Social, Economic, and Demographic Factors
x	x	Sections 3.4 and 5.4	10631(a)	Indicate the current population of the service area.	System Description and Baselines and Targets	3.4.1 Service Area Population
x	x	Section 3.5	10631(a)	Describe the land uses within the service area.	System Description	3.5 Land Uses within Service Area
x	x	Section 4.2	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System Water Use	4.2.2 Past and Current Water Use, Table 4-1, 4.2.4 Projected Water Use, Table 4-5
x	x	Section 4.2.4	10631(d)(3)(C)	Retail suppliers shall provide data to show the distribution loss standards were met.	System Water Use	4.2.3 Distribution System Water Loss, no loss standards have been adopted
x	x	Section 4.2.6	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans and other policies or laws.	System Water Use	4.2.4.1 Projection Methodology, references new State Regulations
x	x	Section 4.2.6	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System Water Use	4.2.4.1 Projection Methodology, references new State Water Use Objective Regulations
x	optional	Section 4.3.2.4	10631(d)(3)(A)	Report the distribution system water loss for each of the 5 years preceding the plan update.	System Water Use	4.2.3 Distribution System Water Loss
x	optional	Section 4.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the supplier.	System Water Use	4.3 Water Use for Lower Income Households
x	x	Section 4.5	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System Water Use	4.4 Climate Change Considerations
x		Chapter 5	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	5.2 Baseline and Target Calculations for 2020 UWMP, Table 5-1
x		Chapter 5	10608.24(a)	Retail suppliers shall meet their water use target by December 31, 2020.	Baselines and Targets	5.4 2020 Compliance Daily Per-Capita Water Use (GPCD), Table 5-2
	x	Section 5.1	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	Not Applicable
x		Section 5.2	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	Not Applicable
x		Section 5.5	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	Not Applicable

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x		Section 5.5 and Appendix E	10608.4	Retail suppliers shall report on their compliance in meeting their water use targets. The data shall be reported using a standardized form in the SBX7-7 2020 Compliance Form	Baselines and Targets	Appendix C
x	x	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought	System Supplies	Table 6-12, Table 7-4, Table 7-5, Table 7-6
x	x	Sections 6.1	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought,*including changes in supply due to climate change.*	System Supplies	Table 6-12, Table 7-4, Table 7-5, Table 7-7, 6.10.1 Climate Change Effects
x	x	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies	System Supplies	7.1.2 Water Supply Management
x	x	Section 6.1.1	10631(b)(3)	Describe measures taken to acquire and develop planned sources of water	System Supplies	6.9 Future Water Projects
x	x	Section 6.2.8	10631(b)	Identify and quantify the existing and planned sources of water available for 2020, 2025, 2030, 2035, 2040 and optionally 2045	System Supplies	Table 6-11 and Table 6-12
x	x	Section 6.2	10631(b)	Indicate whether groundwater is an existing or planned source of water available to the supplier.	System Supplies	6.1 Carmel River Aquifer, 6.2 Seaside Groundwater Basin, Table 6 1, Table 6-2
x	x	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or 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	Not Applicable
x	x	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System Supplies	6.1 Carmel River Aquifer, 6.2 Seaside Groundwater Basin, Figure 6-1, Figure 6-2
x	x	Section 6.2.2	10631(b)(4)(B)	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	6.2 Seaside Groundwater Basin (is adjudicated), Appendix G
x	x	Section 6.2.2.1	10631(b)(4)(B)	For unadjudicated basins, indicate whether or not the department has identified the basin as a high or medium priority. Describe efforts by the supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	System Supplies	6.1 Carmel River Aquifer
x	x	Section 6.2.2.4	10631(b)(4)(C)	Provide a detailed description and analysis of the location, amount, and sufficiency of groundwate pumped by the urban water supplier for the past five years	System Supplies	Table 6-1
x	x	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System Supplies	Table 6-2
x	x	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long- term basis.	System Supplies	6.8 Water Exchanges and Transfers
x	x	Section 6.2.5	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)	Table 6-5 and Table 6-6
x	x	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the supplier's service area.	System Supplies (Recycled Water)	6.6 Wastewater and Recycled Water, Table 6-6
x	x	Section 6.2.5	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)	6.6.5 Potential, Current, and Projected Recycled Water Uses, Table 6-7
x	x	Section 6.2.5	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)	6.6.5 Potential, Current, and Projected Recycled Water Uses, Table 6-7, Table 6-8
x	x	Section 6.2.5	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)	6.6.5 Potential, Current, and Projected Recycled Water Uses / Not Applicable
x	x	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the supplier's service area.	System Supplies (Recycled Water)	6.6.5 Potential, Current, and Projected Recycled Water Uses / Not Applicable
x	x	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System Supplies	6.7 Sand City Desalination, 6.9.1 Monterey Peninsula Water Supply Project Ocean Desalination
x	x	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the supplier's service area with quantified amount of collection and treatment and the disposal methods	System Supplies (Recycled Water)	6.6 Wastewater and Recycled Water, Table 6-5
x	x	Section 6.2.8, Section 6.3.7	10631(f)	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 for a period of drought lasting 5 consecutive water years.	System Supplies	6.9 Future Water Projects
x	x	Section 6.4 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a supplier can readily obtain.	System Suppliers, Energy Intensity	6.11 Energy Intensity
x	x	Section 7.2	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	7.1.1 Constraints on Water Sources

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 7.2.4	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	7.1.2 Water Supply Management
x	x	Section 7.3	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive 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	7.1.4 Water Service Reliability, Table 7-4, Table 7-5, Table 7-6
x	x	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water Supply Reliability Assessment	7.2 Drought Risk Assessment
x	x	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts 5 consecutive years.	Water Supply Reliability Assessment	7.2 Drought Risk Assessment, Table 7-7
x	x	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water Supply Reliability Assessment	7.1.3 Year Type Characterization, Table 7-1, Table 7-2
x	x	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.	Water Supply Reliability Assessment	Table 7-5, Table 7-6
x	x	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water Supply Reliability Assessment	7.1.1 Constraints on Water Sources, 7.1.3 Year Type Characterization
x	x	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water Shortage Contingency Planning	Appendix I
x	x	Chapter 8	10632(a)(1)	Provide the analysis of water supply reliability (from Chapter 7 of Guidebook) in the WSCP	Water Shortage Contingency Planning	Appendix I, 1.1 Water Supply Reliability Analysis
x	x	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the water shortage contingency plan to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water Shortage Contingency Planning	1.10 WSCP Refinement Procedures
x	x	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the supplier will use each year to determine its water reliability.	Water Shortage Contingency Planning	Appendix I, 1.2 Annual Water Supply and Demand Assessment
x	x	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water Shortage Contingency Planning	Appendix I, 1.2 Annual Water Supply and Demand Assessment
x	x	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10, 20, 30, 40, 50 percent shortage and greater than 50 percent shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water Shortage Contingency Planning	Appendix I, 1.3 Six Standard Water Shortage Levels, Table 1, Figure 1
x	x	Section 8.3	10632(a)(3)(B)	Suppliers with an existing water shortage contingency plan that uses different water shortage levels must cross reference their categories with the six standard categories.	Water Shortage Contingency Planning	Appendix I, 1.3.5 Standard Water Shortage Level Crosswalk, Figure 1
x	x	Section 8.4	10632(a)(4)(A)	Suppliers with water shortage contingency plans that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water Shortage Contingency Planning	Appendix I, 1.4.2 Supply Augmentation, Table 3
x	x	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water Shortage Contingency Planning	Appendix I, 1.4.1 Demand Reduction, Table 2
x	x	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water Shortage Contingency Planning	Appendix I, 1.4.3 Operational Changes
x	x	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions are appropriate to local conditions.	Water Shortage Contingency Planning	Appendix I, 1.1.1 Shortage Level 1, Attachment 2
x	x	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water Shortage Contingency Planning	Appendix I, Table 2
x	x	Section 8.4.6	10632.5	The plan shall include a seismic risk assessment and mitigation plan.	Water Shortage Contingency Plan	Appendix I, 1.4.5 Seismic Risk Assessment and Mitigation Plan
x	x	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water Shortage Contingency Planning	Appendix I, 1.5 Communication Protocols, Figure 2
x	x	Section 8.5 and 8.6	10632(a)(5)(B) 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water Shortage Contingency Planning	Appendix I, 1.5 Communication Protocols, Figure 3
x		Section 8.6	10632(a)(6)	Retail supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water Shortage Contingency Planning	Appendix I, 1.6 Compliance and Enforcement
x		Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the supplier to enforce shortage response actions.	Water Shortage Contingency Planning	Appendix I, 1.7 Legal Authorities

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 8.7	10632(a)(7)(B)	Provide a statement that the supplier will declare a water shortage emergency Water Code Chapter 3.	Water Shortage Contingency Planning	Not Applicable- CAW as a public utlity does not have the authority to declare a water shortage emergency, but will advise the CPUC of a water shortage emergency and them the MPWMD will implement the appropriate stage and enforcement, as described in Appendix I, 1.3 Six Standard Water Shortage Levels
x	x	Section 8.7	10632(a)(7)(C)	Provide a statement that the supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water Shortage Contingency Planning	Appendix I, 1.7 Legal Authorities
x	x	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix I, 1.8 Financial Consequences of WSCP
x	x	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water Shortage Contingency Planning	Appendix I, 1.8 Financial Consequences of WSCP
x		Section 8.8	10632(a)(8)(C)	Retail suppliers must describe the cost of compliance with Water Code Chapter 3.3: Excessive Residential Water Use During Drought	Water Shortage Contingency Planning	Appendix I, 1.8 Financial Consequences of WSCP
x		Section 8.9	10632(a)(9)	Retail suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data is collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water Shortage Contingency Planning	Appendix I, 1.9 Monitoring and Reporting
x		Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas	Water Shortage Contingency Planning	Appendix I, 1.11 Special Water Feature Distinction
x	x	Sections 8.12 and 10.4	10635(c)	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 30 days after the submission of the plan to DWR.	Plan Adoption, Submittal, and Implementation	Appendix I, 1.12 Plan Adoption, Submittal, and Availability, TBD
x	x	Section 8.14	10632(c)	Make available the Water Shortage Contingency Plan to customers and any city or county where it provides water within 30 after adopted the plan	Water Shortage Contingency Planning	Appendix I, 1.12 Plan Adoption, Submittal, and Availability, TBD
	x	Sections 9.1 and 9.3	10631(e)(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	Not Applicable
x		Sections 9.2 and 9.3	10631(e)(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	9.1 Existing Demand Management Measures for Retail, 9.2 Reporting Implementation
x		Chapter 10	10608.26(a)	Retail suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan Adoption, Submittal, and Implementation	10.3 Public Hearing and Adoption
x	x	Section 10.2.1	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. Reported in Table 10-1	Plan Adoption, Submittal, and Implementation	10.2 Notice of Public Hearing, 2.3 Coordination and Outreach
x	x	Section 10.4	10621(f)	Each urban water supplier shall update and submit its 2020 plan to the department by July 1, 2021.	Plan Adoption, Submittal, and Implementation	TBD
x	x	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the urban water supplier made the plan and contingency plan available for public inspection, published notice of the public hearing, and held a public hearing about the plan and contingency plan	Plan Adoption, Submittal, and Implementation	TBD
x	x	Section 10.2.2	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	TBD
x	x	Section 10.3.2	10642	Provide supporting documentation that the plan and contingency plan has been adopted as prepared or modified.	Plan Adoption, Submittal, and Implementation	TBD
x	x	Section 10.4	10644(a)	Provide supporting documentation that the urban water supplier has submitted this UWMP to the California State Library.	Plan Adoption, Submittal, and Implementation	TBD
x	x	Section 10.4	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	TBD
x	x	Sections 10.4.1 and 10.4.2	10644(a)(2)	The plan, or amendments to the plan, submitted to the department shall be submitted electronically.	Plan Adoption, Submittal, and Implementation	TBD
x	x	Section 10.5	10645(a)	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	TBD

Retail	Wholesale	2020 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	2020 UWMP Location (Optional Column for Agency Review Use)
x	x	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its water shortage contingency 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	TBD
x	x	Section 10.6	10621(c)	If supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan Adoption, Submittal, and Implementation	TBD
x	x	Section 10.7.2	10644(b)	If revised, submit a copy of the water shortage contingency plan to DWR within 30 days of adoption.	Plan Adoption, Submittal, and Implementation	TBD

B

Appendix B. DWR Standardized Tables

2-1R | Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2020	Volume of Water Supplied 2020
CA2710004	Cal Am Water Company - Monterey	38,644	8,808
CA2701882	Cal Am Water Company - Bishop	418	147
CA2710022	Cal Am Water Company - Hidden Hills	452	134
CA2701466	Ryan Ranch WS	214	49
	Total:	**39,728**	**9,138**

2-2 | Public Water Systems

Type of Plan	Member of RUWMP	Member of Regional Alliance	Name of RUWMP or Regional Alliance
Individual UWMP	No	No	

2-3 | Agency Identification

Type of Supplier	Year Type	First Day of Year		Unit Type
		DD	MM	
Retailer	Calendar Years			Acre Feet (AF)

Conversion to Gallons: *325851*
Conversion to Gallons per Day: *892.7425*

2-4R | Water Supplier Information Exchange

Wholesale Water Supplier Name
Not Applicable

3-1R | Current & Projected Population

Population Served	2020	2025	2030	2035	2040	2045
Monterey Main	91,717	93,577	95,437	97,297	99,157	101,017
Total	**91,717**	**93,577**	**95,437**	**97,297**	**99,157**	**101,017**

4-1R | Actual Demands for Water

Use Type	Additional Description	Level of Treatment When Delivered	2020 Volume
Residential	Single Family and Multifamily Residential	Drinking Water	5,133
Commercial		Drinking Water	3,001
Industrial		Drinking Water	13
Other Public Authority	Institutional/ Governmental. Includes government accounts and schools	Drinking Water	393
Company Accounts	CAW Accounts	Drinking Water	13
Sales for Resale	Sales to other agencies	Drinking Water	6
Fire	Fire Service	Drinking Water	443
Miscellaneous Sales	Construction meter usage	Drinking Water	13
Losses		Drinking Water	124
		Total:	**9,138**

4-2R | Projected Demands for Water

Use Type	Additional Description	Projected Water Use				
		2025	2030	2035	2040	2045
Residential	Single Family and Multifamily Residential	5,031	6,009	6,404	6,800	7,195
Commercial		4,212	4,622	4,783	4,943	5,103
Industrial		27	28	29	30	31
Other Public Authority	Institutional/ Governmental. Includes government accounts and schools	533	555	577	598	620
Company Accounts	CAW Accounts	23	24	25	26	27
Sales for Resale	Sales to other agencies	-	-	-	-	-
Fire	Fire Service	400	400	400	400	400
Miscellaneous Sales	Construction meter usage	11	11	12	12	13
Losses		205	233	245	256	268
Total:		**10,442**	**11,882**	**12,475**	**13,065**	**13,657**

4-3R | Total Gross Water Use

	2020	2020	2030	2035	2040	2045
Potable and Raw Water From Table 4-1R and 4-2R	9,138	10,442	11,882	12,475	13,065	13,657
Recycled Water Demand* Non-Potable Reuse from Table 6-4R	1,155	1,178	1,202	1,223	1,243	1,264
Total Water Use:	**10,293**	**11,620**	**13,084**	**13,698**	**14,308**	**14,921**

4-4R | 12 Month Water Loss Audit Reporting

Report Period Start Date		Volume of Water Loss*
MM	YYYY	
1	2016	637
1	2017	332
1	2018	406
1	2019	509
1	2020	124

4-5R | Inclusion in Water Use Projections

Are Future Water Savings Included in Projections? Refer to Appendix K of UWMP Guidebook.	Yes
Section or page number where the citations utilized in the demand projects can it be found:	Section 4.2.4.1 on Page 4-5, references new State Water Use
Are Lower Income Residential Demands Included in Projections?	Yes

5-1R | Baselines & Targets Summary

Baseline Period	Start Year	End Year	Average Baseline GPCD*	Confirmed 2020 Target *
10-15 Year	1996	2005	114	118
5 Year	2004	2008	143	

*All values are in Gallons per Capita per Day (GPCD)

5-2R | 2020 Compliance

Actual 2020 GPCD*	Optional Adjustments to 2020 GPCD					2020 GPCD* (Adjusted if applicable)	Supplier Achieved Targeted Reduction in 2020
	Extraordinary Events*	Economic Adjustment*	Weather Normalization*	Total Adjustments*	Adjusted 2020 GPCD*		
89	0	0	0	0	0	0	Yes

*All values are in Gallons per Capita per Day (GPCD)

6-1R | Groundwater Volume Pumped

Supplier will complete the table.

Groundwater Type	Location or Basin Name	2016	2017	2018	2019	2020
Alluvial Basin	Carmel Valley Aquifer	6,181	5,619	5,954	6,249	5,317
Alluvial Basin	Seaside Groundwater Basin	2,471	3,532	2,296	2,378	2,802
	Total:	**8,652**	**9,152**	**8,249**	**8,627**	**8,119**

Note: The Carmel River Aquifer volume excludes water that was injected into the Seaside Basin for ASR. This volume is counted as ASR storage and supply.

6-2R | Wastewater Collected within Service Area in 2020

The supplier will complete the table.

Percentage of 2020 service area covered by wastewater collection system (optional):	

Wastewater Collection			**Recipient of Collected Wastewater**			
Name of Wastewater Collection Agency	**Wastewater Volume Metered or Estimated**	**Wastewater Volume Collected from UWMP Service Area in 2020**	**Name of Wastewater Agency Receiving Collected Wastewater**	**Wastewater Treatment Plant Name**	**Wastewater Treatment Plant Located within UWMP Area**	**WWTP Operation Contracted to a Third Party**
City of Pacific Grove	Estimated	1,250	**Montery One Water**	Monterey One Water Regional Treatment Plant	No	No
City of Monterey	Estimated	3,596	**Montery One Water**	Monterey One Water Regional Treatment Plant	No	No
City of Seaside, City of Sand City, City of Del Rey Oaks	Estimated	2,825	**Montery One Water**	Monterey One Water Regional Treatment Plant	No	No
Pacific Beach Community Services District	Metered	477	**Carmel Area Wastewater District**	Carmel Area Wastewater District Wastewater Treatment Plant	Yes	No
Carmel Area Wastewater District	Metered	919	**Carmel Area Wastewater District**	Carmel Area Wastewater District Wastewater Treatment Plant	Yes	No
California American Water	Estimated	69	**California American Water**	Carmel Valley Ranch WWTP	Yes	No
California American Water	Estimated	61	**California American Water**	Pasadera/ Laguna Seca Ranch	Yes	No
California American Water	Estimated	6	**California American Water**	White Oaks Septic System	Yes	No
California American Water	Estimated	4	**California American Water**	Village Green Septic System	Yes	No
City of Pacific Grove	Estimated	85	**Montery One Water**	Pacific Grove Satellite Recycled Water Treatment Plant	Yes	No
Total:		**9,293**				

6-3R | Wastewater Treatment & Discharge Within Service Area in 2020

The supplier will complete the table.

Wastewater Treatment Plant Name	Discharge Location Name or Identifier	Discharge Location Description	Wastewater Discharge ID Number	Method of Disposal	Plant Treats Wastewater Generated Outside the Service Area	Treatment Level	2020 Volumes				
							Wastewater Treated	Discharged Treated Wastewater	Recycled Within Service Area	Recycled Outside of Service Area	Instream Flow Permit Requirement
Monterey One Water Regional Treatment Plant	Pacific Ocean	Monterey Bay Ocean Outfall	NPDES No. CA0048551	Ocean outfall	Yes	Advanced	7,672	405	1,728	3,766	-
Carmel Area Wastewater District Wastewater Treatment Plant	Pacific Ocean	Carmel Bay Ocean Outfall	NPDES No. CA0047996	Ocean outfall	No	Tertiary	1,396	457	939	-	-
Carmel Valley Ranch Wastewater Treatment Plant	Carmel Valley Golf Course and Golf Course Lakes	Storage Pond for Recycled Water Use	WRR No. 01-083	Other	No	Tertiary	69	-	69	-	-
Pasadera / Laguna Seca Ranch Wastewater Treatment Plant	Laguna Seca Golf Course	Storage Pond for Recycled Water Use	WDR No. 98-58	Other	No	Tertiary	61	-	61	-	-
Pacific Grove Satellite Recycled Water Treatment Plant	M1W Collection System	Collection System conveyed to the M1W Regional Treatment Plant	WRR No. R3-2016-0044	Other	No	Tertiary	85		85		
						Total:	**9,283**	**862**	**2,883**	**3,766**	**-**

Volume of collected and treated wastewater and the volume of such that went to recycled water is estimated except for at the Carmel Wastewater District Plant, where flows are metered and 100% from the CAW service area. Total wastewater treated excludes approximately 10 AF collected at the White Oaks and Village Green Septic Systems.

6-4R | Recycled Water Direct Beneficial Uses Within Service Area

The supplier will complete the table.											
Name of Supplier Producing (Treating) the Recycled Water:			Carmel Area Wastewater District, Monterey One Water, California American Water, City of Pacific Grove								
Name of Supplier Operating the Recycled Water Distribution System:			Carmel Area Wastewater District, Monterey One Water, California American Water, City of Pacific Grove								
Supplemental Volume of Water Added in 2020:											0%
Source of 2020 Supplemental Water:			N/A								
Beneficial Use Type	**Potential Beneficial Uses of Recycled Water**	**Amount of Potential Uses of Recycled Water**	**General Description of 2020 Uses**	**Level of Treatment**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**
Landscape Irrigation (excludes golf courses)										
Golf Course Irrigation	Unrestricted outdoor use	1,300	Pebble Beach, Carmel Valley, Laguna Seca, and Pacific Grove Links Golf Course Irrigation	Tertiary	1,155	1,178	1,202	1,223	1,243	1,264
Commercial Use										
Industrial Use										
Geothermal and Other Energy Production										
Seawater Intrusion Barrier										
Recreational Impoundment										
Wetlands or Wildlife Habitat										
Groundwater Recharge (IPR)*	Unrestricted use	5,750	Pure Water Monterey and Expansion Seaside Basin Injection	Advanced	788	4,028	5,750	5,750	5,750	5,750
Surface Water Augmentation (IPR)*										
Direct Potable Reuse										
				Total:	**1,943**	**5,206**	**6,952**	**6,973**	**6,993**	**7,014**

*IPR - Indirect Potable Reuse

6-5R | 2015 Recycled Water Use Projection Compared to 2020 Actual

The supplier will complete the table.

Use Type	2015 Projection for 2020	2020 Actual Use
Agricultural Irrigation		
Landscape Irrigation (excludes golf courses)		
Golf Course Irrigation	1,414	1,155
Commercial Use		
Industrial Use		
Geothermal and Other Energy Production		
Seawater Intrusion Barrier		
Recreational Impoundment		
Wetlands or Wildlife Habitat		
Groundwater Recharge (IPR)*		788
Surface Water Augmentation (IPR)*		
Direct Potable Reuse		
Total:	**1,414**	**1,943**

Note: Estimated recycled water use from CAWD and California American Water used within service area.

6-6R | Methods to Expand Future Recycled Water Use

NOTES: California American Water is an investor owned utility and therefore does not have the authority to issue a mandatory recycled water use ordinance.

The supplier does not plan to expand recycled water use in the future.
The supplier will not complete the table below but will provide narrative explanation.

6-7R | Expected Future Water Supply Projects or Programs

The supplier will complete the table.						
Name of Future Projects or Programs	**Joint Project with Other Suppliers**	**Agency Name**	**Description**	**Planned Implementation Year**	**Planned for Use in Year Type**	**Expected Increase in Water Supply to Supplier**
Pure Water Monterey Expansion	Yes	Monterey Peninsula Water Management District and Monterey One Water	Expansion of the Pure Water Monterey Project to provide an additional 2,250 AFY to the Seaside Basin for CAW's use.	2025	All Year Types	Up to 2,250 AFY when avaliable. Only 528 AFY projected in 2025 normal year, less in dry years
Monterey Peninsula Water Supply Project Ocean Desalination	No		Ocean Desalination Plant	2030	All Year Types	6,252 AFY

6-8R | Actual Water Supplies

Water Supply	Additional Detail on Water Supply	2020		
		Actual Volume	Water Quality	Total Right or Safe Yield
Groundwater (not desalinated)	Carmel River Aquifer (Note 1 & 2)	5,317	Drinking Water	6,060
Groundwater (not desalinated)	Seaside Groundwater Basin (Note 3)	2,802	Drinking Water	2,183
Desalinated Water - Groundwater	Sand City Desalination (Note 4)	213	Drinking Water	300
Other	Aquifer Storage and Recovery (Note 5)	806	Drinking Water	1,300
	Total:	**9,138**		**9,843**

Notes:

1.CAW's total volume extracted from the Carmel River in 2020 was 5,977 AF, however, 660 AF was injected into the Seaside Basin for ASR. This volume is accounted for in the total ASR supply.

2.CAW's allowable diversion from the Carmel River Aquifer was 6,310 AFY in WY 2019-2020 and 5,310 AFY in WY 2020-2021, which equates to 6,060 AFY in calendar year 2020 based on equal diversion each month.

3.CAW's Seaside Groundwater Basin allocation was 1,820 AFY in WY 2019-2020 and 1,474 AFY in WY 2020-2021, which equates to 1,734 AFY in calendar year 2020. The total right is 1,734 AFY plus 136.23 AF carryover storage credits from WY 2019 and 845.93 AF storage credits for WY 2020 (calculated as 449 AF combined storage carryover credits for calendar year 2020). Note CAW did overproduce 334.21 AF beyond the Natural Safe Yield and 229.63 AF beyond the Operating Safe Yield in WY 2020 and paid an overproduction assessment (Source: Seaside Groundwater Basin Watermaster Annual Report WY 2020)

4.CAW's total rights from the Sand City Desalination Plant is 94 AFY, however the plant's capacity is 300 AFY and CAW may utilize the unused rights until development occurs and acquires the rights to the remaining capacity.

5.In 2020 the ASR extraction volume was 806 AF, which includes 660 AF of injection volume from Carmel River seasonal flows plus 146 AF of ASR storage water.

6-8DS | Source Water Desalination

The supplier will complete the table below.

Plant Name or Well ID	Plant Capacity	Intake Type	Source Water Type	Influent TDS	Brine Discharge	Volume of Water Desalinated in AFY				
						2016	2017	2018	2019	2020
Sand City Desalination Plant	300	Vertical Well	Groundwater	35,000 ppm	Other (describe in notes)	185	256	194	106	213
					Total:	**185**	**256**	**194**	**106**	**213**

Brine is disposed via injection to a a below sea-level horizontal concentrate well beneath the coastal bluff. The brine salinity does not exceed the seawater salinity. Source: https://www.mpwmd.net/water-supply/desalination/in-operation/.

6-9R | Projected Water Supplies

Water Supply	Additional Detail on Water Supply	Projected Water Supply									
		2025		2030		2035		2040		2045	
		Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield	Reasonably Available Volume	Total Right or Safe Yield
Groundwater (not desalinated)	Carmel River Aquifer	3,376	3,376	3,376	3,376	3,376	3,376	3,376	3,376	3,376	3,376
Groundwater (not desalinated)	Seaside Basin	1,474	1,474	774	774	774	774	774	774	774	774
Desalinated Water - Groundwater	Sand City Desalination	94	94	94	94	94	94	94	94	94	94
Other	Aquifer Storage and Recovery	920	920	920	920	920	920	920	920	920	920
Recycled Water	Pure Water Monterey	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500
Recycled Water	PWM Expansion	528	528	2,250	2,250	2,250	2,250	2,250	2,250	2,250	2,250
Desalinated Water - Surface Water	MPWSP Ocean Desalination Project	-	-	6,252	6,252	6,252	6,252	6,252	6,252	6,252	6,252
Total:		**9,892**	**9,892**	**17,166**	**17,166**	**17,166**	**17,166**	**17,166**	**17,166**	**17,166**	**17,166**

7-1R | Basis of Water Year Data (Reliability Assessment)

Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP.	
Page Location for Narrative in UWMP:	Section 7.1.3, pages 7-3 through 7-5

7-2R | Normal Year Supply and Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (Note 1)	8,903	15,449	15,449	15,449	15,449
Demand Totals (Note 2)	8,903	11,882	12,475	13,065	13,657
Difference:	**0**	**3,567**	**2,974**	**2,384**	**1,792**

Notes:
1. Supply totals from Table 6-9R minus 10 percent for a supply buffer.
2. Demand totals from Table 4-2R. In year 2025 demand is projected to exceed supply and the WSCP is needed to reduce demands by about 1,540 AFY, or 15%.

7-3R | Single Dry Year Supply & Demand Comparison

	2025	2030	2035	2040	2045
Supply Totals (Note 1)	7,904	14,862	15,022	15,176	15,176
Demand Totals (Note 2)	7,904	11,883	12,474	13,065	13,656
Difference:	**0**	**2,979**	**2,548**	**2,111**	**1,520**

Note:
1. Supply totals listed incorporate a 10 percent buffer subtracted from the supply total.
2. Demand is reduced by 2,539 AFY, or 24%, in 2025 through the WSCP. From 2030 to 2045 demand is unrestricted.

7-4R | Multiple Dry Years Supply & Demand Comparison

		2025	2030	2035	2040	2045
First Year	**Supply Totals (Note 1)**	9,661	18,164	18,361	18,549	18,549
	Demand Totals (Note 2)	7,904	11,883	12,474	13,065	13,656
	Difference:	**1,757**	**6,281**	**5,887**	**5,484**	**4,893**
Second Year	**Supply Totals (Note 1)**	8,436	17,441	17,833	18,210	18,210
	Demand Totals (Note 2)	6,902	11,883	12,474	13,065	13,656
	Difference:	**1,534**	**5,558**	**5,359**	**5,145**	**4,554**
Third Year	**Supply Totals (Note 1)**	7,211	16,717	17,306	17,871	17,871
	Demand Totals (Note 2)	5,900	11,883	12,474	13,065	13,656
	Difference:	**1,311**	**4,834**	**4,832**	**4,806**	**4,215**
Fourth Year	**Supply Totals (Note 1)**	6,325	16,333	17,118	17,871	17,871
	Demand Totals (Note 2)	5,175	11,883	12,474	13,065	13,656
	Difference:	**1,150**	**4,450**	**4,644**	**4,806**	**4,215**
Fifth Year	**Supply Totals (Note 1)**	5,438	15,948	16,930	17,871	17,871
	Demand Totals (Note 2)	4,450	11,883	12,474	13,065	13,656
	Difference:	**989**	**4,065**	**4,456**	**4,806**	**4,215**

Note:
1. Supply totals listed incorporate a 10 percent buffer subtracted from the supply total.
2. Demand is reduced through the WSCP in 2025 by 24% in the first year and increases each year to the maximum 57% in the fifth year. From 2030 to 2045 demand is unrestricted.

2021	**Gross Water Use**	9,399
	Total Supplies	9,187
	Surplus/Shortfall without WSCP Action	**-212**
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	212
	Revised Surplus/Shortfall	**0**
	Resulting Percent Use Reduction from WSCP Action	**2%**
2022	**Gross Water Use**	9,660
	Total Supplies	6,691
	Surplus/Shortfall without WSCP Action	**-2,969**
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	2,969
	Revised Surplus/Shortfall	**0**
	Resulting Percent Use Reduction from WSCP Action	**31%**
2023	**Gross Water Use**	9,920
	Total Supplies	5,710
	Surplus/Shortfall without WSCP Action	**-4,210**
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	4,210
	Revised Surplus/Shortfall	**0**
	Resulting Percent Use Reduction from WSCP Action	**42%**
2024	**Gross Water Use**	10,181
	Total Supplies	5,080
	Surplus/Shortfall without WSCP Action	**-5,101**
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	5,101
	Revised Surplus/Shortfall	**0**
	Resulting Percent Use Reduction from WSCP Action	**50%**
2025	**Gross Water Use**	10,442
	Total Supplies	4,450
	Surplus/Shortfall without WSCP Action	**-5,992**
	Planned WSCP Actions (Use Reduction and Supply Augmentation)	
	WSCP (Supply Augmentation Benefit)	0
	WSCP (Use Reduction Savings Benefit)	5,992
	Revised Surplus/Shortfall	**0**
	Resulting Percent Use Reduction from WSCP Action	**57%**

10-1R | Notification to Cities & Counties

City	60 Day Notice	Notice of Public Hearing	Other
City of Carmel-by-the-Sea	Yes	Yes	
City of Del Rey Oaks	Yes	Yes	
City of Monterey	Yes	Yes	
City of Pacific Grove	Yes	Yes	
City of Sand City	Yes	Yes	
City of Seaside	Yes	Yes	
County	**60 Day Notice**	**Notice of Public Hearing**	**Other**
County of Monterey	Yes	Yes	
Presidio of Monterey	Yes	Yes	
Other	**60 Day Notice**	**Notice of Public Hearing**	**Other**
Pebble Beach Community Services District	Yes	Yes	
Carmel Area Wastewater District	Yes	Yes	
Monterey Regional Water Pollution Control Agency	Yes	Yes	
Monterey Peninsula Water Management District	Yes	Yes	
Alisal Water Corporation	Yes	Yes	
Monterey County CSA 75	Yes	Yes	

C

Appendix C. SBx7-7 Tables and Verification Forms

SBx7-7 Verification Tables and Targets

Appendix A to
California American Water – Monterey County District
2015 Urban Water Management Plan

Technical Memorandum

Date: 6/22/2016

To: Mark Reifer, P.E.
California American Water
8657 Grand Avenue
Rosemead, CA 91770

Phone: (916) 568-4218

Prepared by: Spencer Waterman

Project: 2015 Urban Water Management Plan for the Central Division- Monterey County District

SUBJECT: **BASELINE DAILY PER CAPITA WATER USE AND TARGET WATER USE UPDATE**

This memorandum presents the procedure used by California American Water's Central Division Monterey County District to meet the requirements of Senate Bill x 7-7 (SB7) as defined in the Water Conservation Act of 2009 as incorporated into Division 6 of the California Water Code, commencing with Section 10608 of Part 2.55.

Background

On November 10, 2009, Governor Arnold Schwarzenegger signed Senate Bill x 7-7 into law. The legislation requires all water suppliers to achieve a reduction in per capita water use of 20% by December 31, 2020, with an interim target of 10% reduction by December 31, 2015. The legislation requires each urban water supplier to develop, and include in its Urban Water Management Plans (UWMPs), estimates of: 1) *baseline* daily per capita water use; 2) daily per capita water use *target*; 3) daily per capita water use *interim target*; and 4) *compliance* daily per capita water use. The UWMP must also include bases for determining the estimates, with references to supporting data. However, SB 7 did not include a detailed description of the allowable methodologies for determining the required values. Instead, it required California Department of Water Resources (DWR) to develop appropriate methodologies and criteria, and to make them available to water suppliers no later than October 1, 2010. In consideration of this delay, the bill extended the deadline for adoption of the 2010 UWMP to July 1, 2011.

In connection with preparation of California American Water's Monterey County District 2010 UWMP update, California American Water hired Water Systems Consulting, Inc. (WSC) to develop the required estimates described by SB 7. The Monterey County District has multiple service areas. Consistent with the requirements outlined in DWR's *Guidebook to Assist Urban Water Suppliers to Prepare a 2010 Urban Water Management Plan*, compliance is calculated for the District as a whole. California American Water directed WSC to apply methodologies consistent with those described in the Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use guidebook (Methodologies Guidebook). The selected procedure used to develop the required SB7 estimates includes the following basic steps:

1. Calculate baseline water use, which is the average gross daily water use per capita, reported in gallons per capita per day, based on gross water use and service area population for a continuous 10-year period ending no earlier than December 31, 2004
2. Calculate urban water use target using one of the four methods described below
3. Check and confirm the urban water use target using the five-year running average
4. Calculate the interim urban water use target (equal to the average of the baseline and confirmed urban water use target)
5. Calculate the compliance daily per capita water use (equal to the gross daily water use per capita during the final year of the reporting period (i.e. 2010)

DWR allows the urban water supplier to choose one of four different methods to calculate the urban water use target in Step 2 above.

- Method 1 involves calculating the target based on 80% of baseline daily per capita water use and the interim target based on 90% of the baseline daily per capita water use.
- Method 2 involves calculating the per capita daily water use by using the sum of performance standards applied to indoor residential use, landscaped area water use, and commercial, industrial, and institutional uses.
- Method 3 calculates the water use target as 95% of the applicable state hydrologic region target as stated in the draft 20x2020 Water Conservation Plan. California American Water's service areas are located in the Monterey hydrologic region number 5 as defined in the State's 20x2020 Water Conservation Plan.
- Method 4 is an approach developed by DWR and it uses a spreadsheet to calculate estimated water savings factors to estimate targets.

Gross Water Use

SB 7 defines gross water use as:

> *"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."*

From 1987 to 2003, the Monterey County District utilized both surface diversions from the Carmel River and groundwater as the primary sources of supply. However, 2004 marked the first year that the Monterey County District ceased all surface diversions and supplied water solely from groundwater. Presently, groundwater represents 99% of the current supply with some quantities deriving from desalination. Therefore, gross water use is calculated as the sum of California American Water's total groundwater and desalination production.

Population Estimates and Projections

The population estimates for California American Water's service areas were calculated using DWR's online Population Tool, which utilizes Geographical Information Systems (GIS) service area boundaries, service connection data and Census data. The DWR Population Tool overlaps GIS shapefiles with Census populations by Census block for 1990, 2000 and 2010. The calculated population of each block within California American Water's service area is summed up to provide populations for 1990, 2000, and 2010. Populations are divided by the total service connections in each respective census year to come up with a persons per connection factor for the purposes of projecting populations from 2010-2015. Linear interpolation was used to determine the population for years in between the census years. In 2010, there were 10,600 census blocks within the Monterey County District. The Monterey District service area intersected with 2,776 of those census blocks

Baseline Per Capita Water Use

WSC calculated per capita water use using gross water use values and the population estimates shown in Table 1. The annual per capita water use value was averaged across 10-year periods ranging from 1998-2007 through 2001-2010. Figure 1 shows the historical population, along with the annual per capita water use for the years 1998 through 2010.

Table 1. Baseline Daily Per Capita Water Use

Calendar Year	Distribution System Population[1]	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)	10 year running average (gpcd)
1994	95,607	n/a	n/a	
1995	95,806	n/a	n/a	
1996	96,006	14	151	
1997	96,205	15	158	
1998	96,405	13	130	
1999	96,604	14	141	
2000	96,803	13	139	
2001	96,464	14	145	
2002	96,125	13	140	
2003	95,787	14	141	
2004	95,448	14	148	
2005	95,109	14	144	144
2006	94,770	13	138	142
2007	94,431	13	142	141
2008	94,092	13	143	142
2009	93,753	12	131	141
2010	93,414	11	122	139
Base Daily Per Capita Water Use				**144**

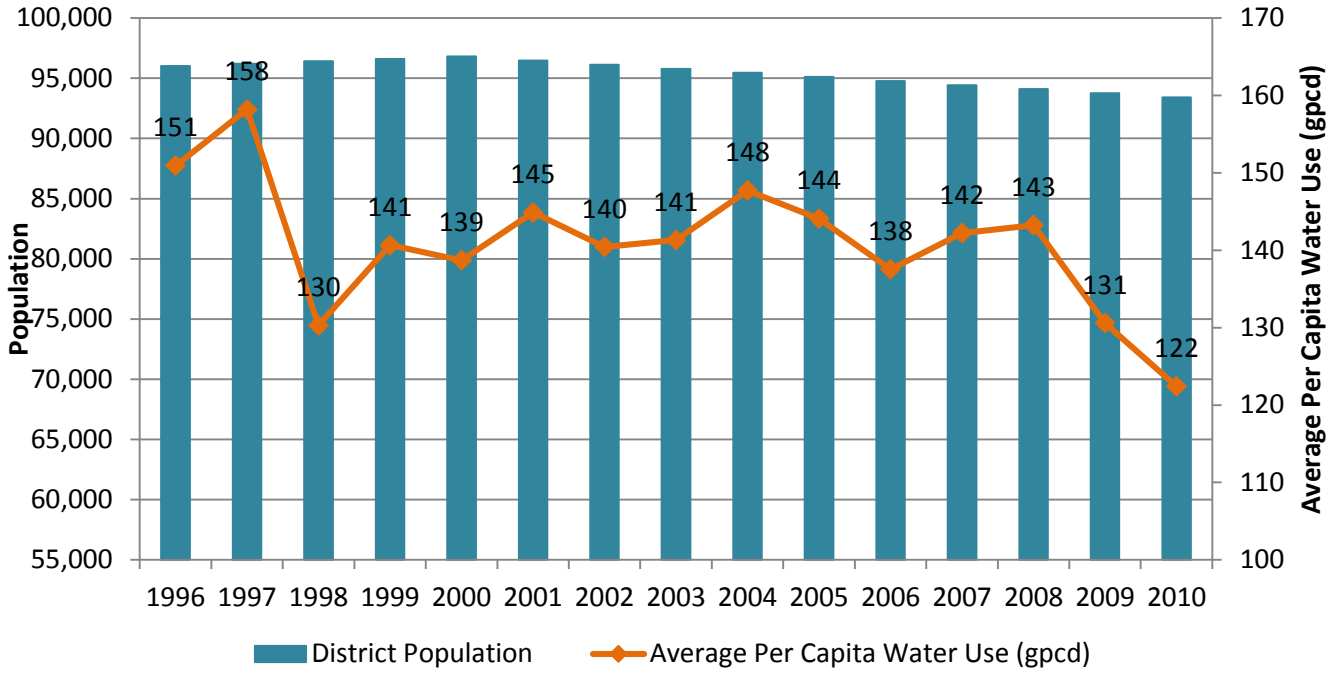

Figure 1. Historical Population and Per Capita Water Use for the Monterey County District

Water Use Targets

The baseline daily per capita water use is used to calculate the urban water use target and the interim urban water use target. The per capita water use target and interim target estimates are calculated using Method 1, Method 3, and Method 4 from the Methodologies Report. Method 2 was not used due to a lack of available data. Table 2 shows the estimated daily per capita water use targets for each method analyzed.

Table 2. Daily Per Capita Water Use Targets

Calculation Method	Water Use Target (gpcd)
Method 1: 80% of Baseline Per Capita Water Use	115
Method 2: Performance Standards	Not calculated
Method 3: 95% of Regional Target	117
Method 4: DWR Approach	118
Selected Urban Water Use Target	118

Minimum Water Use Reduction Requirements

The selected target must be less than 95% of a selected five-year running average ending no earlier than December 31, 2007 and ending no later than December 31, 2010 per the requirements of California Water Code Section 10608.22. Table 3 shows the five-year running averages, with the selected 5-year running average of 141 gpcd. Table 4 shows that the selected target from Table 2 meets the minimum water use reduction requirement; that is, the selected target of 118 gpcd is less than 95% of 134 gpcd. Thus, the confirmed water use target is set to 118 gpcd. Table 5 shows the final baseline, compliance, interim target, and target per capita water use. Table 6 shows the status of meeting the interim target and target based on current compliance per capita water use. The values shown will be reported in California American Water's 2010 Monterey County District UWMP.

Table 3. Minimum Water Use Reduction

Calendar Year	Distribution System Population	Daily System Gross Water Use (mgd)	Annual Daily Per Capita Water Use (gpcd)	5 year running average
2003	95,787	14	141	
2004	95,448	14	148	
2005	95,109	14	144	
2006	94,770	13	138	
2007	94,431	13	142	142.58
2008	94,092	13	143	142.96
2009	93,753	12	131	139.53
2010	93,414	11	122	135.20
Base Daily Per Capita Water Use				142.96

Table 4. Target Confirmation

Parameter	Value
Selected Urban Water Use Target (gpcd)	118
95% of 5-year Base Daily Per Capita Water Use (gpcd)	136
Selected Urban Water Use Target < 95% of 5-year Base GPCD	Yes
Confirmed Urban Water Use Target (gpcd)	118

Table 5. Baseline, Compliance, Interim Target, and Target Water Use

Parameter	Water Use (gpcd)
Base Daily Per Capita Water Use	144
2015 Actual Daily Per Capita Water	94
2015 Interim Urban Water Use Target	131
2020 Urban Water Use Target	118

Table 6. Water Use Reduction Status

Water Use Reduction (on gpcd basis)	% Reduction[1]
Achieved by 2015	34.6%
Needed to meet 2015 target	-39.1%
Needed to meet 2020 target	-25.2%
[1] A negative % means the compliance is currently lower than the target.	

Figure 2 shows the historical, baseline, targets, compliance, and projected per capita water use for the Monterey County District.

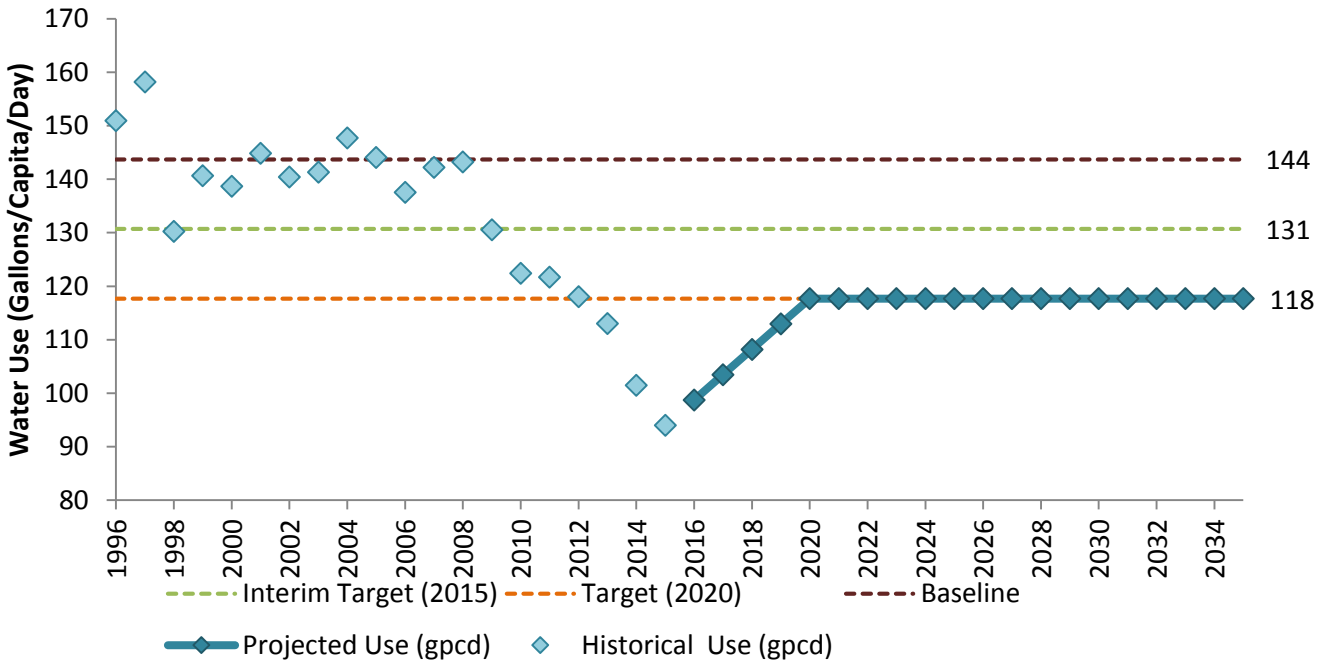

Figure 2. Historical Per Capita Water Use, Baseline, and Targets

Appendix A. User Input- Method 4

User Input -- Provisional Method 4 Target

Target Calculation Option (select one): * Calculate Targets Using Default Indoor Residential Savings

* = Required Data

Water Supplier Name: * California American Water- Monterey County District

10-15 Year Baseline Water Use Information

Baseline Period: *	1996-2005	Midpoint of Baseline Period:	2000
Baseline Water Use GPCD: *	143.7	Population in Midpoint Year: *	96,803

5 Year Baseline Water Use Information

Baseline Period: *	2004-2008		
Baseline Water Use GPCD: *	142.7	95% of 5-Year Baseline GPCD:	135.6

Unmetered Connections

Number of Unmetered Connections in 2000: *	0	
Water Use By Unmetered Connections In 2000: *	0	Acre-Feet

Baseline CII Water Use[1]

CII Water Use in 2000: *	4,558	Acre-Feet
Per Capita Use:	42.0	GPCD

[1]CII = Commercial, Industrial, Institutional.

If you have chosen to calculate targets using the Default Indoor Residential Savings, you do not need to complete the remaining tables.
Go to the "Calculated Targets" worksheet.

Appendix B. Calculator-Method 4

Target Calculation -- Provisional Method 4 Target

Step 1. Calculation of Landscape Water Use and System Water Loss

Urban Supplier	1996-2005 Baseline GPCD	—	Assumed Indoor Residential per Capita Water Use GPCD	—	CII per Capita Water Use GPCD	=	Estimated Landscape Water Use and System Water Loss GPCD
California American Water- Monterey	143.7		70.0		42.0		31.7

Step 2. Calculation of Savings Using BMP Calculators

(Alternate) STEP 2 BEING USED TO CALCULATE TARGET

Urban Supplier	Indoor Residential Savings Calculators					+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	Total Savings GPCD
	Single Family Toilets	Multi Family Toilets	Resi-dential Washers	Resi-dential Showers	Total IR Savings								
California American Water- Monterey	XXXX	XXXX	XXXX	XXXX	XXXX		XXXX		XXXX		XXXX		XXXX

(Alternate) Step 2. Calculation of Savings Using Default Indoor Residential Savings

Urban Supplier	Default Resi-dential Indoor Savings	+	Metering Savings BMP 1.3	+	CII Savings BMP 4	+	Land-scape + Water Loss Savings 21.6%	=	(alt) Total Savings GPCD
California American Water- Monterey	15.0		0.0		4.2		6.8		26.0

Step 3. Calculation of Urban Water Use Targets

Urban Supplier	1996-2005 Baseline GPCD	—	Total Savings GPCD	=	Computed 2020 Target GPCD	⇒	Less Than 95% of 5-Year Baseline	⇒	Final 2020 Target	⇒	Final 2015 Target
California American Water- Monterey	143.7		26.0		117.7		TRUE		117.7		130.7

SBx7-7 Compliance Forms

SB X7-7 Table 0: Units of Measure Used in 2020 UWMP* *(select one from the drop down list)*
Acre Feet
**The unit of measure must be consistent throughout the UWMP, as reported in Submittal Table 2-3.*
NOTES:

SB X7-7 Table 2: Method for 2020 Population Estimate	
Method Used to Determine 2020 Population (may check more than one)	
☐	**1. Department of Finance** (DOF) or **American Community Survey** (ACS)
☐	**2. Persons-per-Connection Method**
☑	**3. DWR Population Tool**
☐	**4. Other** DWR recommends pre-review
NOTES:	

SB X7-7 Table 3: 2020 Service Area Population	
2020 Compliance Year Population	
2020	91,717
NOTES:	

SB X7-7 Table 4: 2020 Gross Water Use							
Compliance Year 2020	**2020 Volume Into Distribution System** *This column will remain blank until SB X7-7 Table 4-A is completed.*	**2020 Deductions**					**2020 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.*	
	9,138	-	-	-	-	-	**9,138**

*** Units of measure (AF, MG , or CCF)** must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.

NOTES:

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	Carmel River Aquifer Groundwater
This water source is *(check one)* **:**	
☑	The supplier's own water source
☐	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	5,317	-	5,317

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES: Volume does not include Carmel River Water that was injected for Aquifer Storage and Recovery. This volume is counted in the Aquifer Storage and Recovery volume to not double count supplies.

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s) Meter Error Adjustment

Complete one table for each source.

Name of Source	Seaside Groundwater Basin
This water source is *(check one)* **:**	
☑	The supplier's own water source
☐	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	2,802		2,802

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	Sand City Desalination Plan
This water source is *(check one)* **:**	
☑	The supplier's own water source
☐	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	213		213

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 4-A: 2020 Volume Entering the Distribution System(s), Meter Error Adjustment

Complete one table for each source.

Name of Source	Aquifer Storage and Recovery
This water source is *(check one)* **:**	
☑	The supplier's own water source
☐	A purchased or imported source

Compliance Year 2020	Volume Entering Distribution System [1]	Meter Error Adjustment [2] *Optional (+/-)*	Corrected Volume Entering Distribution System
	806		806

[1] ***Units of measure (AF, MG , or CCF)*** *must remain consistent throughout the UWMP, as reported in SB X7-7 Table 0 and Submittal Table 2-3.* [2] ***Meter Error Adjustment*** *- See guidance in Methodology 1, Step 3 of Methodologies Document*

NOTES:

SB X7-7 Table 5: 2020 Gallons Per Capita Per Day (GPCD)		
2020 Gross Water *Fm SB X7-7 Table 4*	**2020 Population** *Fm SB X7-7 Table 3*	**2020 GPCD**
9,138	91,717	**89**
NOTES:		

SB X7-7 Table 9: 2020 Compliance							
Actual 2020 GPCD[1]	Optional Adjustments to 2020 GPCD Enter "0" if Adjustment Not Used			TOTAL Adjustments[1]	Adjusted 2020 GPCD [1] *(Adjusted if applicable)*	2020 Confirmed Target GPCD [1, 2]	**Did Supplier Achieve Targeted Reduction for 2020?**
	Extraordinary Events[1]	Weather Normalization[1]	Economic Adjustment[1]				
89	-	-	-	-	89	118	**YES**

[1] *All values are reported in GPCD*

[2] ***2020 Confirmed Target GPCD*** *is taken from the Supplier's SB X7-7 Verification Form Table SB X7-7, 7-F.*

NOTES:

D

Appendix D. AWWA Water Audits

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District Main System (2710004)
Reporting Year: 2015 | 1/2015 - 12/2015

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	8	2,935.780	MG/Yr	n/a				MG/Yr
Water imported:	8	68.590	MG/Yr	n/a				MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 3,004.370 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	2,923.790	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	12.270	MG/Yr			
Unbilled unmetered:		37.555	MG/Yr	1.25%		MG/Yr

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

AUTHORIZED CONSUMPTION: 2,973.615 MG/Yr

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

WATER LOSSES (Water Supplied - Authorized Consumption) 30.755 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		7.511	MG/Yr	0.25%		MG/Yr
Customer metering inaccuracies:	5	29.657	MG/Yr	1.00%		MG/Yr
Systematic data handling errors:		7.309	MG/Yr	0.25%		MG/Yr

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

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

Apparent Losses: 44.478 MG/Yr

Check input values; APPARENT LOSSES should be less than WATER LOSSES

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: -13.722 MG/Yr

WATER LOSSES: 30.755 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 80.580 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	516.6	miles
Number of active AND inactive service connections:	7	37,502	
Service connection density:		73	conn./mile main

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

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

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

Average operating pressure: 8 | 93.0 psi

COST DATA

Total annual cost of operating water system:	7	$36,756,178	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$18.08	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	7	$930.90	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 73 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Customer metering inaccuracies
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey Main System (2710004)
Reporting Year: 2016 | 1/2016 - 12/2016

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	5	2,923.490	MG/Yr	3	-5.00%		MG/Yr
Water imported:	n/a		MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 3,077.358 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	6	2,872.510	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	4	1.360	MG/Yr			
Unbilled unmetered:	7	5.840	MG/Yr		5.840	MG/Yr

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

AUTHORIZED CONSUMPTION: 2,879.710 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 197.648 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:	3	1.000	MG/Yr		1.000	MG/Yr
Customer metering inaccuracies:	3	29.029	MG/Yr	1.00%		MG/Yr
Systematic data handling errors:		7.181	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 37.210 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 160.438 MG/Yr

WATER LOSSES: 197.648 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 204.848 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	555.5	miles
Number of active AND inactive service connections:	7	39,256	
Service connection density:		71	conn./mile main

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

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

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

Average operating pressure: 4 | 87.7 psi

COST DATA

Total annual cost of operating water system:	10	$27,584,871	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$12.48	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	6	$1,281.56	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 57 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Customer metering inaccuracies
3: Unbilled metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey Main System (2710004)
Reporting Year: 2017 | 1/2017 - 12/2017

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	5	2,966.220	MG/Yr	3			-8.220	MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 2,974.440 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	2,876.690	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	1.800	MG/Yr			
Unbilled unmetered:	8	1.570	MG/Yr		1.570	MG/Yr

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

AUTHORIZED CONSUMPTION: 2,880.060 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

94.380 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	7.436	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	36.257	MG/Yr	36.257	MG/Yr
Systematic data handling errors:		7.192	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 50.885 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 43.495 MG/Yr

WATER LOSSES: 94.380 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 97.750 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	564.0	miles
Number of active AND inactive service connections:	7	39,183	
Service connection density:		69	conn./mile main

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

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

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

Average operating pressure:	5	90.1	psi

COST DATA

Total annual cost of operating water system:	10	$27,043,530	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$14.93	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	7	$1,410.45	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 66 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey Main System (2710004)
Reporting Year: 2018 | 1/2018 - 12/2018

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	5	2,961.640	MG/Yr	3			-30.160	MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 2,991.800 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	2,845.670	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	2.160	MG/Yr			
Unbilled unmetered:	8	24.620	MG/Yr		24.620	MG/Yr

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

AUTHORIZED CONSUMPTION: 2,872.450 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 119.350 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		7.480	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	35.176	MG/Yr		35.176	MG/Yr
Systematic data handling errors:		7.114	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 49.770 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 69.580 MG/Yr

WATER LOSSES: 119.350 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 146.130 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	564.7	miles
Number of active AND inactive service connections:	7	38,854	
Service connection density:		69	conn./mile main

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

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

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

Average operating pressure:	5	90.1	psi

COST DATA

Total annual cost of operating water system:	10	$29,450,922	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$15.78	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	7	$1,313.43	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 66 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey Main System (2710004)
Reporting Year: 2019 | 1/2019 - 12/2019

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	7	2,907.350	MG/Yr	6			-18.510	MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	6	0.760	MG/Yr	3			0.000	MG/Yr

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

WATER SUPPLIED: 2,925.100 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	2,769.280	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	2.570	MG/Yr			
Unbilled unmetered:	8	4.080	MG/Yr		4.080	MG/Yr

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

AUTHORIZED CONSUMPTION: 2,775.930 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

149.170 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	7.313	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	7	41.879	MG/Yr	41.879	MG/Yr
Systematic data handling errors:		6.923	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 56.115 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 93.055 MG/Yr

WATER LOSSES: 149.170 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 155.820 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	570.9	miles
Number of active AND inactive service connections:	7	37,934	
Service connection density:		66	conn./mile main

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

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

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

Average operating pressure:	5	90.1	psi

COST DATA

Total annual cost of operating water system:	10	$32,058,913	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$16.06	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	7	$1,465.75	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 74 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Unauthorized consumption

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District Bishop System (2701882)
Reporting Year: 2015 | 1/2015 - 12/2015

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	8	45.040	MG/Yr	n/a				MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 45.040 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	42.410	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	0.310	MG/Yr			
Unbilled unmetered:		0.563	MG/Yr	1.25%		MG/Yr

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

AUTHORIZED CONSUMPTION: 43.283 MG/Yr

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

WATER LOSSES (Water Supplied - Authorized Consumption)

1.757 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		0.113	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	0.432	MG/Yr	1.00%		MG/Yr
Systematic data handling errors:		0.106	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 0.650 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 1.107 MG/Yr

WATER LOSSES: 1.757 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 2.630 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	15.1	miles
Number of active AND inactive service connections:	7	394	
Service connection density:		26	conn./mile main

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

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

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

Average operating pressure: 8 | 81.0 psi

COST DATA

Total annual cost of operating water system:	7	$36,756,178	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$18.08	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	7	$930.90	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

***** YOUR SCORE IS: 73 out of 100 *****

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District - Bishop System (2701882)
Reporting Year: 2016 | 1/2016 - 12/2016

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	7	42.670	MG/Yr	3	-1.00%			MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 43.101 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	38.450	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	4.670	MG/Yr			
Unbilled unmetered:	5	0.120	MG/Yr		0.120	MG/Yr

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

AUTHORIZED CONSUMPTION: 43.240 MG/Yr

Check input values; WATER SUPPLIED should be greater than AUTHORIZED CONSUMPTION

WATER LOSSES (Water Supplied - Authorized Consumption) -0.139 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		0.108	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	0.430	MG/Yr		0.430	MG/Yr
Systematic data handling errors:		0.096	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 0.634 MG/Yr

Check input values; APPARENT LOSSES should be less than WATER LOSSES

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: -0.773 MG/Yr

WATER LOSSES: -0.139 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 4.651 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	16.5	miles
Number of active AND inactive service connections:	7	413	
Service connection density:		25	conn./mile main

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

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

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

Average operating pressure: 5 | 81.0 psi

COST DATA

Total annual cost of operating water system:	7	$301,052	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$16.42	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	5	$1,152.52	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 68 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Variable production cost (applied to Real Losses)
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District - Bishop System (2701882)
Reporting Year: 2017 | 1/2017 - 12/2017

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

					Pcnt:	Value:	
Volume from own sources:	7	41.620	MG/Yr	3		-0.360	MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 41.980 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	36.440	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	3.470	MG/Yr			
Unbilled unmetered:	5	0.010	MG/Yr		0.010	MG/Yr

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

AUTHORIZED CONSUMPTION: 39.920 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 2.060 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		0.105	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	0.400	MG/Yr		0.400	MG/Yr
Systematic data handling errors:		0.091	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 0.596 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 1.464 MG/Yr

WATER LOSSES: 2.060 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 5.540 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	16.7	miles
Number of active AND inactive service connections:	7	412	
Service connection density:		25	conn./mile main

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

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

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

Average operating pressure: 5 | 77.6 psi

COST DATA

Total annual cost of operating water system:	7	$298,028	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$19.18	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	5	$1,305.93	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 68 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Variable production cost (applied to Real Losses)
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District - Bishop System (2701882)
Reporting Year: 2018 | 1/2018 - 12/2018

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	5	41.130	MG/Yr	n/a				MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 41.130 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	35.090 MG/Yr			
Billed unmetered:	n/a	0.000 MG/Yr			
Unbilled metered:	8	3.790 MG/Yr			
Unbilled unmetered:	5	0.010 MG/Yr		0.010	MG/Yr

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

AUTHORIZED CONSUMPTION: 38.890 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 2.240 MG/Yr

Apparent Losses

		Pcnt:	Value:	
Unauthorized consumption:	0.103 MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	5	0.390 MG/Yr	0.390	MG/Yr
Systematic data handling errors:		0.088 MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 0.581 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 1.659 MG/Yr

WATER LOSSES: 2.240 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 6.040 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	16.2	miles
Number of active AND inactive service connections:	7	422	
Service connection density:		26	conn./mile main

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

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

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

Average operating pressure: 5 | 77.6 psi

COST DATA

Total annual cost of operating water system:	10	$318,635	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$20.22	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	7	$990.36	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 65 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Customer metering inaccuracies
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

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+ Click to add a comment

Water Audit Report for: California American Water - Monterey District - Bishop System (2701882)
Reporting Year: 2019 | 1/2019 - 12/2019

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

								Pcnt:	Value:	
Volume from own sources:	5	49.530	MG/Yr	n/a			MG/Yr			MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr			MG/Yr
Water exported:	5	5.610	MG/Yr	n/a			MG/Yr			MG/Yr

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

WATER SUPPLIED: 43.920 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	35.750	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	2.740	MG/Yr			
Unbilled unmetered:	5	0.110	MG/Yr		0.110	MG/Yr

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

AUTHORIZED CONSUMPTION: 38.600 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 5.320 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	0.110	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	5	0.380	MG/Yr	0.380	MG/Yr
Systematic data handling errors:		0.089	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 0.579 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 4.741 MG/Yr

WATER LOSSES: 5.320 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 8.170 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	16.7	miles
Number of active AND inactive service connections:	7	410	
Service connection density:		25	conn./mile main

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

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

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

Average operating pressure:	5	77.6	psi

COST DATA

Total annual cost of operating water system:	10	$347,006	$/Year	
Customer retail unit cost (applied to Apparent Losses):	10	$19.14	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	7	$1,334.90	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 65 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Customer metering inaccuracies
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

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+ Click to add a comment

Water Audit Report for: California American Water - Monterey District Hidden Hills System (2710022)
Reporting Year: 2015 | 1/2015 - 12/2015

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	8	43.600	MG/Yr	n/a				MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 43.600 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	36.980	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	0.010	MG/Yr			
Unbilled unmetered:		0.545	MG/Yr	1.25%		MG/Yr

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

AUTHORIZED CONSUMPTION: 37.535 MG/Yr

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

WATER LOSSES (Water Supplied - Authorized Consumption)

6.065 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		0.109	MG/Yr	0.25%		MG/Yr
Customer metering inaccuracies:	6	0.374	MG/Yr	1.00%		MG/Yr
Systematic data handling errors:		0.092	MG/Yr	0.25%		MG/Yr

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

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

Apparent Losses: 0.575 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 5.490 MG/Yr

WATER LOSSES: 6.065 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 6.620 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	20.8	miles
Number of active AND inactive service connections:	7	439	
Service connection density:		21	conn./mile main

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

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

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

Average operating pressure: 8 | 121.0 psi

COST DATA

Total annual cost of operating water system:	7	$36,756,178	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$18.08	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	7	$930.90	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 73 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District - Hidden Hills System (2710022)
Reporting Year: 2016 | 1/2016 - 12/2016

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

					Pcnt:	Value:	
Volume from own sources:	7	40.560	MG/Yr	3	-1.00%		MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 40.970 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	31.990	MG/Yr		
Billed unmetered:	n/a	0.000	MG/Yr		
Unbilled metered:	8	0.070	MG/Yr		
Unbilled unmetered:	5	0.050	MG/Yr		0.050 MG/Yr

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

AUTHORIZED CONSUMPTION: 32.110 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 8.860 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	0.102	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	0.320	MG/Yr	0.320	MG/Yr
Systematic data handling errors:		0.080	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 0.502 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 8.357 MG/Yr

WATER LOSSES: 8.860 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 8.980 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	22.1	miles
Number of active AND inactive service connections:	7	453	
Service connection density:		20	conn./mile main

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

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

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

Average operating pressure: 5 | 121.0 psi

COST DATA

Total annual cost of operating water system:	7	$330,780	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$16.41	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	5	$1,213.05	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 68 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Variable production cost (applied to Real Losses)
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District - Hidden Hills System (2710022)
Reporting Year: 2017 | 1/2017 - 12/2017

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

					Pcnt:	Value:	
Volume from own sources:	7	43.280	MG/Yr	3		-0.170	MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 43.450 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	32.300	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	0.070	MG/Yr			
Unbilled unmetered:	5	0.160	MG/Yr		0.160	MG/Yr

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

AUTHORIZED CONSUMPTION: 32.530 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

10.920 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	0.109	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	0.320	MG/Yr	0.320	MG/Yr
Systematic data handling errors:		0.081	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 0.509 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 10.411 MG/Yr

WATER LOSSES: 10.920 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 11.150 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	22.5	miles
Number of active AND inactive service connections:	7	454	
Service connection density:		20	conn./mile main

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

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

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

Average operating pressure: 5 | 95.5 psi

COST DATA

Total annual cost of operating water system:	7	$330,769	$/Year	
Customer retail unit cost (applied to Apparent Losses):	9	$15.80	$/1000 gallons (US)	
Variable production cost (applied to Real Losses):	5	$1,331.30	$/Million gallons	☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 68 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Variable production cost (applied to Real Losses)
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District - Hidden Hills System (2710022)
Reporting Year: 2018 | 1/2018 - 12/2018

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

					Pcnt:	Value:	
Volume from own sources:	5	40.580	MG/Yr	n/a			MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 40.580 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	32.170	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	8	0.070	MG/Yr			
Unbilled unmetered:	5	0.250	MG/Yr		0.250	MG/Yr

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

AUTHORIZED CONSUMPTION: 32.490 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

8.090 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	0.101	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	5	0.320	MG/Yr	0.320	MG/Yr
Systematic data handling errors:		0.080	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 0.502 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 7.588 MG/Yr

WATER LOSSES: 8.090 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 8.410 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	21.1	miles
Number of active AND inactive service connections:	7	458	
Service connection density:		22	conn./mile main

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

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

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

Average operating pressure: 5 | 95.5 psi

COST DATA

Total annual cost of operating water system:	10	$344,453	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$17.38	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	7	$1,250.95	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 65 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Customer metering inaccuracies
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District - Hidden Hills System (2710022)
Reporting Year: 2019 | 1/2019 - 12/2019

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

					Pcnt:	Value:	
Volume from own sources:	5	39.840	MG/Yr	n/a		0.000	MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 39.840 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	30.030	MG/Yr		
Billed unmetered:	n/a	0.000	MG/Yr		
Unbilled metered:	8	0.070	MG/Yr		
Unbilled unmetered:	5	0.050	MG/Yr		0.050 MG/Yr

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

AUTHORIZED CONSUMPTION: 30.150 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 9.690 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		0.100	MG/Yr	0.25%	MG/Yr

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

Customer metering inaccuracies:	5	0.300	MG/Yr		0.300 MG/Yr
Systematic data handling errors:		0.075	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 0.475 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 9.215 MG/Yr

WATER LOSSES: 9.690 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 9.810 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	22.5	miles
Number of active AND inactive service connections:	7	449	
Service connection density:		20	conn./mile main

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

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

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

Average operating pressure: 5 | 95.5 psi

COST DATA

Total annual cost of operating water system:	10	$372,550	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$22.20	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	7	$1,419.38	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 65 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Customer metering inaccuracies
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District Ryan Ranch System (2701466)
Reporting Year: 2015 | 1/2015 - 12/2015

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	8	17.260	MG/Yr	n/a				MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 17.260 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	15.450 MG/Yr			
Billed unmetered:	n/a	0.000 MG/Yr			
Unbilled metered:	n/a	0.000 MG/Yr			
Unbilled unmetered:		0.216 MG/Yr	1.25%		MG/Yr

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

AUTHORIZED CONSUMPTION: 15.666 MG/Yr

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

WATER LOSSES (Water Supplied - Authorized Consumption)

1.594 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		0.043 MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	0.156 MG/Yr	1.00%		MG/Yr
Systematic data handling errors:		0.039 MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 0.238 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 1.356 MG/Yr

WATER LOSSES: 1.594 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 1.810 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	4.7	miles
Number of active AND inactive service connections:	7	199	
Service connection density:		42	conn./mile main

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

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

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

Average operating pressure: 8 | 82.0 psi

COST DATA

Total annual cost of operating water system:	7	$36,756,178	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$18.08	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	7	$930.90	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 72 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Billed metered
3: Customer metering inaccuracies

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District - Ryan Ranch System (2701466)
Reporting Year: 2016 | 1/2016 - 12/2016

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	7	19.070	MG/Yr	3	-1.00%			MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 19.263 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	17.530	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:	5	0.482	MG/Yr		0.482	MG/Yr

Unbilled Unmetered volume entered is greater than the recommended default value

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

AUTHORIZED CONSUMPTION: 18.012 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

1.251 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		0.048	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	0.180	MG/Yr		0.180	MG/Yr
Systematic data handling errors:		0.044	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 0.272 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 0.979 MG/Yr

WATER LOSSES: 1.251 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 1.733 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	4.9	miles
Number of active AND inactive service connections:	7	210	
Service connection density:		43	conn./mile main

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

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

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

Average operating pressure: 5 | 82.0 psi

COST DATA

Total annual cost of operating water system:	7	$150,938	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$14.32	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	5	$1,200.54	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 67 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Variable production cost (applied to Real Losses)
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District - Ryan Ranch System (2701466)
Reporting Year: 2017 | 1/2017 - 12/2017

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	7	18.690	MG/Yr	3	-1.00%		MG/Yr
Water imported:	n/a	0.000	MG/Yr				MG/Yr
Water exported:	n/a	0.000	MG/Yr				MG/Yr

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

WATER SUPPLIED: 18.879 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

			Pcnt:	Value:	
Billed metered:	7	17.590 MG/Yr			
Billed unmetered:	n/a	0.000 MG/Yr			
Unbilled metered:	n/a	0.000 MG/Yr			
Unbilled unmetered:	5	0.472 MG/Yr		0.472	MG/Yr

Unbilled Unmetered volume entered is greater than the recommended default value

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

AUTHORIZED CONSUMPTION: 18.062 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

0.817 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:		0.047 MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	6	0.180 MG/Yr		0.180	MG/Yr
Systematic data handling errors:		0.044 MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 0.271 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 0.546 MG/Yr

WATER LOSSES: 0.817 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 1.289 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	5.0	miles
Number of active AND inactive service connections:	7	211	
Service connection density:		42	conn./mile main

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

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

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

Average operating pressure: 5 | 82.0 psi

COST DATA

Total annual cost of operating water system:	7	$149,794	$/Year
Customer retail unit cost (applied to Apparent Losses):	9	$15.21	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	5	$1,350.75	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 67 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Variable production cost (applied to Real Losses)
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
+ Click to add a comment

Water Audit Report for: California American Water - Monterey District Ryan Ranch System (2701466)
Reporting Year: 2018 | 1/2018 - 12/2018

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

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

						Pcnt:	Value:	
Volume from own sources:	5	18.920	MG/Yr	n/a				MG/Yr
Water imported:	n/a	0.000	MG/Yr					MG/Yr
Water exported:	n/a	0.000	MG/Yr					MG/Yr

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

WATER SUPPLIED: 18.920 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	16.320	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:	5	0.250	MG/Yr		0.250	MG/Yr

Unbilled Unmetered volume entered is greater than the recommended default value

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

AUTHORIZED CONSUMPTION: 16.570 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption)

2.350 MG/Yr

Apparent Losses

			Pcnt:	Value:	
Unauthorized consumption:	0.047	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	5	0.160	MG/Yr	0.160	MG/Yr
Systematic data handling errors:		0.041	MG/Yr	0.25%	MG/Yr

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

Apparent Losses: 0.248 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 2.102 MG/Yr

WATER LOSSES: 2.350 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 2.600 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	4.6	miles
Number of active AND inactive service connections:	7	211	
Service connection density:		46	conn./mile main

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

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

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

Average operating pressure: 5 | 82.0 psi

COST DATA

Total annual cost of operating water system:	10	$158,168	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$16.28	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	7	$1,259.40	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 64 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Customer metering inaccuracies
3: Billed metered

AWWA Free Water Audit Software:
Reporting Worksheet

WAS v5.0

? Click to access definition
\+ Click to add a comment

Water Audit Report for: California American Water - Monterey District Ryan Ranch System (2701466)
Reporting Year: 2019 (1/2019 - 12/2019)

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

All volumes to be entered as: MILLION GALLONS (US) PER YEAR

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

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

Master Meter and Supply Error Adjustments

WATER SUPPLIED

				Pcnt:	Value:	
Volume from own sources:	5	11.440	MG/Yr	n/a		MG/Yr
Water imported:	5	6.380	MG/Yr	n/a		MG/Yr
Water exported:	n/a	0.000	MG/Yr			MG/Yr

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

WATER SUPPLIED: 17.820 MG/Yr

AUTHORIZED CONSUMPTION

Click here: ? for help using option buttons below

				Pcnt:	Value:	
Billed metered:	7	16.200	MG/Yr			
Billed unmetered:	n/a	0.000	MG/Yr			
Unbilled metered:	n/a	0.000	MG/Yr			
Unbilled unmetered:	5	0.045	MG/Yr		0.045	MG/Yr

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

AUTHORIZED CONSUMPTION: 16.245 MG/Yr

WATER LOSSES (Water Supplied - Authorized Consumption) 1.575 MG/Yr

Apparent Losses

				Pcnt:	Value:	
Unauthorized consumption:		0.045	MG/Yr	0.25%		MG/Yr

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

Customer metering inaccuracies:	5	0.160	MG/Yr		0.160	MG/Yr
Systematic data handling errors:		0.041	MG/Yr	0.25%		MG/Yr

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

Apparent Losses: 0.245 MG/Yr

Real Losses (Current Annual Real Losses or CARL)

Real Losses = Water Losses - Apparent Losses: 1.330 MG/Yr

WATER LOSSES: 1.575 MG/Yr

NON-REVENUE WATER

NON-REVENUE WATER: 1.620 MG/Yr

= Water Losses + Unbilled Metered + Unbilled Unmetered

SYSTEM DATA

Length of mains:	8	5.0	miles
Number of active AND inactive service connections:	7	203	
Service connection density:		40	conn./mile main

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

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

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

Average operating pressure: 5 82.0 psi

COST DATA

Total annual cost of operating water system:	10	$168,508	$/Year
Customer retail unit cost (applied to Apparent Losses):	10	$17.59	$/1000 gallons (US)
Variable production cost (applied to Real Losses):	7	$1,406.34	$/Million gallons

☐ Use Customer Retail Unit Cost to value real losses

WATER AUDIT DATA VALIDITY SCORE:

*** YOUR SCORE IS: 64 out of 100 ***

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

PRIORITY AREAS FOR ATTENTION:

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

1: Volume from own sources
2: Water imported
3: Customer metering inaccuracies

E

Appendix E. State Water Resources Control Board Order No. WR-95-10

Order on Four Complaints Filed Against The California-American Water Company

Carmel River
Monterey County

Order No. WR 95-10

JULY 6, 1995

STATE WATER RESOURCES CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

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LIST OF FIGURES & TABLE

CITING THE RECORD

When citing evidence in the hearing record, the following conventions have been adopted:

Information derived from the hearing transcript:

T,II,12:1 - 15:17

- T — identifying abbreviation of the information source
- II — hearing transcript volume number
- 12:1 — beginning page and line number
- 15:17 — ending page and line number (may be omitted if single line reference is cited)

Information derived from an exhibit:

SWRCB:5,4

- SWRCB — identifying abbreviation of information source
- 5 — exhibit number
- 4 — page number, volume, table, graph, or figure number; or application number if a file is cited

Abbreviations of information sources:

AC	Archeological Consulting
ACOE	U.S. Army Corps of Engineers
CAL-AM	California American Water Company
CRSA	Carmel River Steelhead Association
CSPA	California Sportfishing Protection Alliance
DISTRICT or MPWMD	Monterey Peninsula Water Management District
DFG	California Department of Fish and Game
ESSELEN TRIBE	Esselen Tribe of Monterey County
ESSELEN NATION	Esselen Nation of United Families of the Central Coast of CA
EVANS	Willis Evans
PARK	Monterey Peninsula Regional Park District
PHBr	Post-Hearing Brief
SWRCB	State Water Resources Control Board
SIERRA CLUB	Ventana Chapter of the Sierra Club
T	Hearing Transcript

Other commonly used abbreviations:

af	Acre-feet
afa	Acre-feet annually
cfs	Cubic feet per second
CEQA	California Environmental Quality Act
gpm	Gallons per minute
RM	River mile, measured from river mouth
USGS	United States Geologic Survey

ORDER FINDING AGAINST RESPONDENT, IN PART, AND DIRECTING CORRECTIVE ACTIONS

SYNOPSIS

The California-American Water Company (Cal-Am) currently diverts water from the Carmel River and supplies the water, primarily, for use outside of the watershed to users on the Monterey Peninsula. Four complaints were filed with the State Water Resources Control Board (SWRCB) against Cal-Am for its diversion of water from the Carmel River. The complaints generally allege that Cal-Am: (a) does not have the legal right to divert water from the river and (b) diversions are adversely affecting public trust resources within the river. The SWRCB concludes that Cal-Am: (a) does not have legal right for about 10,730 acre-feet annually which is currently diverted from the river (about 69 percent of the water currently supplied to Cal-Am users) and (b) diversions are having an adverse affect on the public trust resources of the river. This order directs Cal-Am to: (a) diligently proceed in accord with a time schedule to obtain rights to cover its existing diversion and use of water and (b) implement measures to minimize harm to public trust resources. Measures to minimize harm to public trust resources require Cal-Am to reduce the quantity of water which is currently being pumped from the river. Because water is not available for appropriation by direct diversion in the river during summer months, Cal-Am must either obtain the right to additional water supplies from: (a) sources other than the river, (b) a storage project similar to the New Los Padres (NLP) project proposed by the Monterey Peninsula Water Management District (District), or (c) contract with the District for supply from the proposed NLP project.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Complaints Against Diversion and Use of Water by the		
CALIFORNIA-AMERICAN WATER COMPANY,	ORDER:	WR 95-10
Respondent,	SOURCE:	Carmel River Tributary to Pacific Ocean
CARMEL RIVER STEELHEAD ASSOCIATION, RESIDENTS WATER COMMITTEE, SIERRA CLUB, CALIFORNIA DEPARTMENT OF PARKS AND RECREATION,	COUNTY:	Monterey
Complainants.		

ORDER FINDING AGAINST RESPONDENT, IN PART, AND DIRECTING CORRECTIVE ACTIONS

BY THE BOARD:

Complaints having been filed against Cal-Am for its diversion and use of water from the Carmel River by Carmel River Steelhead Association, Residents Water Committee, Sierra Club, and Department of Parks and Recreation; a hearing having been held on August 24, 25, 26, 31, September 1, 8, and 9, October 19 and 21, and November 7, 8, and 22, 1994; the complainants, Cal-Am, and other interested persons having been provided opportunity to present evidence; closing briefs having been filed; the evidence and briefs having been duly considered; the Board finds as follows:

1.0 CAL-AM, CAL-AM FACILITIES AND CAL-AM OPERATIONS

Cal-Am is an investor-owned public utility subject to the jurisdiction of the California Public Utilities Commission. (T,Sept. 9, 1992, 95:1-95:7; T,I,49:14-49:22.) Cal-Am currently diverts about 14,106 afa of water from the Carmel River and

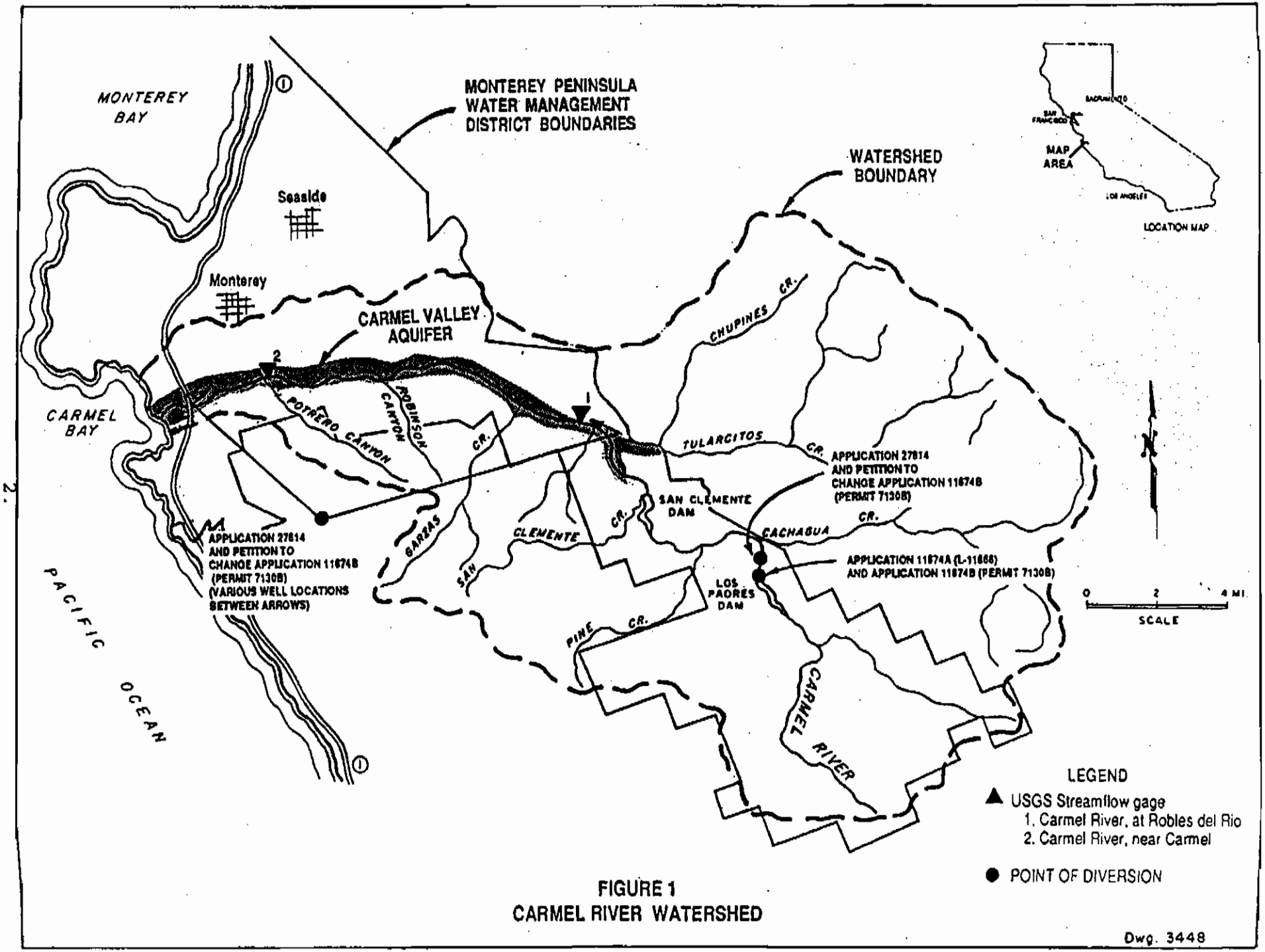


FIGURE 1
CARMEL RIVER WATERSHED

Dwg. 3448

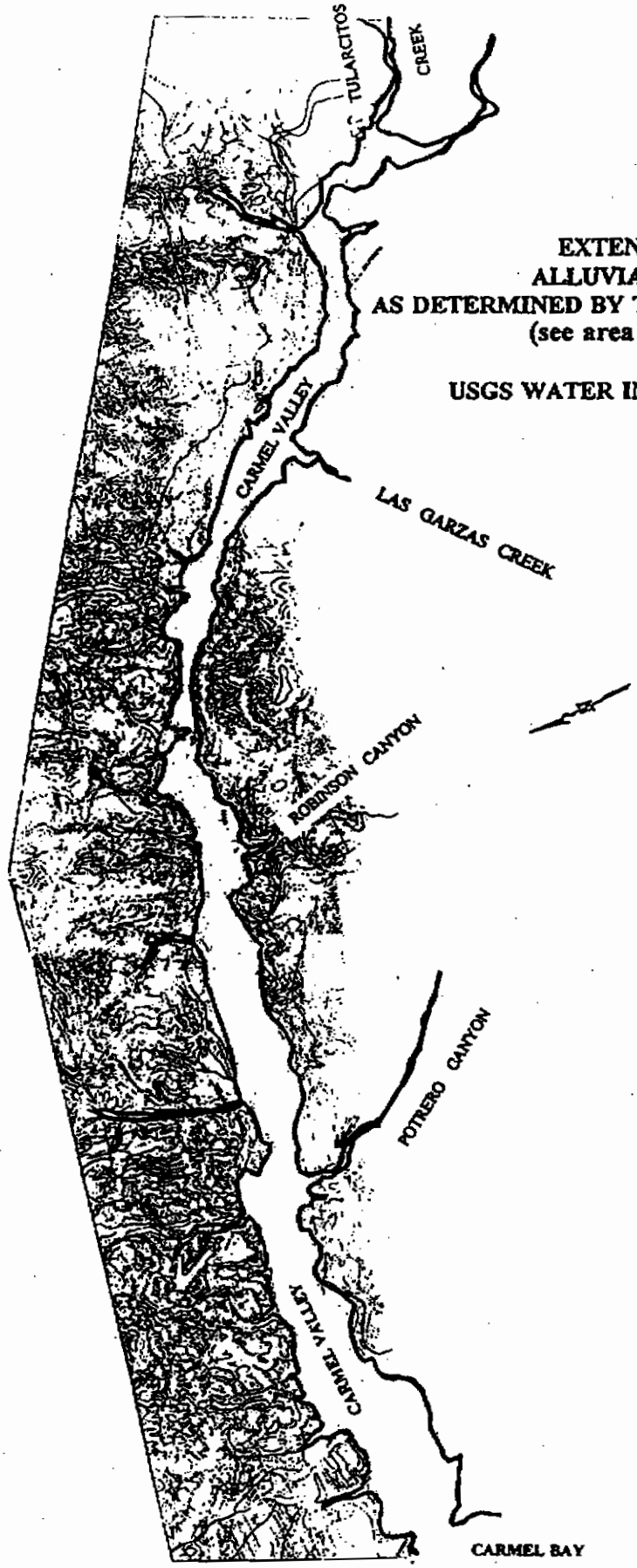


FIGURE 2

EXTENT OF CARMEL VALLEY ALLUVIAL GROUNDWATER BASIN AS DETERMINED BY THE U.S. GEOLOGICAL SURVEY (USGS) (see area defined by the bold lines)

USGS WATER INVESTIGATIONS REPORT 83-4280 JUNE 1984

THE CARMEL RIVER (NOT SHOWN) FLOWS THROUGH CARMEL VALLEY

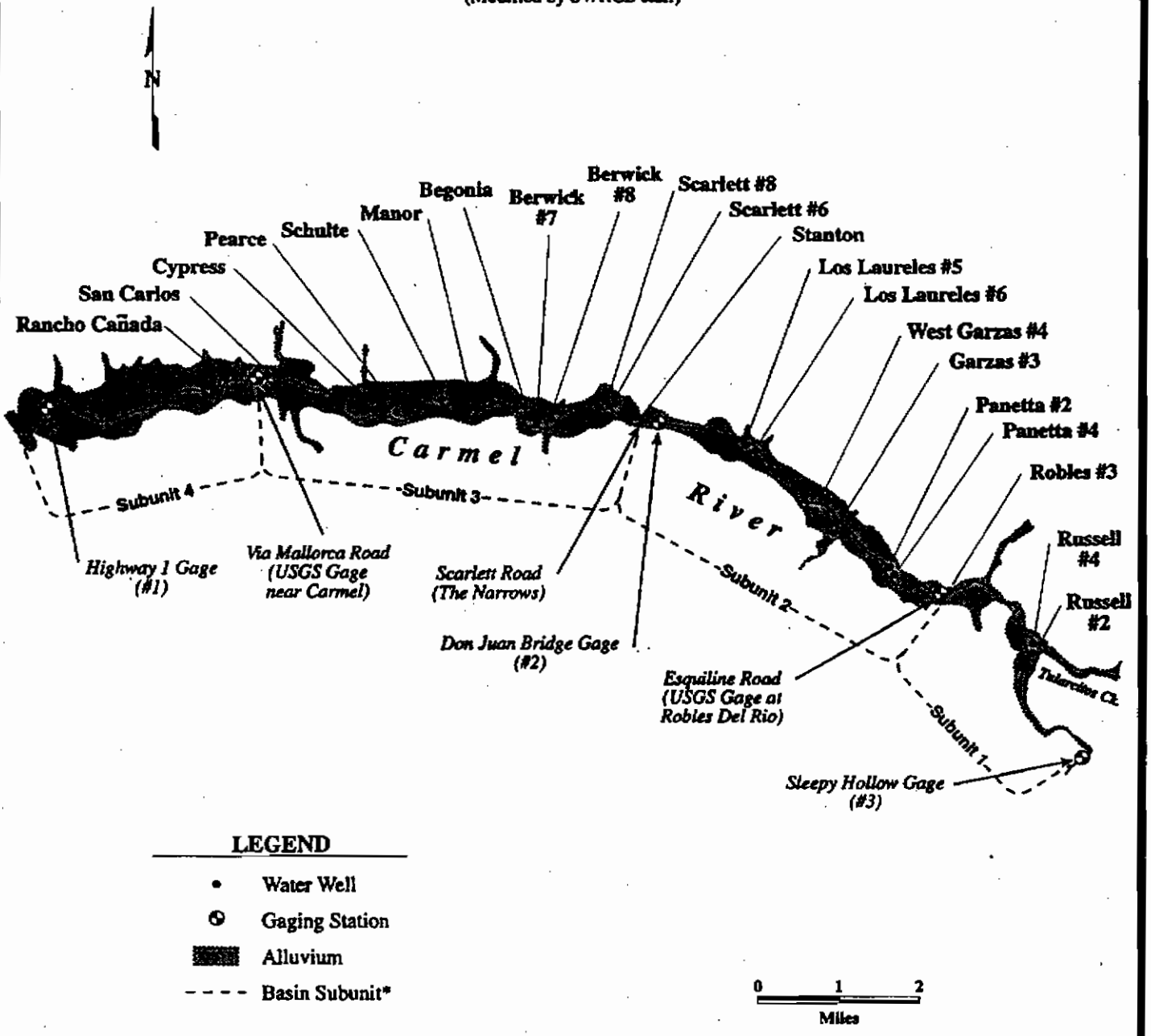
1 2 Miles

Scale

FIGURE 3

ALLUVIAL GROUNDWATER BASIN SHOWING THE LOCATION OF THE CALIFORNIA-AMERICAN WATER COMPANY WELLS

Information obtained from MPWMD Exhibit 287 - Figure 7-2
(Modified by SWRCB staff)

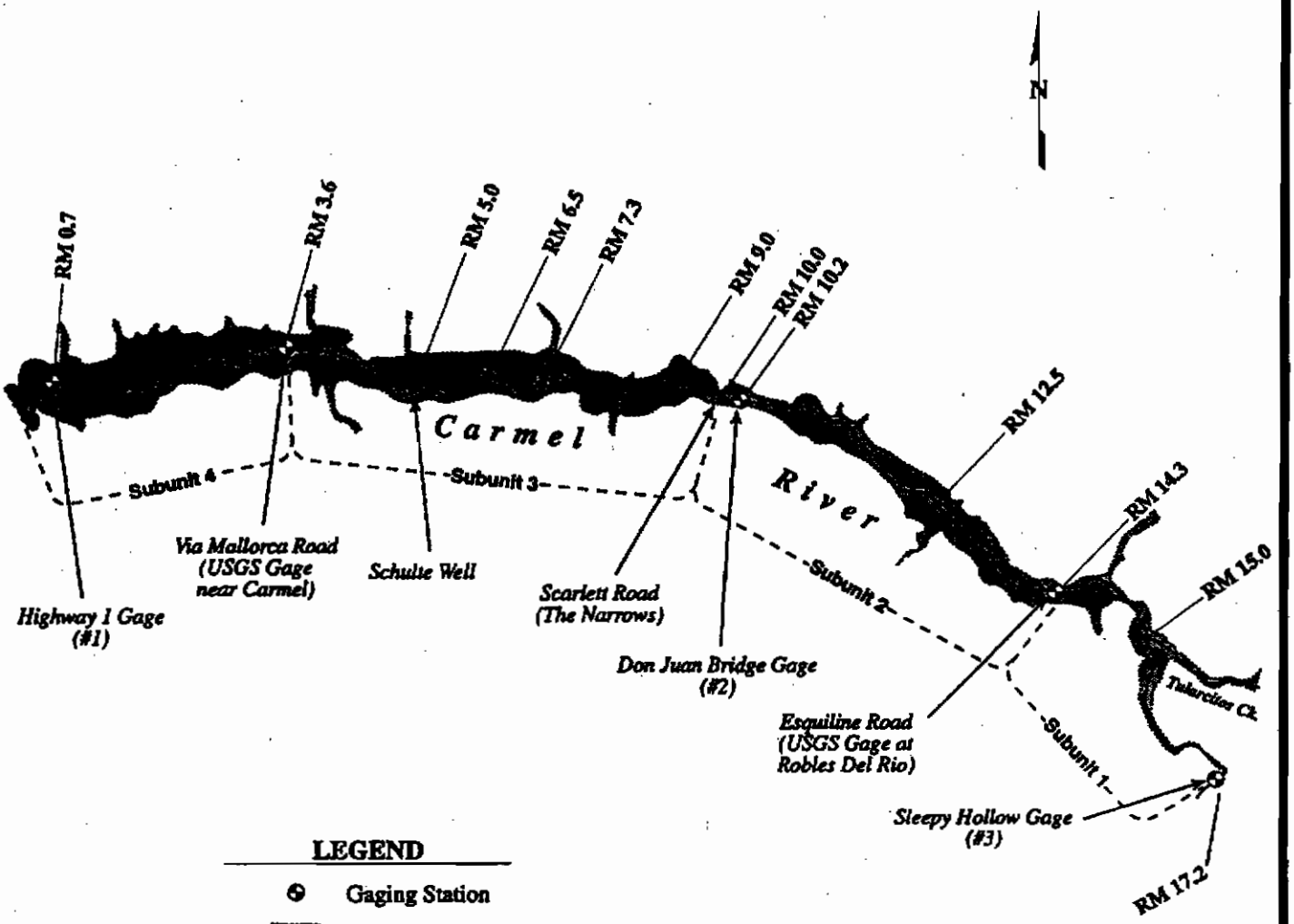


* Subunits 1-4 form the Carmel Valley Groundwater Basin. The subunit boundaries are: 1. Via Mallorca Road (USGS Gage Near Carmel), 2. Scarlett Road (The Narrows), 3. Esquiline Road (USGS Gage at Robles Del Rio), 4. Sleepy Hollow Gage.

Streamgaging will occur at the Highway 1 Gage (#1), Don Juan Bridge Gage (#2), and Sleepy Hollow Gage (#3).

FIGURE 4

ALLUVIAL GROUNDWATER BASIN
IDENTIFYING RIVER MILES (RM)



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Streamgaging will occur at the Highway 1 Gage (#1), Don Juan Bridge Gage (#2), and Sleepy Hollow Gage (#3).

supplies the water, primarily, for use outside of the watershed to users on the Monterey Peninsula.[1] About 105,000 persons are provided service by Cal-Am, most are supplied water from the Carmel River. (T,I,48:1-48:18.)

The primary source of water supply for Cal-Am customers is 21 wells situated on the lower Carmel River. (CAL-AM:91.) These wells supply about 69 percent of the water needs of Cal-Am customers. The balance of the water delivered to Cal-Am customers is supplied from: (1) San Clemente and Los Padres reservoirs in the upper reaches of the Carmel River and (2) pumped ground water in the City of Seaside.[2] (T,I,131:1-19.)

San Clemente Dam has a storage capacity of approximately 2,140 af. Water is stored in this facility under claim of pre-1914 appropriative right.[3] (Statement of Water Diversion and Use No. 8538.) Los Padres Dam is operated pursuant to License 11866 (Application 11674) and authorizes maximum annual withdrawal of 2,950 af. Stored water is released from Los Padres to the river and it is rediverted for use at San Clemente Dam. (T,I,130:16-24.) Sedimentation has reduced the combined usable storage at the

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[1] *Cal-Am supplies about 17,000 af during a normal year . This estimate is obtained by adding the 2,700 af which is supplied from the wells in Seaside (T,I,131:1-19) to the 14,106 af which is obtained from the Carmel River. (CAL-AM:90.) The 14,106 af represents the recent average, non-drought use (average use from 1979 through 1988, based upon Cal-Am Exhibit 90). (14,106 + 2,700 = 16,806 af, or approximately 17,000 afa.)*

[2] *In addition to supplies from the Carmel River and pumped ground water in the area of Seaside, reclaimed wastewater is available to some Cal-Am users from the Carmel Area Wastewater District/Pebble Beach Community Services District Wastewater Reclamation Project. The Project will provide 800 acre-feet of reclaimed water for the irrigation of golf courses and open space in the Del Monte Forest. In return for financial guarantees, the Pebble Beach Company and other sponsors, received a 380 af potable water entitlement from the District, based upon issuance of an appropriative right permit to the District, for development within Del Monte Forest. As of the end of fiscal 1993-1994, the District had not allocated the remaining 420 af of project yield. (MPWMD,337,25.)*

[3] *Diversion at San Clemente Dam was the sole supply for the Monterey Peninsula until the 1940s when wells at the upper end of the Carmel Valley began producing water to meet summer demand (SWRCB:1, A-27614, Folder 6A).*

reservoirs to about 2,600 af, about one-half of their combined original capacity. The reservoirs supply about 15 percent of Cal-Am's estimated normal year customer demand. (MPWMD:106,7.) Finally about 2,700 afa is produced from wells in Seaside, California.

2.0 COMPLAINTS

Between 1987 and 1991, the SWRCB received four complaints regarding Cal-Am's operations in the Carmel River watershed. The complaints are summarized below:

2.1 Carmel River Steelhead Association (CRSA)

On July 27, 1987 CRSA filed a complaint alleging that Cal-Am diversions from the underflow of the Carmel River are unauthorized and are destroying the public trust resources of the river, including steelhead. As a possible solution, the CRSA recommended rescue and rearing in ponds of fish stranded by the unauthorized diversions, irrigation of riparian vegetation affected by the unauthorized diversions, and release of more water from San Clemente Dam for rediversion through wells downstream. (SWRCB,1,a, Complaint File, Monterey Co., 27-01; CSRA:10,35-28.)

2.2 Resident's Water Committee (RWC)

On August 9, 1989 RWC filed a complaint with the Public Utilities Commission alleging that the supply of water needed to serve Cal-Am's customers exceeded available supply.[4] RWC also alleges that Cal-Am diversions from the Carmel River will reduce steelhead in the Carmel River to remnant levels. RWC recommends that Cal-Am be prohibited from serving new customers until an additional supply of water is obtained. (SWRCB:1, A-27614, Folder G.)

2.3 Ventana Chapter of the Sierra Club (Sierra Club)

On March 5, 1991, the Sierra Club filed a complaint alleging: (1) Cal-Am's pumping from the subsurface flow of the Carmel River

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[4] *A copy of the complaint was received by the SWRCB around the same time.*

is unauthorized and (2) Cal-Am's diversion from San Clemente Reservoir during low-flow periods is an unreasonable method of diversion. The Sierra Club's proposed solution includes the following: (1) Cal-Am should be enjoined from diverting water during periods of low flow, (2) Cal-Am and Water West should apply for appropriative water rights from the SWRCB, (3) Cal-Am and Water West should be required to pay for development and implementation of a program to restore public trust resources affected by their diversions,[5] and (4) Cal-Am should be required to release all diversions at San Clemente Reservoir down the Carmel River for collection at downstream wells, instead of diverting water at San Clemente. (SWRCB:1,A-27614, Folder J.)

2.4 California Department of Parks and Recreation (DPR)

On March 8, 1991, DPR filed a complaint alleging that Cal-Am's diversion of water from the underflow of the Carmel River is: (1) unauthorized, (2) results in mortality to mature riparian forests along a 4,000-foot length of river within the Carmel River State Beach, and (3) interferes with DPR's riparian right to divert water from the Carmel River for irrigation purposes. DPR's proposed solution is for Cal-Am to apply for an appropriative water right with the SWRCB and be subject to conditions to protect riparian, wetland, and aquatic resources in the lower Carmel River, and lagoon and riparian rights along the lower Carmel River. (SWRCB:1, A-27614, Folder J.)

2.5 Monterey Peninsula Water Management District

On May 5, 1992, the District petitioned to intervene in the complaints against Cal-Am because of its interest in assuring an appropriate balance between competing demands for the use of the limited water supply. (SWRCB:1, A-27614, Folder K.)

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[5] *Water West is a water company owned by Cal-Am. Water West has rights to divert and use water at about one-half mile below San Clemente Dam. The complaint was directed at only Cal-Am's diversions. Although Water West is not a party to this proceeding, its diversions are analyzed as diversions under the control of Cal-Am.*

2.6 Interested Persons

In addition to the complainants and the District, other persons participated in the hearing. Participation was directed at the effect Cal-Am diversions were having on the instream resources of the Carmel River and measures which might be taken to mitigate such effects. Such participants included the DFG, Willis Evans, John Williams, Charity Crane and others appearing on their own behalf.

3.0 DESCRIPTION OF THE WATERSHED

The Carmel River drains a 255-square mile watershed tributary to the Pacific Ocean. Its headwaters originate in the Santa Lucia Mountains at 4,500 to 5,000-foot elevations, descend and merge with seven major stream tributaries along a 36-mile river course, and discharge into Carmel Bay about 5 miles south of the City of Monterey. Above the confluence of Tularcitos Creek, the Carmel River constitutes about 65 percent of the watershed. Downstream from RM 15, the river has a 40 feet per mile gradient where the river flows to the bay are over and within an alluvium-filled Carmel Valley floor.

Carmel River flow is in a well-defined channel. The channel in the lower 15 river miles ranges from 20 to 150 feet wide. (SWRCB:19.) The channel changes progressively from cobble to gravel between RM 15 and RM 7, from gravel to sand between RM 7 and RM 2.5 and consists entirely of sand from RM 2.5 to Carmel Bay. (DFG:4,2.)

Downstream from RM 15, alluvial deposits comprise a ground water basin which underlies the river flow in the Carmel Valley portion of the watershed. The legal classification of the ground water basin is discussed in Section 3.2 *infra*. Local ground water levels within the aquifer are influenced by pumping or production at supply wells, evapotranspiration by riparian vegetation, seasonal river flow infiltration and subsurface inflow and outflow.

During the dry season, pumping of wells has caused significant declines in the ground water levels. The Carmel River surface flow

decreases due to pump-induced infiltration which recharges the seasonally-depleted ground water basin. During normal water years, surface flow in the lower Carmel Valley is known to become discontinuous or non-existent. Downstream from RM 3.2, there was no river runoff between April 1987 and March 1991. (MPWMD:287, 2-8.)

3.1 Geologic Setting

The principal hydrogeologic units (from oldest to youngest) along the Carmel River alluvial basin that are significant include: (1) pre-tertiary metamorphic and igneous rocks, (2) tertiary sedimentary rocks comprised primarily of sandstone beds (Paleocene and Miocene age) and Monterey shale (Miocene age), (3) older alluvium (Pleistocene age), and (4) younger alluvium (Holocene age). (SWRCB:19.)

Metamorphic (mainly schist and gneiss) and igneous (granitic) rocks form the basement complex which is extensively exposed along or near the river upstream from RM 10 at the downstream extremity of the river narrows. Tertiary sandstone units, which overlie the basement rocks, are exposed primarily along the southern flank of the alluvial valley from about RM 1.5 to 3 and 5.5 to 12.5. The Monterey Shale formation overlies the sandstone. It is exposed extensively along the north side of the Carmel Valley alluvium from approximately RM 2 to 12 and surficially borders the southern side of the valley from about RM 3 to 5.5 (in the vicinity of Potrero Canyon) and RM 14.5 to 15.5 (in the community of Carmel Valley). The older alluvium, consisting mainly of gravel and sand, form remnant terraces which directly overlie the Monterey shale and/or basement complex rocks. These terraces are laterally discontinuous patches along the north side of the valley alluvium from RM 1 to 16 and along both sides from about RM 16.5 to 18. The basement complex and the shale formation are considered to be non-water bearing. The sandstone has no subsurface hydrologic significance and the older alluvium is found on terraces above the level of ground water. (SWRCB:19.)

The younger alluvium, which formed the valley floor, consists principally of boulders, cobbles, gravel, and sand (which contains silt and clay layers of limited horizontal and vertical extent downstream from the river narrows). This alluvium was deposited by river flows (along the lowermost 18 miles of the drainage basin) within a canyon that was incised (by earlier flows) into the shale formation, sandstone units, and basement complex rocks. Its thickness varies from less than a foot at RM 18 to approximately 200 feet in the vicinity of the river mouth. These deposits comprise the most important aquifer in Carmel Valley (MPWMD:105,3) because of their ability to transmit significant amounts of subsurface water to wells.

3.2 Physical (Hydrologic) Characteristics of the Carmel Valley Aquifer

Carmel River surface flow is generally within the well-defined 20- to 150-foot wide channel over the alluvial deposits that form the valley floor. These deposits are the younger alluvium that comprise the Carmel Valley aquifer.

On behalf of the District, Thomas M. Stetson reviewed District Exhibit 108 and SWRCB Exhibits 19, 24, 27, and 29 in connection with his evaluation of the physical aspects of the subsurface water in Carmel Valley. Mr. Stetson also reviewed hydrographs of Carmel Valley aquifer water levels obtained at numerous wells. (MPWMD:107.) In addition, he reviewed Carmel River streamflow hydrographs for the USGS Robles Del Rio and Carmel gaging stations. By superimposing surface and subsurface water level hydrographs, Mr. Stetson established that there is a direct relationship between recovery of seasonally-lowered subsurface water levels at wells and recurrent river flow increases during ensuing wet periods. On this basis, Mr. Stetson concluded that surface flow recharges river underflow and, consequently, causes a rise in Carmel Valley aquifer water levels. (MPWMD,107,4.)

Mr. Stetson provided written testimony that such underflow is only through the younger alluvium within a known and definite channel

along the entire length of Carmel Valley. (MPWMD:107,4.) Mr. Stetson supported his testimony utilizing the following information: (1) essentially nonwater-bearing rocks (described in Section 3.1) border and underlie the younger alluvium or Carmel Valley aquifer and (2) the average hydraulic conductivity of the younger alluvium is about 60 feet per day (ft/day), as compared to the hydraulic conductivity of the rocks which is in the order of 0.1 to 0.0001 ft/day or less. (MPWMD:107,6.) Mr. Stetson concluded that the hydraulic conductivity difference is substantial and renders the aquifer a "pipeline" for subsurface flow. (MPWMD:107,6.)

Mr. Stetson's testimony is consistent with the findings of SWRCB staff. Ms. Laudon submitted testimony and evidence that the relatively impermeable granitic and sedimentary rocks form the bed and banks of a known and definite channel which restricts the flow of subsurface water to the alluvium. (SWRCB:7&8.) This information is further supported by evidence regarding the subsurface occurrence of granitic or sedimentary rocks beneath the Carmel Valley aquifer at all well installations throughout the valley.

Except where water levels have been influenced by drawdown due to pumping, the general down valley or westerly subsurface flow direction within the aquifer is the same as that of the Carmel River flow. The subsurface flow has a pattern which demonstrates that it is within a known and definite channel rather than that of a diffused body of percolating ground water. (MPWMD:107,6.)

Cal-Am and other parties did not contest the testimony and evidence which describes the subsurface flow of the Carmel River as a subterranean stream flowing through a known and definite channel. Nor did Cal-Am or other parties offer evidence that the ground water in the alluvial basin should be classified as percolating ground water not within the SWRCB's permitting jurisdiction. Accordingly, we find that downstream of RM 15 the aquifer underlying and closely paralleling the surface water course of the

Carmel River is water flowing in a subterranean stream and subject to the jurisdiction of the SWRCB.

3.3 Location of Cal-Am Wells

The locations of Cal-Am's wells are described in the following table:

CAL-AM CARMEL RIVER WELLS (CAL-AM EXHIBIT 91)			
Well Name	*Well Location*	*Depth To Water Static/ Pumping*	*Date Drilled*
Los Laureles #5	NE¼ of SE¼ of Sect.29,T16S,R2E	18 feet/44 feet	1947
Los Laureles #6	SE¼ of SE¼ of Sect.29,T16S,R2E	16 feet/43 feet	1977
Robles #3	NE¼ of NE¼ of Sect.10,T17S,R2E	12 feet/30 feet	1989
Russell #4	SW¼ of SE¼ of Sect.11,T17S,R2E	16 feet/35 feet	1947
Russell #2	SE¼ of SE¼ of Sect.11,T17S,R2E	16 feet/35 feet	1947
Scarlett #6	SW¼ of SW¼ of Sect.19,T16S,R2E	20 feet/26 feet	1963
Scarlett #8	SW¼ of SW¼ of Sect.19,T16S,R2E	20 feet/35 feet	1989
Manor #2	NE¼ of SW¼ of Sect.23,T16S,R1E	30 feet/65 feet	1989
Schulte	SW¼ of NW¼ of Sect.23,T16S,R1E	15 feet/58 feet	1967
Stanton	NW¼ of NE¼ of Sect.30,T16S,R2E	3 feet/35 feet	1977
Begonia #2	NW¼ of SW¼ of Sect.24,T16S,R1E	not listed	1990
Berwick #7	SW¼ of SW¼ of Sect.24,T16S,R1E	23 feet/63 feet	1981
Berwick #8	SE¼ of SW¼ of Sect.24,T16S,R1E	20 feet/50 feet	1986
Rancho Cañada (aka Cañada)	NE¼ of SW¼ of Sect.17,T16S,R1E	15 feet/49 feet	1981
San Carlos	NE¼ of SE¼ of Sect.17,T16S,R1E	16 feet/55 feet	1982
Pearce	SE¼ of NW¼ of Sect.22,T16S,R1E	16 feet/50 feet	1981
Cypress	SW¼ of NW¼ of Sect.22,T16S,R1E	15 feet/48 feet	1981
Continued to next page			

CAL-AM CARMEL RIVER WELLS (CAL-AM EXHIBIT 91)			
Well Name	*Well Location*	*Depth To Water Static/ Pumping*	*Date Drilled*
Continued from previous page			
Panetta #1	NW¼ of NW¼ of Sect.03,T17S,R2E	13 feet/16 feet	1989
Panetta #2	NW¼ of NW¼ of Sect.03,T17S,R2E	16 feet/22 feet	1989
Garzas #3	SW¼ of SE¼ of Sect.33,T16S,R2E	13 feet/16 feet	1989
Garzas #4	NE¼ of SW¼ of Sect.33,T16S,R2E	12 feet/16 feet	1989

In addition, the location of these wells in relation to the Carmel River and the aquifer associated with the river is shown by Figure 3. The depth to water for each well is identified in the above table. Figure 3 and the table demonstrate that Cal-Am's wells are extracting water from the subterranean stream associated with the Carmel River.

4.0 ANALYSIS OF CAL-AM'S WATER RIGHTS

Among the issues noticed for hearing is the following:

> "Does [Cal-Am] have a legal right to divert water from wells located adjacent to the Carmel River?" (SWRCB 1, June 1992 Hearing Notice.)

Cal-Am extracts, on average, 14,106 afa via 21 wells from the alluvial aquifer along the Carmel River. Cal-Am claims the right to divert and use this water under pre-1914 appropriative, riparian, prescriptive, and rights acquired under License 11866. (CAL-AM:92,1,10-27; October 1, 1992 letter to SWRCB from Cal-Am transmitting supplemental exhibits.) During the hearing, Cal-Am's representatives presented testimony and numerous exhibits in support of its claimed rights to divert water from the river. The following sections analyze Cal-Am's rights to divert and use water from the Carmel River.

4.1 Applicable Water Law

The following sections set forth the law applicable to the water rights claimed by Cal-Am.

4.1.1 *Pre-1914 Appropriative Rights*

Prior to 1914, an appropriative right for the diversion and use of water could be obtained two ways.[6] First, one could acquire a nonstatutory (common law) appropriative right by simply diverting water and putting it to beneficial use. (Haight v. Costanich (1920) 194 P. 26, 184 Cal. 426.) Second, after 1872, a statutory appropriative right could be acquired by complying with Civil Code Sections 1410 et seq. (*Id.*) Under the Civil Code, a person wishing to appropriate water was required to post a written notice at the point of intended diversion and record a copy of the notice with the County Recorders Office which stated the following: the amount of water appropriated, the purpose for which the appropriated water would be used, the place of use, and the means by which the water would be diverted. (Cal. Civil Code Sections 1410-1422, now partially repealed and partially reenacted in the Water Code; Wells A. Hutchins, The California Law of Water Rights (1956) at 89.)

Generally, the measure of an appropriative right is the amount of water that is put to reasonable beneficial use, plus an allowance for reasonable conveyance loss. (Felsenthal v. Warring (1919) 40 Cal.App. 119, 133, 180 P. 67.) The quantity of water to which an appropriator is entitled, however, is not necessarily limited to the amount actually used at the time of the original diversion. Rather, under the doctrine of "progressive use and development", pre-1914 appropriations may be enlarged beyond the original appropriation. (Haight, 194 P. 26 at 28-29; Hutchins at 118; 62 Cal.Jur. at 370.)

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[6] *After 1914, an appropriative right could only be obtained by complying with the provisions of the California Water Code for the appropriation and use of water. (Water Code Section 1225; Stats. 1913, C. 586, p. 1012, Section 1(c).)*

Under the progressive use and development doctrine, the quantity of water to which an appropriator is entitled is a fact-specific inquiry. According to Haight, "this right to take an additional amount of water reasonably necessary to meet increasing needs is not unrestricted; the new use must have been within the scope of the original intent, and additional water must be taken and put to a beneficial use in keeping with the original intent, within a reasonable time by the use of reasonable diligence...." (194 P. at 29.) Thus, the progressive use and development doctrine allows an appropriator to increase the amount of water diverted under a pre-1914 right, provided: (a) the increased diversion is in accordance with a plan of development and (b) the plan is carried out within a reasonable time by the use of reasonable diligence. (Senior v. Anderson (1896) 115 Cal. 496, 503-504, 47 P. 454; Trimble v. Heller (1913) 23 Cal.App. 436, 443-444, 138 P. 376.)

4.1.2 *Riparian Rights*

The riparian doctrine confers on the owner of land abutting a watercourse the right to the reasonable and beneficial use of water on the land. California riparian rights have the following general characteristics. The riparian right is part and parcel of land which abuts a river, stream, lake, or pond. The riparian right may be used only for direct diversion of naturally occurring flow. Unless adjudicated, the riparian right is unquantified and extends to the use of as much water as can reasonably and beneficially be used on riparian lands. A riparian right is a shared right and, therefore, a riparian has a right to the use of the watercourse in common with the equal and correlative rights of other riparians. Finally, the riparian right generally is paramount to all other rights, and must be satisfied before appropriative rights are exercised. (CEB Manual, Water Rights, Water Supply, & Water Related Law (1987) at 7.)

4.1.3 *Prescriptive Rights*

Generally, "prescription" means the taking of another person's property by adverse use. With regard to water, prescription can only be accomplished by the adverse diversion and use of water that

other private persons are entitled to use under the law. Subsequent to 1914, prescription will not lie against the State for the unappropriated waters of the State. (Water Code Sections 102 and 1225; Stats. 1913, C. 586, p. 1012, Section 1(c); Crane v. Stevinson (1936) 5 Cal.2d 387; People v. Shirokow (1980) 26 Cal.3d 301.)

As to private persons, prescription can be accomplished only by adverse possession that is actual, open and notorious, continuous and uninterrupted, exclusive, hostile and adverse, and under claim of right or color of title for a period of not less than five years. (Locke v. Yorba Irr. Co. (1950) 35 Cal.2d 205; City of Pasadena v. City of Alhambra (1949) 33 Cal.2d 908.) Even though some private rights may be prescripted, the unappropriated waters of the State and post-1914 appropriative water rights cannot be prescripted unless they are supported by a permit. (Shirokow.)

4.1.4 *Licenses*

Under the California permit system, once a permittee has completed construction of a diversion structure and applied the water to beneficial use, the SWRCB investigates to confirm completion and compliance. The SWRCB will issue a license confirming the amount of water found to have been perfected by reasonable beneficial use subject to the terms and conditions included in the permit and required by statute and California case law. (Water Code Sections 1600, et seq.)

4.2 Analysis of Cal-Am's Water Right Claims

Sections 4.2.1 though 4.2.4, *infra*, analyze the evidence introduced in support of Cal-Am's claimed water rights. For purposes of this order when evaluating Cal-Am's claims, the evidence in the hearing record is considered in the light most favorable to Cal-Am due to the difficulty, at this date, of obtaining evidence that specific pre-1914 appropriative claims of right were actually perfected and have been preserved by continuous use.

4.2.1 *Analysis of Pre-1914 Appropriative Rights*

The lower Carmel River Valley, Monterey Peninsula, and surrounding areas were settled and developing before 1800. Many of Cal-Am's predecessors in interest developed or acquired appropriative water rights to divert water from the Carmel River and its subsurface waters prior to 1914. (CAL-AM:93, Attachment 1.) Cal-Am's predecessors in interest included: C.P. Huntington, Pacific Improvement Company, Monterey County Water Works, the Monterey County Water Works, Del Monte Properties Co., and California Water and Telephone Company. (*Id.*) Some of these appropriative rights were initiated and probably acquired in accordance with Civil Code Sections 1410, et seq. Other appropriative rights were acquired by the nonstatutory method of simply taking the water and putting it to reasonable beneficial use. (See 4.1.1, *supra*.)

Cal-Am submitted over 100 documents, including deeds and notices of appropriations by Cal-Am's predecessors, "which represent virtually all title documents bearing upon Cal-Am's water rights and chain of title." (CAL-AM, PHBr at 14:15-18.) Cal-Am Exhibit 93 (Attachment 1) summarizes the deeds and notices of appropriation pertaining to Cal-Am's appropriative rights. Nevertheless, Cal-Am did not present nor does the record contain any evidence which would enable the SWRCB to determine for each claimed pre-1914 appropriative right:[7] (1) whether diversion works were actually constructed, (2) whether water was ever diverted and used under any claimed right prior to 1914 or pursuant to a notice given in accordance with Civil Code Section 1410, or (3) the quantity of water which was put to reasonable beneficial use and maintained by continuous use by Cal-Am's predecessors.

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[7] *Despite the fact that Issue #2 was clearly noticed for hearing, Cal-Am asserted throughout the proceedings that the complaint proceedings were not the proper forum to evaluate Cal-Am's appropriative rights. (October 1, 1992 letter to Messrs. Stubchaer and Samaniego from Leonard G. Weiss transmitting supplemental exhibits at 1, n.1; CAL-AM Post-Hearing Brief, 13:14-18.) Nonetheless, Cal-Am submitted extensive evidence of its water rights based on deeds, notices of appropriation, and other documents.*

Cal-Am submitted two categories of documents to establish the total quantity of water used under all of its pre-1914 appropriative rights. These are:

> "(1) Direct evidence of actual usage in 1913 and earlier; and (2) Material dating back to the 1880s which demonstrate ... the existence of the water company's physical plant, dollar volumes of sales, and the like, prior to 1914." (CAL-AM, PHBr at 15:6-11; October 1, 1992 letter to SWRCB from Cal-Am transmitting supplemental exhibits.)

Several parties objected to the admissibility of the above exhibits on the ground that they are hearsay. (E.g., Carmel Valley Water Users, Closing Brief, 5-8.)

Title 23, California Code of Regulations, Section 761(d) provides, in part, that in a hearing before the SWRCB:

> "The hearing need not be conducted according to technical rules relating to evidence and witnesses. Any relevant, non-repetitive evidence shall be admitted *if it is the sort of evidence on which responsible persons are accustomed to rely in the conduct of serious affairs.* Hearsay evidence may be used for the purpose of supplementing or explaining any direct evidence but shall not be sufficient by itself to support a finding *unless it would be admissible over objection in civil actions* ...." (Emphasis added.)

Cal-Am exhibits are admissible under Section 761(d) because: (a) it is the sort of evidence on which responsible persons are accustomed to rely and (b) the exhibits would likely be admissible over objection in a civil action.[8] Moreover, these exhibits

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[8] *The SWRCB is of the opinion that those exhibits pertaining to proceedings of the California Railroad Commission would be admissible over objection in a civil trial. It is difficult to find a clear statement in the California Evidence Code or cases specifically addressing this evidentiary issue. However, there are multiple theories, including: the official notice doctrine, the official records exception to the hearsay rule, and other "residual" exceptions to the hearsay rule that support this conclusion.*

Official notice may be taken of the existence of any specific record of the California Railroad Commission. While official notice generally may not be taken of the truth of the Railroad Commission's factual findings (see Sosinsky v. Grant (1992) 8 Cal.Rptr.2d 552, 558-59), the factual statements within such exhibits are admissible under the official records exception to

(continued...)

likely are the best, if not the only, evidence available for events which occurred over eighty years ago. Thus, the SWRCB will allow Cal-Am's exhibits as evidence for the purpose of evaluating its pre-1914 appropriative claims.

These documents, however, do not show the amount of water that was actually used beneficially or maintained by continuous beneficial use by Cal-Am's predecessors under any specific pre-1914 appropriative rights. Thus, Cal-Am has not demonstrated that the

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[8](...continued)
the hearsay rule. Section 1280 of the Evidence Code provides:

> *"Evidence of a writing made as a record of an act, condition, or event is not made inadmissible by the hearsay rule when offered to prove the act, condition, or event if:*
>
> *(a) The writing was made by and within the scope of duty of the public employee;*
>
> *(b) The writing was made at or near the time of the act, condition, or event; and*
>
> *(c) The sources of information and method and time of preparation were such as to indicate its trustworthiness."*

In this case, those exhibits pertaining to proceedings of the California Railroad Commission generally satisfy the requirements of Section 1280. However, some courts have held that the public employee must have had personal knowledge of the act, condition, or event, or received the information recorded from someone in the agency who had personal knowledge in order for the official records exception to apply. (See People v. Parker (1992) 8 Cal.App.4th 114.) Because it is unclear whether any public official had personal knowledge of the quantity of water allegedly being used by Cal-Am's predecessor, it is possible that a court may find such information inadmissible under the official records exception. Nonetheless, the SWRCB concludes that these exhibits should be admitted under the official records exception because "the sources of information and method of time of preparation were such as to indicate [the exhibits'] trustworthiness." (See Cal. Evidence Code Section 1280(c).)

Alternatively, these exhibits would likely be admissible under one of the "residual" exceptions to the hearsay rule that allow California courts to recognize hearsay exceptions "in addition to those exceptions expressed in the statutes." (In re Malinda S, 51 Cal.3d 368, 376 (1990).) For example, evidence of a statement contained in a writing more than 30 years old is admissible if "the statement has been since generally acted upon as true by persons having an interest in the matter." (Cal. Evidence Code Section 1331.)

The deeds are admissible for the purpose of demonstrating chain of title. (Cal. Evidence Code Sections 1330 and 1600.) Finally, Exhibit 93 (Schematic of Chain of Title) is also admissible, but only to the extent the information therein is confirmed by the underlying documents which it purports to summarize.

notices of appropriation were ever perfected into appropriative rights.[9]

The best evidence regarding the amount of water actually put to reasonable beneficial use prior to 1914 by Cal-Am's predecessors is found in Cal-Am Exhibits 126, 131 and 133. The following sections briefly describe these exhibits:

(a) Exhibit 126 is a copy of a "Petition of the Monterey County Water Works For an Increase of its Water Rates," (MCWW) Application No. 950, filed before the California Railroad Commission on or about January 14, 1914. Exhibit "C" of this petition shows that in 1913 the MCWW sold a total of 314,879,755 gallons (966 afa) of water to its customers.

(b) Exhibit 131 is an MCWW brief to the Railroad Commission dated June 29, 1914, supporting its position for increased water rates. Page 6 of this brief discusses various estimates of water use and presents a likely total annual water use of 370,515,000 gallons (1,137 afa).

(c) Exhibit 133 is a January 27, 1915, engineer's report to the MCWW about the impact of the Railroad Commission's Decision regarding the MCWW's petition for a rate increase. Table 1A of this exhibit presents the MCWW's annual use of water in 1913-1914 as 43,444,600 cubic feet (997 afa).[10]

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[9] *Cal-Am's claimed pre-1914 appropriative rights could not possibly have been perfected and maintained for the face value of the rights being claimed. Assuming that the appropriative rights conveyed to Cal-Am were all perfected and maintained by continuous reasonable beneficial use, the maximum quantity which could be diverted from the Carmel River would be 751,608 afa, an amount which vastly exceeds the amount of water available in the river during even the wettest years of record. (MPWMD:199, Attachment 1 (showing maximum unimpaired Carmel River flow of approximately 325,000 afa).)*

[10] *The record contains other contradictory evidence as to the amount of water used prior to 1914. For example, less than 507 afa is reported as having been used in 1916. (CAL-AM:90.)*

These exhibits shed some light on the amount of water used by Cal-Am's predecessor in interest around 1914. These exhibits are inconclusive as to the actual amount of water used by the MCWW around 1914 due to the different water use figures. For purposes of this analysis and order, the 1,137 afa figure is used because: (1) the range between the high and low values is only fifteen percent and (2) it is reasonable to use the maximum annual water use estimate of 1,137 afa to establish the baseline quantity of water being used under pre-1914 appropriative claims.

In addition to the actual quantity of water used by Cal-Am's predecessors prior to 1914, Cal-Am might have been entitled to an additional quantity of water under the progressive use and development doctrine. However, Cal-Am neither asserted such a claim nor presented evidence which might support findings that it is entitled to additional water under the doctrine.[11] In addition, the diversion of a large amount of the water currently taken from the river or its underflow was not initiated until rapid growth occurred on the Monterey Peninsula, which commenced after 1960. (T,I,48:1-9; T,I,38:12-18; CAL-AM,90.) Cal-Am drilled 18 of its 21 wells after 1960. (CAL-AM:91.) Thus, Cal-Am is not entitled to additional water under the progressive use and development doctrine. Cal-Am's pre-1914 rights, therefore, should be limited to the estimated actual use by Cal-Am's predecessors in 1913, an amount which does not exceed 1,137 afa.[12]

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[11] *Indeed, Cal-Am requested that the Board "decline to attempt to quantify Cal-Am's rights until it hears Cal-Am's pending applications for permits." (CAL-AM's Post Hearing Brief at 21:9-11.) This request is rejected because this issue was noticed for this proceeding and Cal-Am had an opportunity to present evidence on the issue.*

[12] *Pre-1914 appropriative claims for San Clemente Dam. Persons diverting water under pre-1914 claims or right are required to file Statements of Diversion and Use with the SWRCB. (Water Code Sections 5100, et seq.) Cal-Am filed its first statements for San Clemente Dam in 1975. Cal-Am contends that this right was established under four Notices filed under the Civil Code. (CAL-AM, Exhibit A, pp.3 and 4; CAL-AM exhibits 4, 5, 6 and 8.)*

The first statements included water diverted for years 1972 through 1975. The statements indicate that Cal-Am was able to divert 1,529 af to storage at San Clemente Reservoir and that Cal-Am was claiming the right to divert up to 20 cfs by direct diversion. Over succeeding years, Cal-Am has

(continued...)

4.2.2 *Analysis of Riparian Rights*

Cal-Am's riparian claims are limited to the use of water on only those parcels which adjoin the surface water course of the river or which overlie water flowing in the subterranean channel.[13] Clearly, Cal-Am wells extract water flowing in the subterranean channel. Cal-Am also presented testimony indicating that 60 afa were used to irrigate riparian habitat along the river. (T,I,54:3-10.) Nevertheless, Cal-Am did not identify any specific parcels for which riparian claims were asserted. In summary, although Cal-Am did not submit testimony or exhibits in support of any specific riparian claim, it appears that Cal-Am has riparian rights and it is not unlikely that such rights are being exercised to divert 60 af to irrigate riparian vegetation along the Carmel River.[14]

4.2.3 *Analysis of Prescriptive Rights*

Cal-Am bases its claim to prescriptive water rights on the alleged fact that the claimed combined diversions of two of Cal-Am's predecessors depleted the flow in the Carmel River (CAL-AM: October 1, 1992 letter to SWRCB from Cal-Am transmitting supplemental exhibits, pp. 7 and 8; CAL-AM:136,2) during some years and the fact that the Carmel River often has no surface flow. (CAL-AM:132,14.) Assuming the truth of these facts, Cal-Am's post-1914 claims of prescriptive rights are, nevertheless, not supported

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[12] *(...continued)*
stated that it has approximately diverted between 1,200 to 8,000 af per year under this claim. (SWRCB, Files, Statements of Diversion and Use, Statement 8538.) More recent information indicates the dam can only store between 320 and 800 af. (MPWMD:287,4-49.) Amounts which are currently directly diverted are taken at the Carmel Valley Filter Plant about one-half mile below the San Clemente Dam.

San Clemente Dam was constructed in 1921, seven years after the modern Water Code respecting appropriation became effective. No evidence was presented: (1) as to which, if any, Notice is the basis for the pre-1914 claim of right, (2) that work was commenced on facilities to divert water prior to 1914, or (3) that water was diverted and used prior to 1914 or within a reasonable time thereafter under any Civil Code Notice.

[13] *Cal-Am does not claim that water being diverted from the subterranean channel associated with the Carmel River can be served to persons on the Monterey Peninsula under riparian rights claims. (T,I,91:13-92:8.)*

[14] *Cal-Am does not claim that water served outside the valley can be diverted from the river under riparian right claims. (T,I,91:13-92:8.)*

by the record because Cal-Am failed to introduce other essential evidence necessary to support prescriptive claims. Cal-Am did not: (1) demonstrate that the basic elements of prescription were met and (2) identify any specific persons, lands, or types of water rights that were allegedly prescripted. Thus, there is no basis for finding that Cal-Am is entitled to divert any water from the river under the doctrine of prescription.

4.2.4 *Analysis of Rights Under License 11866 (Application 11674A)*

On February 14, 1986, Cal-Am was issued License 11866 (Application 11674A) to divert 3,030 afa to storage from October 1 to May 31 from the Carmel River for municipal, domestic, industrial, and recreational uses. (SWRCB:1,b.) The maximum annual withdrawal under this right, however, is 2,950 afa. The above analysis of appropriative, riparian, and prescriptive rights does not affect the rights exercised under License 11866.

4.3 Conclusions Regarding Cal-Am's Claimed Water Rights

In summary, Cal-Am has valid pre-1914 appropriative rights to divert no more than 1,137 afa, based upon the amount of water actually used by Cal-Am's predecessors prior to 1914. Cal-Am is not entitled to additional water under the progressive use and development doctrine because Cal-Am did not present evidence of a plan of development carried out within a reasonable time.

Cal-Am has riparian rights for use within the Carmel River Valley on only those parcels which adjoin the surface watercourse of the river or which overlie water flowing in the subterranean channel. It is not unlikely that such rights are being exercised to irrigate the riparian vegetation along the Carmel River. Such rights do not extend to water that is served outside the valley or water served to non-riparian parcels located within the valley.

Cal-Am is not entitled to any prescriptive water rights because Cal-Am did not identify the persons, lands, or types of water rights that are allegedly prescripted. Cal-Am has an appropriative

right to divert 3,030[15] afa of water to storage in Los Padres Reservoir from October 1 to May 31 pursuant to the conditions imposed by License 11866. Thus the total quantity of water which Cal-Am is presently using under legal rights is 3,376 afa.[16]

Because the amount of water to which Cal-Am is legally entitled under the appropriation and riparian doctrines, pre-1914 storage rights, and License 11866 is much less than the amount Cal-Am presently is diverting, Cal-Am is diverting about 10,730[17] afa from the Carmel River or its underflow without a valid basis of right. Accordingly, Cal-Am should be required to diligently develop and implement a plan for obtaining water from the Carmel River or other sources consistent with California water law.

5.0 EFFECT OF CAL-AM DIVERSION ON INSTREAM BENEFICIAL USES

The following sections will discuss the effects of Cal-Am's diversions on the instream beneficial uses of the Carmel River. Such effects include the loss of riparian habitat in the lower river and the near extinction of the Carmel River steelhead run. Cal-Am diversions, standing alone, are not the sole cause of current conditions in the Carmel River. Other causes include the diversion and use of water by other persons and, significantly, a series of dry and critically dry years during the late 1980s and early 1990s. Nevertheless, Cal-Am's combined diversions from the Carmel River constitute the largest single impact to the instream beneficial uses of the river.

5.1 Vegetative Resources

Three vegetation communities are found within the Carmel River watershed: coastal wetlands within the Carmel River Lagoon,

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[15] *The actual diversion is limited to 2,179 af due to siltation.*

[16] *1,137 afa, pre-1914 appropriative + 60 afa, riparian + 2,179 afa, license 11866 = 3,376.*

[17] *10,730 afa represents Cal-Am's total diversions from the Carmel River minus that amount which appears to be legally diverted. (14,106 - 3,376 = 10,730.)*

riparian communities along the river itself, and upland vegetation on the upper alluvial terraces and hills surrounding the valley. Mature multistoried riparian vegetation supports a wide diversity of plant and animal species, including a number of which are protected pursuant to federal and state endangered species acts.

Historically, riparian vegetation was more extensive than at present, particularly in the lower nine river miles. Prior to 1956, losses were primarily attributable to agricultural development. Since that time, the decline has coincided with the increasing export of ground water to meet growing urban demand on the Monterey Peninsula. (SWRCB:17; SWRCB:42,III-28.) Were it not for the extensive riparian corridor irrigation efforts of the District and Cal-Am, it is estimated that current ground water pumping would severely stress approximately 59 percent of the existing riparian vegetation in the upper portion of Aquifer Subunit 3 (see Figure 2) in normal water years, and nearly all vegetation during critically dry years. (MPWMD:289,9G-1.)

The Carmel River Lagoon contains a mixture of freshwater and salt marsh vegetation. Coastal salt marsh is considered one of the most fragile and rapidly disappearing habitats in California. The Carmel River coastal wetland represents some of the last remaining habitat of this type on the Central Coast. (SWRCB:42,III-32.)

Upland vegetation within the watershed is composed of a mixture of coastal scrub, hardwood forest, coastal dune, chaparral, and closed-cone coniferous forest. Cal-Am's diversions have no direct effect on such resources.

5.2 Wildlife Resources

Carmel River riparian and wetland communities support a diverse group of resident and migratory wildlife. A number of amphibian and reptile species occur within the riparian and wetland zones as well, including the red-legged frog and the western pond turtle. These are, respectively, a proposed and candidate species for listing under the Federal Endangered Species Act. A more detailed

description of these resources is found in the District's EIR/EIS. (MPWMD:287-290.)

5.3 Fishery Resources

The Carmel River supports populations of at least ten resident freshwater and anadromous fish species. Of these fishes, the steelhead (*Onchrhynchus mykiss*) has been considered the most important, and extensive studies have been performed to define its ecology in the river. (SWRCB:42,III-41.)

Adult steelhead live in the ocean and migrate into the upper reaches of the Carmel River to spawn. Migration may begin in the fall after the Lagoon sandbar is breached by artificial means or by the first major storm and when sufficient flow is established in the lower river to allow upstream passage.

Typically, in early January the adults spawn and migrate back to the ocean. After approximately three to eight weeks of incubation, depending on water temperature, the eggs hatch and fry soon emerge from the gravel. These fry continue development in the river until fall. By fall, fry will have developed into juveniles and begin moving downstream. They remain in the lower reaches of the river and the lagoon adapting to brackish water until late spring. In late spring, as high river flows are receding, they migrate out into the Pacific Ocean. Some juveniles and adults remain in the river for one or two additional years before migrating to the ocean, hence these life stages may be found in the river throughout the entire year. (SWRCB:42,III-42.)

5.4 Extent of the Steelhead Resource

When first seen by Spanish explorers in 1603, the Carmel River supported a spectacular steelhead run, believed to have been well in excess of 12,000 fish annually. (CSRA:5,2.) Heavy fishing in the 1850s through the 1870s diminished the fishery. Fish planting began in 1910 and continued through the 1940s. (MPWMD:289,8-8.)

When San Clemente Dam was constructed in 1921 (RM 18.5), a fish ladder was also built. (MPWMD:289,8-8.) Access to a major portion of the steelhead spawning and rearing habitat was effectively eliminated in 1949 with the construction of Los Padres Dam at RM 23.5. (CSRA:5,2.) Although a fish trap was installed downstream of the dam and captured adults transported into the reservoir, the facility proved ineffective at maintaining steelhead populations. (MPWMD:289,8-8.)

Annual counts of steelhead passing through the San Clemente fishway began in 1961. The critical dry years of 1976-77 and 1987-92, drought, and diversion by Cal-Am from its wells have combined to reduce water available to steelhead and have also reduced the steelhead population to remnant levels. Only one fish was recorded in 1991 and 15 fish in 1992. (MPWMD:337,49.) Past reviews of Carmel River environmental problems have identified flow reduction and habitat alteration as major factors associated with steelhead decline. (SWRCB:42,III-44.)

Paralleling the declining steelhead population during this period was the rising urban demand for water. Originally, the Monterey Peninsula water supply was diverted entirely from the two reservoirs and from surface flow. When demand exceeded the developed surface resources, wells drilled in the Carmel Valley alluvium aquifer were added to supplement supply. In recent times, dry season surface flows below the Narrows at RM 10 have been depleted in most years as a result of heavy ground water pumping. This results in the stranding and death of many juvenile fish as surface flow recedes. (DFG:4,32.)

5.5 The Effect of Cal-Am Diversions Should be Mitigated

To summarize, Cal-Am diversions have historically had an adverse effect on: (1) the riparian corridor along the river below RM 18.5, (2) wildlife which depend on riparian habitat, and (3) steelhead and other fish which inhabit the river. Measures should be adopted requiring Cal-Am to mitigate the effect of its diversions on the environment until such time as it is able to

obtain water from the Carmel River or other sources consistent with California water law.

6.0 MITIGATING EFFECTS OF CAL-AM DIVERSIONS

The following sections identify the measures which are in effect to mitigate the effect of Cal-Am's diversions in the instream beneficial uses of the Carmel River. Many significant measures to protect the instream beneficial uses of the river have been initiated and are being carried out by the Monterey Peninsula Water Management District. In order to avoid confusion, an explanation of the District's role is necessary.

The District was created by special act of the Legislature in 1977. (Water Code Appendix Section 118-2.) The District is responsible for managing available surface and ground water sources to supply water within the District and to protect the environmental quality of the area's water resources, including the protection of fish and wildlife resources. (*Id.*; MPWMD:16,1-2.) Much of the watershed of the Carmel River is within the District's boundaries (Figure 1) and the District has broad powers over the use and distribution of water within its boundaries, including the operations of Cal-Am. (Water Code Appendix Sections 118-2, 118-102.)

6.1 Interim Relief Program

In 1988, as a result of the complaint filed by the CRSA (Section 2.1), the District formed an Environmental Advisory Committee. The committee was composed of citizen groups and public agency representatives, including representatives from Cal-Am and DFG. (MPWMD:53;3&4.) Their efforts resulted in an Emergency Relief Program and an Interim Relief Program, both designed to address chronic environmental degradation in the lower Carmel River. (MPWMD:53.)

The focus of the Interim Relief Program was on rescuing stranded steelhead during critically dry years, preserving the riparian corridor, and enhancing aquatic habitat by increasing streamflow. Specifically, the District undertook to: (1) limit surface

diversion at San Clemente Dam to 29 percent of total Cal-Am production, (2) hire fishery professionals to assess habitat and coordinate steelhead rescue efforts, and (3) monitor the health of riparian vegetation and install, operate, and maintain drip irrigation systems along the lower Carmel River. The provisions of the program expired in November 1993, but are carried forward as elements of the Water Allocation EIR mitigation program of the District. (MPWMD:53; SWRCB:42.)

6.2 Water Allocation Mitigation Program

In 1981, the District established an annual Water Allocation Program to apportion water to each of its member jurisdictions. In 1990, a Water Allocation Program EIR was completed and certified by the District. (SWRCB:42; MPWMD:16.) The EIR analyzed the environmental and socioeconomic impacts of varying levels of water production from the Monterey Peninsula Water Resource System, including the Carmel River. The document found that the amount of water which could be produced without significant environmental impact was less than previous estimates. As a result, the Cal-Am allocation was reduced from 18,600 to 16,744 afa.[18] Even at the reduced level, diversion of water from the Carmel River was found to have significant adverse environmental impacts on fisheries, riparian vegetation and wildlife, and the Lagoon. Therefore, the District also approved the Water Allocation Mitigation Program and committed itself to implement the mitigation program. The Program provides for the following mitigation measures:

Fisheries (MPWMD:16,55)

- Continue Interim Relief Program
- Expand program to capture emigrating smolts in spring
- Prevent stranding of early fall and winter migrants
- Rescue juveniles downstream of Robles Del Rio in summer

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[18] *The quantity of water which the District allocated to Cal-Am was not based on the amount of water diverted by Cal-Am and not on Cal-Am's legal right to divert water.*

- Modify spillway and transport juveniles around Los Padres Dam

Riparian Vegetation and Wildlife (MPWMD:16,64)

- Continue Interim Relief Program
- Conservation and water distribution management to retain water in the Carmel River
- Prepare and oversee a Riparian Corridor Management Plan (MPWMD:69)
- Implement the Riparian Corridor Management Plan
- Expand monitoring programs for soil moisture and vegetative stress

Lagoon Vegetation and Wildlife (MPWMD:16,72)

- Continue Interim Relief Program
- Assist with Lagoon Enhancement Plan investigations
- Expand long-term monitoring program
- Identify feasible alternatives to maintain adequate Lagoon volume

The program was adopted and funded by the District for an initial five-year period, due to expire in late 1995, after which allocations are to be reassessed based on results of monitoring studies. Annual progress reports have been prepared by the District and submitted to the SWRCB. (SWRCB:43; MPWMD:307-308.) Funded primarily by user fees and taxes, the program costs will slightly exceed $6.5 million over five years. (MPWMD:309.)

The effectiveness of this mitigation program and the degree to which the District has implemented the mitigation program was the subject of considerable testimony during the SWRCB hearing. Both the CSRA and the DFG expressed dissatisfaction with the implementation of the program. (CRSA:94-1,3; T,X,100:2.) Further, DFG stated that it was the Department's position that fish rescue is inappropriate as a long-term mitigation measure and that provision of adequate instream flow is the preferable alternative. (T,IX,8:2.)

6.3 Other District Actions

In addition to the above programs, the District has engaged in a number of other activities to lessen the impact of water extraction on the Carmel River system. These measures include:

- Limitation on total system production
- Mandatory rationing and moratoriums
- Conservation and community education programs
- Development of Seaside aquifer
- Wastewater reclamation

Although these programs have been effective in reducing demand on the Carmel River, their combined effect is inadequate to reverse severe environmental degradation. It is the position of the District and DFG wildlife experts that river flow is the critical element in reversing this degradation. The District has also concluded that a firm municipal supply and water for environmental restoration cannot be provided without additional water storage upstream of Cal-Am's existing well field. (MPWMD:287,2-8.)

6.4 Conditions On the Operation of Los Padres and San Clemente Dams

In 1948 the SWRCB adopted Decision 582 approving an appropriative right for the Los Padres Dam. The Decision and Permit 7130 require, in general, that Cal-Am maintain a flow of not less than 5 cfs in the channel of the Carmel River directly below the outlet structure of the Los Padres Dam at all times during which water is being stored under this permit.

Diverting under a claim of pre-1914 appropriative right, San Clemente Dam has no bypass requirement and, until the early 1980s, the entire summer streamflow was diverted into the filter plant downstream of San Clemente Dam. (DFG:4,8.) During the 1980s, DFG and Cal-Am began negotiating year-to-year agreements for the release of some water at San Clemente Dam to benefit fish in the river. Bypass flows have generally been in the range of 3.5 to 5 cfs. Under more normal hydrologic conditions, the bypass

maintains flow in the stream to the Narrows at RM 10. This habitat below San Clemente Dam is considered significant steelhead habitat.

6.5 Interim Measures to Mitigating Effects of Cal-Am Diversions Should Continue to be Implemented

As previously stated, Cal-Am's diversions have an adverse effect on the instream beneficial use of the river. Although the interim measures discussed herein are beneficial, they are by no means sufficient to offset the total effect of Cal-Am's diversions. Thus, these measures should be continued until such time as Cal-Am is able to obtain water from the Carmel River or other sources consistent with California water law.

That most interim measures have been undertaken by the District and not Cal-Am is a matter of concern. There is no assurance that the District will indefinitely continue to mitigate the effects of Cal-Am's diversions. Furthermore, there is no basis for the SWRCB to order the District to continue implementing the interim measures on behalf of Cal-Am. Thus, a condition should be adopted requiring Cal-Am to implement these interim measures in the event the District fails to continue with its programs.

7.0 OTHER PROPOSALS FOR MITIGATING THE EFFECTS OF CAL-AM DIVERSIONS FROM THE CARMEL RIVER

In addition to the interim mitigation measures being implemented by the District, the Complainants, DFG, and Mr. Evans contend that additional mitigation measures should be implemented by Cal-Am. Some of these measures are discussed in the following sections.

7.1 Maximize Production in Seaside Aquifer, Minimize Production from Carmel River

Several parties advanced the concept that production from the Seaside aquifer should be increased and diversions from the Carmel River should be reduced. Cal-Am produces about 2,700 afa from the Seaside ground water basin from wells in Seaside, California. The Seaside northern and southern coastal ground water subbasins have a usable storage capacity of 4,700 af. (MPWMD:101,6,144.) The long-term yield of the Seaside ground water subbasin, however, is

estimated to be 3,300 afa, using the practical rate of withdrawal method. (SWRCB:1, "Hydrology Update, Seaside Coastal Ground Water Basins, Monterey County, California", Staal, Gardner & Dunne, Inc., 1990, p.22.) A new well became available to Cal-Am and its customers during 1994, the Peralta Well, which is located in the Seaside aquifer. The well is capable of producing approximately 1,000 afa. The District has allocated the potential production from the Peralta Well for purposes which include water for community benefit and among eight jurisdictions for new connections, remodeling, and additions. (MPWMD,291,4:1-17; MPMD,3378,28,Figure 10.) By more fully utilizing water available in the Seaside aquifer, Cal-Am can reduce its diversions from the Carmel River and the effects of such diversions on public trust values. Thus, we find that Cal-Am should be required to maximize production from the Seaside aquifer and reduce diversions from the river to the greatest practicable extent.

7.2 Maximize Production from the Most Downstream Wells

Several parties advanced the proposal that by maximizing production from the most downstream wells that surface water in the Carmel River could be extended farther downstream.[19] The benefit of operating the wells in this manner would be to provide more habitat for fish during some years and seasons. (T,IV,248:24-251:3.) Testifying for DFG, Keith Anderson indicated that Cal-Am was already operating in this manner pursuant to an agreement with DFG. (T,IX,17:2-10.) Testimony did indicate, however, that too much pumping of wells nearer to the Lagoon might result in water quality degradation and adversely affect supply of water to other wells. Thus, we find that Cal-Am should be required to satisfy the water demands of its customers outside of the Carmel River watershed by extracting water from its most downstream wells to the maximum practicable extent.

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[19] *Some parties advocated drilling more wells farther down the river as near to the Lagoon as possible. The feasibility of this proposal was not demonstrated. Testimony and exhibits indicated that such wells and pumping could result in: (a) poorer water quality for Cal-Am customers, (b) dewatered wells used by other persons in the area, and (c) seawater intrusion into the lower aquifer. (T,IV,251:4-254:4; 258:5-269:4; 272:14-284:2.)*

7.3 Supply Water to the Carmel Village Filter Plant from Wells

The Carmel Village is supplied water from a filter plant located downstream of the San Clemente Dam. The filter plant is supplied water from the dam via a pipeline. Several parties advanced the proposal that more surface flow could remain in the river if the filter plant was supplied water from wells instead of the dam. The water diverted to storage at the dam could then be released to the river for fish and to recharge the subterranean stream from which the downstream wells extract water. No evidence was presented to demonstrate the feasibility of the proposal. Indeed the evidence indicates that it is not feasible to supply water to the filter plant from the most downstream wells. No evidence was introduced which would indicate whether the filter plant could be supplied from more nearby wells and thus keep more water at the surface of the stream for some additional distance. We find that Cal-Am should be required to conduct a reconnaissance level study of the feasibility, benefits, and costs of this proposal.[20]

7.4 Bypass Early Storm Runoff at the Dams

On behalf of DFG, Keith Anderson suggested that runoff from early storms be passed by the Los Padres and San Clemente Dams. (T,IX,21:4-22:6.) This proposal can result in recharging the subterranean stream and restoring surface water flows in the river at an earlier date. An earlier reestablishment of surface flows would increase the likelihood that steelhead could successfully migrate up and down the stream to complete their life cycle. The record does not include any evidence which demonstrates the feasibility of this suggestion; however, the storage capacity of the dams is so small that it appears likely that this suggestion could be implemented in even the driest water years and the

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[20] *The SWRCB recognizes that the wells nearest the filter plant are not the most downstream wells. The feasibility of supplying the filter plant may depend upon supplying the plant via the nearest wells. Supplying the filter plant from nearby wells would, implicitly, conflict with the principle that water be supplied to Cal-Am customers via the most downstream wells to the maximum practicable extent. Nevertheless, we find that the feasibility, benefits, and costs of this proposal should be evaluated.*

reservoirs could still be refilled. We find that Cal-Am should be required to study the feasibility of this proposal.

7.5 Modify Critical Stream Reaches to Facilitate Fish Passage

In the context of this section, a critical stream reach means any portion of the river which, due to low flow, acts as a barrier to migrating steelhead. Such barriers interfere with the ability of steelhead to successfully complete all life stages and to reproduce in the river. Testifying for DFG, Keith Anderson expressed the opinion that modifying critical stream reaches was an action which could be taken to mitigate the effect of Cal-Am's diversions from the river. (T,IX,20:24-21:3.) Thus, we find that Cal-Am should be required to conduct a study of the feasibility, benefits, and cost of this proposal.

7.6 Remove Boulder Below Los Padres Dam

A large boulder or rock outcrop is situated below the spillway of Los Padres Dam. A significant percentage of steelhead juvenile fail to survive downstream migration during low water conditions over the spillway because they fall upon the rock. Removal of the rock could improve the survival rate of steelhead juvenile moving downstream from Los Padres Dam. Accordingly, Cal-Am should be required to remove the rock or implement some other reliable measure to assure safe passage for fish over or around the rock.

8.0 ENFORCEMENT OPTIONS

Three enforcement options are available to the SWRCB for the unlawful diversion and use of water. First, Water Code Section 1052 declares that the unauthorized diversion of water is a trespass. Such diversions may be referred to the Attorney General for injunctive relief. (Section 1052(c).) Persons committing a trespass may be liable for up to $500 for each day in which a trespass occurs. (Section 1052(d).)

Second, Water Code Sections 1055 and 1052 authorizes the SWRCB to impose administrative civil liability for the unlawful diversion and use of water. Persons committing a trespass may be liable for

up to $500 for each day in which a trespass occurs. (Section 1052(b).) Persons committing a trespass may be liable for up to $500 for each day in which a trespass occurs.

Finally, Sections 1825, et seq. authorizes the SWRCB to adopt cease and desist orders for violation of conditions in permits and licenses. Cease and desist orders may require compliance forthwith or in accordance with a time schedule. (Section 1831.) Diversion of water in excess of the quantity authorized by permit or license can be treated as a violation subject to enforcement under Section 1831. Persons failing to comply with a cease and desist order are liable for $1,000 for each day in which violation occurs.

This proceeding was not noticed under any of the enforcement provisions and the SWRCB cannot, at this time, proceed directly to an order under Sections 1055 or 1830. The SWRCB, however, can request the Attorney General to take action under Section 1052. Alternatively, the SWRCB can suspend such a referral provided that Cal-Am takes appropriate actions to: (a) mitigate the effect of its diversions on the environment and (b) develop and diligently pursue a plan for obtaining water from the Carmel River or other sources consistent with California water law.[21]

8.1 Considerations Mitigating Against the Use of Punitive Enforcement Options

In the short term, Cal-Am cannot significantly reduce its extraction from the wells along the Carmel River. As previously stated, most of Cal-Am's supply is obtained from the Carmel River and most of that supply is provided by the wells along the river. The people and businesses on the Monterey Peninsula must continue to be served water from the Carmel River in order to protect public health and safety.

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[21] *Cal-Am could satisfy this requirement by contracting with MPWMD for the supply from its proposed project or by proposing to develop water under applications to appropriate water from the Carmel River by storage or from other sources.*

Cal-Am introduced exhibits during the hearing which show that during 1980 and 1981, on the basis of available information, the SWRCB was not of the opinion that the water pumped by the wells would require a permit from the SWRCB. (CAL-AM, F and G.) Further, Cal-Am does not contend that the wells are not extracting water from a subterranean stream. (CAL-AM, Closing Brief, 20.) Indeed, Cal-Am has filed an application to appropriate water with the SWRCB. (Application 30215.)[22]

Cal-Am also supports the New Los Padres Project proposed by the District as one means for providing a reliable and legal water supply for its customers. (CAL-AM, Closing Brief, 2:4-12.) Finally, Cal-Am has cooperated with the District, DFG, and others to develop and implement measures to mitigate the effect of its diversions on the instream resources of the river. (MPWMD:287,2-15.)

Under circumstances such as these, the imposition of monetary penalties make little sense. Rather, the SWRCB's primary concern should be the adoption of an order which, until a legal supply of water can be developed or obtained, will require that Cal-Am: (1) minimize its diversions from the Carmel River, (2) mitigate the environmental effects of its diversions, and (3) prepare a plan setting forth: (a) specific actions to develop or obtain a legal supply of water and (b) the dates specific actions will have occurred so that progress on the plan can be objectively monitored.

9.0 SUMMARY AND CONCLUSIONS

To summarize the foregoing, we find that:

1. Downstream of RM 15 of the Carmel River, the aquifer underlying and closely paralleling the surface water course of the Carmel River is water flowing in a subterranean stream and subject to

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[22] *Administrative notice is taken that on May 29, 1992, Cal-Am submitted Application 30215 to the SWRCB. The application is for the direct diversion of 42 cfs from its wells along the river.*

the jurisdiction of the SWRCB. Cal-Am's wells are drawing water from the subterranean stream associated with the Carmel River.

2. Cal-Am is diverting about 10,730 afa from the Carmel River or its underflow without a valid basis of right. In addition, Cal-Am does not have a pre-1914 right to divert and use water at San Clemente Dam. Cal-Am should be required to diligently develop and implement a plan for obtaining water from the Carmel River or other sources consistent with California water law.

3. Cal-Am diversions are having an adverse effect on: the riparian corridor along the river below San Clemente Dam at RM 18.5, wildlife which depend on instream flows and riparian habitat, and steelhead which spawn in the river. Interim measures mitigating the effects of Cal-Am diversions undertaken by the District should continue to be implemented. Cal-Am should be required to implement interim measures in the event the District fails to continue with its program. In addition, Cal-Am should be required to implement other mitigation measures. Cal-Am should be required to mitigate the effect of its diversions until such time as it is able to obtain water from the Carmel River or other sources consistent with California water law.

4. The SWRCB can request the Attorney General to take action under Section 1052. Alternatively, the SWRCB can suspend such a referral provided that Cal-Am takes appropriate actions to: mitigate the effect of its diversions on the environment and develop and diligently pursue a plan for obtaining water from the Carmel River or other source consistent with California water law. The SWRCB's primary concern should be the adoption of an order requiring Cal-Am to: (1) prepare a plan setting forth (a) specific actions which will be taken to develop or obtain a legal supply of water and (b) the dates specific actions will have occurred so that progress on the plan can be

objectively monitored, (2) minimize its diversions for the Carmel River, and (3) mitigate the environmental effects of its diversions.

ORDER

NOW THEREFORE, IT IS HEREBY ORDERED that Cal-Am shall comply with the following conditions:

1. Cal-Am shall forthwith cease and desist from diverting any water in excess of 14,106 afa from the Carmel River, until unlawful diversions from the Carmel River are ended.

2. Cal-Am shall diligently implement one or more of the following actions to terminate its unlawful diversions from the Carmel River: (1) obtain appropriative permits for water being unlawfully diverted from the Carmel River, (2) obtain water from other sources of supply and make one-for-one reductions in unlawful diversions from the Carmel River, provided that water pumped from the Seaside aquifer shall be governed by condition 4 of this Order not this condition, and/or (3) contract with another agency having appropriative rights to divert and use water from the Carmel River.

3. (a) Cal-Am shall develop and implement an urban water conservation plan. In addition, Cal-Am shall develop and implement a water conservation plan based upon best irrigation practices for all parcels with turf and crops of more than one-half acre receiving Carmel River water deliveries from Cal-Am. Documentation that best irrigation practices and urban water conservation have already been implemented may be substituted for plans where applicable.

   (b) Urban and irrigation conservation measures shall remain in effect until Cal-Am ceases unlawful diversions from the Carmel River. Conservation measures required by this Order in combination with conservation measures required

by the District shall have the goal of achieving 15 percent conservation in the 1996 water year and 20 percent conservation in each subsequent year.[23] To the extent that this requirement conflicts with prior commitments (allocations) by the District, the Chief, Divison of Water Rights shall have the authority to modify the conservation requirement. The base for measuring conservation savings shall be 14,106[24] afa. Water conservation measures required by this order shall not supersede any more stringent water conservation requirements imposed by other agencies.

4. Cal-Am shall maximize production from the Seaside aquifer for the purpose of serving existing connections, honoring existing commitments (allocations), and to reduce diversions from the Carmel River to the greatest practicable extent. The long-term yield of the basin shall be maintained by using the practical rate of withdrawal method.

5. Cal-Am shall satisfy the water demands of its customers by extracting water from its most downstream wells to the maximum practicable extent, without degrading water quality or significantly affecting the operation of other wells.

6. Cal-Am shall conduct a reconnaissance level study of the feasibility, benefits, and costs of supplying water to the Carmel Valley Village Filter Plant from its more nearby wells downstream of the plant. The objective of supplying water from the wells is to maintain surface flow in the stream as far downstream as possible by releasing water from San Clemente Dam for maintenance of fish habitat. The results

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[23] *Each water year runs from October 1 to September 30 of the following year.*

[24] *14,106 afa represents Cal-Am's total diversions from the Carmel River.*

of the study and recommendations shall be provided to the District and DFG for comment.

7. Cal-Am shall evaluate the feasibility of bypassing early storm runoff at Los Padres and San Clemente Dams to recharge the subterranean stream below San Clemente Dam in order to restore surface water flows in the river at an earlier date. The results of the study and recommendations shall be provided to the District and DFG for comment.

8. Cal-Am shall conduct a study of the feasibility, benefits, and costs of modifying critical stream reaches to facilitate the passage of fish. The study shall be designed and carried out in consultation with DFG and the District. The results of the study and recommendations shall be provided to the District and DFG for comment.

9. The studies required by conditions 6, 7, and 8 shall be carried out by persons with appropriate professional qualifications. The studies required by condition 7 shall be completed and submitted to the Chief, Division of Water Rights, within 5 months from the date of this order. The Chief, Divison of Water Rights may extend the time for performing the study required by condition 8 upon making a finding that adequate flows were not available to perform the study. The studies required by conditions 6 and 8 shall be completed and submitted to the Chief, Division of Water Rights, within 12 months from the date of this order. The Chief, Division of Water Rights may extend the time for performing the study required by condition 8 upon making a finding that adequate flows were not available to perform the study. The report (or reports) transmitting the results of the study (or studies) shall describe the action (or actions) which Cal-Am will undertake to correct the problems addressed by the studies. Cal-Am shall provide a written response to any comments received on the study. If no action (or actions) will be taken to correct the underlying problem (or problems),

Cal-Am's report shall provide written justification why corrective action is not appropriate. Based upon the results of the studies, recommendations, comments by the District and DFG, and Cal-Am responses, the Chief, Division of Water Rights, shall determine what actions shall be taken by Cal-Am consistent with this Order and establish reasonable times for implementation.

10. Cal-Am shall remove the large rock immediately below the spillway of the Los Padres Dam which results in substantial loss of juvenile steelhead or implement some other reliable measure (or measures) to assure safe passage for fish over or around the rock. Prior to removing the rock Cal-Am shall consult with DFG and obtain any streambed alteration permit required by Fish and Game Code Section 1601. If Cal-Am leaves the rock in place, it shall consult with DFG when evaluating what other measures can be used to assure safe fish passage. Cal-Am shall comply with this measure within 4 months.

11. Cal-Am shall be responsible for implementing all measures in the "Mitigation Program for the District's Water Allocation Program Environmental Impact Report" not implemented by the District after June 30, 1996.[25] Not later than August 30, 1996, Cal-Am shall submit a report to the Chief, Division of Water Rights, identifying mitigation measures which the District does not continue to implement after June 30, 1996. At the same time, Cal-Am shall submit a plan for the approval of the Chief, Division of Water Rights, detailing how it will implement mitigation measures not implemented by the District. The Chief, Division of Water Rights, may excuse Cal-Am from implementing specific mitigation measures only upon making a finding that Cal-Am has demonstrated that it does not have

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[25] *On November 5, 1990 the District adopted a mitigation program to be carried out for five years. The plan is summarized in Section 6.2, infra. There is no assurance the District will continue with any or all of the elements of its mitigation program after November of 1995. (MPWMD:289, Vol. III, Appendix 2-D.)*

adequate legal authority to implement the ability to finance such measures or demonstrates that such measures are demonstrably ineffective.

12. Within 90 days of the date of this order, Cal-Am shall submit for the approval of the Chief, Division of Water Rights:

    (a) A compliance plan detailing the specific actions which will be taken to comply with condition 2 and the dates by which those actions will be accomplished;

    (b) An urban water conservation plan; and

    (c) An irrigation management plan.

13. Starting with the first full month following adoption of this order, Cal-Am shall file quarterly with the Chief, Division of Water Rights:

    (a) Reports of the monthly total amounts being: (1) pumped from wells; and (2) diverted from the Carmel River,

    (b) Reports of the progress being made in complying with the schedule submitted to comply with condition 11, and

    (c) Reports of the progress being made in complying with conditions 6, 7, 8, and 9.

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14. The Chief, Division of Water Rights, is authorized to refer any violation of these conditions to the Attorney General for action under Section 1052 or to initiate such other enforcement action as may be appropriate under the Water Code.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on July 6, 1995.

AYE: John P. Caffrey
Mary Jane Forster
Marc Del Piero
James M. Stubchaer
John W. Brown

NO: None

ABSENT: None

ABSTAIN: None

Maureen Marché

Maureen Marché
Administrative Assistant to the Board

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Appendix F. State Water Resources Control Board Order No. WR 2016-0016

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER WR 2016-0016

In the Matter Of Application of

California American Water Company

To Amend State Water Board Order 2009-0060

SOURCE: Carmel River

COUNTY: Monterey County

ORDER AMENDING IN PART REQUIREMENTS OF STATE WATER BOARD ORDER WR 2009-0060

BY THE BOARD:

1.0 OVERVIEW

For decades, California-American Water Company (Cal-Am) has been unlawfully diverting water from the Carmel River to provide municipal water to a large area of the Monterey Peninsula. State Water Resources Control Board (State Water Board) Order WR 2009-0060 (hereafter, WR 2009-0060) is a cease and desist order that, among other requirements, established a compliance timeline for cessation of Cal-Am's unlawful diversions from the Carmel River by December 31, 2016. This timeline was based on evidence gathered at hearing that indicated that a regional desalination plant would be built, enabling the area's municipal water needs to be met by new water supplies. It is now clear that no desalination plant will be in operation by the end of this year. In light of this recognition, Cal-Am has proposed modifying the compliance schedule to accommodate the anticipated pace for approval and implementation of several proposed projects (1) a different desalination plant, the Monterey Peninsula Water Supply Project; (2) a water recycling project, entitled Pure Water Monterey; and (3) the expansion of the facilities for an existing groundwater storage project entitled Aquifer Storage and Recovery (ASR). These projects are undergoing review by permitting agencies.

Since the adoption of WR 2009-0060 in 2009, Cal-Am's diversions from the Carmel River have consistently been well below the annual diversion levels set by WR 2009-0060, but still remain thousands of acre-feet per annum above the amount available under Cal-Am's lawful water rights.(See Table 1, p. 2.) The reductions in Carmel River diversions have resulted from a number of factors, including conservation and efficiency measures and implementation of local supply projects, combined with a moratorium on increased water use within Cal-Am's service area. To address the impacts of its diversions, Cal-Am has also applied significant resources to fishery conservation and habitat improvement programs.

Seven years after adoption of WR 2009-0060, the State Water Board is again placed in a position of deciding whether to adopt a compliance schedule that may allow for obtaining lawful supplies with less disruption to existing communities than meeting the required legal pumping limit by December 31, 2016. For the reasons described herein, this order adopts a new compliance schedule that essentially maintains an ongoing diversion level as long as specified progress towards alternative supplies is met, but sharply drops allowable diversions should the progress towards these supplies slip. In taking this action, the State Water Board is facilitating local cooperation in development of alternate water supplies and at the same time requiring that unauthorized diversions end by December 31, 2021, regardless of whether the envisioned projects are timely built.

2.0 BACKGROUND

WR 2009-0060 and State Water Board Order WR 95-10 (hereinafter WR 95-10) detail specific information regarding Cal-Am's lawful and unlawful diversions from the Carmel River, which does not require repetition here.

Since the adoption of WR 2009-0060, Cal-Am has lowered its diversions from the Carmel River more rapidly than the minimum compliance terms in the CDO required, and has not missed the CDO diversion reduction requirements in any year.

Table 1

Water Year (Oct. 1 – Sept. 30)	Carmel River Pumping (to nearest acre-foot)	Pumping Limit under Order 2009-0060
2009-2010	9,786	10,209
2010-2011	8,559	9,994
2011-2012	7,646	9,883
2012-2013	8,008	9,772
2013-2014	7,744	9,661
2014-2015	7,228	9,550

The pumping limit under Order 2009-0060 for Water Year (hereinafter also WY) 2015-2016 is 9,318, and there is no indication from current reporting or based on recent historical use, to think that Cal-Am will not fall well under this mark.

The reductions in pumping are the result of demand reductions as well as new supplies, both of which were required under WR 2009-0060. In terms of demand reduction, Cal-Am and the Monterey Peninsula Water Management District (District) have adopted programs encouraging conservation by business and residential customers, including turf replacement programs, water efficiency requirements, and tiered conservation rates. Cal-Am has also implemented new technologies to identify and address leaks. Additionally, Cal-Am has proposed revisions to its water rationing program pending at the California Public Utilities Commission (CPUC). The CPUC anticipates making a decision on the proposed changes in October 2016.

Three new non-Carmel River supplies have either already come online, expanded or have received regulatory approval since 2009. Sand City's desalination plant provides to Cal-Am, in the form of offset deliveries, a minimum of 94 acre-feet per annum (afa), and the balance of its

capacity which is not needed for expanded use in Sand City. Pebble Beach's water recycling facility has expanded its capacity and technology, and increased its offset of Cal-Am's unlawful pumping to an average of 970 afa. Its average offset prior to the technology changes completed in 2008 was 450 afa. This increase far out-measures the modest increase in usage entitlements, which now measure 65 afa, and are expected to reach on the order of 140 afa[1] by the end of the proposed compliance period. As of June 2016, the City of Pacific Grove was scheduled to have begun construction of a recycled water plant that will offset 100 to 125 afa of current Cal-Am deliveries for golf course and cemetery irrigation.

Additionally, Cal-Am has pursued lawful water rights in the Carmel River. Cal-Am has obtained water right Permit 21330, allowing lawful diversion in the high flow season, under certain bypass flow conditions, at a rate of 4.1 cubic feet per second with an limit of 1,488 afa. This water may only be used within the Carmel River watershed, rather than throughout the Cal-Am service area. In WY 2014-2015, Cal-Am diverted approximately 42 acre-feet under this water right.

Joint owners Cal-Am and the District have lawful water rights under Permit 20808A and Permit 20808C to develop and use up to 5,326 afa (2,426 afa and 2,900 afa, respectively) of pumping from the Carmel River under certain bypass flow conditions for operation of the ASR project. The ASR project has expanded its capacity since the adoption of WR 2009-0060, although increased water has not been available for diversion during the recent drought. The ASR project diverted just over 1,110 afa of water in WY 2009-2010 and WY 2010-2011, and between 0 and 210 afa in the drier water years from WY 2011-2012 through WY 2014-2015. The ASR water is pumped to the Seaside Groundwater Basin and WR 2009-0060 requires Cal-Am to recover the ASR water during the months most beneficial to the fishery. By June 1 of each year, Cal-Am, National Marine Fisheries Service (NMFS) and the California Department of Fish and Wildlife (CDFW) agree on a schedule for using the ASR water by reducing Carmel River pumping for fishery benefits. Cal-Am's diversions from the Carmel River are reduced on a one-to-one basis with the scheduled recovery. NMFS and CDFW can and have agreed to allow some ASR water to be carried over in Seaside Groundwater storage for the next water year's use, as allowed under WR 2009-0060. Cal-Am carried over 215 acre-feet of ASR water, and WY 2015-2016 storms allowed for an additional 699 acre-feet of ASR diversions such that Cal-Am had 914 acre-feet of available ASR water stored in the Seaside Groundwater Basin by June 1, 2016. NMFS and DFW agreed that Cal-Am would recover the ASR water from June through September of 2016, and carry over approximately 315 acre-feet for WY 2016-2017.

Water previously pumped from the Carmel River for the Odello Ranch under License 13868A, is being provided to offset Cal-Am's unlawful diversions on an interim basis. The water will not be available on a long-term basis. The project provided 85 acre-feet of water to offset Cal-Am's unlawful diversions in 2015, and will provide a minimum of 50 acre-feet in 2016 and 25 acre-feet in 2017. Cal-Am and the Eastwood Trust have reached an agreement for Cal-Am to divert up to 85 afa on an interim basis, to the extent that the water is not being sold by the Malpaso Water Company to other users.

[1] Pebble Beach estimates that deliveries of water under new entitlements through the end of December 2020 will be 140 afa. While the application now requests an extension of the compliance deadline for an additional year, there is no reason to think that this number will be significantly different by 2021, given the prior rate of growth in the area and the necessarily imprecise nature of such estimates.

Since adoption of WR 2009-0060, Cal-Am has also funded or otherwise implemented significant measures to improve fish habitat and survival. WR 2009-0060 required some of these measures, while others were implemented as part of an agreement with the NMFS and the CDFW.

After the failure of efforts to build the Coastal Water Project and the Regional Desalination Project[2], it became clear that there would not be a lawful alternative supply of water for the Cal-Am service area prior to the end of 2016, when WR 2009-0060 requires Cal-Am to end all unlawful diversions from the Carmel River.

In 2014, Cal-Am approached State Water Board staff regarding the possibility of reaching an agreement on a proposal to amend the CDO's compliance schedule which State Water Board staff would recommend to the State Water Board for consideration. Staff met with Cal-Am and other stakeholders over a period of two years in an effort to craft a proposal that staff, Cal-Am, and a range of stakeholders could endorse. At points over the two year period, the discussion included representatives from Cal-Am, the District, the Monterey Peninsula Regional Water Authority, the Sierra Club, the Planning and Conservation League, the Pebble Beach Company, and NMFS.[3] The group was able to reach an agreement on a framework for a proposal to amend the Cal-Am CDO's compliance schedule until the end of December 2020, even as some of the specifics remained contested. The broad area of agreement was maintaining a diversion limit significantly lower than that required for WY 2015-2016 in the current CDO as long as milestones based on securing alternative water supplies are met. Failure to meet the milestones would result in significant reductions of the diversion limits under the compliance schedule, such that Cal-Am's diversions from the Carmel River would be limited to lawful diversion limits prior to the end of the compliance period.

Cal-Am, in conjunction with the District, Monterey Peninsula Regional Water Authority, the City of Pacific Grove and the Pebble Beach Company, submitted an application to amend the Cal-Am CDO on November 20, 2015. On April 28, 2016, Cal-Am submitted a revised application to amend the CDO, in light of significant delays in the CPUC's schedule for consideration of a proposed desalination facility, the Monterey Peninsula Water Supply Project (MPWSP) Desalination Project. These delays resulted from the CPUC's desire to prepare a joint environmental impact statement and environmental impact report in conjunction with a federal partner, the Monterey Bay National Marine Sanctuary. In addition, the CPUC needed to evaluate a potential conflict of interest issue involving one of the contractors evaluating the project under the California Environmental Quality Act. There have also been repeated interruptions in operations of the test wells used to evaluate the impacts and viability of the proposed facility's slant well technology.

3.0 CAL-AM'S PROPOSAL

Cal-Am's April 28, 2016 revised application to amend WR 2009-0060 was submitted pursuant to Water Code section 1832, which allows the State Water Board to "modify, revoke or stay" cease and desist orders.

[2] The CPUC approved an alternative to the Coastal Water Project – the Regional Desalination Project.
[3] Cal-Am and other stakeholders indicated that a broader group met in preparation for meetings with staff, including participation by the Carmel River Steelhead Association, Quail Lodge, Bernardus Lodge, and Carmel Valley Ranch.

The primary change Cal-Am proposes is maintaining an "effective diversion limit" (or EDL) of 8,310 afa from the Carmel River from the start of WY 2015-2016 until December 31, 2021, as long as alternate water supply projects meet defined approval and construction milestones. Cal-Am proposes a milestone for each water year from 2017-2018 until the end of December 2021. If Cal-Am fails to achieve a milestone by the last day of the water year, then the effective diversion limit would be reduced by 1,000 afa for the following water year.[4] For example, if construction on the Pure Water Monterey project fails to begin and the CPUC fails to issue a certificate of public convenience and necessity for the proposed MPWSP Desalination Project by September 30, 2018, then the proposed effective diversion limit for WY 2018-2019 would be 7,310 acre-feet. Thus, if Cal-Am fails to meet each milestone, the effective diversion limit would fall by 1,000 afa each water year from WY 2018-2019 on. The limit for WY 2021-2022 would be 4,310 acre-feet until the end of December 2021. As discussed above, WR 2009-0060 requires all unlawful diversions from the Carmel River to end by December 31, 2016. This EDL would replace the "base level" that formed the foundation for diversion limits under WR 2009-0060.

Cal-Am also proposes several changes to the manner of calculating the diversion limit, or of assessing compliance with that limit.

One significant change in determining compliance with a diversion limit is Cal-Am's proposal that it be allowed to accrue "credits" in years in which its diversions are lower than the EDL for a particular water year, starting in WY 2015-2016. Cal-Am could then apply any such "credits" to be able to pump more than the EDL in future years, without penalty. WR 2009-0060 had no such credit system. Cal-Am's proposal includes a Cap on Carryover Credits that would need to be calculated to confirm that the sum of non-ASR diversions from the Carmel River plus the amount of ASR water recovered that year cannot exceed the EDL plus 750 afa.

Another substantial calculation change that Cal-Am proposes is to amend the accounting for winter pumping under the ASR.

Under WR 2009-0060, any ASR diversions are counted towards the annual limit on Carmel River diversions: Here, Cal-Am proposes to count only the first 600 afa towards the diversion limit. Thus, as proposed, diversions to storage under the ASR program above 600 afa could occur without impacting Cal-Am's subsequent diversions from the Carmel River in a particular water year. For example, Cal-Am reported diversion of 699 afa to ASR storage in WY 2015-2016, so 99 afa would not be considered in measuring compliance with the EDL.

A third significant change to calculating the diversion limits would be the manner in which the limit is changed by the addition of lawful supplies. Under WR 2009-0060, production from new sources of water generally lowered the Carmel River diversion limit acre-foot by acre-foot. Under Cal-Am's proposed application, the EDL would be lowered for water delivered under the Pure Water Monterey water recycling project in this same manner, and the reductions for Sand City desalination project and for accounting for Pebble Beach entitlements would continue unchanged (except that the provision on unlawful diversions to serve Pebble Beach entitlements would be extended until December 31, 2021). However, Cal-Am proposes that fifty percent of

[4] The deadline for measuring achievement of a milestone for the 2021-2022 water year is December 31, 2021. Because this is the end of the compliance period, failure to meet this milestone would not result in a reduction of the effective diversion limit, as the limit to Carmel River diversions after that time is the limit of Cal-Am's lawful water rights.

any water Cal-Am may acquire from other willing water right holders on the Carmel River be added to the EDL, with the other fifty percent being added to instream use. Additionally, Cal-Am proposes that water rights purchased from the Malpaso Water Company LLC to Cal-Am be added to the EDL. Finally, Cal-Am proposes that the EDL not apply to excess pumping that any of the petitioners establish was necessary to meet reductions required by mitigation measures imposed by the Seaside Basin watermaster or the court to address seawater intrusion within the Seaside Groundwater Basin.

Cal-Am's application also includes new reporting requirements. The first new reporting requirement is an annual report to the State Water Board regarding progress towards each milestone due 120 days prior to its deadline. In the event that the annual milestones report anticipates a delay in achieving a milestone, Cal-Am proposes that the State Water Board determine whether the delay is beyond the control of the applicants, and, if so, that the State Water Board determine whether or not to lower the EDL by 1,000 afa after a missed milestone. The second proposed reporting requirement is Cal-Am's funding of an annual report on the status of the Carmel River steelhead population that may include adaptive management recommendations.

Cal-Am's application also notes Cal-Am's substantial completion of downstream fish passage facilities at Los Padres Dam, and states that the company will endeavor to remove the Old Carmel River Dam and Sleepy Hollow Ford prior to September 30, 2017.

4.0 NOTICE AND COMMENTS RECIEVED

The State Water Board noticed Cal-Am's application on May 6, 2016. The State Water Board received 16 comments prior to June 1, 2016, the deadline for consideration of comments by staff prior to releasing a preliminary staff recommendation. Staff released a preliminary staff recommendation, along with a rationale document explaining the reasoning behind the proposed adoption of the broad framework of the extension, and for the recommended changes from certain terms in the submitted application. The document further set notice of a comment deadline of July 13, 2016 for written comments. The State Water Board received an additional 77 comments prior to the written comment deadline of July 13, 2016. All comments received were posted on the State Water Board, Division of Water Rights page for the Cal-Am CDO Change Application: http://www.waterboards.ca.gov/waterrights/water_issues/projects/california_american_water_company/index.shtml.

5.0 ANALYSIS

5.1 Adoption of Proposed Approach to Extension of CDO

Seven years after adoption of Order 2009-0060, the State Water Board finds itself in a situation that is in some respects analogous to the situation before it at the Cal-Am CDO hearings. A project that was presented to the State Water Board as a solution to end unlawful diversions has failed to come to fruition: then, the Los Padres Dam, here the Coastal Water Project.

Cal-Am's service area continues to depend on thousands of acre-feet of unlawful diversions from the Carmel River each year. Cal-Am has plans to develop a substitute supply that could resolve reliance on unlawful diversions, and proposes a CDO compliance schedule that would allow continued diversions at recent historic levels during the foreseeable timeframe for construction. The plans are supported by a number of stakeholders, but there is also substantial opposition. Permitting is incomplete and construction not yet begun.

In other ways, however, the situation is different than that in 2009. Cal-Am has complied with the compliance schedule in WR 2009-0060, including making significant reductions in diversions from the Carmel River despite the ultimate failure of the Coastal Water Project and the Regional Desalination Project. WR 2009-0060 required Cal-Am to reduce diversions from the Carmel River as much as possible and set minimum reductions. Cal-Am reduced diversions at a faster rate than the minimum required under the order. (See Table 1, p. 2.) The pumping limit Cal-Am is currently requesting is approximately 2,000 afa less than the first limit for diversions imposed under WR 2009-0060, and the actual reductions top 3,000 af of reduction in some years. These amounts constitute a reduction of approximately one third to almost half of the average annual unlawful diversions found in 2009.

Additionally, Cal-Am has undertaken or funded a number of fishery restoration actions since 2009. As required under an agreement with NMFS and CDFW, Cal-Am has funded a number of significant habitat improvement and fishery recovery projects as mitigation for unlawful diversions. Cal-Am helped fund removal of the San Clemente Dam, with benefits for not only the steelhead fishery, but also public safety. Under an agreement with NMFS, Cal-Am has contributed funding towards a series of steelhead recovery projects identified by the State Coastal Conservancy in consultation with NMFS, CDFW and Carmel River stakeholders. These include ongoing projects to facilitate fish passage by removing barriers, including removal of Old Carmel River Dam and Sleepy Hollow Ford anticipated by the end of September 2017,[5] to restore habitat upstream of San Clemente Dam and in the Carmel Lagoon and to augment water availability for fisheries purposes in the Carmel Lagoon and during the summer. Cal-Am and other stakeholders have also constructed downstream fish passage facilities at Los Padres Dam and the company is helping fund a planning effort to address long-term disposition of Los Padres Dam. These actions are in addition to ongoing habitat restoration and steelhead rescue operations on the lower Carmel River. NMFS has commented that the habitat has improved since 2009, and that an additional four years of diversion at levels similar to recent years would be unlikely to cause jeopardy.

Further significant habitat restoration actions have also been set in motion, indicating that habitat improvement will continue over the next few years even absent an immediate cessation of Cal-Am's unlawful diversions.

Cal-Am has also funded a forbearance agreement with Rancho Cañada to add approximately 300 afa to the Carmel River for the next three years. This agreement is part of a larger effort to convert much of the property to riparian habitat, with additional potential ecological benefits. Cal-Am is also a purchaser of water from Malpaso Water Company, to offset unlawful

[5] This order adds reopener provisions if these anticipated efforts to undertake major habitat expansion efforts do not continue to develop according to the schedule set forth. That schedule would enable realization of the project benefits for almost the entire duration of the extension of the compliance schedule.

diversions, and with the funds from the purchase to facilitate the transfer of the Eastwood/Odello Ranch for wetland restoration near the Carmel Lagoon.

Thus, the current situation on the Carmel River has improved in that the Cal-Am service area has meaningfully reduced its dependence on unlawful diversions, fish habitat has undergone improvement and expansion, plans are underway to undertake additional large fishery habitat improvements, robust fish rescue and habitat restoration efforts have been ongoing for years and will continue throughout the requested extension period, and additional instream flows have been secured. These factors all indicate that the impact of extending the compliance period will not be as great as the impacts found in 2009. The broad terms of the proposed revisions to the compliance plan also provide a framework that encourages success in constructing new water supplies, and that allow for planned reductions to lawful levels of diversions regardless of the success of supply projects.

Cal-Am is proposing a more diversified approach to water supply on the Monterey Peninsula than the efforts in 2009, so that the water supply does not depend so heavily on the success of any one project. In 2009, the State Water Board required Cal-Am to diligently pursue small projects, including requiring implementation of small projects that would result in at least 500 afa of additional water supply, and also required annual reductions in Carmel River diversions of between 121 and 242 afa. The central element of the effort to reduce diversions to sustainable levels, however, required construction of the Coastal Water Project. Development of a water supply project large enough to address the region's water needs has proven a challenge, given the failure of several major proposed water supply projects: the New Los Padres Dam, the Carmel River Dam and Reservoir Project, the Coastal Desalination Project, and the Regional Water Supply Project. Here, Cal-Am has proposed three potential projects to substitute for unlawful Carmel River diversions: a 6,250 to 9,752 afa desalination facility currently undergoing environmental review and permitting at the CPUC; a 3,500 afa water recycling project with completed environmental review that is currently undergoing expedited permitting review at the CPUC, with a decision expected in August 2016; and a proposed expansion of facilities to complete the ASR groundwater storage project, which is permitted to produce up to 5,326 afa, albeit subject to water availability. Each of these projects has the potential to provide a significant amount of new lawful water supplies to the Cal-Am Service area, and to greatly reduce Cal-Am's remaining unlawful diversions of approximately 3,500-4,500 afa.

The application changes the incentive for conservation and for adopting smaller-scale projects. WR 2009-0060 required yearly reductions in diversion amounts and did not specify whether these reductions stem from conservation measures or small water supply projects. As described above, conservation and small projects have resulted in a combined reduction of approximately 2,000 to 3,000 afa of demand from the Carmel River. As these projects were the first to be implemented, they likely represent some of the lowest-hanging fruit in terms of demand reduction. Rather than imposing additional reductions, the application proposes adopting a "credit" system that incentivizes conservation and small projects. Should the larger projects fail to proceed on their expected timelines, Cal-Am can draw on these credits to offset the majority of the required reduction in diversions. Thus, Cal-Am and other stakeholders can anticipate whether the milestones will be met, and undertake efforts to build credits in anticipation of failures to meet milestones, but are otherwise not required to expend additional resources on conservation and small projects. Stakeholders can thus focus efforts on working to make implementation of the larger supply projects go more smoothly.

The Board implements the overall concept of credits in this order, but imposes more limits on the accrual and use of credits so as to avoid overwhelming other incentives and results of the extended compliance schedule. (see explanation below)

The milestones approach proposed is similarly broadly acceptable, as it accomplishes two important goals. First of all, it provides structural encouragement to timely develop lawful water supplies for the Cal-Am service area. Implementing a large municipal water supply project is a long-term decision that affects a wide range of stakeholders and involves impacts to costs of service to existing users, to the environment, and to the cost of and potential for municipal growth. The potential for sharp reductions in water availability provides an incentive to multiple stakeholders to make diligent progress, and to shift the baseline of a discussion regarding the area's water needs away from a status quo that relies on cheap unlawful diversions. If the alternative to implementation of a project is severely limited access to water there is an incentive to implement change from the status quo.[6] It is the Board's hope that the focus on annual deadlines with large but achievable reductions of up to 1,000 afa for failure to meet them will be an effective incentive. The fact that Cal-Am did meet the more incremental annual reductions each year under WR 2009-0060 provides reason to believe that the incremental approach may be an effective inducement to alternate water supply development. Secondly, in the event that one or more of the proposed projects fails to move forward as envisioned, the step-wise reduction of diversions ensures a staggered approach to ending reliance on unlawful Carmel River diversions through continued conservation, efficiency and smaller supply development. This step-wise reduction approach allows for greater planning for reductions and implementation of alternative projects. As discussed below, this order does make changes to the milestones proposal to better serve the goals described above.

This more diversified approach, in combination with diversion reductions for failure to achieve milestones allows for Cal-Am to reduce its diversions to lawful levels by the end of December 2021, regardless of whether any one of the proposed projects – or any of them at all - are built. Implementation of one or more of these projects in combination with diversion limits for any failure to reach particular milestones provides sufficient assurance that the State Water Board will not again find itself in the same position of again extending the compliance deadlines in the CDO at the end of December 2021.

The proposed annual reporting on milestone progress will give the State Water Board the opportunity to track compliance. This order adopts the annual reporting requirement with minor timeline modifications that better accommodate State Water Board processes. The report gives time for a formal warning should progress towards a milestone be lacking, which will allow Cal-Am and other stakeholders to prepare for step-wise reductions through development of additional supplies, to generate additional credits, or to implement additional conservation

[6] Numerous commenters have asserted that the milestone approach inappropriately burdens ratepayers and water users for Cal-Am's unlawful diversions, and that therefore the CDO should impose monetary fines in-lieu-of requiring diversion reductions. The remedies of issuing a CDO and imposing penalties for unlawful diversions are not mutually exclusive, however, and payment of a penalty does not authorize continuing violations. The penalty addresses past violations; the law still requires elimination of future violations. Moreover, the argument that the State Water Board should impose penalties *in-lieu*-of requiring elimination of unlawful diversions fails to recognize the connection between Cal-Am's diversions and the ratepayers – Cal-Am diverts water only for the purpose of serving it to ratepayers, whose costs have been artificially lowered and expectations of supply have been artificially raised because of diversions in excess of the available lawful supply. California law prohibits both the diversion and the use of water without a lawful right. The State Water Board's concern is not forcing one party or another to bear a burden, but is rather to encourage compliance, and both Cal-Am and its customers have a role in achieving that outcome.

measures. It also provides for the opportunity for the State Water Board to re-assess whether to impose EDL cuts where the anticipated failure to meet a milestone is not reasonably within the control of the Applicants.

The annual report on the state of the fishery gives the State Water Board additional assurance that an extension of the compliance period will not cause undue harm to the fishery. If the restoration measures planned are not undertaken or fail to achieve the improvements that this order relies on in part, then the report will recommend adaptive management measures.

The foreseeable consequences if State Water Board were not to extend the compliance schedule also provide reasons to extend the schedule.

Without amendment of WR 2009-0060's deadline, Cal-Am would need to cease its unlawful diversions from the Carmel River by the end of December 2016. This would mean that Cal-Am's diversions from the Carmel River would be limited to 3,376 afa, plus whatever lawful diversions are available in the diversion seasons under Permit 21330, and Permits 20808A and 20808C for the ASR project, plus any water available under transfers from other rights holders on the Carmel River. Because the Cal-Am service area continues to rely on thousands of acre-feet per year of unlawful diversions, a reduction to lawful levels would require immediate and substantial curtailment of use, and the purchase and importation of additional supplies at costs previously believed to be untenable. Since 2009, the average total reported diversions in the Carmel River basin under other confirmed or claimed rights are approximately 2,000 afa. But, there is no indication that users are willing or able to transfer that amount of water for use in the Cal-Am service area. State Water Board staff have calculated that the annual average residential per-capita usage in the Cal-Am service area from June 2014 through May 2016 was 55 to 57 gallons per person per day, based on reporting required under emergency conservation regulations. This level is in the lowest 12% of urban water users in the state. During this period, such residential use accounted for between 40 and 70% of total usage. Numerous commenters have suggested that additional measures would cause economic harm, and could potentially affect health and safety.

With respect to the claims of potential health and safety impacts, there is no established level of per capita water use required for health and safety in the U.S. or California. The State Water Board has used 50 gallons per person per day as a benchmark for drought evaluation of diversions – just slightly under the amount typically considered for indoor use. Some Coastal California communities have achieved averages of approximately 40 gallons per person per day during the ongoing drought emergency. The standards adopted by the United Nations General Assembly in 2010 to implement a basic human right to water require 50-100 liters per person per day (13-26 gallons).

The State Water Board recognizes that requiring major reductions in water use rates over a relatively short period could cause substantial adverse economic impacts, and even greater inconvenience. Rapid curtailments in water use and implementation of rationing may be necessary, however, to end unlawful diversions on the Carmel River if the area continues to fail to develop alternative supplies. Economic impacts are a consideration in establishing a schedule of compliance, but cannot justify a decision not to require compliance. This order allows for cuts to occur on a predictable schedule, should the planned projects not meet development milestones, and also sets forth a clear method to address health and safety

concerns as the reductions of 1,000 afa for each milestone missed occur. The plans also allow time for and provide incentive for additional innovation in water supply planning should the processes underway fail.

To the extent that additional demand reduction and immediate supply acquisition efforts fail, Cal-Am would face significant fines. Each day of violation of a CDO accrues a potential administrative penalty of $10,000 in certain drought years, or of $1,000 in wetter years. (See Wat. Code, § 1845, subd. (b)(1).)

This administrative penalty is in addition to the potential administrative civil liability penalties for unlawful diversion of water under Water Code section 1052, which may be imposed for all unlawful diversions, not just those which are in excess of the levels set in the CDO. Such penalties are up to $1,000 per day and $2,500 per acre-foot of unlawfully diverted water in certain drought years, and up to $500 per day in wetter years. (See Wat. Code, § 1052, subd. (c).) Thus, in wetter years, Cal-Am would face approximately $550,000 for each year of violation of the CDO. In certain drought years, such as those the state is currently experiencing, Cal-Am could face over $4 million per year of violation in per-diem penalties, in addition to up to $2.5 million in penalties for every 1,000 acre-feet that the company diverts unlawfully. These penalties would be deposited in the Water Rights Fund for the state, rather than being used directly to fund a more stable water supply for the Monterey Peninsula. To the extent that Cal-Am or others dispute the imposition of fines, the process could result in additional expenditures of time and resources on issues related to the peninsula's lack of water supply, but that do not have the potential to provide a long-term solution. The CPUC would determine the question of whether these penalties would ultimately be borne by Cal-Am as a corporation or by the area's ratepayers, or whether the burden of these penalties would be shared. (See Cal. Const., Art XII, 6; Pub. Util. Code, §§ 427, 727.5.)

The result of an immediate reduction in pumping such that Cal-Am is taking only lawful supplies by the end of December 2016 is likely to divert time and resources from building a permanent, lawful supply, and to cause significant hardship to the residents of the Monterey Peninsula and to have broad economic impacts.

An immediate end to unlawful diversions would provide significantly more water for the fishery, and NMFS continues to have serious concerns regarding the impact of diversions on the fishery. However, NMFS supports extension of the CDO for the 6 years requested, under the conditions outlined for fishery protection, habitat restoration and rescue efforts, so long as sufficient monitoring of the fishery occurs.[7] Environmental organizations with longstanding and immediate experience in the area similarly support the limited extension of the compliance period, as conditioned.

[7] Some comments have proposed specific additional measures during the compliance period in order to mitigate impacts to the Carmel River fisheries. The State Water Board does not have before it sufficient information regarding the potential efficacy, need for, and cost of these measures, and is reluctant to re-balance the suite of priorities that NMFS has expressed without this information. This order provides for an annual fisheries report that includes the opportunity for recommendations for any adaptive management measures, including those suggested by commenters.

Amending the existing compliance schedule in WR 2009-0060 is appropriate in light of the fishery agency's support, the substantial mitigation measures that are completed, ongoing and planned for the immediate future, and the substantial hardships in immediately cutting off unlawful diversions where there is no clear alternative supply.

For the reasons discussed above, the Board will extend the CDO in a manner following the application's broad approach. This order does, however, make modifications to the application's proposal, as discussed below.

5.2 Adoption of Initial Effective Diversion Limit

Cal-Am's application proposes a starting Carmel River diversion limit of 8,310 acre-feet per annum, which is approximately 1,000 acre-feet less than the requirement of WR 2009-060 for WY 2015-16, and approximately the five-year average of pumping from WY 2009-2010 until WY 2012-2013. Staff's Preliminary Recommendation had suggested reducing this limit to 7,990, which is the most recent six-year average of diversions with adjustments to reflect modifications to ASR accounting.[8]

A table comparing the various average diversion levels over the past few years is below:

Requested Limit	8,310 af
Unadjusted Averages	
WY 2009/10 to 2013/14	8,348 af
WY 2009/10 to 2014/15	8,162 af
WY 2010/11 to 2014/15	7,836 af
Averages Adjusted - New ASR Accounting	
WY 2009/10 to 2013/14	8,143 af
WY 2009/10 to 2014/15	7,990 af
WY 2010/11 to 2014/15	7,733 af

Applicants submitted a letter in response to the preliminary recommendation requesting again that the State Water Board set the EDL at 8,310.[9] The submittal included additional information on the proposed EDL, demand levels during the historic drought, and the scheduled decreases in pumping from the Seaside Basin[10] under the management plan ordered under the Seaside Groundwater Basin Adjudication, *California American Water v. City of Seaside* (Monterey County Superior Court, Case Number M66343). This information indicates that, because of a scheduled reduction in allowable pumping from the Seaside Groundwater Basin of approximately 400 afa starting in WY 2017-2018, setting the diversion limit at 7,990 afa would require improvement on conservation levels from those achieved during the historic drought.

[8] As described above, the application proposes counting only the first 600 acre-feet of ASR pumping in any water year towards the EDL.

[9] A number of additional commenters also wrote in support of setting the diversion level at 8,310, either independently or in explicit support of the Applicants' letter.

[10] Cal-Am's major alternative supply to Carmel River water is groundwater extracted from the Seaside Groundwater Basin, an adjudicated basin regulated by a watermaster. Due to a continued negative gradient for seawater intrusion, there is a ten percent reduction every three years in to the production allocations to the Basin users, including Cal-Am. According to the Watermaster Report for WY 2014-15, the watermaster has implemented another ten percent reduction. Cal-Am exceeded its allotments from the Basin in 2014-2015.

Thus, setting the EDL at 7,990 would therefore require immediate efforts to lower demand or cultivate alternate sources, rather than only requiring such efforts if milestones are missed. This would potentially undermine one of the benefits of the milestone structure – namely, allowing parties to focus on development of the primary water supply projects already underway.

The only comments submitted in support of lowering the proposed EDL were submitted by Planning and Conservation League and the Sierra Club, prior to the submittal of Cal-Am's revised application. The two environmental organizations have submitted a new joint letter explaining that they now support the EDL level of 8,310 for two primary reasons: (1) Cal-Am has entered into a forbearance agreement with Rancho Cañada which will increase flows in the river by 300 afa, reducing the fisheries impact of a slightly higher pumping level than that used over the past three years; and (2) the agreements to accelerate the Pure Water Monterey project indicate that it will provide water by 2018, resulting in an EDL after that date of 4,810.

For the reasons discussed above, this order adopts an initial EDL of 8,310, despite the fact that diversions at this level would constitute an actual increase in Carmel River diversions over those in recent years, and would likely result in Cal-Am accruing a significant number of credits prior to implementation of further restrictions on Seaside Groundwater Basin diversions.[11]

5.3 Modifications to Cal-Am's Application

5.3.1 Changes to Proposed Credit Framework

As discussed above, allowing Cal-Am to generate "credits" for reducing unlawful diversions from the Carmel River below the EDL is a worthwhile tool to encourage continued efficiency and conservation measures, as well as to encourage investment by various parties in development of water supply and re-use projects. Any additional reductions in diversions are likely to assist the fishery. However, allowing too generous accrual and use of credits threatens to undermine the basic principle of having a substantial drop in diversions for failure to meet a milestone and of ensuring that the diversion limits are ratcheted down such that unlawful diversions end by December 31, 2021 regardless of whether Cal-Am meets the milestones.

Therefore, this order adopts the concept of credits, but makes a minor adjustment to the proposed method of their accrual and use.

The order sets a clear limit to the number of credits that can be used in any year to 750 acre-feet. This 750 acre-foot limit prevents the entire reduction from a missed milestone (and its associated incentive to meet deadlines) from being cancelled out by significant accrual of credits.

Cal-Am also proposes limiting the quantity of credits available for use in any one year, but using a different calculation for this limit. The application proposes limiting carryover credits once the non-ASR total production from the Carmel River plus the amount of ASR water recovered that year exceeds the sum of EDL + 750 acre-feet. Because Cal-Am's pumping from Carmel River to ASR storage typically often exceeds the amount of ASR recovered that year (due to allowable ASR carryover), the value of non-ASR water plus ASR recovery is less than the Carmel River production counted under the EDL in most years. Thus, under the calculation method in the application, Cal-Am could use credit to pump up to 1,350 acre-feet above the

[11] Since the adjusted average for usage in the last six years is 7,990 afa, using an EDL for 8,310 afa is likely to result in accrual of approximately 400 afa of credits in 2015-2016 and in 2016-2017, prior to enactment of the next reductions in Seaside Groundwater Basin pumping.

otherwise-applicable limit, if it had diverted 600 or more acre-feet to storage in that year and had not recovered that amount from storage. In simpler terms, there would potentially be no reduction in diversions for missing a milestone during a year when there is water banking under the ASR, which could undermine the incentives for compliance, and the step-down structure towards ending unlawful diversions by the end of December 2021.

Additionally, it is easier to understand, comply with, and enforce the order when it treats ASR water in the same manner, rather than counting it in different ways for different purposes.

5.3.2 Changes to Proposed EDL Following Late Achievement of Milestones

This order adjusts Cal-Am's proposed accounting system by modifying the requested elimination of step-wise reductions when compliance with a milestone is achieved late. Under the application, Cal-Am proposes that the 1,000 afa reduction in the EDL be eliminated in the water year following late achievement of a milestone. This proposal reduces too greatly the incentive to meet a milestone. Additionally, it does not provide meaningful incentives for stakeholders to adhere as closely as possible to proposed timelines, even in the event of a delay. The order requires that for milestones achieved within the month following the deadline, the continuing reduction shall be 250 afa. For those achieved between one and six months after the deadline, the continuing reduction shall be 500 afa. For milestones achieved between six and nine months after the deadline, the continuing reduction shall be 750 afa. The 1,000 afa reduction to the EDL shall remain for milestones achieved more than nine months after the deadline. This structure provides meaningful incentives for adhering as closely as possible to the timelines proposed. Additionally, as discussed below in the Changes to EDL Accounting section, this order permits the accrual of credits for up to 50 percent of instream flow agreements, upon approval of the Deputy Director for the Division of Water Rights.

5.3.3 Changes to Milestones

5.3.3.1 New Milestones

This order adds two milestones to those proposed. These additions are necessary to track progress towards completion of the Pure Water Monterey recycled water project, even in the face of delays for the review of the desalination project. The first added milestone, for WY 2015-2016, is for CPUC approval of the Water Purchase Agreement for Cal-Am's purchase of water from the Pure Water Monterey Project, and of construction of the Cal-Am components of the Pure Water Monterey facilities. On April 25, 2016, Administrative Law Judge Sandoval ruled that the Pure Water Monterey portions of Cal-Am's pending request for a certificate of public convenience and necessity should be expedited. The order set an accelerated schedule for hearings and a decision on Cal-Am's ability to purchase and convey water from the recycled water project, with a decision anticipated in August 2016. The joint Applicants' letter of June 29, 2016 informed the Board that the CPUC has subsequently issued a ruling, on June 10, 2016, that includes a newly-noticed workshop and public hearing that will address the Pure Water Monterey Project. Cal-Am has filed a motion to the CPUC to confirm whether a decision is still anticipated on August 18, 2016. Absent such confirmation, Applicants have requested that the deadline for meeting this milestone be set for the end of December 2016, rather than the September 30, 2016 date proposed in the preliminary staff recommendation. This order sets December 31, 2016 as the deadline for meeting the milestone, but notes that, should there be additional delay in the decision or a denial, the entire 1,000 afa reduction in use would occur for the 2016-2017 water year, despite the extension of the deadline.

The order also adds a second milestone for start of construction of the Cal-Am portion of Pure Water Monterey Project to track progress on this Pure Water Monterey Project, for WY 2016-2017.

The Applicants have affirmed in their April 2016 application, and in their letter of June 29, 2016, that they anticipate water deliveries to begin under the Pure Water Monterey project in 2018. This timeline is significantly accelerated compared to the timeline in the initial application, and is based on the CPUC's ruling expediting proceedings for this project. In the initial application, the start of construction of the Pure Water Monterey project facilities constituted part of a WY 2017-2018 milestone. However, in the April 2016 application, this milestone was pushed back to 2018-2019 in its entirety, including the Pure Water Monterey portions. This order returns the Pure Water Monterey construction milestone to WY 2017-2018, as there is no indication that such an extension is necessary—acceleration rather than delay of the project is anticipated.

5.3.1.2 New Limit to Milestone Reductions

This order additionally limits the cuts to the EDL for missing a milestone when the diversions from the Carmel River in a particular water year are reduced to lawful levels. This addition is necessary because the Pure Water Monterey Project is anticipated to begin providing 3,500 afa to the Cal-Am service area, with water deliveries beginning in 2018. While this amount of water is insufficient on its own to eliminate the threat of unlawful diversions, implementation of the project followed by a failure to meet milestones related to the desalination project could result in the EDL falling below lawful pumping levels. Implementation of Pure Water Monterey and use of significant ASR water in the same water year could allow Cal-Am to pump lawfully at a level above the EDL if milestones are missed. However, as ASR water is not always available, the CDO would not likely be lifted under this scenario: termination of the CDO requires that Cal-Am have a permanent supply available.

5.3.1.3 Requirement to Revisit Milestones Based On Alternative Supply Projects

In a final change to the proposed milestones, this order adds the requirement that Cal-Am submit revised milestones within 60 days of CPUC approval of any water purchase agreement with Cal-Am for a major water supply project not specified in the milestones receives CPUC approval.

Two competing desalination projects at Moss Landing are currently undergoing environmental review: the People's Moss Landing Water Desalination Project and the Deep Water Desal Project. Proponents of both projects project that they could be permitted and built to begin serving water by 2019. The People's Moss Landing Water Desalination Project is a proposed 13,400 afa project that could serve the North Monterey County and Monterey Peninsula communities. The Moss Landing Harbor District is the lead agency for environmental review. The facility would use existing open ocean intakes that operate under proven technologies, and would be built on a previously-used industrial site. The use of these facilities could significantly reduce the cost of the facilities, and therefore of the water produced.

The Deep Water Desal Project is a proposed 25,000 afa project that could serve from Santa Cruz to the Monterey Peninsula, and east to Salinas. The facility would use open ocean intakes that draw deep ocean water, with the goal of lessening impacts on ocean organisms. It would be run conjunctively with a computer data center, to reduce the energy demand of each

of the two facilities, as compared to separate operation. The District has identified the Deep Water Desal Project as a potential supply project for the service area, should Cal-Am's proposed desalination facility not be built.

Open ocean intakes can cause significant impacts to the ocean. The State Water Board's 2015 amendments to the Ocean Plan require that subsurface intakes be infeasible, including consideration of alternative siting and sizing of facilities, before issuance of a permit for a surface intake of ocean water. (State Water Board Resolution No. 2015-0033, approved by Office of Administrative Law on January 28, 2016.) The Coastal Commission would also need to permit construction of either of these facilities, and The Public Utilities Commission would need to issue a Certificate of Public Convenience and Necessity in order for the facilities to sell water in the Cal-Am Service Area.

Additionally, the Central Coast Regional Water Quality Control Board has suggested that there is significant untapped potential in recycling water from wastewater treatment plants owned by Cal-Am and others in the Salinas area. Discharges that are not currently recycled could be routed through the existing water recycling facilities operated by the Monterey Peninsula Reginal Water Pollution Control Agency.

Cal-Am's application does not include milestones for either of these larger desalination facilities, and neither of the project proponents have submitted usable potential amendments to the existing milestones.[12] Yet, the construction of either Moss Landing facility could provide sufficient water to end unlawful diversions from the Carmel River, were its water approved for sale within the Cal-Am Service Area. Other large projects, such as the wastewater recycling augmentations mentioned above, may emerge as review of the proposed projects continues. The State Water Board's interest is in ending unlawful diversions from the Carmel River, rather than in supporting a particular facility. The specification of the MPSWP desalination and water recycling facilities in the milestones in this order are based on

Cal-Am's application and on evidence suggesting that they have made regulatory progress and are capable of ending unlawful diversions by the end of 2021. Should either of the other large desalination projects, or any other major water supply project, emerge as an alternative to all or part of the MPWSP, the State Water Board should have the opportunity to consider amendment of the proposed milestones.

5.3.1.4 Changes to EDL Accounting

The order adopts some of the new water diversion accounting methods proposed, in order to encourage full development of new water supplies. But it also amends or rejects other proposed changes that undermine the principle that new supplies must offset current unlawful diversions. It also clarifies whether or not various sources of additional supply count towards the EDL, rather than raising the EDL for specific supplies, in order to reduce confusion about what the EDL actually is.

[12] Water Plus has suggested requiring Cal-Am to support the People's Water Supply Project, but as discussed above, the State Water Board supports a more diversified approach at this point, given the track record for large water supply projects in the area.

The order adopts a new method of accounting for lawful winter diversions from the Carmel River to aquifer storage for later recovery, under the ASR. These changes encourage Cal-Am to maximize diversion during the winter months when sufficient water is available to meet bypass flows, and encourage further development of facilities to capture flows when they are available. The ASR permits authorize diversion of 5,326 afa of winter high flows, but the pumping and transportation pipeline facilities have limited the diversions to a maximum of about 1,110 af. Because the fisheries impact of diversions during periods of higher flow in winter, and under specified bypass requirements, are significantly less than the impact of the same amount of diversion in the lower-flow summer months, it makes sense to implement a strong incentive signal in the pumping limits to encourage reliance on this pumping rather than on summer diversions. Because the pumping continues to have some impact on the fishery, the first 600 afa will continue to count towards determination of the EDL. Additional pumping will not be counted in the EDL.

The application recommends that water delivered on an interim basis by the Malpaso Water Company LLC to Cal-Am under State Water Board License 13868A be added to the EDL for the water year. License 13868A requires that all water diverted under the right and provided to Cal-Am for municipal purposes be for the purpose of reducing Cal-Am's unlawful diversions[13] in 2015, that 50 afa be used to reduce unlawful diversion in 2016, and that 25 afa be so used in 2017. Because these amounts are used to offset unlawful diversions rather than increase deliveries, they should not increase the EDL. The order does add clarification, provided in State Water Board Division of Water Rights Decision 2005-0001, regarding the extent to which Condition 2 of WR 2009-0060 applies to water that Cal-Am may wheel on behalf of Malpaso Water Company. Namely, where Cal-Am is the purchaser of the water, Condition 2 applies. Where Malpaso Water Company sells to a customer outside the current service area, however, Condition 2 does not apply. The order also establishes monthly reporting requirements to monitor implementation of this condition.

The application additionally requests that fifty percent of the water from other water supply projects and from forbearance agreements be used to increase the EDL, with the other fifty percent of the water being used for instream use. Increasing the EDL is contrary to the basic premise of the enforcement action that new water supplies must offset current unlawful diversions. However, in the event that a milestone is missed, small projects and instream flow agreements may prove to be the fastest and best way to obtain supplies and river protection in the short term. The credit system as proposed provides incentives for small water supply projects and conservation: it does not, however, provide incentives for instream flow projects, as increasing instream flows does not directly[14] affect water supplies or demand. Therefore, this order adds provisions to incentivize such projects.[15] This order provides that fifty percent of the flows provided through forbearance agreements or other instream water dedications may be accrued as carryover credits, provided that the Deputy Director reviews the agreements to ensure that the agreement provide increased flows in the river as envisioned.

[13] See Division of Water Rights Decision 2005-0001, Condition 2.
[14] In certain winters, increasing instream flows above the ASR points of diversion may have minor impacts on the number of days that ASR pumping can occur, by affecting whether bypass flows are achieved. However, these changes are likely to be minimal as the bypass flows are set to be triggered only when there are high flows. It is unlikely that flows would remain in the range where an instream flow dedication makes the difference in the ability to pump ASR supplies.
[15] This change did not appear in the preliminary staff recommendations distributed on June 17, 2016.

It is worth noting that the temporary non-diversion of water, and its use instream for fisheries and instream habitat improvement purposes may be considered a reasonable and beneficial use of water in some circumstances. Consistent with state policy and water rights law, the State Water Board encourages appropriately-documented forbearance agreements to improve fisheries flows. Short-term agreements and agreements regarding riparian rights may be structured in such a manner that the subject rights are not prejudiced. The substantive standards of Water Code section 1707, and various decisions approving such instream flow dedication, provide guidance as to the appropriate manner by which to construct forbearance agreements that provide real benefits to instream flow and which do not prejudice the water holder dedicating the flow or the rights of other lawful water users.

The application requests that the State Water Board provide assurances regarding a particular forbearance agreement with Rancho Cañada for a significant amount of water in calendar years 2016-2019. This agreement generates funding for a planned permanent land conservation and restoration project, and for the potential permanent retirement of associated water diversions. This proceeding is not the context to make definitive findings regarding the water rights at issue in the agreement: This is neither a noticed adjudicative proceeding regarding the rights at issue, nor a rulemaking regarding instream fishery needs. However, it is worth noting that a four-year cessation of diversion cannot be the basis for forfeiture, and that the State Water Board has recently approved a water right change petition to add instream beneficial use and use for wetland protection in the vicinity.

5.3.1.5 Changes as to Form

Attachment 1 to the Application recommends embedding the changes proposed in the ordering section of WR 2009-0060. Because WR 2009-0060 was issued after an evidentiary hearing, and is based on the evidence presented therein, the State Water Board has determined that it is clearer to issue a separate order based on the Water Code section 1832 application.

5.3.1.6 Modifications to Reporting

This order generally adopts the reporting provisions requested in the application, but modifies the timelines to better fit State Water Board needs and to give NMFS additional authority over the selection of a contractor to prepare the fisheries report, in the event that NMFS cannot itself prepare the report.

6.0 CONCLUSION

For the reasons discussed above, the State Water Board approves, with modifications, Cal-Am's application to modify the compliance schedule in WR 2009-0060.

ORDER

NOW, THEREFORE, IT IS ORDERED THAT as of the effective date of this Order, Cal-Am shall cease and desist from the unauthorized diversion of water from the Carmel River in accordance with the following schedule and conditions.

1. This Order shall supersede the requirements in State Water Board Orders WR 2009-0060, 95-10 and any other State Water Board orders affecting Cal-Am's diversions from the Carmel River, to the extent stated herein, or to the extent that there is an irreconcilable conflict between the requirements here and those orders. All other requirements in State Water Board orders affecting Cal-Am's diversions from the Carmel River remain in effect until terminated by operation of law or action of the Stat Water Board.

2. Cal-Am shall diligently implement actions to terminate its unlawful diversions from the Carmel River and shall terminate all unlawful diversions from the river no later than December 31, 2021. This date supersedes the December 31, 2016 date in State Water Board Order WR 2009-0060, ordering paragraph 1.

3. At a minimum, Cal-Am shall adjust its diversions from the Carmel River in accordance with the following terms and conditions. These terms and conditions supersede the annual reductions in State Water Board Order 2009-0060, ordering paragraph 3.a.(2), after the effective date of this Order:

a. **Effective Diversion Limit**: The limit set forth in this Condition 3.a., as may be further reduced or increased pursuant to the terms and conditions of this Order, is referred to as the "Effective Diversion Limit."

i. **Immediate Reduction**: Commencing on October 1, 2015 (Water Year 2015-2016) the Effective Diversion Limit shall be 8,310 acre-feet per annum (afa). This Effective Diversion Limit shall not be exceeded through December 31, 2021 except as provided in condition 3.b.ii or 3.c. of this Order. This limit supersedes the reduction limit required under Order 2009-0060 for Water Year 2015-2016.

b. Adjustments to the Effective Diversion Limit:

i. **Pure Water Monterey Groundwater Replenishment Project Offset**: In any year that Cal-Am delivers water stored in the Seaside Groundwater Basin as part of the Pure Water Monterey Groundwater Replenishment Project to its customers for use, the Effective Diversion Limit shall be reduced by one acre foot for every acre foot of Pure Water Monterey Groundwater Replenishment Project Water so delivered. If this reduction will result in the Effective Diversion Limit for that year being lower than Cal-Am's available lawful diversions from the Carmel River in that year, Cal-Am may apply to the Deputy Director for a limitation of this condition such that the provision will not limit lawful diversions.

ii. **Seaside Groundwater Basin Limitations**: The Board may adjust the Effective Diversion Limit if an unexpected reduction in Cal-Am's production allocation from the Seaside Groundwater Basin, or access to water pumped makes the supply unavailable. The Applicants[16] may request such relief whenever they can establish that access to water in the Seaside Groundwater Basin is limited due to unexpected mitigation measures imposed pursuant to the Seaside Basin Watermaster's Seawater Intrusion Response Plan, or by the court pursuant to the Seaside Groundwater Basin Judgment in response to a detection of seawater intrusion within the Seaside Groundwater Basin.

iii. **Carryover**: After October 1, 2015 if Cal-Am's diversions from the Carmel River during a given water year are less than the Effective Diversion Limit for that water year, Cal-Am will accumulate credit for the difference between the Effective Diversion Limit and Cal-Am's actual diversions. Additionally, Cal-Am may generate credits through instream flow agreements, as described in 3.b.xii, below. Any such credit may be carried over to offset an exceedance of the Effective Diversion Limit prior to December 31, 2021, subject to the restriction in Paragraph 3.b.iv below, and subject to the overall cap on diversions in Paragraph 3.a.i., above.

iv. **Cap on Carryover**: The amount of carryover water accumulated under Paragraph 3.b.iii that may be credited in any one water year shall not exceed 750 afa.

v. **Milestones:** For purposes of calculating a reduction to the Effective Diversion Limit, the following Milestones and Deadlines will apply:

Water Year	Milestone[17]	Deadline
2015-2016	CPUC approval of (1) the Water Purchase Agreement for Cal-Am's purchase of Pure Water Monterey water, and of (2) construction of the Cal-Am components of the Pure Water Monterey conveyance facilities,[18] including the Monterey Pipeline and pump station.	December 31, 2016*
2016-2017	Start of construction of the Cal-Am components of the Pure Water Monterey project, meaning commencement of physical work after issuance of required regulatory permits and authorizations to begin work.	September 30, 2017

[16] "Applicants" refers to the joint applicants for the request to modify State Water Board Order WR 2009-0060: Cal-Am, the Monterey Peninsula Regional Water Authority, the Monterey Peninsula Water Management District, the Pebble Beach Company, and the City of Pacific Grove.

[17] If at any point prior to completion of the facilities listed in these Milestones the CPUC authorizes Cal-Am to acquire more than 1,000 afa of water from an alternative source, then the following shall occur. Cal-Am shall submit to the Executive Director within 60 days a revised set of milestones taking this water supply source into account. If the proponents of the alternative project are unable to reach concurrence with Cal-Am on revised milestones to propose, the proponents may also submit revised milestones within that time period. The Executive Director shall determine whether to bring forward a recommendation to the State Water Board regarding amendment of the milestones.

[18] "Cal-Am components" of the Pure Water Monterey Project refers to the pump station and pipeline within or leading to Cal-Am's Service Area needed to transmit water to Cal-Am's service area.

Water Year	Milestone[17]	Deadline
2017-2018	Issuance of a Certificate of Public Convenience and Necessity to Construct the Monterey Peninsula Water Supply Project Desalination Plant ("MPWSP Desalination Plant") by the California Public Utilities Commission.	September 30, 2018
2018-2019	Start of construction for any of the Cal-Am Components of the MSWSP Desalination Plant[19], meaning commencement of physical work after issuance of required regulatory permits and authorizations to begin work.[20]	September 30, 2019
2019-2020	(1) Drilling activity for at least one MPWSP Desalination Plant source water production well[21] complete; (2) foundation and structural framing complete for MPWSP Desalination Plant pretreatment seawater reverse osmosis, and administration buildings at desalination plant; (3) excavation complete for MPWSP Desalination Plant brine and backwash storage basins; and (4) 25% of MPWSP Desalination Plant transmission pipelines installed based on total length, including 100% installation of the "Monterey Pipeline and other ASR related improvements".	September 30, 2020
2020-2021	For MPWSP Desalination Plant: (1) 50% of drilling activity complete for source water production wells based on total number of wells required; (2) mechanical systems for brine and backwash storage basins complete; (3) construction of filtered water tanks and finished water tanks complete; (4) 50% of transmission pipelines installed based on total length.	September 30, 2021
2021-2022 and beyond	Substantial completion of the Cal-Am Components of the MPWSP Desalination Plant, meaning the Cal-Am Components are sufficiently complete and appropriately permitted to allow delivery of MPWSP Desalination Plant produced potable water to Cal-Am's Monterey Main system, eliminating further Cal-Am diversions of Carmel River water without valid basis of right	December 31, 2021

* It is anticipated that this milestone will be achieved during Water Year 2015-2016. The deadline provides a three-month extension in the event that it occurs soon after the end of the water year.

vi. **Reductions to the Effective Diversion Limit Based on Missed Milestones**: The following reductions to the Effective Diversion Limit shall apply if an applicable Milestone Deadline is not met:

[19] For purposes of this proposal the Cal-Am Components of the MPWSP Desalination Plant include: source water production wells; desalination plant; brine disposal system; and transmission pipelines

[20] Such work may include, among other things, any of the following: desalination plant site grading and preparation; electric utility installation; yard piping; subsurface excavation for structural foundations; and transmission pipeline installation.

[21] Not including construction of the MPWSP Desalination Plant Test Well completed in 2015.

Water Year	Milestone Missed	Reduction in Effective Diversion Limit	Date Reduction Assessed
2016- 2017	1	1,000 AFA	Dec. 31, 2016*
2017- 2018	2	1,000 AFA	Oct. 1, 2017
2018- 2019	3	1,000 AFA	Oct. 1, 2018
2019- 2020	4	1,000 AFA	Oct. 1, 2019
2020-2021	5	1,000 AFA	Oct. 1, 2020
Oct. 1, 2021 – Dec 31, 2021	6	1,000 AFA	Oct. 1, 2021

* The entire 1,000 AFA reduction for failure to meet this milestone must occur in the 9 remaining months of WY 2016-2017.

If a Milestone is not achieved by its Deadline but is subsequently achieved, the 1,000 afa reduction to the Effective Diversion Limit shall be amended on the first day of the water year following achievement of the Milestone, as follows. For Milestones achieved within the first month following the deadline, the reduction shall be 250 afa. For Milestones achieved between one and six months after the deadline, the reduction shall be 500 afa. For Milestones achieved between six and nine months after the deadline, the reduction shall be 750 afa. The 1,000 afa reduction to the Effective Diversion Limit shall remain for milestones achieved 9 months after the deadline or later.

If the reductions required under this subparagraph will result in the Effective Diversion Limit for that year being lower than Cal-Am's available lawful diversions from the Carmel River in that year, Cal-Am may apply to the Deputy Director for Water Rights for a limitation of this section such that the provision will not limit lawful diversions.

vii. **Illustration:** The following table illustrates the effect of the reduction in the Effective Diversion Limit over the term of this Order, and assumes no Deadlines have been met and no carryover credits have been applied under Paragraph 3.b.iii, and no additional water rights have been obtained or other adjustments made to the Effective Diversion Limit. The result is an elimination of unauthorized diversions from the Carmel River on October 31, 2020 if no Deadlines are met.

Water Year	**EDL if All Milestones Missed, No Other EDL Adjustments**
2015-2016	8,310 AFA
2016- 2017	7,310 AFA
2017- 2018	6,310 AFA
2018-2019	5,310 AFA
2019-2020	4,310 AFA

Water Year	EDL if All Milestones Missed, No Other EDL Adjustments
2020–2021	Legal limit
Thereafter	Legal limit

viii. **Joint Annual Report**: Commencing in water year 2016-2017, at least 120 days prior to each Milestone Deadline described in Condition 3.b.v, Cal-Am, in coordination with Applicants, shall submit a joint report to the Deputy Director for Water Rights, describing progress towards that Milestone, whether Applicants expect the Milestone to be achieved by its Deadline and, if not, whether the Milestone will be missed for reasons beyond Applicants' control. Sufficient evidence supporting the reasons that missing a milestone is beyond the control of Applicants shall be included for any further action related to such a claim.

If requested, Cal-Am, in coordination with Applicants, shall present written and/or oral comments on the progress towards Milestones at a regularly scheduled State Water Board meeting that falls at least 60 days after submission of the report. If the report indicates that a Milestone is likely to be missed for reasons beyond Applicants' control, the State Water Board may make a determination during that meeting or at a subsequent meeting whether the cause for delay is beyond Applicants' control. If the State Water Board determines that the cause is beyond Applicants' control, it may suspend any corresponding reductions under Condition 3.b.vi until such time as the Applicants can reasonably control progress towards the Milestone.

ix. **ASR Project**: Commencing for water year 2015-2016, only the first 600 afa of the amount of any water diverted to underground storage under State Water Board Permits 20808A and 20808C as of May 31 of each water year shall be included in determining compliance with the Effective Diversion Limit: Diversions greater than 600 afa in a single water year shall not count as annual production of Carmel River water for the Effective Diversion Limit calculation. This section supersedes State Water Board Order WR 2009-0060, ordering paragraph 3.a.(3).

x. **Sand City Desalination Plant**: Any volume of water that is produced by the Sand City Desalination Plant and not served to persons residing within the City of Sand City shall be subtracted from the Effective Diversion Limit for the water year in which it is produced.

xi. **Pebble Beach**: Pebble Beach Company (PBC) shall continue to annually submit, on September 30, a report to the Deputy Director for Water Rights accounting for any additional water that is diverted from the Carmel River as the result of an increased use of its remaining District water entitlement. Any diversions from the river by Cal-Am to satisfy PBC remaining entitlements from District shall not be considered in calculating compliance with the Effective Diversion Limit. After December 31, 2021, Cal-Am shall not illegally divert water from the river to supply the holders of PBC entitlements. This order supersedes the last sentence of paragraph 3.a.(6) of State Water Board Order WR 2009-0060.

xii. **Supplemental Water Rights and Acquisitions**: Provided Cal-Am is able to identify suitable and willing transacting parties, Cal-Am will acquire supplemental Carmel River water rights, and/or will pursue other Carmel River water acquisitions and water right changes in order to increase flows in the Carmel River and decrease Cal-Am's unauthorized Carmel River diversions ("Carmel River Flow Enhancement Program"). Cal-Am will implement the Carmel River Flow Enhancement Program to the extent it can negotiate agreements with water right holders. Such acquisitions or water right changes may include forbearance agreements, leases and/or purchases of water rights along the Carmel River on a temporary or permanent basis, and may include water right change approvals or permits (permanent or temporary) from the State Water Board. The acquisitions may increase the proportion of Cal-Am's diversions that are made under lawful right, or increase Carmel River instream flows during periods of lower flow on the Carmel River. Instream flow agreements made with other parties can generate carryover credits described in 3.b.iii. at 50% of the amount that the Deputy Director confirms that the agreements have increased Carmel River flows without being diverted by other downstream users. To claim the credits, Cal-Am must first submit the agreement and a monitoring and reporting plan to the Deputy Director for concurrence. After concurrence in the plan, Cal-Am shall implement the monitoring and reporting, and shall annually submit the proposed credit amount for the water year within 2 months of the end of the instream flow agreement or of the water year, whichever comes first. The amount shall become available as credit in the amount approved by the Deputy Director.

xiii. **Malpaso Water Company**: Water provided by the Malpaso Water Company LLC to Cal-Am under water right License 13868A shall not be counted towards calculation of compliance with the Effective Diversion Limit for the water year in which the water is provided to Cal-Am to the extent that Cal-Am is merely transporting the water on behalf of Malpaso Water Company to serve Malpaso Water Company's contracts with water users. To the extent such water is used by Cal-Am to serve its customers, this water will be counted towards calculation of compliance with the EDL, and shall serve to increase the portion of such diversion that are made under lawful rights. Any use of the Malpaso Water Company's diversions shall be consistent with the terms of License 13868A and Division Decision 2015-0001.

c. Either Cal-Am or the District may petition the Deputy Director for Water Rights for relief from reductions imposed under this Order. No relief shall be granted unless all of the following conditions are met: (1) Cal-Am and the District continue the moratorium on new service connections; (2) the demand for potable water by Cal-Am customers meets all applicable conservation standards and requirements; and (3) a showing is made that public health and safety will be threatened if relief is not granted. Any relief granted shall remain in effect only as long as a prohibition on new service connections remains in effect, and compliance with applicable conservation standards and requirements remains in effect. This section supersedes ordering paragraph 3.b. of State Water Board Order WR 2009-0060.

4. Status of Steelhead Fishery Report. During the extension period Cal-Am will provide funding in an amount up to $175,000 per year for the preparation of an annual report that evaluates the status of the threatened South-Central California Coast Steelhead Distinct Population Segment ("SCCC Steelhead DPS") in the Carmel River ("Status of Steelhead Fishery Report"). If possible, the annual Status of the Steelhead Fishery Report will be

prepared by the National Marine Fisheries Science ("NMFS") Southwest Fisheries Science Center ("SWFSC"). If NMFS West Coast Region finds a significant change in the status of the SCCC Steelhead DPS since the previous report (or, in the case of the first report, since the effective date of this Order), NMFS West Coast Region may provide recommendations for additional adaptive management measures to be taken with respect to the SCCC Steelhead DPS in the Carmel River. If SWFSC cannot complete the Status of the Steelhead Fishery Report for any or all years during the extension period, Cal-Am will designate another individual or entity, in consultation with the other Applicants and other stakeholders, with requisite expertise to complete the report. If NMFS objects to the choice, Cal-Am shall designate a different individual or entity. If the NMFS West Coast Region cannot review the Status of the Steelhead Fishery report in any or all years, Applicants and other stakeholders may develop an alternative system for making adaptive management recommendations. Cal-Am will deliver the report in a cost effective and efficient manner, and will work with Applicants, stakeholders, and the preparer of the Status of the Steelhead Fishery Report to share resources, and to avoid duplication of effort to lower the cost of the report to the extent practicable. The Status of the Steelhead Fishery Report and any adaptive management recommendations shall be submitted to the State Water Board by Cal-Am each year with the corresponding joint annual report.

5. Additional Conservation Measures: Cal-Am has stated that it will implement an additional $2.5 million of projects to improve fish passage and habitat during the four years following adoption of this Order, as follows: improvements to the existing upstream fish passage ladder and trap at Los Padres Dam ($0.2 million); installation of a fish screen at the lower outlet pipe on Los Padres Dam ($0.8 million); a pit tagging program ($1.0 million); and a through-reservoir survival study for Los Padres Reservoir ($0.5 million). If the above projects are not implemented according to plans developed in coordination with the California Department of Fish and Wildlife and the National Oceanic and Atmospheric Administration, the State Water Board may revisit this Order to determine whether to make further adjustments to protect public trust resources in the Carmel River.

6. Carmel River Volitional Fish Passage: Cal-Am has substantially completed downstream fish passage facilities at Los Padres Dam. If Cal-Am fails to remove the Old Carmel River Dam and the Sleepy Hollow Ford before September 30, 2017, the State Water Board may reopen this order to determine whether to make further adjustments to improve fish passage in the Carmel River or otherwise restore public trust resources.

7. On June 1 of each year, Cal-Am shall submit an operating plan to the Deputy Director for Water Rights specifying the quantity of water it will supply from the ASR Project for its customers after May 31 of each year. This plan shall provide for use of the water between June 1 and September 30 of the water year the water was pumped from the Carmel River, unless otherwise authorized by the fishery agencies. Cal-Am shall reduce its illegal diversions from the Carmel River at the same rate ASR water is recovered from the groundwater basin. ASR diversions remain subject to State Water Board Order WR 2009-0060, ordering paragraph 3.c. This section supersedes ordering paragraph 4 of WRO 2009-0060.

8. In addition to the reporting required elsewhere in this order or required under WRO 2009-0060 ordering paragraph 6, except as specified, Cal-Am shall provide and post on its website the following information in quarterly reports:

a. Monthly summaries of the total quantity of water produced from the Carmel River, and other separate sources of water used by Cal-Am within the service area.
b. Monthly summaries of the total quantity of ASR project water diverted from the river under water right Permits 20808A and 20808C and stored in the Seaside Groundwater Basin, including the separate accounting of the amounts pumped in excess of 600 afa. The monthly reporting shall also state the quantity of ASR water recovered from aquifer storage and beneficially used, and the current balance of ASR water remaining in storage in the Seaside Groundwater basin. This paragraph supersedes WRO 2009-0060, ordering paragraph 6.(b).
c. Monthly summaries of the quantity of water being supplied by the Malpaso Water Company to Cal-Am and to Malpaso customers supplied using Cal-Am facilities. The reporting shall identify the amount of water used at Cal-Am's existing meter connections and within the Cal-Am service area, and the amounts used at new service connections served by Malpaso Water Company. The monthly reports shall specify the quantity of water used to reduce diversions from the river during the reporting period.
d. Monthly summaries of the quantity of water produced by the City of Pacific Grove, and the quantity of water used to reduce diversions from the river during the reporting period. Cal-Am shall not deliver water produced by the City of Pacific Grove unless such use is consistent with Resolution 2015-0070, paragraph 4.
e. For the final quarter of each water year, the report shall include the quantification and basis of any credits earned and of any amount being carried over for future years.
f. An accounting of the progress towards completion of the Water Supply Project MPWSP Desalination Plant and Pure Water Monterey Project that identifies all progressive steps completed during the previous 12 months and the upcoming 12 month's anticipated progress, and discussion of potential setbacks that may beyond the Applicant's control.

10. Each report submitted by Cal-Am shall be certified under penalty of perjury and shall include the following declaration: "I declare under penalty of perjury, under the laws of the State of California, that all statements contained in this report and any accompanying documents are true and correct, with full knowledge that all statements made in this report are subject to investigation and that any false or dishonest statement may be grounds for prosecution."

11. Cal-Am shall file quarterly reports of its diversions under Paragraph 5 (small project implementation) of State Water Board Order WR 2009-0060. This section corrects an error in State Water Board Order WR 2009-0060 ordering paragraph 7, which incorrectly identified the relevant paragraph as State Water Board Order WR 2009-0060 ordering paragraph 3.

12. The Deputy Director for Water Rights is authorized to modify the timing and the content of the reporting required by all of the provisions of this Order to more effectively carry out the intent of this Order.

13. Cal-Am shall comply with all requirements of State Water Board Order 95-10, except as provided in State Water Board Order WR 2009-0060, ordering paragraph 9, or except as inconsistent with this Order.

14. The Deputy Director for Water Rights is directed to closely monitor Cal-Am's compliance with State Water Board Order 95-10, State Water Board Order WR 2009-0060, and this Order. Appropriate action shall be taken to insure compliance with these Orders including the issuance of additional cease and desist orders under Water Code section 1831, the imposition of administrative civil liability under Water Code section 1055, and referral to the Attorney General under Water Code section 1845 for injunctive relief and for civil liability. If additional enforcement action becomes necessary, the Deputy Director is directed to consider including in such actions all Cal-Am's violations of Water Code section 1052 since the adoption of Order 95-10.

15. The conditions of this Order, State Water Board Order WR 2009-0060 and State Water Board Order 95-10 shall remain in effect until (a) Cal-Am certifies, with supporting documentation, that it has obtained a permanent supply of water that has been substituted for the water illegally diverted from the Carmel River and (b) the Deputy Director for Water Rights concurs, in writing, with the certification.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on July 19, 2016.

AYE:	Chair Felicia Marcus Vice Chair Frances Spivy-Weber Board Member Tam M. Doduc Board Member Steven Moore Board Member Dorene D'Adamo
NAY:	None
ABSENT:	None
ABSTAIN:	None

Jeanine Townsend
Clerk to the Board

G

Appendix G. Seaside Groundwater Basin Adjudication

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF MONTEREY

CALIFORNIA AMERICAN WATER,

Plaintiff,

vs.

CITY OF SEASIDE; CITY OF MONTEREY; CITY OF SAND CITY; CITY OF DEL REY OAKS; SECURITY NATIONAL GUARANTY, INC.; GRANITE ROCK COMPANY, INC.; D.B.O. DEVELOPMENT COMPANY NO. 27, INC.; MURIEL E. CALABRESE 1987 TRUST; ALDERWOODS GROUP (CALIFORNIA), INC.; PASADERA COUNTRY CLUB, LLC; LAGUNA SECA RESORT, INC; BISHOP MC INTOSH & MC INTOSH, a general partnership; THE YORK SCHOOL, INC.; COUNTY OF MONTEREY; and DOES 1 through 1,000, Inclusive,

Defendants.

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT,

Intervenor.

MONTEREY COUNTY WATER RESOURCES AGENCY,

Intervenor.

AND RELATED CROSS-ACTIONS

Case No. M66343

DECISION

Action Filed: August 14, 2003
Trial Date: December 13, 2005
Dept.: 21

(Assigned to Hon. Roger D. Randall, Ret.)

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I. INTRODUCTION

This Decision sets forth the adjudicated rights of the parties to this lawsuit (with certain exceptions noted in section I.D. below), including Plaintiff California American Water, and Defendants the City of Seaside, the City of Monterey, the City of Sand City, the City of Del Rey Oaks, Security National Guaranty, Inc., Granite Rock Company, D.B.O. Development Company No. 27, Muriel E. Calabrese 1987 Trust, Alderwoods Group (California), Inc., Pasadera Country Club, LLC, Laguna Seca Resort, Inc., Bishop, McIntosh & McIntosh, and The York School, Inc. (hereinafter "Water User Defendants") to use the water resources of the Seaside Groundwater Basin ("Seaside Basin" or "Basin") and provides for a physical solution for the perpetual management of the Basin, which long-term management will provide a means to augment the water supply for the Monterey Peninsula.

A. Seaside Groundwater Basin.

The Seaside Basin is located in Monterey County and underlies the Cities of Seaside, Sand City, Del Rey Oaks, Monterey, and portions of unincorporated county areas, including the southern portions of Fort Ord, and the Laguna Seca Area. The boundaries of the Basin are depicted in Exhibit B of this Decision. Generally, the Seaside Basin is bounded by the Pacific Ocean on the west, the Salinas Valley on the north, the Toro Park area on the east, and Highways 68 and 218 on the south. The Seaside Basin consists of subareas, including the Coastal subarea and the Laguna Seca subarea in which geologic features form partial hydrogeologic barriers between the subareas.

B. The Parties.

1. Plaintiff California American Water ("Plaintiff" or "California American") is an investor-owned public utility incorporated under the laws of the State of California. (*See* Pub. Utilities Code, §§ 1001 et seq. and 2701 et seq.) California American produces groundwater from the Seaside Basin and delivers it for use on land within its certificated service area that both overlies portions of the Seaside Basin, and is located outside of the Seaside Basin Area, all within the County of Monterey.

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2. Defendant City of Seaside ("Seaside") is a general law city situated in the County of Monterey. Seaside produces groundwater from the Seaside Basin (1) for use on two city-owned golf courses that overly the Basin, and (2) for municipal water service to its residents. (*See* Call. Const., Art. XI, § 9; Gov. Code, § 38730.)

3. Defendant City of Sand City ("Sand City") is a charter city situated in the County of Monterey. Sand City produces groundwater from the Seaside Basin and delivers it for use on private and publicly owned lands within its incorporated boundaries, all of which overlie the Seaside Basin. (*See* Cal. Const., Art. XI, § 9; Gov. Code, § 38730.)

4. Defendant City of Del Rey Oaks ("Del Rey Oaks") is a general law city situated in the County of Monterey. Land within Del Rey Oaks' incorporated boundaries overlies the Seaside Basin. The two wells Del Rey Oaks presently operates for irrigation of public lands are located outside the Seaside Basin area and are, therefore, excluded from this Stipulation. (*See* Cal. Const., Art. XI, § 9; Gov. Code, § 38730.)

5. Defendant City of Monterey ("Monterey") is a charter city situated in the County of Monterey. Monterey owns and controls land that overlies the Seaside Basin area.

6. Defendant Security National Guaranty, Inc. ("SNG") is a California corporation with its principal place of business in the City and County of San Francisco. SNG's primary business activity is real estate development. As part of its operation, SNG and/or its predecessors-in-interest have produced groundwater from the Seaside Basin. SNG also owns land overlying the Seaside Basin.

7. Defendant Granite Rock Company ("Granite") is a California corporation with its principal place of business in the County of Santa Cruz. Granite's primary business activity is the production and sale of concrete aggregate and building materials. As part of its Seaside concrete and building materials plant, Granite has produced groundwater from the Seaside Basin. Granite also owns land overlying the Seaside Basin.

8. Defendant D.B.O. Development No. 27 ("D.B.O."), erroneously sued herein as D.B.O. Development Company, is a California limited liability company with its principal place of business in the County of Monterey. D.B.O.'s primary business activity is the ownership and

development of real property for commercial, industrial, residential, and public uses. As part of their ownership and development of land overlying the Seaside Basin, D.B.O. and/or its predecessor in interest have produced groundwater from the Basin. D.B.O. also owns and controls land overlying the Seaside Basin.

9. Defendant Muriel E. Calabrese 1987 Trust ("Calabrese") is an irrevocable trust that holds property in the County of Monterey. Calabrese and/or its predecessor in interest have produced groundwater from the Seaside Basin in relation to the operation of its paving, grading and construction business and operation of a concrete batch plant in Sand City. Calabrese also owns and controls land overlying the Seaside Basin.

10. Defendant Alderwoods Group (California), Inc. ("Alderwoods Group"), DBA Mission Memorial Park ("Mission Memorial") is a California corporation with its principal place of business in the County of Monterey. Mission Memorial's primary business activity is the operation of a cemetery in the City of Seaside. As part of maintenance of the cemetery, Mission Memorial has produced groundwater from the Seaside Basin. Mission Memorial also owns land overlying the Seaside Basin.

11. Defendant Pasadera Country Club, LLC ("Pasadera") is a California limited liability company with its principal place of business in the County of Monterey. Pasadera's primary business activity is the operation of a private golf course. As part of its golf course operations, Pasadera has produced groundwater from the Seaside Basin. Pasadera also owns land overlying the Seaside Basin.

12. Defendant Bishop, McIntosh & McIntosh ("Bishop") is a general partnership, with its principal place of business in the County of Monterey. Bishop owns land overlying the Laguna Seca Subarea of the Seaside Basin. Defendant Laguna Seca Resort, Inc.("Laguna Seca") is a California corporation with its principal place of business in the County of Monterey. Laguna Seca's primary business activity is the operation of a public golf course on land owned in fee by Bishop. Laguna Seca operates the golf course pursuant to a lease with Bishop. As part of the golf course's operations, groundwater is produced from the Laguna Seca Subarea of the Seaside Basin for irrigation purposes. Laguna Seca filed a cross-complaint against California

American, and Bishop filed a cross-complaint against California American and all defendants other than Laguna Seca Defendants Laguna Seca Resort, Inc. and Bishop, McIntosh & McIntosh shall collectively be referred to as "Laguna Seca/Bishop." However, the pumping allocation established in Section III.B., below, is held only by Bishop, as the overlying property owner. Laguna Seca is a Water User Defendant now exercising Bishop's pumping allocation and operating the golf course facilities. The damages provided for in Section III.G. shall be based on the Average Gross Annual Income of the entity operating thee golf course facilities, which is now Laguna Seca (Bishop's lessee).

13. Defendant County of Monterey owns land on which is operates the Laguna Seca Park. County of Monterey has produced groundwater from the Seaside Basin for use at Laguna Seca Park. County of Monterey owns land overlying the Seaside Basin.

14. Intervenor Monterey Peninsula Water Management District ("MPWMD") is a district formed pursuant to Water Code Appendix sections 118-1 et seq. MPWMD intervened as a party defendant as against California American, cross-complained against the other parties as a plaintiff, and is a defendant in a cross-complaint filed by Seaside and joined in by City defendants.

15. Intervenor Monterey County Water Resources Agency ("MCWRA") is a duly constituted Water Resources Agency created pursuant to California Water Code Appendix section 52-3 et seq. MCWRA intervened inn this action as a plaintiff as against all parties.

16. Defendant The York School, Inc. ("York" or "York School"), is a nonprofit corporation, founded in 1959 as an independent day school providing college preparatory education. Its primary activity is the operation of a school. York leases approximately 31.4 acres of property from the United States, Department of the Army, on the former Fort Ord. This property is located immediately north of the main campus, across York Road, and is a portion of a larger parcel, approximately 107 acres in size, that is scheduled to be transferred as a public benefit conveyance to York from the federal government. This parcel overlies the Seaside Basin and is subject to this Decision. York has produced groundwater from the Seaside Basin. York is not an agent of the United States, nor can York bind the United States to this Decision.

C. The Complaint.

On or about August 14, 2003, Plaintiff filed a complaint against Defendants and Does 1 through 1,000 requesting a declaration of Plaintiff's and Defendants' individual and collective rights to groundwater and a mandatory and prohibitory injunction requiring the reasonable use and coordinated management of groundwater within the Seaside Basin pursuant to Article X, Section 2 of the California Constitution. The pleadings further allege that Plaintiff and Defendants collectively claim substantially all rights of groundwater use, replenishment and storage within the Seaside Basin area, that the Natural Safe Yield (as defined in Section III.A.) is being exceeded, and that absent a physical solution and coordinated groundwater management strategy, the Seaside Basin is in imminent risk of continued lowering of water levels, increased pump-lifts, diminution of water supply and quality, seawater intrusion, and possible land subsidence. Accordingly, Plaintiff requested: (1) a determination of the Seaside Basin's safe yield; (2) an operating plan for the management of the Basin; (3) a declaration of the rights of the parties named in this Complaint; (4) a declaration and quantification, as part of a physical solution, of the parties' respective rights to make use of the Seaside Basin's available storage space; and (5) the appointment of a Watermaster to administer the Court's Decision. Subsequently, Plaintiff has twice amended its complaint and the operative complaint is now the Second Amended Complaint, which sets forth the same general allegations as the original complaint.

D. Defendants' Responses.

Water User Defendants in this action have all responded to the Complaint pursuant to Answers. In addition, they have all joined in a motion seeking Court approval of a Stipulated Judgment. The Monterey Peninsula Water Management District and the County of Monterey, including the Monterey County Water Resources Agency, did not join in the Stipulation.

On or about September 24, 2003, Intervenor MPWMD filed a complaint in intervention against the defendants named in the Complaint. Defendants to that complaint responded to the cross-complaint pursuant to an Answer, containing a general denial and affirmative defenses.

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Seaside, on or about January 9, 2004, filed a cross-complaint against MPWMD. MPWMD responded to the cross-complaint by filing an Answer, containing a general denial and affirmative defenses.

Laguna Seca, on or about April 23, 2004, filed a cross-complaint against California American. California American responded to the cross-complaint pursuant to an Answer, containing a general denial and affirmative defenses.

Bishop, on or about September 23, 2004, filed a cross-complaint against California American and against all defendants other than Laguna Seca. California American, Granite, Sand city, Alderwoods Group, York School, D.B.O., Monterey, MPWMD, Seaside, and Pasadera responded to the cross-complaint pursuant to Answers containing general denials and affirmative defenses.

SNG, on or about July 26, 2005, filed a cross-complaint against MPWMD. MPWMD responded to the cross-complaint by filing an Answer, containing a general denial and affirmative defenses.

At the conclusion of argument on December 22, 2005, the various defendant cross-complainants agreed that the relief they had sought via their cross-complaints had been subsumed in the litigation of the complaint and complaints in intervention, the answers thereto, and the Settlement Agreement and General Mutual Release executed by all parties save the intervenors and the County of Monterey.

E. Joint Motion for Entry of Judgment.

Plaintiff and Water User Defendants filed a Motion for the Entry of Judgment along with a Stipulation for Entry of Judgment, which was opposed by both intervenors. The Motion for Entry of Judgment requested that the Court approve the Stipulation and enter the Judgment. The motion was heard by this Court on December 12, 2005. At the request of the moving parties, it deferred its ruling until it had taken evidence in the trial of this matter.

Having now received the evidence, and having considered written and oral argument from the various parties, the Court denies the Motion for Entry of Judgment. The Court accepts the stipulation of certain of the parties entitled "Settlement Agreement and General Mutual Release"

filed with the Court during trial insofar as the stipulation does not conflict with the ruling set forth herein.

F. Jurisdiction. This Court has jurisdiction to enter a Judgment declaring and adjudicating Plaintiff's and Water User Defendants' rights to the reasonable and beneficial use of groundwater in the Seaside Basin Area, including the imposition of a physical solution, pursuant to Article X, Section 2 of the California Constitution.

II. FINDINGS

A. Importance of Groundwater. Groundwater is an important water supply source for businesses, individuals and public agencies that overlie or Extract groundwater from the Seaside Basin. The overwhelming majority of the groundwater appropriated from the Seaside Basin has been and continues to be dedicated to a public use in accordance with the provisions of the California Constitution, Article X, Section 5. The Plaintiff and the Water User Defendants rely upon continued availability of groundwater to meet their demands. The intervenors, MPWMD and MCWRA, have a legislatively mandated interest in the preservation and enhancement of groundwater in the Basin.

B. Status of the Groundwater Basin.

1. Perennial Natural Safe Yield. The Perennial Natural Safe Yield (as defined in Section III.A. and hereinafter referred to as "Natural Safe Yield") of the Seaside Basin is solely the result of natural percolation from precipitation and surface water bodies overlying the Basin. The Court finds that the Natural Safe Yield of the Basin as a whole, assuming no action is taken to capture subsurface flow exiting the northern boundary of the Basin, is from 2,581 to 2,913 acre feet per year. The Natural Safe Yield for the Coastal Subarea is estimated from 1,973 to 2,305 acre feet peer year, and the Natural Safe Yield for the Laguna Seca Subarea is 608 acre feet per year.

2. Groundwater Production. Production records demonstrate that the cumulative annual groundwater production of the Parties from the Seaside Basin area in each of the five (5) years immediately preceding the filing of this action has been between approximately 5,100 and 6,100 acre feet. Therefore, the Court finds that groundwater production has exceeded the Natural

Safe Yield during the preceding five (5) years throughout the Seaside Basin and in each of its subareas. While no one can predict with precision when it will occur, all parties agree continued indefinite production of the Basin Groundwater in excess of the Natural Safe Yield will ultimately result in seawater intrusion, with deleterious effects on the Basin. The evidence demonstrates that the stage is set for such an occurrence in the foreseeable future.

C. Legal Claims.

1. Groundwater Rights. Certain Parties allege that they have produced groundwater openly, notoriously, continuously, and without interruption in excess of the Natural Safe Yield of the Basin for more than five (5) years. As a result, these Parties allege that they have accrued prescriptive rights as articulated by the California Supreme Court in *City of Pasadena v. City of Alhambra* (1948) 33 Cal.2d 908. In defense of these claims, other Parties deny that the elements of prescription have been satisfied, and further allege the affirmative defense of "self help" as recognized in *Pasadena, supra*, 33 Cal.2d at pp. 932-32. Those Parties responsible for public water service also raise Civil Code section 1007 as an affirmative defense against prescription.

The Court finds that there is merit to the claim that certain prescriptive rights have accrued, but also finds that there is merit to the aforementioned affirmative defenses. Accordingly, the Court finds that the Parties collectively possess a variety of rights based in prescription and other original rights (including overlying and appropriative rights). Each Party's right to produce naturally occurring groundwater from the Seaside Basin therefore reflects the amount of their historical production from the Basin, and respects the priority of allocations under California law. The physical solution set forth by this Decision is intended to ultimately reduce the drawdown of the aquifer to the level of the Natural Safe Yield; to maximize the potential beneficial use of the Basin; and to provide a means to augment the water supply for the Monterey Peninsula.

2. Storage Rights. The Court finds that the public interest is served by augmenting the total yield of the Seaside Basin through artificial groundwater recharge, storage, and recovery. It is well established that an entity which artificially recharges a groundwater basin with the intent to later recapture that water maintains an exclusive right to recapture that quantity of water by which said recharge augments the retrievable water supply of the groundwater basin, so long as

such recharge and recapture (i.e., storage) does not materially harm the groundwater basin or any other entity's prior rights associated with the groundwater basin. (*City of Los Angeles v. City of San Fernando* (1975) 14 Cal.3d 199, 264; *City of Los Angeles v. City of Glendale* (1943) 23 Cal.2d 68, 76-77; see also Water Code, § 7075.) The Court finds, therefore, that the right to store and recover water from the Seaside Basin shall be governed by the provisions of the Decision, and the rules and regulations promulgated by the Seaside Basin Watermaster, the basic provisions of which are described in Section III.H.

3. *De Minimis* Production. The Court finds that production of groundwater by any person or entity less than five (5) acre feet per year is not likely to significantly contribute to a Material Injury (as defined in Section III.A.) to the Seaside Basin or any interest related to the Seaside Basin. Accordingly, this Decision is not intended to govern the production of groundwater by any person or entity that produces a total quantity of groundwater that is less than five (5) acre feet peer year. However, to the extent the Court determines in the future that this exemption has contributed to or threatens to contribute to a Material Injury to the Seaside Basin or any interest related to the Seaside Basin, including any contribution caused by production subject to this exemption in combination with all other production from the Seaside Basin, the Court will modify or eliminate this exemption as it deems prudent pursuant to its reserved jurisdiction provided in Section III.O.

4. Transferability of Seaside Basin Rights. The Court finds that maximum beneficial use of the Seaside Basin's resources is encouraged by the ability to sell and lease production allocations. Such transferability will also provide necessary flexibility to satisfy future water supply needs. Accordingly, the Court finds that production allocations should be assignable, subject to the rules and regulations promulgated by the Watermaster, and subject to certain Parties' participation in the Alternative Production Allocation, described in Section III.B.3, which election will restrict their transfers of water.

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III. DECISION

IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

A. Definitions.

1. "Administrative Year" is the twelve (12)month period from January 1 through December 31.

2. "Alternative Production Allocation" is the amount of Groundwater that a Producer participating in this allocation method may Produce from a Subarea of the Seaside Basin as provided in Section III.B.3.

3. "Artificial Replenishment" means the act of the Watermaster, directly or indirectly, engaging in or contracting for Non-Native Water to be added to the Groundwater supply of the Seaside Basin through Spreading or Direct Injection to offset the cumulative Over-Production from the Seaside Basin in any particular Administrative Year pursuant to Section III.L.3.j.iii. It shall also include programs in which Producers agree to refrain, in whole or in part, from exercising their right to produce their full Production Allocation where the intent is to cause the replenishment of the Seaside Basin through forbearance in lieu of the injection or spreading of Non-Native Water.

4. "Base Water Right" is the percentage figure or the fixed amount assigned to each Party as provided in Section III.B.2, which is used to determine various rights and obligations of the Parties as provided in Sections III.B.2, III.B.3, III.L.3.c, and III.L.3.j.iii.

5. "Brackish Water" means water containing greater than 1,000 parts of chlorides to 1,000,000 parts of Water.

6. "Carryover" means that portion of a Party's Production Allocation that is not Extracted from the Basin during a particular Administrative Year. Each acre-foot of Carryover establishes an acre-foot of Carryover Credit.

7. "Carryover Credit(s)" means the quantity of Water established through Carryover, that a Party is entitled to Produce from the Basin pursuant to Section III.F.

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8. "Coastal Subarea" means those portions of the Seaside Basin that are west of North-South Road, and further as shown on the Basin map attached as Exhibit B to this Decision.

9. "Direct Injection" means a method of Groundwater recharge whereby Water is pumped into the Basin through wells or other artificial channels.

10. "Extraction," "Extractions," "Extracting," "Extracted," and other variations of the same noun or verb, mean pumping, taking, diverting or withdrawing Groundwater by any manner or means whatsoever from the Seaside Basin.

11. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

12. "Groundwater" means all Water beneath the ground surface in the Seaside Basin, including Water from Natural Replenishment, Artificial Replenishment, Carryover, and Stored Water.

13. "Laguna Seca Subarea," or "Laguna Seca Area," means those portions of the Basin that are east of the Southern Coastal Subarea and south of the Northern Inland Subarea, as shown on the Seaside Basin map attached as Exhibit B to this Decision.

14. "Landowner Group" means all Producers that own or lease land overlying the Seaside Basin and Produce Groundwater solely for use on said land, except California American, Seaside (Municipal), Monterey, Del Rey Oaks, and Sand City.

15. "Material Injury" means a substantial adverse physical impact to the Seaside Basin or any particular Producer(s), including but not limited to: seawater intrusion, land subsidence, excessive pump lifts, and water quality degradation. Pursuant to a request by any Producer, or on its own initiative, Watermaster shall determine whether a Material Injury has occurred, subject to review by the Court as provided for in Section III.N.

16. "Natural Replenishment" means all processes by which Water may become a part of the Groundwater supply of the Seaside Basin without the benefit of the Physical Solution and the coordinated management it provides. Groundwater that occurs in the Seaside Basin as a

result of the Physical Solution, which is not Natural Replenishment, includes, but is not limited to Storage, Carryover, and Artificial Replenishment.

17. "Natural Safe Yield" or "Perennial Natural Safe Yield" means the quantity of Groundwater existing in the Seaside Basin that occurs solely as a result of Natural Replenishment. The Natural Safe Yield of the Seaside Basin as a whole, assuming no action is taken to capture subsurface flow exiting the northern boundary of the Basin, is from 2,581 to 2,913 acre feet per year. The Natural Safe Yield for the Coastal Subareas is from 1,973 to 2,305 acre feet per year. The Natural Safe Yield for the Laguna Seca Subarea is 608 acre feet per year.

18. "Non-Native Water" means all Water that would not otherwise add to the Groundwater supply through natural means or from return flows from surface applications other than intentional Spreading.

19. "Overdraft" or "Overdrafted" refers to a condition within a Groundwater basin resulting from long-term depletions of the basin over a period of years.

20. "Operating Safe Yield" means the maximum amount of Groundwater resulting from Natural Replenishment that this Decision, based upon historical usage, allows to be produced from each Subarea for a finite period of years, unless such level of production is found to cause Material Injury. The Operating Safe Yield for the Seaside Basin, as a whole, is 5,600 acre feet. The Operating Yield is 4,611 acre feet for the Coastal Subarea and 989 acre feet for the Laguna Seca Subarea. The Operating Yield established here will be maintained for three (3) years from the date of this Decision or until a determination is made by the Watermaster, concurred in by this Court, that continued pumping at this established Operating Yield will cause Material Injury to the Seaside Basin or to the Subareas, or will cause Material Injury to a Producer due to unreasonable pump lifts. In either such event the Watermaster shall determine the modified Operating Yield in accordance with the Principles and Procedures attached hereto as Exhibit A, and through the application of criteria that it shall develop for this purpose.

21. "Over-Production" and other variations of the same term means (1) with regard to all Production from the Seaside Basin, that quantity of Production which exceeds an initially assumed Natural Safe Yield of 3,000 afy (or such adjusted calculation of Natural Safe Yield as

further study of the Basin by the Watermaster shall justify); or (2) with regard to each Producer, that quantity of Water Produced in any Administrative Year in excess of that Producer's Base Water Right, as applied to an initially assumed Natural Safe Yield of 3,000 afy (subject to adjustment as further study shall justify). For a Party producing under the Alternative Production Allocation, the calculation shall be based upon the Base Water Right assigned to them in Table 1, infra, only to the extent that Party has elected to convert all or part of an Alternative Production Allocation into a Standard Production Allocation, pursuant to Section III.B.3.e.

22. Operating Yield Over-Production means pumping of Native Water by Producers in excess of their Standard Production Allocation or Alternative Production Allocation, as discussed in Section III.L.3.j.iii.

23. "Person" or "Persons" includes individuals, partnerships, associations, governmental agencies and corporations, and any and all types of entities.

24. "Physical Solution" means the efficient and equitable management of Groundwater resources within the Seaside Basin, as prescribed by this Decision, to maximize the reasonable and beneficial use of Water resources in a manner that is consistent with Article X, Section 2 of the California Constitution, the public interest, and the basin rights of the Parties, while working to bring the Production of Native Water to Natural Safe Yield.

25. "Produce," "Produced," or "Production" means (1) the process of Extracting Water or (2) the gross amount of Water Extracted.

26. "Producer" means a Party possessing a Base Water Rights.

27. "Production Allocation" is the amount of Groundwater that a Producer may Produce from a Subarea of the Seaside Basin based on the Parties' election to proceed under either the Standard Production Allocation or the Alternative Production Allocation set forth in Sections III.B.2 and III.B.3, respectively.

28. "Replenishment Assessment" means an assessment levied by the Watermaster per each acre-foot of Over-Production against each party Over-Producing Groundwater in the previous Administrative Year. The amount of the assessment shall be sufficient to cover the cost of Artificial Replenishment in an amount necessary to off-set that Producer's Over-Production,

and levied as provide in Section III.L.3.j.iii. The assessment must of necessity be initially determined based upon the estimated cost of providing Non-Native water to replenish the Basin, as determined by the Watermaster.

29. "Seaside Basin" is the underground water basin or reservoir underlying the Seaside Basin Area, the exterior boundaries of which are the same as the exterior boundaries of the Seaside Basin Area.

30. "Seaside Basin Area" is the territory depicted in Exhibit B to this Decision.

31. "Spreading" means a method of introducing Non-Native Water into the Seaside Basin whereby Water is placed in permeable impoundments and allowed to percolate into the Seaside Basin.

32. "Standard Production Allocation" is the amount of Groundwater that a Producer participating in this allocation method may Produce from a Subarea of the Seaside Basin as provided in Section III.B.2, which is determined by multiplying the Base Water Right by the Operating Yield.

33. "Storage" means the existence of Stored Water in the Seaside Basin.

34. "Storage Allocation" means that quantity of Stored Water in acre feet that a Party is allowed to Store in the Coastal Subarea or the Laguna Seca Subarea at any particular time.

35. "Storage Allocation Percentage" means the percentage of Total Usable Storage Space allocated to each Producer proceeding under the Standard Production Allocation. Producers proceeding under the Alternative Production Allocation are not allocated Storage rights and, consequently, their share of the Total Usable Storage Space is apportioned to the Producers proceeding under the Standard Production Allocation. Pursuant to the terms of Section III.B.3, Parties proceeding under the Alternative Production Allocation enjoy a one-time right to change to the Standard Production Allocation. Due to the recalculation of the Storage Allocation Percentage necessitated when a Party changes to the Standard Production Allocation, the Watermaster will maintain the up-to-date Seaside Basin Storage Allocation Percentages.

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36. "Storage and Recovery Agreement" means an agreement between Watermaster and a Party for Storage pursuant to Section III.L.3.j.xx.

37. "Store" and other variations of the same verb refer to the activities establishing Stored Water in the Seaside Basin.

38. "Stored Water" means (1) Non-Native Water introduced into the Seaside Basin by a Party or any predecessors-in-interest by Spreading or Directly Injecting that Water into the Seaside Basin for Storage and subsequent Extraction by and for the benefit of that Party or their successors-in-interest; (2) Groundwater within the Seaside Basin that is accounted for as a Producer's Carryover; or (3) Non-Native water introduced into the Basin through purchases by the Watermaster, and used to reduce and ultimately reverse Over-Production.

39. "Stored Water Credit" means the quantity of Stored Water augmenting the Basin's Retrievable Groundwater Supply, which is attributable to a Party's Storage and further governed by this Decision and a Storage and Recovery Agreement.

40. "Subarea(s)" means either the Laguna Seca Subarea or the Coastal Subarea.

41. "Total Useable Storage Space" means the maximum amount of space available in the Seaside Basin that can prudently be used for Storage as shall be determined and modified by Watermaster pursuant to Section III.L.3.j.xix, less Storage space which may be reserved by the Watermaster for its use in recharging the Basin.

42. "Transfer" and other variations of the same verb refers to the temporary or permanent assignment, sale, or lease of all or part of any Producer's Production Allocation, Storage Allocation, Carryover Credits, or Stored Water Credits. Pursuant to Section III.B.3., Transfer does not include the use of Water on properties identified in Exhibit C for use under an Alternative Production Allocation.

43. "Water" includes all forms of Water.

44. "Watermaster" means the court-appointed Watermaster pursuant to Section III.L. of this Decision for the purpose of executing the powers, duties, and responsibilities assigned therein.

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45. "Watermaster Rules and Regulations" means those rules and regulations promulgated by the Watermaster consistent with the terms of this Decision.

B. Physical Solution.

1. Groundwater Rights. The Parties have Produced Groundwater from the Seaside Basin openly, notoriously, continuously, and without interruption, which Production has been determined to be in excess of the Natural Safe Yield of the Seaside Basin and each of its Subareas for more than five (5) years. Accordingly, Parties have accrued mutual prescriptive rights and/or have preserved their overlying, appropriative, and prescriptive rights against further prescription by self-help. These individual and competitive rights, whether mutually prescriptive, appropriative or overlying rights, can be most efficiently exercised and satisfied by the implementation of this Physical Solution and in the manner expressly set forth herein.

2. Standard Production Allocation. Each Producer is authorized to Produce its Production Allocation within the designated Subarea in each of the first three Administrative Years. Except for those certain Parties electing to proceed under the Alternative Production Allocation, as set forth in Section III.B.3., each Producer's Production Allocation for the first three Administrative Years shall be calculated by multiplying its Base Water Right, as set forth in Table 1 below, by that portion of the Operating Yield which is in excess of the sum of the Alternative Production Allocations. The Operating Yield for the Seaside Basin, as a whole, is set at 5,600 acre feet annually ("afa"). The Operating Yield for the Coastal Subarea is 4,611 afa, with 743 afa committed to Alternative Production Allocations and 3,868 afa committed to Standard Production Allocations. The Operating Yield for the Laguna Seca Subarea is 989 afa, with 644 afa committed to Alternative Production Allocations and 345 afa committed to Standard Production Allocations. The Operating Yield established here will be maintained for three (3) Administrative Years from the date Judgment is granted or until a determination is made by the Watermaster, concurred in by this Court, that continued pumping at this established Operating Yield will cause Material Injury to the Seaside Basin or to the Subareas or will cause Material Injury to a Producer due to unreasonable pump lifts. In the event of such Material Injury the Watermaster shall determine the modified Operating Yield in accordance with the Principles and

Procedures attached hereto as Exhibit A, and through the application of criteria that it shall develop for this purpose.[1]

Commencing with the fourth Administrative Year, and triennially thereafter the Operating Yield for both Subareas will be decreased by ten percent (10%) until the Operating Yield is the equivalent of the Natural Safe Yield unless:

a. The Watermaster has secured and is adding an equivalent amount of Non-Native water to the Basin on an annual basis; or

b. The Watermaster has secured reclaimed water in an equivalent amount and has contracted with one or more of the Producers to utilize said water in lieu of their Production Allocation, with the Producer agreeing to forego their right to claim a Stored Water Credit for such forbearance; or

c. Any combination of a and b which results in the decrease in Production of Native Water required by this decision; or

d. The Watermaster has determined that Groundwater levels within the Santa Margarita and Paso Robles aquifers are at sufficient levels to ensure a positive offshore gradient to prevent seawater intrusion.

TABLE 1[2]

Standard Production Allocations

Party:	Percentage of Operating Yield Coastal Subarea
California American Water	77.55%
City of Seaside (Municipal)	6.36%
City of Seaside (Golf Courses)	10.47%
City of Sand City	0.17%

[1] If the Operating Yield changes, Standard Production Allocations will be calculated by multiplying the portion of the changed Operating Yield committed to Standard Production Allocations by the Standard Producers' Base Water Rights. This calculation will result in a remaining quantity of water already committed to Standard Production Allocations (due to the Base Water Right percentages assigned to Alternative Producers but which are not used to calculate the Standard Production Allocations), which will be further allocated to the Standard Producers in proportion to their Base Water Rights until no quantity remains unallocated.

[2] Certain Parties including Seaside (Golf Courses), Sand City, SNG, Calabrese, Mission Memorial, Pasadera, Bishop and York School hold an Alternative Production Allocation in the fixed amount shown in Table 2. If any of these Parties subsequently elects to convert to the Standard Production Allocation, then the Base Water Right shown in Table 1 for such converting Party will be used to determine that Party's Standard Production Allocation consistent with the terms provided in Section III.B.3.e.

Granite Rock Company	0.60%
SNG	2.89%
D.B.O. Development No. 27	1.09%
Calabrese	0.27%
Mission Memorial Park	0.60%

Producer:	Percentage of Operating Yield for Laguna Seca Sec area
California American Water Company	45.13%
Pasadera Country Club	22.65%
Bishop	28.88%
York School	2.89 %
Laguna Seca County Park	0.45%*

* Because the County of Monterey has not joined in the Settlement Agreement and General Mutual Release, its right to Produce water will be governed by the provisions made for those Producers selecting Alternative Production Allocations.

3. Alternative Production Allocation. The following Parties, which all assert overlying Groundwater rights, have chosen to participate in an Alternative Production Allocation: Seaside with regard to the Groundwater that it Produces for irrigation of its golf courses; Sand City, SNG, Calabrese, Mission Memorial, Pasadera, Bishop, York School, and Laguna Seca.

The Alternative Production Allocation provides the aforementioned Parties with a prior and paramount right over those Parties Producing under the Standard Production Allocation to Produce the amount set forth in Table 2 in perpetuity, and said Alternative Production shall not be subject to any reductions under Section III.B.2 or at such times as the Watermaster determines to reduce the Operating Yield in accordance with Section III.L.3.j.ii., subject to the following terms:

a. The Alternative Production Allocation may not be transferred for use on any other property, but shall be limited to use on the respective properties (including subdivisions thereof) identified in Exhibit C;

b. The Party electing the Alternative Production Allocation may not establish Carryover Credits or Storage rights;

c. The Party electing the Alternative Production Allocation is obligated to adopt all reasonably Feasible Water conservation methods, including methods consistent with generally accepted irrigation practices;

d. In the event a Party electing the Alternative Production Allocation is required to utilize reclaimed Water for irrigation purposes, pursuant to the terms of sections 13550 and 13551 of the California Water Code, that Party shall have the first opportunity to obtain and substitute reclaimed Water for its irrigation demands. Should that Party not pursue such substitution with due diligence, any other Party may provide reclaimed Water for the irrigation purpose pursuant to the terms of sections 13550 and 13551 of the California Water Code. Under either circumstance, the Party providing the reclaimed Water for substitution shall obtain a credit to Produce an amount of Groundwater equal to the amount of substituted reclaimed Water in that particular year, provided that such credit shall be reduced proportionately to all reductions in the Operating Yield in accordance with Section III.L.3.j.ii. The Alternative Production Allocation of the Party utilizing the reclaimed Water shall be debited in an amount equal to the reclaimed Water being substituted.

e. In the event that this Court, the Watermaster, or other competent governmental entity requires a reduction in the Extraction of Groundwater from the Seaside Basin or either of its Subareas, then Parties exercising a Standard Production Allocation in the affected subarea shall reduce their Groundwater Extractions *pro rata* to accommodate the required reduction. Only after such Parties exercising a Standard Production Allocation reduce their Extractions to zero, may Parties exercising an Alternative Production Allocation in the affected subarea be required to reduce their Groundwater Extractions. In such case, those Parties exercising an Alternative Production Allocation shall reduce their pumping in an amount correlative to each other in accordance with the California law pertaining to allocation of rights to Overdrafted Groundwater basins between overlying landowners.

TABLE 2

Alternative Production Allocations

Party:	Coastal Subarea
Seaside (Golf Courses)	540 afa
SNG	149 afa
Calabrese	14 afa
Mission Memorial	31 afa
Sand City	9 afa

Producer:	Alternative Production Allocation
Pasadera	251 afa
Bishop	320 afa
York School	32 afa
Laguna Seca County Park	41 afa*

* The County of Monterey possesses certain water rights based upon its use of water from the aquifer for maintenance of Laguna Seca Park. Its historic Production of Groundwater has averaged 41 afy. It has not joined in the stipulation of the other Producers, but is entitled to draw up to 41 afy from the Laguna Seca Subarea as if it were a party to the Alternative Production Allocations.

At any time prior to the expiration of the initial three-year operating period of this Decision, as designated in Section III.B.2, any of the aforementioned Parties, except the County of Monterey, may choose to change all or a portion of their Alternative Production Allocation to the Standard Production Allocation method set forth in Section III.B.2 and shall be entitled to all of the privileges associated with said Production Allocation as set forth herein (e.g., transferability, Storage rights, and Carryover rights). A Party choosing to change to the Standard Production Allocation shall do so by filing a declaration with the Court, and serving said declaration on all other parties. Once a Party chooses to change to the Standard Production Allocation method set forth in Section III.B.2, that Party shall not be allowed to thereafter again choose to participate in the Alternative Production Allocation. The Parties under the Standard Production Allocation shall not be allowed at any time to change from the Standard Production Allocation to the Alternative Production Allocation.

C. Production of Brackish Water. Sand City shall have the right to Produce Brackish Water from the brackish Groundwater aquifer portion of the Coastal Subarea of the Seaside Basin for the purpose of operating its proposed desalinization plant, said Production being limited to the Aromas Sands Formation, so long as such Production does not cause a Material Injury. Upon receiving a complaint supported by evidence from any Party to this Decision that the Production of Brackish Water by Sand City is causing a Material Injury to the Seaside Basin or to the rights of any Party to this Decision as set forth herein, the Watermaster shall hold a noticed hearing. The burden of proof at such hearing shall be on the Party making the complaint to show, based on substantial evidence, that the Production of Brackish Water by Sand City is causing a Material

Injury. If the Watermaster determines, based on substantial evidence, that the Production of Brackish Water by Sand City is causing a Material Injury to the Seaside Basin or to the rights of any Party to this Decision as set forth herein, the Watermaster may impose conditions on such Production of Brackish Water that are reasonably necessary to prevent such Material Injury.

D. Injunction of Unauthorized Production. Each Producer is prohibited and enjoined from Producing Groundwater from the Seaside Basin except pursuant to a right authorized by this Decision, including Production Allocation, Carryover, Stored Water Credits, or Over-Production subject to the Replenishment Assessment. Further, all Producers are enjoined from any Over-Production beyond the Operating Yield in any Administrative Year in which Watermaster has declared that Artificial Replenishment is not available or possible.

E. No Abandonment. It is in the interest of reasonable beneficial use of the Seaside Basin and its Water supply, that no Producer be encouraged to take and use more Water in any Administrative Year than is actually required, Therefore, failure to Produce all of the Water to which a Producer is entitled hereunder for any amount of time shall, in and of itself, not be deemed to be, or constitute an abandonment of such Producer's Base Water Right or Production Allocation, in whole or in part. The Water unused by any Party (either as Production or Carryover) will otherwise contribute to the ongoing efficient administration of the Decision and the Physical Solution.

F. Right to Carryover Unused Production Allocation; Carryover Credits. Except for those certain Parties electing to proceed under the Alternative Production Allocation, as set forth in Section III.B.3., for the first three Administrative Years each Producer who, during a particular Administrative Year, does not Extract from the Basin a total quantity equal to such Producer's Standard Production Allocation for the particular Administrative Year may establish Carryover Credits, up to the total amount of that Producer's Storage Allocation; provided, however, in no circumstance may the sum of a Producer's Storage Credits and Carryover Credits exceed that Producer's available Storage Allocation. Use (Extraction) of Carryover Credits shall be governed as otherwise provided in this Decision and the Watermaster Rules and Regulations. In

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consideration of the Seaside Basin's hydrogeologic characteristics, the Watermaster may discount the quantity of Water that may be Extracted pursuant to a Carryover Credit.

G. Damages and Prohibition on Enjoining Municipal Pumping. The Parties recognize that California American's pumping is for municipal purposes, including drinking Water supplies for most of the Monterey Peninsula, including within all of the Defendant Cities and to all of the Defendant landowners. In this context, if California American's Groundwater pumping causes an "Intrusion" upon a Water User Defendant's Production Allocation, then it shall compensate the Water User Defendant for damages caused by this Intrusion. An "Intrusion" occurs when a Water User Defendant exercising an Alternative Production Allocation is directed by the Watermaster, this Court or any other competent governmental entity to reduce its Groundwater pumping to a level below that Water User Defendant's Alternative Production Allocation, while California American continues pumping Groundwater from the same subarea. This damages provision does not alter the priority of the Alternative Production Allocation over the Standard Production Allocation pursuant to Section III.B.3, and is intended to address potential exigent circumstances that might arise regarding California American's municipal water service.

1. Damages from an Intrusion shall be calculated based upon the losses incurred by the Water User Defendant that are caused by the Intrusion. These losses may include the loss of crop yield and associated income, measured against the average achieved over the preceding five (5) years from the date of the loss. Where an Intrusion occurs with respect to a Water User Defendant's exercise of an Alternative Production Allocation for golf course irrigation (i.e., an Intrusion to a "Golf Course Water User"), the Intrusion may cause discoloration, thinning and damage to the golf course turf and may require replacement of golf course turf and other golf course landscaping. Such conditions may, in turn, cause the loss of income from reduced golf course facilities usage and loss of good will. It may be difficult to quantify such damages to a sum certain. Accordingly, where a Golf Course Water User demonstrates that an Intrusion caused discoloration, thinning or loss of golf course turf, the following criteria shall be utilized to determine damages for an Intrusion to a Golf Course Water User.

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a. Lost Income.

i. The Golf Course Water User's "Average Gross Annual Income" shall be determined by summing its gross annual income from each of the five (5) years preceding the year of the Intrusion and dividing that sum by five, except where a Golf Course Water User (Pasadera) has not been in operation for seven (7) years at the time of the Intrusion, the Average Gross Annual Income shall be determined by summing the gross annual income from each of the three years preceding the year of the Intrusion and dividing that sum by three;

ii. The Golf Course Water User's gross annual income during the year of an Intrusion shall be subtracted from its Average Gross Annual Income, with the resulting difference constituting the amount of lost income damages for that year of Intrusion; and

iii. If an Intrusion occurs in two or more years within a five-year period, damages shall be calculated using an Average Gross Annual Income based on the last consecutive five-year period preceding the first year of Intrusion, or if a Golf Course Water User (i.e., Pasadera) has not been in operation for a full seven (7) years at the time of the Intrusion, damages shall be calculated using an Average Gross Annual Income based on the last consecutive three-year period proceeding the first year of Intrusion. Gross Annual Income shall not be calculated based upon a year in which an Intrusion occurred.

iv. Water User Defendants shall make Feasible efforts to mitigate damages caused by an Intrusion (e.g., including use of evapotranspiration rates to schedule turf grass irrigation).

b. Property Damage/Out-of-Pocket Repair Costs.

i. Actual costs of repairing and/or replacing golf course turf and/or other golf course landscaping and associated labor costs shall be added to the lost income damages calculated as set forth in subparagraph (1), above.

ii. The Golf Course Water User shall make Feasible efforts to mitigate damages by employing the best irrigation practices, including use of evapotranspiration rates to schedule turf grass irrigation.

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2. A damages Claim with all substantiating gross annual income data shall be provided to California American within 120 days after December 31 of the year in which the Intrusion occurred. California American shall accept or reject the Claim within 30 days thereafter. If within 35 days after receipt of a Claim, California American fails to notify the claimant of California American's acceptance or rejection of that Claim, such Claim is deemed accepted. If the Claim is affirmatively accepted, payment will be made at the time of Claim acceptance. If the Claim is deemed accepted by California American's failure to timely accept or reject the Claim, payment will be made within 30 days after the date the Claim is deemed accepted. If the Claim is rejected, all or in part, the Water User Defendant may proceed to a hearing before the Court to determine the appropriate damages, considering the above referenced criteria. The hearing shall be by motion with all supporting documentation and contest thereto submitted and supported by declaration.

H. Allowed Storage.

1. Public Resource. Underground Storage within the Seaside Basin is and shall remain a public resource. Subject to this paramount public right, the Parties hereto shall be permitted to utilize available Storage space for bona fide Groundwater Storage projects. This use shall be subject to the supervision of the Watermaster and this Court and shall be governed by the following more specific provisions.

2. In General. Except for those certain Parties electing to proceed under the Alternative Production Allocation as set forth in Section III.B.3., each Producer is entitled to Store Water in the Basin as provided for in this Decision and Watermaster's Rules and Regulations up to the amount of their Storage Allocation. Each Producer's Allowed Storage Allocation in each Subarea shall be calculated by multiplying its Storage Allocation Percentage by the Total Useable Storage Space, less space reserved by the Watermaster as herein below set forth. The initial Storage Allocation Percentages are equal to the Base Water Rights, Table 1, less Storage reserved for the Watermaster and certain public agencies. Parties with an Alternative Production Allocation are entitled to their Storage Production Allocation when they elect to change to Standard Production Allocation

3. California American Storage Allocation. All Storage Allocation held by California American shall be held in trust by California American: (i) first for the benefit of California American's retail Water service customers within its service territory on the Monterey Peninsula and the County of Monterey and cities within its service territory which it serves; and (ii) then for other purposes as California American deems appropriate. In the event of a reduction in service from the Seaside Basin, California American will allocate service, including that which is associated with its Storage Allocation, in a manner that is consistent with and proportionate to its historic deliveries to all then current customers. Further, to the extent that California American has excess Storage Allocation available after meeting its responsibilities to its retail Water service customers within its service territory on the Monterey Peninsula and the cities which it serves, upon request by the County of Monterey, Monterey, Seaside, Sand City, or Del Rey Oaks, California American shall make available portions of its Storage Allocation within the Coastal Subarea for use by the requesting city in the Coastal Subarea as provided herein. Specifically, the city's request shall be made in writing and generally describe the public purpose and proposed use of the Storage Allocation by the requesting city. California American shall not deny the request unless making the requested portion of the Storage Allocation available to the city would unreasonably interfere with California American's ability to operate its system or to otherwise provide service to its customers. Should California American not be able to accommodate all requests by all cities without unreasonably interfering with its operations and service responsibilities, first priority to excess Storage Allocation shall be given to each respective city requesting the use of a portion of the Storage Allocation up to an amount equal to the percentage that the total quantity of Water delivered by California American for retail service to the requesting city bears to the total quantity of Water delivered to all cities at the date the Decision is entered. Notwithstanding the paramount rights of each city described in this section, 5 percent of any Storage Allocation held in trust by California American will be reserved for *de minimis* Storage opportunities and made available for the benefit of any requesting city on the basis of first in time, first in right. Additionally, provision of Storage Allocation by California American to a requesting city shall not be construed as a waiver of California American's rights under

section 1501 et seq. of the California Public Utilities Code or consent to duplication of its retail Water service. Moreover, California American shall not charge any fee for use of its Storage Allocation by Monterey, Seaside, Sand City, or Del Rey Oaks. However, the capital or other value of California American's Storage Allocation shall belong to California American. Finally, no city may request use of California American's Storage Allocation unless it has first used all of its own Storage Allocation as provided herein.

4. Determination of Total Useable Storage Space. Watermaster shall determine and declare the Total Useable Storage Space in the Basin, and may annually adjust the Total Useable Storage Space pursuant to Section III.L.3.j.xix of this Decision. If and when Watermaster adjusts the Total Useable Storage Space in the Basin, each Producer's Storage Allocation shall be adjusted accordingly.

Each Storage Allocation is of the same legal force and effect, and each is without priority with reference to any other Producer's Storage Allocation. Watermaster shall, however, consider each proposal to Store Water independently pursuant to Section III.L.3.j.xx.

5. Carryover. Each Producer operating under the Standard Production Allocation shall have the right to use their respective Storage Allocation to Store any Carryover Water subject to the provisions of this Decision. Unused (not Extracted) Stored Water Credits and Carryover Credits shall be carried over from year to year for the first three Administrative Years. Thereafter Carryover Water withdrawal is subject to a percentage decrease consistent with percentage decreases in the Operating Yield, according to the terms of this Decision. Due to the hydrogeologic characteristics of the Seaside Basin, naturally occurring losses of stored Water may require Watermaster to discount the percentage of Stored Water that may be Extracted. Watermaster shall study the efficiencies of Storage in the Seaside Basin and set a uniform percentage for withdrawals of Stored Water.

6. Injection and/or Spreading. Each Producer operating under the Standard Production Allocation, and the Watermaster, and certain public agencies, shall have the right to Store Water by Direct Injection, Spreading, or other artificial means so long as such Storage does not cause Material Injury to any other Party. Except as provided in Section III.H.5., no Producer

herein granted a Storage Allocation may Store Water in the Seaside Basin without first executing a Storage and Recovery Agreement with Watermaster, pursuant to Section III.L.3.j.xx. Each Storage and Recovery Agreement shall further define the terms and conditions by which a Producer may exercise its Storage Allocation and associated Stored Water Credits.

I. Injunction Against Unauthorized Storage. Each Producer is enjoined and restrained from Carrying Over or Storing any quantity of Water in the Seaside Basin greater than that Producer's Storage Allocation. Further, each Producer is enjoined from Storing any Water in the Seaside Basin except as provided in Section III.H.5. (establishment of Carryover Credits) or as authorized by a Storage and Recovery Agreement issued by Watermaster pursuant to Section III.L.3.j.xx.

J. Measurement of Extractions and Storage. All Producers shall install, maintain, and use adequate measuring devices on all Groundwater Production facilities as directed by Watermaster and report accurate measurements of all Groundwater Produced from the Seaside Basin in the manner required by Watermaster's Rules and Regulations. Such measuring devices shall not conflict with any monitoring devices required by MPWMD. All Producers shall comply with the provisions for measurement of any Storage of Water in the Seaside Basin, as provided in Watermaster's Rules and Regulations, and as may be further provided for in a Storage and Recovery Agreement issued by Watermaster for such Storage.

K. Order of Accounting for the Production of Groundwater. Unless otherwise requested by a Producer in writing to Watermaster, Watermaster shall account for all Production of Water form the Seaside Basin by a Producer in any Administrative Year as follows: Production shall first be deemed Production of that Producer's Production Allocation up to that Producer's total Production Allocation, and thereafter shall be deemed Production of that Producer's Carryover Credits, if any, and thereafter shall be deemed Production of that Producer's Stored Water Credits, if any. So long as consistent with this section, Watermaster may prescribe administrative rules within its Rules and Regulations concerning the method and manner of accounting for the Production of Groundwater.

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L. Appointment of Watermaster; Watermaster Administrative Provisions.

1. Establishment of Watermaster. A Watermaster shall be established for the purposes of administering and enforcing the provisions of this Decision and any subsequent instructions or orders of the Court. The Watermaster shall consist of thirteen (13) voting positions held among nine (9) representatives. California American, Seaside, Sand City, Monterey, and Del Rey Oaks shall each appoint one (1) representative to Watermaster for each two-year term of Watermaster. The Landowner Group shall appoint two (2) representatives to Watermaster for each two-year term of Watermaster. The MPWMD shall have one (1) representative and the MCWRA shall have one (1) representative. The representatives elected to represent the Landowner Group shall include one (1) representative from the Coastal Subarea and one (1) representative from the Laguna Seca Subarea. The California American representative shall possess three (3) voting positions; the Seaside, MPWMD, and MCWRA representatives shall each possess two (2) voting positions; and every other representatives shall posses one (1) voting position. Each representative from the Landowner Group shall carry one-half of the Landowner Representative vote. Each representative under the Landowner Group may also act as an alternate for the other.

The right to assign a representative to Watermaster and the representative's respective voting power shall only transfer upon permanent sale of 51 percent or more of the Party's Base Water Right, but not upon the lease of any portion of the member's Base Water Right.

2. Quorum and Agency Action. A minimum of six (6) representatives shall be required to constitute a quorum for the transaction of Watermaster affairs. Unless otherwise provided herein, the affirmative vote of seven (7) voting positions shall be required to constitute action by Watermaster.

3. Qualification, Nomination, Election, and Administrative Procedures.

a. Qualification. Any duly authorized agent of the entities or groups provided for in Section III.L.1. is qualified to serve as a representative on the Watermaster board.

b. Term of Office. Each new Watermaster board shall assume office at the first regular meeting in January of every second year. Each Watermaster board member shall

serve for a two-year term, subject to the retained jurisdiction of the Court. Should a vacancy arise on the Watermaster board for any reason, the respective entity or group from which that vacancy arises shall appoint a replacement representative in the manner prescribed by Watermaster Rules and Regulations. Such replacement shall complete the remainder of the term of the vacated office. Within 30 days of the appointment of any new Watermaster board member, any Party may file a motion with the Court challenging the appointment The Court, acting *sua sponte*, may reject any Watermaster board appointment within the 30-day period. Challenges shall be based on allegations that the appointed board member does not possess the requisite skills necessary to effectively serve as a member of the Watermaster board.

c. Nomination and Election of Landowner Representative. The nomination and election of the Landowner Group representatives shall occur in November of every second year in the manner designated by Watermaster Rules and Regulations. The nomination and election of the Landowner Group representatives shall be by cumulative voting with each member of the Landowner Group entitled to one (1) vote for each acre-foot of annual entitlement under the member's Alternative Production Allocation. Voting rights may only be transferred upon permanent sale of 51 percent or more of the Landowner Party's Base Water Right.

d. Organization. At he first meeting of each newly comprised Watermaster board, the Watermaster shall elect a chairman and a vice-chairman from its membership. It shall also select a secretary, a treasurer and such assistant secretaries and assistant treasurers as may be appropriate, any of whom may, but need not, be representatives appointed to Watermaster.

e. Minutes. Minutes of all Watermaster meetings shall be kept and shall reflect a summary of all actions taken by the Watermaster. Copies thereof shall be furnished to all Parties and interested Persons as provided for inn Section III.P.2. Copies of minutes shall constitute notice of any Watermaster action therein reported.

f. Regular Meetings. The Watermaster shall hold regular meetings at places and times to be specified in the Watermaster Rules and Regulations. Its first meeting must be held within 15 days from the date Judgment is granted in this case. Notice of the scheduled or

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regular meetings of the Watermaster and of any changes in the time or place thereof shall be mailed to all Parties and interested Persons as provided for in Section III.P.2.

g. Special Meetings. Special meetings of the Watermaster may be called at any time by the chairman or vice chairman or by any three (3) representatives appointed to Watermaster by written notice delivered personally or mailed to all Parties and interested Persons as provided for in Section III.P.2., at least twenty-four (24) hours on a business day before the time of each such meeting in the case of personal delivery, and five (5) days' notice prior to such meeting in the case of mail if the special meeting is being called under urgent circumstances. If a special meeting is called and no urgent circumstance exists, then at least ten (10) days' notice must be provided to all Parties. The notice shall specify the time and place of the special meeting and the business to be transacted at such meeting.. No other business shall be considered at such meeting.

h. Meeting Procedures. Watermaster shall designate the procedure for conducting meetings within its Rules and Regulations. Rules and regulations for conducting meetings shall conform to the procedures established for meetings of public agencies pursuant to the California Open Meetings Law ("Brown Act"), California Government Code section 54950 et seq., as it may be amended from time to time.

i. Appointment of the Initial Watermaster Board. The initial Watermaster board, which shall take office immediately from the date Judgment is granted, shall be composed of the duly authorized representatives of California American, Seaside, Sand City, Del Rey Oaks, Monterey, MCWRA, MPWMD, and two individuals to be designated by the landowners as the initial representatives of the Landowner Group for the Coastal and Laguna Seca Subareas, respectively.

j. Duties, Powers and Responsibilities of the Watermaster. To assist the Court in the administration and enforcement of the provisions of this Decision, the Watermaster shall have and is limited to the following duties, powers, and responsibilities:

i. Preparation of Monitoring and Management Plan. Within sixty (60) days from the date Judgment is granted, Watermaster will prepare a comprehensive

monitoring and management plan for the Seaside Basin ("Monitoring and Management Plan"). The Monitoring and Management Plan must be consistent with the criteria set forth in Exhibit A.

ii. Declaration of Operating Yield. Based upon the evidence at trial concerning historic Production in the Basin, the Court sets the Operating Yield for the Seaside Basin, as a whole, as 5,600 acre feet. The Operating Yield for the Coastal Subarea is 4,611 acre feet and 9889 acre feet for the Laguna Seca Subarea. The Operating Yield established here will be maintained for three (3) years from the date Judgment is granted, or until a determination is made by the Watermaster, concurred in by this Court, that continued pumping at this established Operating Yield will cause Material Injury to the Seaside Basin or to the Subareas or will cause Material Injury to a Producer due to unreasonable pump lifts. In that event, the Watermaster shall determine the modified Operating Yield in accordance with the Principles and Procedures attached hereto as Exhibit A, and through the application of criteria that it shall develop for this purpose.

iii. Artificial Replenishment and Replenishment Assessments. Each Administrative Year, the Watermaster will determine a Replenishment Assessment for Artificial Replenishment of the Seaside Basin necessary to offset the cumulative Basin Over-Production (as defined in Section III.A.21.), and levy a Replenishment Assessment. Said Replenishment Assessment does not apply to Production under an Alternative Production Allocation so long as such Production is within the fixed amount established for that Producer in Table 2 of Section III.B.3. Funds so generated may be accumulated for multiple Administrative Years, if necessary, and shall be utilized solely for replenishment of the Basin Groundwater supply with Non-Native water.

An additional Watermaster Replenishment Assessment shall be levied after the close of each Administrative Year against all Producers that incurred Operating Yield Over-Production during the Administrative Year. Said assessment shall be in addition to the Replenishment Assessment addressed in Section III.A.21. The Replenishment Assessment based upon Operating Yield Over-Production shall be levied against the Parties participating in the Alternative Production Allocation for only such Production that exceeds the Parties' respective fixed

Alternative Production Allocation identified on Table 2. In the event Watermaster cannot procure Artificial Replenishment Water to offset Operating Yield Over-Production during the ensuing Administrative Year, the Watermaster shall so declare in December and no Operating Yield Over-Production then in effect may occur during the ensuing Administrative Year. Funds generated by the Operating Yield Over-Production Assessment shall be utilized by the Watermaster to engage in or contract for Replenishment of the Operating Yield Over-Production occurring in the Preceding Administrative Year as expeditiously as possible.

Replenishment Assessments based on Over-Production and on Operating Yield Over-Production shall be assessed on a per acre-foot basis on each acre-foot, or portion of an acre-foot, of Over-Production. The per acre-foot amount of the Replenishment Assessments shall be determined and declared by Watermaster in January of each Administrative Year in order to provide Parties with advance knowledge of the cost of Over-Production in that Administrative Year.

Payment of the Replenishment Assessment shall be made by each Producer incurring a Replenishment Assessment within 40 days after the mailing of a statement for the Replenishment Assessment by Watermaster. If payment by any Producer is not made on or before said date, the Watermaster shall add a penalty of 5 percent thereof to such Producer's statement. Payment required of any Producer hereunder may be enforced by execution issued outside of this Court, by order of this Court, or by other proceedings by the Watermaster or by any Producer on the Watermaster's behalf. All proceeds of Replenishment Assessments shall be used to procure Non-Native water, including, if appropriate, substitute reclaimed water.

iv. Budget Assessments. The Watermaster budget for each Administrative Year, and for the initial funding of the Monitoring and Management Plan, shall be funded by Budget Assessments. The Watermaster budget will be composed of three separate budgets. The first budget is solely for the funding of the Monitoring and Management Plan. The initial, one-time funding for the Monitoring and Management Plan shall not be in excess of $1,000,000. The annual budget for the Monitoring and Management Plan shall not be in excess of $200,000 for the first Administrative Year, and thereafter as determined by the Watermaster.

The Budget Assessment for the Monitoring and Management budget shall be assessed against each Producer (except those in the Landowner Group) by multiplying the amount of the Monitoring and Management Plan budget for the ensuing Administrative Year by the following percentages:

(1)	California American	91%
(2)	City of Seaside	7%
(3)	Granite Rock Company	1%
(4)	D.B.O. Development No. 27	1%

At such times as a Party within the Coastal Subarea chooses to change its Alternative Production to a Standard Production Allocation that Party will be assessed a proportionate share of the Budget Assessment for the Monitoring and Management Plan Budget based upon a modification of the percentages to include any new Standard Production.

The administrative budget shall be fixed at $100,000 annually for the first Administrative Year, and thereafter as determined by the Watermaster. The Budget Assessment for the administrative budget shall be assessed against each Producer (except those inn the Landowner Group) by multiplying the amount of the budget for the ensuing Administrative Year by the following percentages:

(1)	California American	83%
(2)	City of Seaside	14.4%
(3)	City of Sand City	2.6%

The Replenishment Budget shall be calculated based upon the anticipated cost of obtaining replenishment water, and shall be assessed as set forth in Section III.A.21, and in Section III.L.3.j.iii.

Except for the initial Budget Assessment which shall be due 30 days from the date Judgment is granted, payment of the Budget Assessment, subject to any adjustment by the Court as provided in Section III.N., shall be made by each Producer prior to the beginning of the Administrative Year to which the Budget Assessment relates, or within 40 days after the mailing of the tentative budget, whichever is later. If such payment by any Producer is not made on or

before said date, the Watermaster shall add a penalty of 5 percent thereof to such Producer's statement. Payment required of any Producer hereunder may be enforced by execution issued outside of this Court, by order of this Court, or by other proceedings by the Watermaster or by any Producer on the Watermaster's behalf.

v. Reports, Information, and Records. The Watermaster will require Parties to furnish such reports, information, and records as may be reasonably necessary to determine compliance or lack of compliance by any Party with the provisions of this Decision.

vi. Requirement of Measuring Devices. The Watermaster will require all Parties owning or operating any Groundwater Extraction and/or Storage facilities to install appropriate Water measuring devices, and to maintain said Water measuring devices at all times in good working order at such Party's own expense. Such devices shall not interfere with any measuring gauges required by MPWMD.

vii. Inspections by the Watermaster. The Watermaster will make inspections of Water Production facilities and measuring devices at such times and as often as may be reasonable under the circumstances, and to calibrate or test such devices.

viii. Collection of Arrears. The Watermaster will undertake any and all actions necessary to collect the arrears of any Party with regard to any and all components of the Budget Assessment and/or the Replenishment Assessment.

ix. Hearing Objections; Review and Approvals. The Watermaster will hear all objections and/or review and determine approval or denial of the action(s) of any Party as provided for by any other provision of this Decision.

x. Annual Report. The Watermaster will prepare, file with the Court and mail to each of the Parties on or before the 15th day of February, an annual report for the preceding Administrative Year, the scope of which shall include but not be limited to the following:

- Groundwater Extractions;
- Groundwater Storage;
- Amount of Artificial Replenishment, if any, performed by Watermaster;

- Leases or sales of Production Allocation;
- Use of imported, reclaimed, or desalinated Water as a source of Water for Storage or as a Water supply for lands overlying the Seaside Basin;
- Violations of the Decision and any corrective actions taken;
- Watermaster administration costs;
- Replenishment Assessments;
- All components of the Watermaster budget; and
- Recommendations.

xi. Annual Budget and Appeal Procedure in Relation Thereto. The Watermaster will annually adopt a tentative budget for each Administrative Year stating the anticipated expense for administering the provisions of this Decision, including reasonable reserve funds. The adoption of each Administrative Year's tentative budget shall require the affirmative vote of seven (7) voting positions. The Watermaster shall mail a copy of said tentative budget to each of the Producers hereto at least 60 days before the beginning of each Administrative Year. The Landowner Group representative shall not participate in any vote concerning the approval of the Watermaster budget. If any Producer hereto has any objection to said tentative budget, it shall present the same in writing to the Watermaster within 15 days after the date of mailing of said tentative budget by the Watermaster. If no objections are received within said period, the tentative budget shall become the Final budget. If objections are received, the Watermaster shall, within 10 days thereafter, consider such objections, prepare a Final budget, and mail a copy thereof to each Producer, together with a statement of the amount assessed to each Producer (Administrative Assessment). Any Producer may apply to the Court within 15 days after the mailing of such Final budget for a revision thereof based on specific objections thereto in the manner provided in Section III.N. The Producer challenging the budget shall make the payments otherwise required of them to the Watermaster, despite the filing of the request for revision with the Court. Upon any revision by the Court, the Watermaster shall either remit to the Producers their pro rata portions of any reduction in the budget, or credit their accounts with respect to their Administrative Assessment for the next ensuing Administrative Year, as the Court

shall direct. The amount of each Producer's Budget Assessment shall be determined as provided in Section III.L.3.j.iv.

Any money in Watermaster's budget not expended at the end of any Administrative Year shall be applied to the budget of the succeeding Administrative Year.

xii. Rules and Regulations. The Watermaster will adopt and amend from time to time such Rules and Regulations as may be reasonably necessary to carry out its duties, powers and responsibilities under the provisions of this Decision. The Rules and Regulations and any amendments thereto, shall be effective on such date after the mailing thereof to the Parties as is specified by the Watermaster, but not sooner than thirty (30) days after such mailing. The Watermaster shall adopt initial Watermaster Rules and Regulations within ninety (90) days from the date Judgment is granted.

xiii. Acquisition of Facilities. The Watermaster may purchase, lease, acquire and hold all necessary property and equipment as necessary to perform the duties, powers, and responsibilities provided to Watermaster by this Decision; provided, however, that Watermaster shall not acquire any interest in real property in excess of year-to-year tenancy for necessary quarters and facilities.

xiv. Employment of Staff and Consultants. The Watermaster may employ such administrative, engineering, geologic, accounting, legal, or other specialized personnel or consultants as may be deemed appropriate to the carrying out of its duties, powers, and responsibilities and to require appropriate bonds from all officers and employees handling the Watermaster funds.

xv. Investment of Funds. The Watermaster may hold and invest any and all funds that the Watermaster may possess in investments authorized from time to time for public agencies in the State of California.

xvi. Borrowing. The Watermaster may borrow in anticipation of receipt of assessment proceeds an amount not to exceed the annual amount of assessments levied but uncollected.

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xvii. Contracts. The Watermaster may enter into contracts for the performance of any administrative power herein granted.

xviii. Cooperation with Public and Private Entities. The Watermaster may act jointly or cooperate with any public or private entity to the end that the purposes of the Physical Solution may be fully and economically carried out. Where it is more economical to do so, Watermaster is directed to use such facilities of a public or private entity as are available to it to execute the duties, powers, and responsibilities provided to Watermaster under this Decision.

xix. Declaration of Total Usable Storage Space. The Watermaster will declare the Total Useable Storage Space and periodically issue adjustments to the same.

xx. Review of Storage Applications; Regulation of Storage; Issuance of Storage and Recovery Agreements. The Watermaster will review applications for Storage in the Seaside Basin, regulate the Storage of Non-Native Water in the Seaside Basin, and issue Storage and Recovery Agreements, all as provided below. All applications for Storage in the Seaside Basin shall be considered and voted on before a noticed meeting of the Watermaster. However, all such applications shall be approved absent the issuance of findings that a Material Injury to the Seaside Basin or Producers will or is likely to occur as a result of the proposed Storage program and no reasonable conditions could be imposed to eliminate such risk. If a Storage application is approved, the Watermaster shall issue a Storage and Recovery Agreement. The Storage and Recovery Agreement may include, among other possible elements and/or provisions, the following conditions to avoid Material Injury: (1) the quantity of Water authorized to be Spread or Directly Injected into the Seaside Basin, (2) the location of the authorized Spreading or Direct Injection, (3) the location(s) where the Water may be recaptured, (4) the particular Water quality characteristics that are required pursuant to the Storage and Recovery Agreement, (5) the amount of Water that may be recaptured pursuant to the Stored Water Credits calculated by Watermaster, (6) any other terms and conditions deemed necessary to protect the Seaside Basin and those areas affected by the Seaside Basin. Such Storage and Recovery Agreements may provide for different locations for introduction and Extraction of Stored Water if deemed appropriate by the Watermaster.

xxi. Monitoring and Study of the Seaside Basin and All Seaside Basin Activities. The Watermaster will monitor and perform or obtain engineering, hydrogeologic, and scientific studies concerning all characteristics and workings of the Seaside Basin, and all natural and human-induced influences on the Seaside Basin, as they may affect the quantity and quality of Water available for Extraction, that are reasonably required for the purposes of achieving prudent management of the Seaside Basin in accord with the provisions of this Decision.

xxii. Relocation of Authorized Production Locations. The Watermaster will order relocation of the authorized quantity of Production pursuant to any Producer's Production Allocation from a specific location or from a specific aquifer within the same Subarea of the Seaside Basin, provided that it allows equivalent Production from any other location/aquifer in the Seaside Basin within the same Subarea that would not also create a reasonable potential for Material Injury. Watermaster may only order relocation of Production after issuing findings that a Material Injury has occurred or is likely to occur as a result of the then-authorized quantity and geographic distribution of Production. Watermaster may not order the relocation of Production by any Producer that is a member of the Landowner Group.

xxiii. Water Quality. The Watermaster will take any action within the Seaside Basin, including, but not limited to, capital expenditures and legal actions, which in the discretion of Watermaster is necessary or desirable to accomplish any of the following:

- Prevent contaminants from entering the Groundwater supplies of the Seaside Basin, which present a significant threat to the Groundwater quality of the Seaside Basin, whether or not the threat is immediate;
- Remove contaminants from the Groundwater supplies of the Seaside Basin presenting a significant threat to the Groundwater quality of the Seaside Basin;
- Determine the existence, extend, and location of contaminants in, or which may enter, the Groundwater supplies of the Seaside Basin;
- Determine Persons responsible for those contaminants; and
- Perform or obtain engineering, hydrologic, and scientific studies as may be reasonably required for any of the foregoing purposes.

xxiv. Other Specified Powers Pursuant to Decision Terms. The Watermaster will undertake any other powers, duties, or responsibilities provided through any other provision of this Decision.

xxv. No Power to Alter Allocation or Rights. Watermaster has no power to adjust any Producer's Base Water Right or the formula for determining Production Allocation, except to accommodate the intervention of a new Party pursuant to Section III.O.1.b. However, should an adjustment of Base Water Right and/or Production Allocation within a Subarea be required to accommodate the intervention of a new Party, no adjustment shall be made to the Base Water Right or Production Allocations possessed by any Party operating under the Alternative Production Allocation within the Landowner Group until the Production Allocations for that Subarea possessed by Parties operating under the Standard Production Allocation have been reduced to zero.

xxvi. Effect of Non-Compliance by Watermaster With Time Provisions. Failure of the Watermaster to perform any duty, power or responsibility set forth in this Decision within the time limitation herein set forth shall not deprive the Watermaster of authority to subsequently discharge such duty, power, or responsibility, except to the extent that any such failure by the Watermaster may have rendered some otherwise required act by a Party impossible.

xxvii. Public Records. Watermaster shall conform to the procedures established under the California Public Records Act, California Government Code section 54950 et seq., as it may be amended from time to time.

M. Additional Provisions of Physical Solution.

In order to provide flexibility to the injunctive provisions set forth in Section III.D of this Decision, and to assist in a Physical Solution to meet Water requirements in the Basin, the determination of rights and responsibilities, and the injunctive provisions so set forth are subject to the following provisions:

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1. California American Obligation to Augment Water Supply

a. Long-Term Supplemental Water Supplies. California American shall undertake all reasonable best efforts to promptly and diligently pursue, and if necessary collaborate with other entities, to obtain and develop sufficient long-term supplemental Water supplies to augment the Water supply available for its service territory within Monterey County.

b. Interim Supplemental Water Supplies. During the interim period, until long-term supplemental Water supplies are available, California American shall undertake all reasonable best efforts to ensure that it has sufficient Water supplies to meet all present Water supply needs, including the Water credits allocated to the various political subdivisions pursuant to the MPWMD's Water Allocation Program, in such quantities as set forth in Exhibit D, and the Water credits issued to various properties pursuant to the MPWMD's Water Allocation Program.

c. Regulatory Authorization. California American's duties under Sections III.M.1.a and III.M.1.b above will be measured and construed in the context that there are various regulatory approvals that must be obtained for California American to successfully implement the measures reasonably contemplated to secure supplemental Water. For example, it is acknowledged and understood that California American's ability to complete a supplemental Water supply project will require approvals and authorizations from the State Water Resources Control Board ("SWRCB") and the California Public Utilities Commission ("CPUC"). Accordingly, California American will not be considered in default under this Section III.M.1 if it uses reasonable best efforts to obtain the required approvals and authorizations.

d. Credit Toward Replenishment Assessment. California American's expenditures for water supply augmentation may also provide replenishment water for the Basin. Accordingly, on an annual basis, California American will provide the Watermaster with an accounting of all expenditures it has made for water supply augmentation that it ~~believes have~~ Cordoba has or will ~~also~~ result in replenishment of the Basin. The Watermaster shall review

these expenditures and reduce California American's Replenishment Assessment obligation, for that year, by an amount equal to the amount claimed by California American. To the extent that the Watermaster ~~disputes~~ any of the claimed amounts, it shall provide California American with an explanation ~~of its contest~~ and allow California American an opportunity to meet and confer on the disputed amount. In the event that the Watermaster and California American cannot ~~resolve their dispute~~, the matter ~~will~~ be referred to the Court through a request filed by ~~the Watermaster~~.

2. Assignment and Transfer of Production Allocation. Subject to other provisions of this Decision, and any applicable Watermaster Rules and Regulations, the Parties may assign and transfer any portion of their respective Production Allocation either on an annual Administrative Year basis or in perpetuity to any Person for use within the Basin.

The Parties may also assign and transfer the right to Extract any quantity of Water associated with an existing Stored Water Credit or Carryover Credit, subject to other provisions of this Decision, and any applicable Watermaster Rules and Regulations.

3. Export of Groundwater Outside of Subarea or Seaside Basin.

a. Exports Authorized from the Coastal Subarea. Producers may export Water Produced from the Coastal Subarea for reasonable and beneficial uses within another Subarea of the Seaside Basin. Only California American may export water outside the Basin, and then only to provide water to its current customers. This means that, in any Administrative Year, any Producer may export from the Coastal Subarea up to, but not in excess of, a quantity equal to the sum of that Producer's Production Allocation, plus Stored Water Credits, plus Carryover Credits. Export of Groundwater in excess of a Producer's total rights (Production Allocation, plus Stored Water Credits, plus Carryover Credits), however, is prohibited.

b. Exports of Natural Replenishment Water Prohibited from the Laguna Seca Subarea. Exports from the Laguna Seca Subarea of Natural Replenishment Water and Carryover Credits not caused by Artificial Replenishment are prohibited.

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c. Portability Authorized Within Subareas; Portability Prohibited Between Subareas. Any Producer may change the location of its Production facilities within its respective Subarea or join other Production facilities within its Subarea, so long as such relocation does not cause a Material Injury or threat of Material Injury to the Basin or interfere with the Production by any pre-existing Production facilities operated by another Producer(s). No Party may Produce Groundwater from the Coastal Subareas pursuant to any right recognized by this Decision in the Laguna Seca Subarea, and *vice versa.*

N. Watermaster Decision Review Procedures. Any action, decision, rule or procedure of the Watermaster pursuant to this Decision shall be subject to review by the Court on its own motion or on timely motion by any Party, as follows:

1. Effective Date of the Watermaster Action. Any order, decision or action of the Watermaster pursuant to this Decision on noticed specific agenda items shall be deemed to have occurred on the date of the order, decision or action.

2. 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 Decision. 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 Section III.P.2. A Party's obligation to serve 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 such petition shall not operate to stay the effect of any Watermaster action or decision that is challenged.

3. Time for Motion. A motion to review any Watermaster action or decision will be filed within thirty (30) days after such Watermaster action or decision, except that motions to review Budget Assessments and Replenishment Assessments hereunder shall be filed within fifteen (15) days of mailing of notice of the Assessment.

4. De Novo Nature of Proceedings. 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.

O. Reserved Jurisdiction and Other Remedies.

1. Continuing Jurisdiction.

a. Jurisdiction Reserved. Full jurisdiction, power and authority are retained by and reserved by the Court upon the application of any Party or by the Watermaster, by a noticed motion to all Parties, to make such further or supplemental orders or directions as may be necessary or appropriate for interpretation, enforcement, or implementation of this Decision. The Court may also modify, amend or amplify any of the provisions of this Decision upon noticed motion to all the Parties. The Court, through its reserved and retained jurisdiction, however, shall not have the authority to adjust any Producer's Base Water Right or Production Allocation, except to accommodate the intervention of a new Party pursuant to Section III.O.1.b. However, should an adjustment of Base Water Right and/or Production Allocation within a Subarea be required to accommodate the intervention of a new Party, no adjustment shall be made to the Base Water Right or Production Allocations possessed by any Party operating under the Alternative Production Allocation within the Landowner Group until the Production Allocations within that Subarea possessed by Parties operating under the Standard Production Allocation have been reduced to zero.

b. Intervention After Decision. Any non-party who is Producing or proposes to Produce Groundwater from the Seaside Basin in an amount equal to or greater than five (5) acre feet per year, may seek to become a Party to this Decision through (1) a stipulation for intervention entered into with the Watermaster or (2) any Party or the Watermaster filing a complaint against the non-party requesting that the non-party be joined in and bound by this Decision. The Watermaster may execute said stipulation on behalf of the other Parties herein, but such stipulation shall not preclude a Party from opposing such

intervention at the time of the Court hearing thereon. A stipulation for intervention must be filed with the Court, and the Court will then consider an order confirming said intervention following thirty (30) days' notice to the Parties. Thereafter, if approved by the Court, such intervenor shall be a Party bound by this Decision and entitled to the rights and privileges accorded under the Physical Solution herein.

2. Reservation of Other Remedies.

a. Claims By and Against Non-Parties. Nothing in this Decision shall expand or restrict the rights, remedies or defenses available to any Party in raising or defending against claims made by any non-party. Any Party shall have the right to initiate an action against any non-party to enforce or compel compliance with the provisions of this Decision.

b. Claims Between Parties on Matters Unrelated to the Decision. Nothing in this Decision shall either expand or restrict the rights or remedies of the Parties concerning any subject matter that is unrelated to the use of the Seaside Basin for Extraction and/or Storage of Water as allocated and equitably managed pursuant to this Decision.

P. General Provisions.

1. Decision Constitutes Inter Se Adjudication. This Decision constitutes an inter se adjudication of the respective rights of all Parties.

2. Service Upon and Delivery to Parties and Interested Persons of Various Papers. This Decision and all future notices, determinations, requests, demands, objections, reports and other papers and processes Produced from this Court shall be served on all Parties by first class mail, postage prepaid, addressed to the designee and at the address designated for that purpose in the list attached as Exhibit E to this Decision, or in any substitute designation filed with the Court.

Each Party who has not heretofore made such a designation, within thirty (30) days from the date Judgment is granted, shall file with the Court, with proof of service of a copy upon the Watermaster, a written designation of the Person to whom, and the address at which, all future notices, determinations, requests, demands, objections, reports and other papers and

processes to be served upon that Party or delivered to that Party are to be so served or delivered.

A later substitute designation filed and served in the same manner by any Party shall be effective from the date of the filing as to the then future notices, determinations, requests, demands, objections, reports and other papers and processes to be served upon or delivered to that Party.

Watermaster shall maintain at all times a current list of Parties to whom notices are to be sent and their address for purposes of service. 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: (a) the Party's attorney of record; (b) if the Party does not have an attorney of record, the Party itself at the address on the Watermaster list.

Watermaster shall also maintain a list of interested Persons that shall include all Persons whom, by written request to Watermaster, request to be added to Watermaster's list of interested Persons. All notices, determinations, requests, demands, objections, reports and other papers and processes required to be delivered to interested Persons shall be delivered to all Parties and all Persons on Watermaster's list of interested Persons.

Delivery to or service upon any Party or interested Person by Watermaster, by any other Party, or by the Court, of any document required to be served upon or delivered to a Party under or pursuant to this Decision shall be deemed made if made by deposit thereof (or by copy thereof) in the mail, first class postage prepaid, addressed to the designee of the Party and at the address shown in the latest designation filed by that Party.

Any Party desiring to be relieved of receiving deliveries from Watermaster may file a waiver of notice on a form to be provided by Watermaster.

3. Decision Binding on Successors. All provisions contained in this Decision are applicable to and binding upon and inure to the benefit of not only the Parties to this action, but also to their respective heirs, executors, administrators, successors, assigns, lessees, licensees and to the agents, employees and attorneys in fact of any such Persons.

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Q. The Complaints in Intervention

The Complaint in Intervention of MPWMD seeks declaratory relief regarding its statutory right to manage and control pumping in the Basin, to store water in and Extract water from the Basin, to store and use reclaimed water, to manage all water distribution facilities within the Basin, and "the quantification and prioritization of its water and storage rights". It also sought a Physical Solution for the management of the Basin's water resources, with MPWMD being appointed as Watermaster to administer the Court's judgment. It also sought parallel injunctive relief against the parties to the lawsuit.

The Complaint in Intervention of MCWRA sought declaratory and injunctive relief regarding its right to manage and control water resources including, inter alia, those within the boundaries of the Seaside Basin, and a permanent injunction prohibiting any party to the lawsuit from exercising control "in any fashion" of the Basin in contravention of its water management authority.

On December 12, 2005, the Court asked the parties to brief the issue of whether MPWMD should be designated as Watermaster. Briefs were submitted by MPWMD , Plaintiff, Cal Am, and the City of Seaside. The court had previously received an Amicus brief from the Sierra Club which dealt with the issue of the powers of MPWMD land the effect on those powers if the court were to appoint a Watermaster other than MPWMD. The Court has read and considered each submitted brief. It has also read the Act which created MPWMD (Water Code Appendix, Chapter 118), and has had the benefit of the arguments of the parties concerning the subject. Being so informed it has concluded that the appointment of a collaborative Watermaster does not interfere with the powers of the District.

The District has argued that appointment of a Watermaster other than itself would violate the Separation of Powers doctrine. It urges that the legislature has vested it with the power to regulate pumping, and therefore only it is qualified to serve as Watermaster. On the other hand, the District has asked the Court to adopt a Physical Solution for the Basin. In so arguing, it necessarily concedes that this Court possesses power to regulate use of the Basin beyond any power the District currently possesses. Furthermore, the undisputed evidence in this case has

shown that, although the District is empowered to adopt a Groundwater management plan it has never done so. The language of Water Code Section 10753 is instructive regarding the issue of the Separation of Powers:

> "(a) Any local agency, whose service area includes a groundwater basin...that is not subject to groundwater management pursuant to...a court order, judgment, or decree, may...adopt and implement a groundwater management plan."
>
> (Emphasis added.)

Pursuant to the quoted provisions of the foregoing section, the District will not be able in the future to adopt a Groundwater management plan for the Seaside Basin. Clearly the legislature contemplated that courts had the power to develop management plans for aquifer management even if a water management district already existed in a geographical area.

The District further argues that if the Court appoints a Watermaster other than itself, the authority of the Watermaster must not conflict with the MPWMD's authority. It is certainly true that the District possesses certain authority, which it is free to exercise according to the legislative mandate which created it. However, it is apparent the legislature did not intend that all of the powers it granted to the District be held exclusively by the District, else it would not at a later time have created the Monterey County Water Resources Agency and endowed it with many of the powers granted to the MPWMD. Rather, in creating the MCWRA, the legislature mandated that the two agencies cooperate with one another (Water Code Appendix Section 52-85). Similarly, the judgment contemplated in this Decision requires the Watermaster to "...act jointly or cooperate with any public...entity to the end that the purposes of the Physical Solution may be fully...carried out." (Section III.L.3.j.xviii)

On pages 15-16 of its brief, the District lists 9 powers and asserts those powers would "encompass the duties of any appointed watermaster." The Court has compared those 9 asserted powers and has concluded that those powers, to the extent that they exist or are currently being utilized by the District, do not encompass all the duties of a Watermaster appointed by the judgment. Furthermore, to the extent the Watermaster may be given powers akin to those of the District, this Court retains jurisdiction to determine any conflict which may arise in the future.

For example, the Decision directs that any metering of Production wells by the Watermaster shall be done in a way which does not conflict with the MPWMD gauging already in place on all producing wells. The MPWMD is still able to develop water resources within its boundaries and can store water for the benefit of the District in the Basin, although it has not to date done either of those things with regard to the Seaside Basin.

One asserted power deserves more precise attention: the asserted "...power and duty to manage and regulate the transferability of the water among users- (Water Code Appendix) Section 328(g)." The plain reading of the referenced section does not encompass the right asserted. Furthermore, to the extent those that section purports to grant the District the power to "...declare rights in the natural flow of any subterranean supply of water..." it is apparent that the legislature did not intent to interfere with the ultimate right of the courts to determine the water rights of parties claiming such rights. To read the section otherwise would be to create a true Separation of Powers issue.

In fairness to the District, it had, of necessity, to confine its analysis of the duties of the proposed Watermaster to those set forth in the Proposed Stipulated Judgment. The Decision, while obviously relying on the structure and format of the Stipulated Judgment, does not track all provisions of said Judgment. For example, many of the concerns of the District revolve around its statutory right to store water in subterranean reservoirs. The Decision preserves that right. Similarly, while the Decision allows the assignment of Production rights (which the District is not empowered to affect by its referenced legislation, Water Code Section 328(g)), it does not provide for the transferability of Storage rights, a matter which might be of concern to the District under certain circumstances.

The District argues that the proposed powers of the Watermaster regarding maintenance and modification of the Operating Safe Yield would conflict with the District's authority. Much of its argument is addressed to language in the Proposed Stipulated Judgment which does not appear in the Decision. The Decision grants certain rights of control to the Watermaster for the purpose of maintaining the viability of the aquifer. However, it does not purport to forbid any regulation of the Basin which may be required by a public agency possessing the power to

impose such regulation. In this regard it should be noted that the complaint in this case first raised the issue of the Overdraft status of the Basin, and the initial pleadings of the District stated that it did not know if that were true or not. The Decision does not conflict with any procedure or plan currently in place by the District to establish an Operating Yield for the Basin.

Of concern to the District is the fact that the Watermaster will be empowered to augment the underground water supply. While Water Code Section 118-343 gives the District the power to levy a Groundwater charge for the purpose of augmenting underground water supplies, in fact from the time of its creation in 1977 to the present the District has established no such charge, and has not augmented the underground water supply of the Basin. The fact that the Watermaster is authorized in the contemplated judgment to assess charges for replenishment of the Basin does not prevent the District in the future from undertaking such augmentation, if it determines it is appropriate to do so.

Based upon the evidence adduced at trial, which demonstrated that a collaborative Watermaster will likely provide more tangible results than any single individual or entity Watermaster, the Court has decided to appoint a collaborative board as Watermaster.

The prayer of MPWMD for injunctive relief is denied, except insofar as the court will issue injunctive relief as set forth in the Decision at the request of all parties. The prayer that the Court adopt a Physical Solution for the Seaside Basin is granted. The request for declaratory relief is granted to the extent that the court finds that the statutory rights of MPWMD are not in conflict with the Physical Solution and the appointment of a Watermaster in this proceeding.

The Complaint in Intervention of MCWRA also seeks declaratory and injunctive relief, but does not urge the appointment of itself or any other entity as Watermaster. The request for injunctive relief is denied as moot, since the lawsuit does not challenge the statutory authority of the Agency. The request for declaratory relief is granted to the extent that the Court finds that the statutory rights of MCWRA are not in conflict with the Physical Solution adopted by the Court in this proceeding.

A statement of decision, if requested by any party, will be prepared by Plaintiff. If no party within ten days of the filing of this Decision specifies controverted issues or makes

proposals not covered in the Decision this Decision shall become the Statement of Decision, and Plaintiff shall prepare a judgment thereon.

Dated: ~~February~~ March 22, 2006

By _____

Honorable _____
Roger D. Randall

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF MONTEREY

CALIFORNIA AMERICAN WATER,

Plaintiff,

vs.

CITY OF SEASIDE; CITY OF MONTEREY; CITY OF SAND CITY; CITY OF DEL REY OAKS; SECURITY NATIONAL GUARANTY, INC.; GRANITE ROCK COMPANY, INC.; D.B.O. DEVELOPMENT COMPANY NO. 27, INC.; MURIEL E. CALABRESE 1987 TRUST; ALDERWOODS GROUP (CALIFORNIA), INC.; PASADERA COUNTRY CLUB, LLC; LAGUNA SECA RESORT, INC; BISHOP MC INTOSH & MC INTOSH, a general partnership; THE YORK SCHOOL, INC.; COUNTY OF MONTEREY; and DOES 1 through 1,000, Inclusive,

Defendants.

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT,

Intervenor.

MONTEREY COUNTY WATER RESOURCES AGENCY,

Intervenor.

AND RELATED CROSS-ACTIONS

Case No. M66343

AMENDED DECISION

Action Filed: August 14, 2003
Trial Date: December 13, 2005
Dept.: 21

I. INTRODUCTION

This Decision sets forth the adjudicated rights of the parties to this lawsuit (with certain exceptions noted in section I.D. below), including Plaintiff California American Water, and Defendants the City of Seaside, the City of Monterey, the City of Sand City, the City of Del Rey Oaks, Security National Guaranty, Inc., Granite Rock Company, D.B.O. Development Company No. 27, Muriel E. Calabrese 1987 Trust, Alderwoods Group (California), Inc., Pasadera Country Club, LLC, Laguna Seca Resort, Inc., Bishop, McIntosh & McIntosh, and The York School, Inc. (hereinafter "Water User Defendants") to use the water resources of the Seaside Groundwater Basin ("Seaside Basin" or "Basin") and provides for a physical solution for the perpetual management of the Basin, which long-term management will provide a means to augment the water supply for the Monterey Peninsula.

A. Seaside Groundwater Basin.

The Seaside Basin is located in Monterey County and underlies the Cities of Seaside, Sand City, Del Rey Oaks, Monterey, and portions of unincorporated county areas, including the southern portions of Fort Ord, and the Laguna Seca Area. The boundaries of the Basin are depicted in Exhibit B of this Decision. Generally, the Seaside Basin is bounded by the Pacific Ocean on the west, the Salinas Valley on the north, the Toro Park area on the east, and Highways 68 and 218 on the south. The Seaside Basin consists of subareas, including the Coastal subarea and the Laguna Seca subarea in which geologic features form partial hydrogeologic barriers between the subareas.

B. The Parties.

1. Plaintiff California American Water ("Plaintiff" or "California American") is an investor-owned public utility incorporated under the laws of the State of California. *(See* Pub. Utilities Code, §§ 1001 et seq. and 2701 et seq.) California American produces groundwater from the Seaside Basin and delivers it for use on land within its certificated service area that both overlies portions of the Seaside Basin, and is located outside of the Seaside Basin Area, all within the County of Monterey.

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2. Defendant City of Seaside ("Seaside") is a general law city situated in the County of Monterey. Seaside produces groundwater from the Seaside Basin (1) for use on two city-owned golf courses that overly the Basin, and (2) for municipal water service to its residents. *(See* Call. Const., Art. XI, § 9; Gov. Code, § 38730.)

3. Defendant City of Sand City ("Sand City") is a charter city situated in the County of Monterey. Sand City produces groundwater from the Seaside Basin and delivers it for use on private and publicly owned lands within its incorporated boundaries, all of which overlie the Seaside Basin. *(See* Cal. Const., Art. XI, § 9; Gov. Code, § 38730.)

4. Defendant City of Del Rey Oaks ("Del Rey Oaks") is a general law city situated in the County of Monterey. Land within Del Rey Oaks' incorporated boundaries overlies the Seaside Basin. The two wells Del Rey Oaks presently operates for irrigation of public lands are located outside the Seaside Basin area and are, therefore, excluded from this Stipulation. *(See* Cal. Const., Art. XI, § 9; Gov. Code, § 38730.)

5. Defendant City of Monterey ("Monterey") is a charter city situated in the County of Monterey. Monterey owns and controls land that overlies the Seaside Basin area.

6. Defendant Security National Guaranty, Inc. ("SNG") is a California corporation with its principal place of business in the City and County of San Francisco. SNG's primary business activity is real estate development. As part of its operation, SNG and/or its predecessors-in-interest have produced groundwater from the Seaside Basin. SNG also owns land overlying the Seaside Basin.

7. Defendant Granite Rock Company ("Granite") is a California corporation with its principal place of business in the County of Santa Cruz. Granite's primary business activity is the production and sale of concrete aggregate and building materials. As part of its Seaside concrete and building materials plant, Granite has produced groundwater from the Seaside Basin. Granite also owns land overlying the Seaside Basin.

8. Defendant D.B.O. Development No. 27 ("D.B.O."), erroneously sued herein as D.B.O. Development Company, is a California limited liability company with its principal place of business in the County of Monterey. D.B.O.'s primary business activity is the ownership and

development of real property for commercial, industrial, residential, and public uses. As part of their ownership and development of land overlying the Seaside Basin, D.B.O. and/or its predecessor in interest have produced groundwater from the Basin. D.B.O. also owns and controls land overlying the Seaside Basin.

9. Defendant Muriel E. Calabrese 1987 Trust ("Calabrese") is an irrevocable trust that holds property in the County of Monterey. Calabrese and/or its predecessor in interest have produced groundwater from the Seaside Basin in relation to the operation of its paving, grading and construction business and operation of a concrete batch plant in Sand City. Calabrese also owns and controls land overlying the Seaside Basin.

10. Defendant Alderwoods Group (California), Inc. ("Alderwoods Group"), DBA Mission Memorial Park ("Mission Memorial") is a California corporation with its principal place of business in the County of Monterey. Mission Memorial's primary business activity is the operation of a cemetery in the City of Seaside. As part of maintenance of the cemetery, Mission Memorial has produced groundwater from the Seaside Basin. Mission Memorial also owns land overlying the Seaside Basin.

11. Defendant Pasadera Country Club, LLC ("Pasadera") is a California limited liability company with its principal place of business in the County of Monterey. Pasadera's primary business activity is the operation of a private golf course. As part of its golf course operations, Pasadera has produced groundwater from the Seaside Basin. Pasadera also owns land overlying the Seaside Basin.

12. Defendant Bishop, McIntosh & McIntosh ("Bishop") is a general partnership, with its principal place of business in the County of Monterey. Bishop owns land overlying the Laguna Seca Subarea of the Seaside Basin. Defendant Laguna Seca Resort, Inc.("Laguna Seca") is a California corporation with its principal place of business in the County of Monterey. Laguna Seca's primary business activity is the operation of a public golf course on land owned in fee by Bishop. Laguna Seca operates the golf course pursuant to a lease with Bishop. As part of the golf course's operations, groundwater is produced from the Laguna Seca Subarea of the Seaside Basin for irrigation purposes. Laguna Seca filed a cross-complaint against California

American, and Bishop filed a cross-complaint against California American and all defendants other than Laguna Seca Defendants Laguna Seca Resort, Inc. and Bishop, McIntosh & McIntosh shall collectively be referred to as "Laguna Seca/Bishop." However, the pumping allocation established in Section III.B., below, is held only by Bishop, as the overlying property owner. Laguna Seca is a Water User Defendant now exercising Bishop's pumping allocation and operating the golf course facilities. The damages provided for in Section III.G. shall be based on the Average Gross Annual Income of the entity operating thee golf course facilities, which is now Laguna Seca (Bishop's lessee).

13. Defendant County of Monterey owns land on which is operates the Laguna Seca Park. County of Monterey has produced groundwater from the Seaside Basin for use at Laguna Seca Park. County of Monterey owns land overlying the Seaside Basin.

14. Intervenor Monterey Peninsula Water Management District ("MPWMD") is a district formed pursuant to Water Code Appendix sections 118-1 et seq. MPWMD intervened as a party defendant as against California American, cross-complained against the other parties as a plaintiff, and is a defendant in a cross-complaint filed by Seaside and joined in by City defendants.

15. Intervenor Monterey County Water Resources Agency ("MCWRA") is a duly constituted Water Resources Agency created pursuant to California Water Code Appendix section 52-3 et seq. MCWRA intervened inn this action as a plaintiff as against all parties.

16. Defendant The York School, Inc. ("York" or "York School"), is a nonprofit corporation, founded in 1959 as an independent day school providing college preparatory education. Its primary activity is the operation of a school. York leases approximately 31.4 acres of property from the United States, Department of the Army, on the former Fort Ord. This property is located immediately north of the main campus, across York Road, and is a portion of a larger parcel, approximately 107 acres in size, that is scheduled to be transferred as a public benefit conveyance to York from the federal government. This parcel overlies the Seaside Basin and is subject to this Decision. York has produced groundwater from the Seaside Basin. York is not an agent of the United States, nor can York bind the United States to this Decision.

C. The Complaint.

On or about August 14, 2003, Plaintiff filed a complaint against Defendants and Does 1 through 1,000 requesting a declaration of Plaintiff's and Defendants' individual and collective rights to groundwater and a mandatory and prohibitory injunction requiring the reasonable use and coordinated management of groundwater within the Seaside Basin pursuant to Article X, Section 2 of the California Constitution. The pleadings further allege that Plaintiff and Defendants collectively claim substantially all rights of groundwater use, replenishment and storage within the Seaside Basin area, that the Natural Safe Yield (as defined in Section III.A.) is being exceeded, and that absent a physical solution and coordinated groundwater management strategy, the Seaside Basin is in imminent risk of continued lowering of water levels, increased pump-lifts, diminution of water supply and quality, seawater intrusion, and possible land subsidence. Accordingly, Plaintiff requested: (1) a determination of the Seaside Basin's safe yield; (2) an operating plan for the management of the Basin; (3) a declaration of the rights of the parties named in this Complaint; (4) a declaration and quantification, as part of a physical solution, of the parties' respective rights to make use of the Seaside Basin's available storage space; and (5) the appointment of a Watermaster to administer the Court's Decision. Subsequently, Plaintiff has twice amended its complaint and the operative complaint is now the Second Amended Complaint, which sets forth the same general allegations as the original complaint.

D. Defendants' Responses.

Water User Defendants in this action have all responded to the Complaint pursuant to Answers. In addition, they have all joined in a motion seeking Court approval of a Stipulated Judgment. The Monterey Peninsula Water Management District and the County of Monterey, including the Monterey County Water Resources Agency, did not join in the Stipulation.

On or about September 24, 2003, Intervenor MPWMD filed a complaint in intervention against the defendants named in the Complaint. Defendants to that complaint responded to the cross-complaint pursuant to an Answer, containing a general denial and affirmative defenses.

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Seaside, on or about January 9, 2004, filed a cross-complaint against MPWMD. MPWMD responded to the cross-complaint by filing an Answer, containing a general denial and affirmative defenses.

Laguna Seca, on or about April 23, 2004, filed a cross-complaint against California American. California American responded to the cross-complaint pursuant to an Answer, containing a general denial and affirmative defenses.

Bishop, on or about September 23, 2004, filed a cross-complaint against California American and against all defendants other than Laguna Seca. California American, Granite, Sand city, Alderwoods Group, York School, D.B.O., Monterey, MPWMD, Seaside, and Pasadera responded to the cross-complaint pursuant to Answers containing general denials and affirmative defenses.

SNG, on or about July 26, 2005, filed a cross-complaint against MPWMD. MPWMD responded to the cross-complaint by filing an Answer, containing a general denial and affirmative defenses.

At the conclusion of argument on December 22, 2005, the various defendant cross-complainants agreed that the relief they had sought via their cross-complaints had been subsumed in the litigation of the complaint and complaints in intervention, the answers thereto, and the Settlement Agreement and General Mutual Release executed by all parties save the intervenors and the County of Monterey.

E. Joint Motion for Entry of Judgment.

Plaintiff and Water User Defendants filed a Motion for the Entry of Judgment along with a Stipulation for Entry of Judgment, which was opposed by both intervenors. The Motion for Entry of Judgment requested that the Court approve the Stipulation and enter the Judgment. The motion was heard by this Court on December 12, 2005. At the request of the moving parties, it deferred its ruling until it had taken evidence in the trial of this matter.

Having now received the evidence, and having considered written and oral argument from the various parties, the Court denies the Motion for Entry of Judgment. The Court accepts the stipulation of certain of the parties entitled "Settlement Agreement and General Mutual Release"

filed with the Court during trial insofar as the stipulation does not conflict with the ruling set forth herein.

F. Jurisdiction. This Court has jurisdiction to enter a Judgment declaring and adjudicating Plaintiff's and Water User Defendants' rights to the reasonable and beneficial use of groundwater in the Seaside Basin Area, including the imposition of a physical solution, pursuant to Article X, Section 2 of the California Constitution.

II. FINDINGS

A. Importance of Groundwater. Groundwater is an important water supply source for businesses, individuals and public agencies that overlie or Extract groundwater from the Seaside Basin. The overwhelming majority of the groundwater appropriated from the Seaside Basin has been and continues to be dedicated to a public use in accordance with the provisions of the California Constitution, Article X, Section 5. The Plaintiff and the Water User Defendants rely upon continued availability of groundwater to meet their demands. The intervenors, MPWMD and MCWRA, have a legislatively mandated interest in the preservation and enhancement of groundwater in the Basin.

B. Status of the Groundwater Basin.

1. Perennial Natural Safe Yield. The Perennial Natural Safe Yield (as defined in Section III.A. and hereinafter referred to as "Natural Safe Yield") of the Seaside Basin is solely the result of natural percolation from precipitation and surface water bodies overlying the Basin. The Court finds that the Natural Safe Yield of the Basin as a whole, assuming no action is taken to capture subsurface flow exiting the northern boundary of the Basin, is from 2,581 to 2,913 acre feet per year. The Natural Safe Yield for the Coastal Subarea is estimated from 1,973 to 2,305 acre feet per year, and the Natural Safe Yield for the Laguna Seca Subarea is 608 acre feet per year.

2. Groundwater Production. Production records demonstrate that the cumulative annual groundwater production of the Parties from the Seaside Basin area in each of the five (5) years immediately preceding the filing of this action has been between approximately 5,100 and 6,100 acre feet. Therefore, the Court finds that groundwater production has exceeded the Natural

Safe Yield during the preceding five (5) years throughout the Seaside Basin and in each of its subareas. While no one can predict with precision when it will occur, all parties agree continued indefinite production of the Basin Groundwater in excess of the Natural Safe Yield will ultimately result in seawater intrusion, with deleterious effects on the Basin. The evidence demonstrates that the stage is set for such an occurrence in the foreseeable future.

C. Legal Claims.

1. Groundwater Rights. Certain Parties allege that they have produced groundwater openly, notoriously, continuously, and without interruption in excess of the Natural Safe Yield of the Basin for more than five (5) years. As a result, these Parties allege that they have accrued prescriptive rights as articulated by the California Supreme Court in *City of Pasadena v. City of Alhambra* (1948) 33 Cal.2d 908. In defense of these claims, other Parties deny that the elements of prescription have been satisfied, and further allege the affirmative defense of "self help" as recognized in *Pasadena, supra,* 33 Cal.2d at pp. 932-32. Those Parties responsible for public water service also raise Civil Code section 1007 as an affirmative defense against prescription.

The Court finds that there is merit to the claim that certain prescriptive rights have accrued, but also finds that there is merit to the aforementioned affirmative defenses. Accordingly, the Court finds that the Parties collectively possess a variety of rights based in prescription and other original rights (including overlying and appropriative rights). Each Party's right to produce naturally occurring groundwater from the Seaside Basin therefore reflects the amount of their historical production from the Basin, and respects the priority of allocations under California law. The physical solution set forth by this Decision is intended to ultimately reduce the drawdown of the aquifer to the level of the Natural Safe Yield; to maximize the potential beneficial use of the Basin; and to provide a means to augment the water supply for the Monterey Peninsula.

2. Storage Rights. The Court finds that the public interest is served by augmenting the total yield of the Seaside Basin through artificial groundwater recharge, storage, and recovery. It is well established that an entity which artificially recharges a groundwater basin with the intent to later recapture that water maintains an exclusive right to recapture that quantity of water by which said recharge augments the retrievable water supply of the groundwater basin, so long as

such recharge and recapture (i.e., storage) does not materially harm the groundwater basin or any other entity's prior rights associated with the groundwater basin. *(City of Los Angeles v. City of San Fernando* (1975) 14 Ca1.3d 199, 264; *City of Los Angeles v. City of Glendale* (1943) 23 Cal.2d 68, 76-77; see also Water Code, § 7075.) The Court finds, therefore, that the right to store and recover water from the Seaside Basin shall be governed by the provisions of the Decision, and the rules and regulations promulgated by the Seaside Basin Watermaster, the basic provisions of which are described in Section III.H.

3. *De Minimis* Production. The Court finds that production of groundwater by any person or entity less than five (5) acre feet per year is not likely to significantly contribute to a Material Injury (as defined in Section III.A.) to the Seaside Basin or any interest related to the Seaside Basin. Accordingly, this Decision is not intended to govern the production of groundwater by any person or entity that produces a total quantity of groundwater that is less than five (5) acre feet peer year. However, to the extent the Court determines in the future that this exemption has contributed to or threatens to contribute to a Material Injury to the Seaside Basin or any interest related to the Seaside Basin, including any contribution caused by production subject to this exemption in combination with all other production from the Seaside Basin, the Court will modify or eliminate this exemption as it deems prudent pursuant to its reserved jurisdiction provided in Section M.O.

4. Transferability of Seaside Basin Rights. The Court finds that maximum beneficial use of the Seaside Basin's resources is encouraged by the ability to sell and lease production allocations. Such transferability will also provide necessary flexibility to satisfy future water supply needs. Accordingly, the Court finds that production allocations should be assignable, subject to the rules and regulations promulgated by the Watermaster, and subject to certain Parties' participation in the Alternative Production Allocation, described in Section III.B.3, which election will restrict their transfers of water.

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III. DECISION

IT IS HEREBY ORDERED, ADJUDGED AND DECREED:

A. Definitions.

1. "Alternative Production Allocation" is the amount of Groundwater that a Producer participating in this allocation method may Produce from a Subarea of the Seaside Basin as provided in Section III.B.3.

2. "Artificial Replenishment" means the act of the Watermaster, directly or indirectly, engaging in or contracting for Non-Native Water to be added to the Groundwater supply of the Seaside Basin through Spreading or Direct Injection to offset the cumulative Over-Production from the Seaside Basin in any particular Water Year pursuant to Section III.L.3.j.iii. It shall also include programs in which Producers agree to refrain, in whole or in part, from exercising their right to produce their full Production Allocation where the intent is to cause the replenishment of the Seaside Basin through forbearance in lieu of the injection or spreading of Non-Native Water.

3. "Base Water Right" is the percentage figure or the fixed amount assigned to each Party as provided in Section III.B.2, which is used to determine various rights and obligations of the Parties as provided in Sections III.B.2, III.B.3, III.L.3.c, and III.L.3.j.iii.

4. "Brackish Water" means water containing greater than 1,000 parts of chlorides to 1,000,000 parts of Water.

5. "Carryover" means that portion of a Party's Production Allocation that is not Extracted from the Basin during a particular Water Year. Each acre-foot of Carryover establishes an acre-foot of Carryover Credit.

6. "Carryover Credit(s)" means the quantity of Water established through Carryover, that a Party is entitled to Produce from the Basin pursuant to Section III.F.

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7. "Coastal Subarea" means those portions of the Seaside Basin that are west of North-South Road, and further as shown on the Basin map attached as Exhibit B to this Decision.

8. "Direct Injection" means a method of Groundwater recharge whereby Water is pumped into the Basin through wells or other artificial channels.

9. "Extraction," "Extractions," "Extracting," "Extracted," and other variations of the same noun or verb, mean pumping, taking, diverting or withdrawing Groundwater by any manner or means whatsoever from the Seaside Basin.

10. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

11. "Fiscal Year" means the twelve (12) month period from January 1 through December 31.

12. "Groundwater" means all Water beneath the ground surface in the Seaside Basin, including Water from Natural Replenishment, Artificial Replenishment, Carryover, and Stored Water.

13. "Laguna Seca Subarea," or "Laguna Seca Area," means those portions of the Basin that are east of the Southern Coastal Subarea and south of the Northern Inland Subarea, as shown on the Seaside Basin map attached as Exhibit B to this Decision.

14. "Landowner Group" means all Producers that own or lease land overlying the Seaside Basin and Produce Groundwater solely for use on said land, except California American, Seaside (Municipal), Monterey, Del Rey Oaks, and Sand City.

15. "Material Injury" means a substantial adverse physical impact to the Seaside Basin or any particular Producer(s), including but not limited to: seawater intrusion, land subsidence, excessive pump lifts, and water quality degradation. Pursuant to a request by any Producer, or on its own initiative, Watermaster shall determine whether a Material Injury has occurred, subject to review by the Court as provided for in Section M.N.

16. "Natural Replenishment" means all processes by which Water may become a part of the Groundwater supply of the Seaside Basin without the benefit of the Physical Solution and the coordinated management it provides. Groundwater that occurs in the Seaside Basin as a result of the Physical Solution, which is not Natural Replenishment, includes, but is not limited to Storage, Carryover, and Artificial Replenishment.

17. "Natural Safe Yield" or "Perennial Natural Safe Yield" means the quantity of Groundwater existing in the Seaside Basin that occurs solely as a result of Natural Replenishment. The Natural Safe Yield of the Seaside Basin as a whole, assuming no action is taken to capture subsurface flow exiting the northern boundary of the Basin, is from 2,581 to 2,913 acre feet per year. The Natural Safe Yield for the Coastal Subareas is from 1,973 to 2,305 acre feet per year. The Natural Safe Yield for the Laguna Seca Subarea is 608 acre feet per year.

18. "Non-Native Water" means all Water that would not otherwise add to the Groundwater supply through natural means or from return flows from surface applications other than intentional Spreading.

19. "Overdraft" or "Overdrafted" refers to a condition within a Groundwater basin resulting from long-term depletions of the basin over a period of years.

20. "Operating Safe Yield" means the maximum amount of Groundwater resulting from Natural Replenishment that this Decision, based upon historical usage, allows to be produced from each Subarea for a finite period of years, unless such level of production is found to cause Material Injury. The Operating Safe Yield for the Seaside Basin, as a whole, is 5,600 acre feet. The Operating Yield is 4,611 acre feet for the Coastal Subarea and 989 acre feet for the Laguna Seca Subarea. The Operating Yield established here will be maintained for three (3) years from the date of this Decision or until a determination is made by the Watermaster, concurred in by this Court, that continued pumping at this established Operating Yield will cause Material Injury to the Seaside Basin or to the Subareas, or will cause Material Injury to a Producer due to unreasonable pump lifts. In either such event the Watermaster shall determine the modified Operating Yield in accordance with the Principles and Procedures attached hereto as Exhibit A, and through the application of criteria that it shall develop for this purpose.

21. "Over-Production" and other variations of the same term means (1) with regard to all Production from the Seaside Basin, that quantity of Production which exceeds an initially assumed Natural Safe Yield of 3,000 afy (or such adjusted calculation of Natural Safe Yield as further study of the Basin by the Watermaster shall justify); or (2) with regard to each Producer, that quantity of Water Produced in any Water Year in excess of that Producer's Base Water Right, as applied to an initially assumed Natural Safe Yield of 3,000 afy (subject to adjustment as further study shall justify). For a Party producing under the Alternative Production Allocation, the calculation shall be based upon the Base Water Right assigned to them in Table 1, infra, only to the extent that Party has elected to convert all or part of an Alternative Production Allocation into a Standard Production Allocation, pursuant to Section III.B.3.e.

22. Operating Yield Over-Production means pumping of Native Water by Producers in excess of their Standard Production Allocation or Alternative Production Allocation, as discussed in Section III.L.3.j.iii.

23. "Person" or "Persons" includes individuals, partnerships, associations, governmental agencies and corporations, and any and all types of entities.

24. "Physical Solution" means the efficient and equitable management of Groundwater resources within the Seaside Basin, as prescribed by this Decision, to maximize the reasonable and beneficial use of Water resources in a manner that is consistent with Article X, Section 2 of the California Constitution, the public interest, and the basin rights of the Parties, while working to bring the Production of Native Water to Natural Safe Yield.

25. "Produce," "Produced," or "Production" means (1) the process of Extracting Water or (2) the gross amount of Water Extracted.

26. "Producer" means a Party possessing a Base Water Rights.

27. "Production Allocation" is the amount of Groundwater that a Producer may Produce from a Subarea of the Seaside Basin based on the Parties' election to proceed under either the Standard Production Allocation or the Alternative Production Allocation set forth in Sections III.B.2 and III.B.3, respectively.

28. "Replenishment Assessment" means an assessment levied by the Watermaster per each acre-foot of Over-Production against each party Over-Producing Groundwater in the previous Water Year. The amount of the assessment shall be sufficient to cover the cost of Artificial Replenishment in an amount necessary to off-set that Producer's Over-Production, and levied as provide in Section III.L.3.j.iii. The assessment must of necessity be initially determined based upon the estimated cost of providing Non-Native water to replenish the Basin, as determined by the Watermaster.

29. "Seaside Basin" is the underground water basin or reservoir underlying the Seaside Basin Area, the exterior boundaries of which are the same as the exterior boundaries of the Seaside Basin Area.

30. "Seaside Basin Area" is the territory depicted in Exhibit B to this Decision.

31. "Spreading" means a method of introducing Non-Native Water into the Seaside Basin whereby Water is placed in permeable impoundments and allowed to percolate into the Seaside Basin.

32. "Standard Production Allocation" is the amount of Groundwater that a Producer participating in this allocation method may Produce from a Subarea of the Seaside Basin as provided in Section III.B.2, which is determined by multiplying the Base Water Right by the Operating Yield.

33. "Storage" means the existence of Stored Water in the Seaside Basin.

34. "Storage Allocation" means that quantity of Stored Water in acre feet that a Party is allowed to Store in the Coastal Subarea or the Laguna Seca Subarea at any particular time.

35. "Storage Allocation Percentage" means the percentage of Total Usable Storage Space allocated to each Producer proceeding under the Standard Production Allocation. Producers proceeding under the Alternative Production Allocation are not allocated Storage rights and, consequently, their share of the Total Usable Storage Space is apportioned to the Producers proceeding under the Standard Production Allocation. Pursuant to the terms of Section III.B.3, Parties proceeding under the Alternative Production Allocation enjoy a one-time right to change

to the Standard Production Allocation. Due to the recalculation of the Storage Allocation Percentage necessitated when a Party changes to the Standard Production Allocation, the Watermaster will maintain the up-to-date Seaside Basin Storage Allocation Percentages.

36. "Storage and Recovery Agreement" means an agreement between Watermaster and a Party for Storage pursuant to Section III.L.3.j.xx.

37. "Store" and other variations of the same verb refer to the activities establishing Stored Water in the Seaside Basin.

38. "Stored Water" means (1) Non-Native Water introduced into the Seaside Basin by a Party or any predecessors-in-interest by Spreading or Directly Injecting that Water into the Seaside Basin for Storage and subsequent Extraction by and for the benefit of that Party or their successors-in-interest; (2) Groundwater within the Seaside Basin that is accounted for as a Producer's Carryover; or (3) Non-Native water introduced into the Basin through purchases by the Watermaster, and used to reduce and ultimately reverse Over-Production.

39. "Stored Water Credit" means the quantity of Stored Water augmenting the Basin's Retrievable Groundwater Supply, which is attributable to a Party's Storage and further governed by this Decision and a Storage and Recovery Agreement.

40. "Subarea(s)" means either the Laguna Seca Subarea or the Coastal Subarea.

41. "Total Useable Storage Space" means the maximum amount of space available in the Seaside Basin that can prudently be used for Storage as shall be determined and modified by Watermaster pursuant to Section III.L.3.j.xix, less Storage space which may be reserved by the Watermaster for its use in recharging the Basin.

42. "Transfer" and other variations of the same verb refers to the temporary or permanent assignment, sale, or lease of all or part of any Producer's Production Allocation, Storage Allocation, Carryover Credits, or Stored Water Credits. Pursuant to Section III.B.3., Transfer does not include the use of Water on properties identified in Exhibit C for use under an Alternative Production Allocation.

43. "Water" includes all forms of Water.

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44. "Watermaster" means the court-appointed Watermaster pursuant to Section III.L. of this Decision for the purpose of executing the powers, duties, and responsibilities assigned therein.

45. "Watermaster Rules and Regulations" means those rules and regulations promulgated by the Watermaster consistent with the terms of this Decision.

46. "Water Year" means the twelve (12) month period from October P^{t} through September 30th.

B. Physical Solution.

1. Groundwater Rights. The Parties have Produced Groundwater from the Seaside Basin openly, notoriously, continuously, and without interruption, which Production has been determined to be in excess of the Natural Safe Yield of the Seaside Basin and each of its Subareas for more than five (5) years. Accordingly, Parties have accrued mutual prescriptive rights and/or have preserved their overlying, appropriative, and prescriptive rights against further prescription by self-help. These individual and competitive rights, whether mutually prescriptive, appropriative or overlying rights, can be most efficiently exercised and satisfied by the implementation of this Physical Solution and in the manner expressly set forth herein.

2. Standard Production Allocation. Each Producer is authorized to Produce its Production Allocation within the designated Subarea in each of the first three Water Years. Except for those certain Parties electing to proceed under the Alternative Production Allocation, as set forth in Section III.B.3., each Producer's Production Allocation for the first three Water Years shall be calculated by multiplying its Base Water Right, as set forth in Table 1 below, by that portion of the Operating Yield which is in excess of the sum of the Alternative Production Allocations. The Operating Yield for the Seaside Basin, as a whole, is set at 5,600 acre feet annually (afa). The Operating Yield for the Coastal Subarea is 4,611 afa, with 743 afa committed to Alternative Production Allocations and 3,868 afa committed to Standard Production Allocations. The Operating Yield for the Laguna Seca Subarea is 989 afa, with 644 afa committed to Alternative Production Allocations and 345 afa committed to Standard Production Allocations. The Operating Yield established here will be maintained for three (3) Water Years

from the date Judgment is granted or until a determination is made by the Watermaster, concurred in by this Court, that continued pumping at this established Operating Yield will cause Material Injury to the Seaside Basin or to the Subareas or will cause Material Injury to a Producer due to unreasonable pump lifts. In the event of such Material Injury the Watermaster shall determine the modified Operating Yield in accordance with the Principles and Procedures attached hereto as Exhibit A, and through the application of criteria that it shall develop for this purpose.'

Commencing with the fourth Water Year[2], and triennially thereafter the Operating Yield for both Subareas will be decreased by ten percent (10%) until the Operating Yield is the equivalent of the Natural Safe Yield unless:

a. The Watermaster has secured and is adding an equivalent amount of Non-Native water to the Basin on an annual basis; or

b. The Watermaster has secured reclaimed water in an equivalent amount and has contracted with one or more of the Producers to utilize said water in lieu of their Production Allocation, with the Producer agreeing to forego their right to claim a Stored Water Credit for such forbearance; or

a. Any combination of a and b which results in the decrease in Production of Native Water required by this decision; or

b. The Watermaster has determined that Groundwater levels within the Santa Margarita and Paso Robles aquifers are at sufficient levels to ensure a positive offshore gradient to prevent seawater intrusion.

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[1] If the Operating Yield changes, Standard Production Allocations will be calculated by multiplying the portion of the changed Operating Yield committed to Standard Production Allocations by the Standard Producers' Base Water Rights. This calculation will result in a remaining quantity of water already committed to Standard Production Allocations (due to the Base Water Right percentages assigned to Alternative Producers but which are not used to calculate the Standard Production Allocations), which will be further allocated to the Standard Producers in proportion to their Base Water Rights until no quantity remains unallocated.

[2] As ordered by the Court at the January 12, 2007 hearing, the initial potential 10% reduction in Operating Yield will occur, if at all, on January 1, 2009. The 10% reduction would apply to 75% of the Operating Yield, because 25% of the Water Year would have already elapsed. Assuming the current Operating Yield of 5600 acre-feet, the Basin-wide Operating Yield would be reduced to 3,780 acre-feet for the remainder of the Water Year. Subsequent potential Operating Yield reductions would occur on the Water Year schedule set forth in the MMP.

TABLE 1[3]

Standard Production Allocations

Party:	Percentage of Operating Yield Coastal Subarea
California American Water	77.55%
City of Seaside (Municipal)	6.36%
City of Seaside (Golf Courses)	10.47%
City of Sand City	0.17%
Granite Rock Company	0.60%
SNG	2.89%
D.B.O. Development No. 27	1.09%
Calabrese	0.27%
Mission Memorial Park	0.60%

Producer:	Percentage of Operating Yield for Laguna Seca Sec area
California American Water Company	45.13%
Pasadera Country Club	22.65%
Bishop	28.88%
York School	2.89 %
Laguna Seca County Park	0.45%*

* Because the County of Monterey has not joined in the Settlement Agreement and General Mutual Release, its right to Produce water will be governed by the provisions made for those Producers selecting Alternative Production Allocations.

3. Alternative Production Allocation. The following Parties, which all assert overlying Groundwater rights, have chosen to participate in an Alternative Production Allocation: Seaside with regard to the Groundwater that it Produces for irrigation of its golf courses; Sand City, SNG, Calabrese, Mission Memorial, Pasadera, Bishop, York School, and Laguna Seca.

The Alternative Production Allocation provides the aforementioned Parties with a prior and paramount right over those Parties Producing under the Standard Production Allocation to Produce the amount set forth in Table 2 in perpetuity, and said Alternative Production shall not be

[3] Certain Parties including Seaside (Golf Courses), Sand City, SNG, Calabrese, Mission Memorial, Pasadera, Bishop and York School hold an Alternative Production Allocation in the fixed amount shown in Table 2. If any of these Parties subsequently elects to convert to the Standard Production Allocation, then the Base Water Right shown in Table 1 for such converting Party will be used to determine that Party's Standard Production Allocation consistent with the terms provided in Section III.B.3.e.

subject to any reductions under Section III.B.2 or at such times as the Watermaster determines to reduce the Operating Yield in accordance with Section III.L.3.j.ii., subject to the following terms:

a. The Alternative Production Allocation may not be transferred for use on any other property, but shall be limited to use on the respective properties (including subdivisions thereof) identified in Exhibit C;

b. The Party electing the Alternative Production Allocation may not establish Carryover Credits or Storage rights;

c. The Party electing the Alternative Production Allocation is obligated to adopt all reasonably Feasible Water conservation methods, including methods consistent with generally accepted irrigation practices;

d. In the event a Party electing the Alternative Production Allocation is required to utilize reclaimed Water for irrigation purposes, pursuant to the terms of sections 13550 and 13551 of the California Water Code, that Party shall have the first opportunity to obtain and substitute reclaimed Water for its irrigation demands. Should that Party not pursue such substitution with due diligence, any other Party may provide reclaimed Water for the irrigation purpose pursuant to the terms of sections 13550 and 13551 of the California Water Code. Under either circumstance, the Party providing the reclaimed Water for substitution shall obtain a credit to Produce an amount of Groundwater equal to the amount of substituted reclaimed Water in that particular Water Year, provided that such credit shall be reduced proportionately to all reductions in the Operating Yield in accordance with Section III.L.3.j.ii. The Alternative Production Allocation of the Party utilizing the reclaimed Water shall be debited in an amount equal to the reclaimed Water being substituted.

e. In the event that this Court, the Watermaster, or other competent governmental entity requires a reduction in the Extraction of Groundwater from the Seaside Basin or either of its Subareas, then Parties exercising a Standard Production Allocation in the affected subarea shall reduce their Groundwater Extractions *pro rata* to accommodate the required reduction. Only after such Parties exercising a Standard Production Allocation reduce their Extractions to zero, may Parties exercising an Alternative Production Allocation in the affected

subarea be required to reduce their Groundwater Extractions. In such case, those Parties exercising an Alternative Production Allocation shall reduce their pumping in an amount correlative to each other in accordance with the California law pertaining to allocation of rights to Overdrafted Groundwater basins between overlying landowners.

TABLE 2

Alternative Production Allocations

Party:	**Coastal Subarea**
Seaside (Golf Courses)	540 afa
S NG	149 afa
Calabrese	14 afa
Mission Memorial	31 afa
Sand City	9 afa

Producer:	**Alternative Production Allocation**
Pasadera	251 afa
Bishop	320 afa
York School	32 afa
Laguna Seca County Park	41 afa*

* The County of Monterey possesses certain water rights based upon its use of water from the aquifer for maintenance of Laguna Seca Park. Its historic Production of Groundwater has averaged 41 afy. It has not joined in the stipulation of the other Producers, but is entitled to draw up to 41 afy from the Laguna Seca Subarea as if it were a party to the Alternative Production Allocations.

At any time prior to the expiration of the initial three-year operating period of this Decision, as designated in Section III.B.2, any of the aforementioned Parties, except the County of Monterey, may choose to change all or a portion of their Alternative Production Allocation to the Standard Production Allocation method set forth in Section III.B.2 and shall be entitled to all of the privileges associated with said Production Allocation as set forth herein (e.g., transferability, Storage rights, and Carryover rights). A Party choosing to change to the Standard Production Allocation shall do so by filing a declaration with the Court, and serving said declaration on all other parties. Once a Party chooses to change to the Standard Production Allocation method set forth in Section III.B.2, that Party shall not be allowed to thereafter again choose to participate in the Alternative Production Allocation. The Parties under the Standard

Production Allocation shall not be allowed at any time to change from the Standard Production Allocation to the Alternative Production Allocation.

C. Production of Brackish Water. Sand City shall have the right to Produce Brackish Water from the brackish Groundwater aquifer portion of the Coastal Subarea of the Seaside Basin for the purpose of operating its proposed desalinization plant, said Production being limited to the Aromas Sands Formation, so long as such Production does not cause a Material Injury. Upon receiving a complaint supported by evidence from any Party to this Decision that the Production of Brackish Water by Sand City is causing a Material Injury to the Seaside Basin or to the rights of any Party to this Decision as set forth herein, the Watermaster shall hold a noticed hearing. The burden of proof at such hearing shall be on the Party making the complaint to show, based on substantial evidence, that the Production of Brackish Water by Sand City is causing a Material Injury. If the Watermaster determines, based on substantial evidence, that the Production of Brackish Water by Sand City is causing a Material Injury to the Seaside Basin or to the rights of any Party to this Decision as set forth herein, the Watermaster may impose conditions on such Production of Brackish Water that are reasonably necessary to prevent such Material Injury.

D. Injunction of Unauthorized Production. Each Producer is prohibited and enjoined from Producing Groundwater from the Seaside Basin except pursuant to a right authorized by this Decision, including Production Allocation, Carryover, Stored Water Credits, or Over-Production subject to the Replenishment Assessment. Further, all Producers are enjoined from any Over-Production beyond the Operating Yield in any Water Year in which Watermaster has declared that Artificial Replenishment is not available or possible.

E. No Abandonment. It is in the interest of reasonable beneficial use of the Seaside Basin and its Water supply, that no Producer be encouraged to take and use more Water in any Water Year than is actually required, Therefore, failure to Produce all of the Water to which a Producer is entitled hereunder for any amount of time shall, in and of itself, not be deemed to be, or constitute an abandonment of such Producer's Base Water Right or Production Allocation, in whole or in part. The Water unused by any Party (either as Production or Carryover) will

otherwise contribute to the ongoing efficient administration of the Decision and the Physical Solution.

F. Right to Carryover Unused Production Allocation; Carryover Credits. Except for those certain Parties electing to proceed under the Alternative Production Allocation, as set forth in Section III.B.3., for the first three Water Years each Producer who, during a particular Water Year, does not Extract from the Basin a total quantity equal to such Producer's Standard Production Allocation for the particular Water Year may establish Carryover Credits, up to the total amount of that Producer's Storage Allocation; provided, however, in no circumstance may the sum of a Producer's Storage Credits and Carryover Credits exceed that Producer's available Storage Allocation. Use (Extraction) of Carryover Credits shall be governed as otherwise provided in this Decision and the Watermaster Rules and Regulations. In consideration of the Seaside Basin's hydrogeologic characteristics, the Watermaster may discount the quantity of Water that may be Extracted pursuant to a Carryover Credit.

G. Damages and Prohibition on Enjoining Municipal Pumping. The Parties recognize that California American's pumping is for municipal purposes, including drinking Water supplies for most of the Monterey Peninsula, including within all of the Defendant Cities and to all of the Defendant landowners. In this context, if California American's Groundwater pumping causes an "Intrusion" upon a Water User Defendant's Production Allocation, then it shall compensate the Water User Defendant for damages caused by this Intrusion. An "Intrusion" occurs when a Water User Defendant exercising an Alternative Production Allocation is directed by the Watermaster, this Court or any other competent governmental entity to reduce its Groundwater pumping to a level below that Water User Defendant's Alternative Production Allocation, while California American continues pumping Groundwater from the same subarea. This damages provision does not alter the priority of the Alternative Production Allocation over the Standard Production Allocation pursuant to Section III.B.3, and is intended to address potential exigent circumstances that might arise regarding California American's municipal water service.

1. Damages from an Intrusion shall be calculated based upon the losses incurred by the Water User Defendant that are caused by the Intrusion. These losses may include the loss of

crop yield and associated income, measured against the average achieved over the preceding five (5) years from the date of the loss. Where an Intrusion occurs with respect to a Water User Defendant's exercise of an Alternative Production Allocation for golf course irrigation (i.e., an Intrusion to a "Golf Course Water User"), the Intrusion may cause discoloration, thinning and damage to the golf course turf and may require replacement of golf course turf and other golf course landscaping. Such conditions may, in turn, cause the loss of income from reduced golf course facilities usage and loss of good will. It may be difficult to quantify such damages to a sum certain. Accordingly, where a Golf Course Water User demonstrates that an Intrusion caused discoloration, thinning or loss of golf course turf, the following criteria shall be utilized to determine damages for an Intrusion to a Golf Course Water User.

a Lost Income.

i. The Golf Course Water User's "Average Gross Annual Income" shall be determined by summing its gross annual income from each of the five (5) years preceding the year of the Intrusion and dividing that sum by five, except where a Golf Course Water User (Pasadera) has not been in operation for seven (7) years at the time of the Intrusion, the Average Gross Annual Income shall be determined by summing the gross annual income from each of the three years preceding the year of the Intrusion and dividing that sum by three;

ii. The Golf Course Water User's gross annual income during the year of an Intrusion shall be subtracted from its Average Gross Annual Income, with the resulting difference constituting the amount of lost income damages for that year of Intrusion; and

iii. If an Intrusion occurs in two or more years within a five-year period, damages shall be calculated using an Average Gross Annual Income based on the last consecutive five-year period preceding the first year of Intrusion, or if a Golf Course Water User (i.e., Pasadera) has not been in operation for a full seven (7) years at the time of the Intrusion, damages shall be calculated using an Average Gross Annual Income based on the last consecutive three-year period proceeding the first year of Intrusion. Gross Annual Income shall not be calculated based upon a year in which an Intrusion occurred.

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Seaside Groundwater Basin Adjudication Allocations: Water Years 2006 - 2026

Water Years	Coastal Subareas				Laguna Seca Subarea				Basin
	Operating Yield (afy)	Alternative Production Allocation (afy)	Standard Production Allocation (afy)	CAW Share (afy)	Operating Yield (afy)	Alternative Production Allocation (afy)	Standard Production Allocation (afy)	CAW Share (afy)	Operating Yield (afy)
2006-2008	4,611	743	3,868	3,504	989	644	345	345	5,600
2009	4,265	743	3,522	3,191	915	644	271	271	5,180
2010-2011	4,150	743	3,407	3,087	890	644	246	246	5,040
2012-2014	3,689	743	2,946	2,669	791	644	147	147	4,480
2015-2017	3,228	743	2,485	2,251	692	644	48	48	3,920
2018-2020	2,752	743	2,009	1,820	608	608	0	0	3,360
2021-2023	2,392	743	1,649	1,494	608	608	0	0	3,000
2024-2026	2,392	743	1,649	1,494	608	608	0	0	3,000

Source: *California American Water v. City of Seaside, et al.* (Case No. M66343, California Superior Court, Monterey County, March 27, 2006, as amended February 9, 2007)

Notes:

1. Values are based on the Court's decision at the January 12, 2007 hearing to switch to a Water Year-based accounting period (October 1 through September 30), the first "Administrative" Year began on October 1, 2006. However, consistent with the original decision, the first reduction in the Operating Yield will occur on January 1, 2009. Each reduction after January 1, 2009, will occur at the beginning of each triennial period, i.e., October 1, 2012, October 1, 2015, and so forth.
3. CAW's share of the Standard Production Allocation for the Coastal Subareas is calculated as 90.60% of the total Standard Production Allocation. For the first triennial period, i.e., Water Years 2006 through 2008, CAW's share is 3,504 afy. This calculation is consistent with the procedure described in the adjudication decision (pages 17 through 19) and Cal-Am's arguments in the J*oint Post-Judgment Motion to Request Clarification of the Court's Final Decision Relating to the Calculation of the Over-Production Replenishment Assessment* dated November 28, 2006 (pages 8 through 10).
4. For computation purposes, it is assumed that the 10% reduction in the Operating Yield is based on the initial Operating Yield specified by the Court, i.e., 5,600 afy. For example, at the beginning of Water Year 2010, the 10% reduction equals 560 afy (5,600 x 0.10 = 560). Similarly, at the beginning of Water Year 2012, the 10% reduction also equals 560 afy (5,600 x 0.10 = 560).
5. For computation purposes, it is assumed that the Natural Safe Yield for the basin is and remains at 3,000 afy, with 608 afy assigned to the Laguna Seca Subarea and the remainder, 2,392 afy, assigned to the Coastal Subareas within the basin.

H

Appendix H. Pure Water Monterey and Expansion Reliability Analysis TMs

California American Water
Peer Review of Supply and Demand for Water on the Monterey Peninsula

Prepared By: Kevin Alexander, P.E.
Reviewed By: Cindy L. Miller, P.E.; Jack Kiefer, PhD, Greg Gates, P.E., Luke Wang, P.E.
Hazen and Sawyer - August 11, 2020

This memorandum is in response to the following:

- Monterey Peninsula Water Management District (MPWMD), Exhibit 4-A Supply and Demand for Water on the Monterey Peninsula dated March 13, 2020 prepared by David J. Stoldt, General Manager;
- Exhibit 4-B Marina Coast Water District Demand (MCWD) Study by WaterDM dated April 21, 2020;
- Final Supplemental EIR for the PWM Expansion dated April 2020; and
- WaterDM Supplemental Study dated June 24, 2020.

California American Water Company (CalAm) is responsible for ensuring the Monterey Peninsula's available water supply is adequate to meet demand not just under ideal circumstances, but particularly under any number of adverse conditions that have some probability of occurrence.

There is no dispute that the Monterey Peninsula Water Supply Project (MPWSP) will provide a supply required to meet the demand of the Monterey Peninsula. The MPWSP is the only solution that meets the stated goals of Governor Newsom's 2020 Water Resilience Portfolio of: diverse water supplies, protect and enhance natural ecosystems, build connections and be prepared[1].

PHOTOS: USGS (TOP), HAZEN AND SAWYER (ABOVE)

MPWMD's General Manager is asking CalAm to utilize recycled water with sources that are vulnerable to drought, climate change, and water quality challenges. CalAm is asking for consideration of the MPWSP as a means to address those concerns and to address vulnerable supply issues for the entire region.

Considering the Ocean as a safe, secure, reliable, and resilient source as part of the Monterey Peninsula water supply portfolio is critical to solving the region's water supply.

- Since 2001, 13 dry years and 4 critically dry years have affected the Peninsula's water supplies.
- Agricultural flows are diminished by a third when compared to past years.[2]
- Water demands are down and that is reducing municipal wastewater flows available for water recycling.[3]

The Pure Water Monterey(PWM) Expansion project as proposed by Monterey One Water (M1W) is intended to provide additional water supply, but fails to provide the reliability, resiliency and supply diversity needed to meet demand on the Monterey Peninsula under multiple probable adverse scenarios including demand variability, wastewater flow variability, and surface water supply limitations as discussed further in this memorandum.

In contrast, the resiliency and certainty of the MPWSP facility provides the ability to meet uncertain demands across multiple probable adverse scenarios, flexibility to manage supply to protect the environment, and enough water to support stated goals of safe, secure, reliable and resilient water for the Peninsula at all times.

Phase One of the Pure Water Monterey Groundwater Replenishment Project (PWM Phase One) is intended to provide up to 3,500 acre-feet per year of recycled water as a valuable part of the Peninsula's supply portfolio, but expanding the facility with the PWM Expansion means more reliance on an uncertain water source and creates an imbalance in the Peninsula's supply portfolio. Such heavy reliance on one source means more scrutiny must be placed on assessing the risks of the supply.

> **Only the Monterey Peninsula Water Supply Project provides a source that can meet the objectives of a reliable and adequate potable water supply for the Monterey Peninsula.**

Water Resource Management

CalAm is responsible for assessing the ability of water supplies to meet the demands of the community and the environment in Monterey. With that responsibility comes a need to identify potential risks to its customers' water supplies and the need to develop plans and supplies resilient to those risks. CalAm has developed the MPWSP to accomplish these objectives, ensuring the ability to protect public health and the environment on the Peninsula for the foreseeable future.

CalAm Considers Water Supplies Through Supply Reliability, Diversification, Data, and Dry Year Resiliency.

Supply Reliability – Water agencies throughout the world consider water supply reliability when developing water supply plans to account for known and unknown risks. California Water Code 10635(a) requires water suppliers to assess the reliability of supplies. Of the proposed supply projects for the Peninsula, only the MPWSP fully accounts for water supply reliability to protect the Peninsula from adverse supply conditions.

Diversification – Diversification is a foundational strategy for minimizing the risks to any kind of water supply portfolio. Even California Water Code section 10608(c) declares that diverse supply portfolios will increase supply reliability. Governor Newsom's 2020 Water Resilience Portfolio includes diversification as the first approach to address climate change in the state's water supply systems and explains that diversification "will strengthen water security and reduce pressure on river systems across the state." (Portfolio, at p. 5.) The Governor explains that local and regional entities "must reduce reliance on any one source and diversify supplies to enable flexibility as conditions change." (Portfolio, p. 17.) The MPWSP increases the diversity of the Peninsula's water portfolio by introducing a new source of raw water and reduces risk, as opposed to the PWM Phase One and the PWM Expansion, which rely on the availability of effluent treated at a centralized recycling facility to generate 51% of total supply available to CalAm's Customers.

Data – Analysis of proposed water sources and demands over the same time period is important to account for impacts such as financial downturns, drought, water restrictions, tiered rates, regulatory changes and population considerations. The MPWMD Supply and Demand Report fails to fully account for historical data and thus fails to tell a complete story by using only the past 3 or 5 years of demand data, while simultaneously using a different time range (2009-2013) for other sources. Informed decisions based on a complete picture of supply and demand and concrete data from the historic and available record can and should be made together and in the best Interest of the Peninsula.

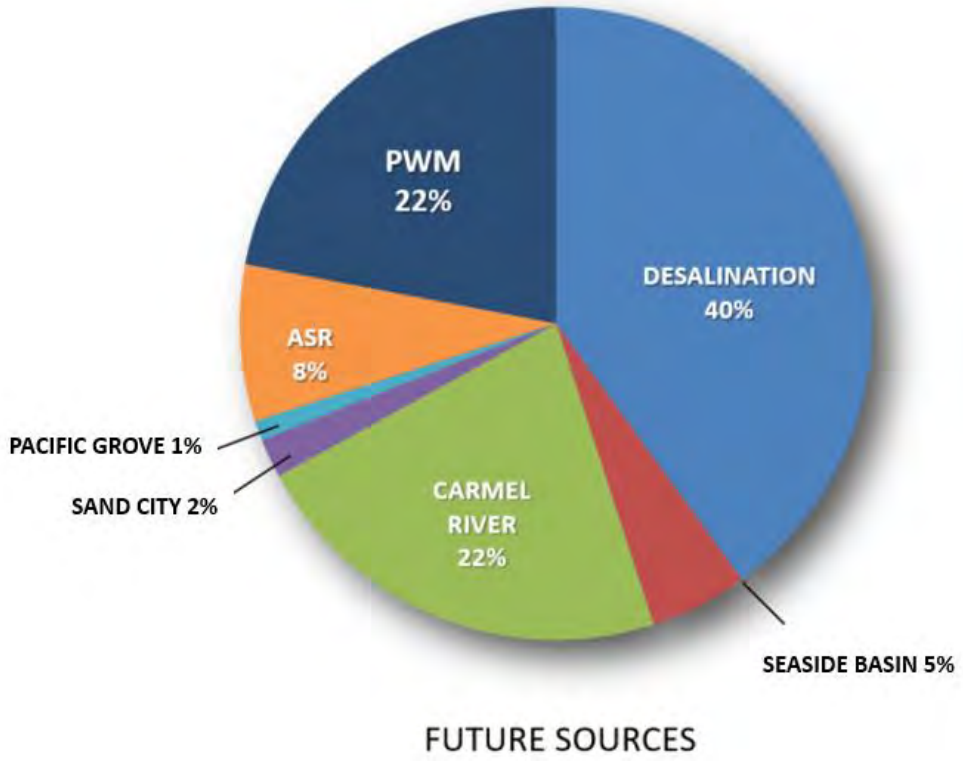
Dry Year Resiliency – Throughout an increasing percentage of the world, the western United States, and certainly California, planning for a very dry year (and a succession of dry years) is a key element to water supply planning as required by the California Water Code. The source water for the MPWSP, the Pacific Ocean, is not vulnerable to drought – and the regulatory conservation that often accompanies it – unlike the source water for PWM Phase One and the PWM Expansion. Governor Newsom's 2020 Water Resilience Portfolio specifically notes that water suppliers need to plan for deeper droughts and "develop strategies to protect communities and fish and wildlife in the event of a drought lasting at least six years. (p. 25) Only the MPWSP provides for such dry year resiliency. (Portfolio, pp. 25-26.)

Water Supply to Meet Demand

CalAm is responsible for meeting the requirements of the California Water Code for Urban Water Management Planning, which requires the assessment of the reliability of water service under multiple scenarios (normal, dry, and multiple dry years, including a repeat of the 5 consecutive historic driest years) and consideration of the reliability of water service given the combination of supplies available to it. (See Water Code §10635.) If PWM Phase One and the PWM Expansion are considered key sources of supply for the Peninsula, then the Peninsula is required to rely on production from PWM Phase One and PWM Expansion and ASR at all times to barely achieve normal year demands. Accepting the PWM Expansion as a key supply does not line up with informed and thorough engineering practices for water supply planning required by the California Water Code. (Water Code §§ 10610 *et seq.*) Figure 1 below illustrates why a diverse and balanced portfolio of water supplies is required for the Peninsula to meet the range of water demands including low optimistic demand values to the higher and more conservative demand values.

The only solution that addresses the water supply issue in a way that provides appropriate supply reliability on the Peninsula is the MPWSP. As depicted in Figure 1 below, coupled with the existing PWM Phase One and other existing sources, the MPWSP provides a robust and diversified portfolio of water supplies to address known and probable challenges such as prolonged drought conditions, limited wastewater flows, limited PWM Phase One injection, limited agricultural drain flows, flows from the Sand City Desal and possible limited flows from Aquifer Storage and Recovery (ASR).

Figure 1: Monterey Peninsula Water Supply Portfolio Diversification



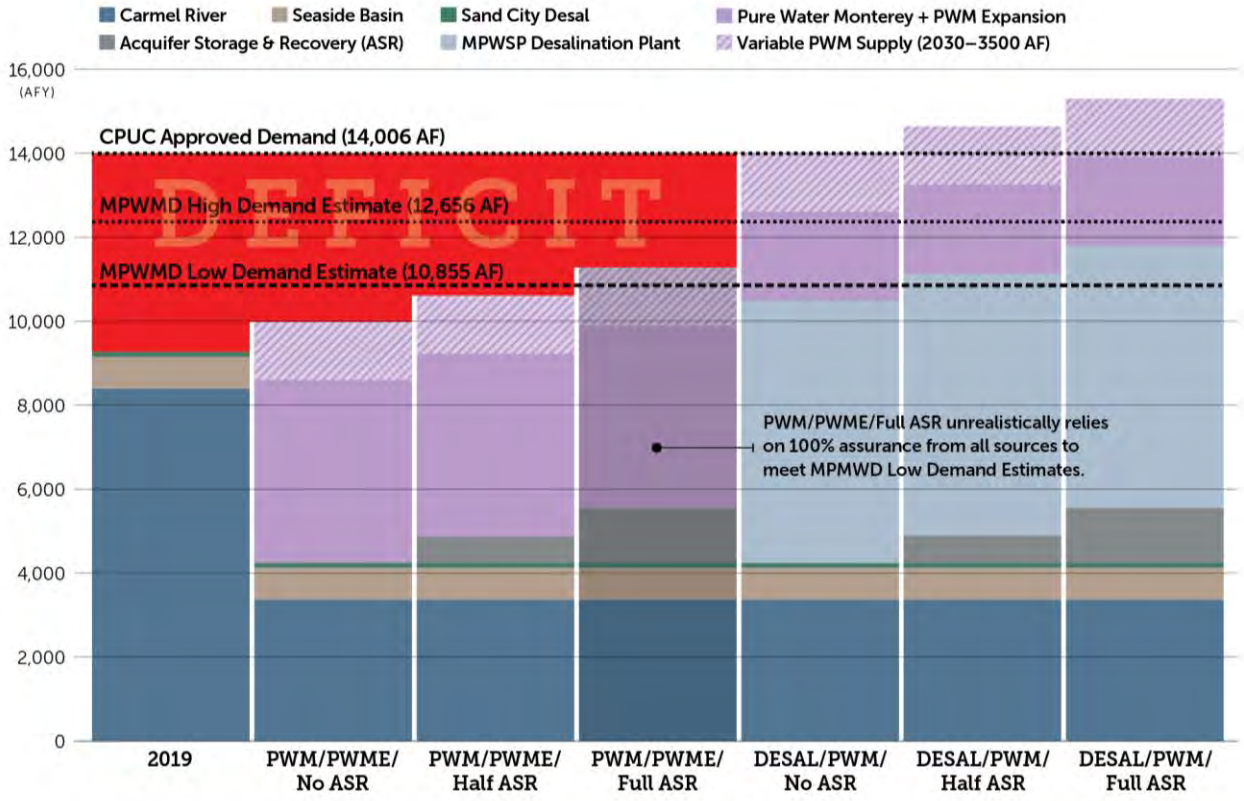
ASR build-up in particular has not been successfully demonstrated throughout the development and use of the ASR system over a 15-year period. As shown in Figure 6, included in the Appendix hereto, only once in the past 15 years has ASR achieved 1,300 AFY. As explained in Hazen's prior memo, ASR water availability is reduced to 63% in a single dry year, and even further reduced to 4% following three dry years. Therefore, ASR does not meet Water Code reliability standards (5 consecutive historic driest years) or Governor Newsom's 2020 Water Resilience Portfolio that requires consideration of a drought lasting six years.

Further, over the past 15 years, the average availability of ASR is approximately 138 AFY, far less than the 1,300 AFY assumed by MPWMD General Manager David Stoldt and WaterDM as available to meet water demand on the Peninsula. Even over the last five years, the average availability of ASR is 352 AFY, which again is far less than the 1,300 AFY assumed available by Stoldt and WaterDM. Analysis offered by Stoldt in September 2019 to the Coastal Commission and WaterDM relied on the full availability of ASR in order for the PWM Expansion to meet existing demand on the Peninsula, however, such analysis is based on the unrealistic assumption that no drought will take place between now and 2034. Such an assumption is contradicted by plain history—there has been a multi-year drought in California in virtually every decade since 1917—and as discussed above is inconsistent with applicable water planning regulations and guidance.

In addition, counting on ASR storage at 100% with limited knowledge of losses to the ocean and other basins imparts uncertainty in that supply as a continuous resource and drought mitigation strategy. In Figure 2 below, ASR volume is shown under three distinct scenarios to account for the limited volume stored over the past 15 years and these other uncertainties—No ASR, Half ASR and Full ASR. Notably, even the Half ASR scenario requires 650 AFY, which is almost double the average ASR availability over the past five years, and over five times the 15-year ASR average. When the variability of ASR is considered, the PWM Phase One and PWM Expansion do not meet the Peninsula's minimum water demands. This is one of the reasons that the California Public Utilities Commission concluded that "only in conjunction with construction of a desalination plant of some size within five to fifteen years" would the PWM Expansion be capable of providing a "sufficient and reliable water supply" for the Peninsula. (See CPUC Decision D.18-09-017, Appx. C, p. C-71.)

Figure 2: Monterey Peninsula Water Supplies to Meet Demands
Comparison of PWM Expansion and MPWSP with Variable ASR

MPWSP opponents claim that the MPWSP is not currently needed to meet existing demand projections. However, meeting even the lowest demand projections without the MPWSP requires full capacity operation of two other supplies that have yet to prove reliable and are vulnerable to high-probability risks.



Wastewater as a Source for PWM Phase One and PWM Expansion

Stoldt's characterization of the PWM Expansion as a project that can replace CalAm's existing water supplies and meet the long-term needs of the Peninsula also does not accurately and transparently account for the risks of having wastewater as a primary water supply that varies with demand and drought.[4,5] As discussed below, publicly available evidence demonstrates that wastewater cannot be relied upon as a primary water source for the PWM Expansion, and additional reliable supplies would be needed to ensure that the PWM Phase One and PWM Expansion can supply water in the amounts those projects have promised/projected.

The MPMWD Supply and Demand Report and the Supplemental EIR for the PWM Expansion focus on demands being low and use the last 3, 5 and 10 years as the basis for revised demand assumptions in CalAm's service territory. (See MPWMD Supply and Demand Report page 8, Table 3 .) MPMWD had WaterDM evaluate demands with recent data in an attempt to explain the differences in demands between estimates by CalAm and what has been observed on the Peninsula in the past 5 years.[6]

In contrast to MPMWD's and WaterDM's attempt to focus only on the most recent years to support their positions, Appendix I to the Supplemental EIR for the PWM Expansion asserts that the average wastewater treatment plant (WWTP) flows should be based on the period from 2009 to 2013 where WWTP flows were 21,764 AF, or a worse case flow of 20,090 AF based on the 2013 drought year.[7] By failing to account for the most recent years since 2013, Appendix I substantially overstates the available wastewater flows that could potentially be used as source water for recycled water projects on the Peninsula.

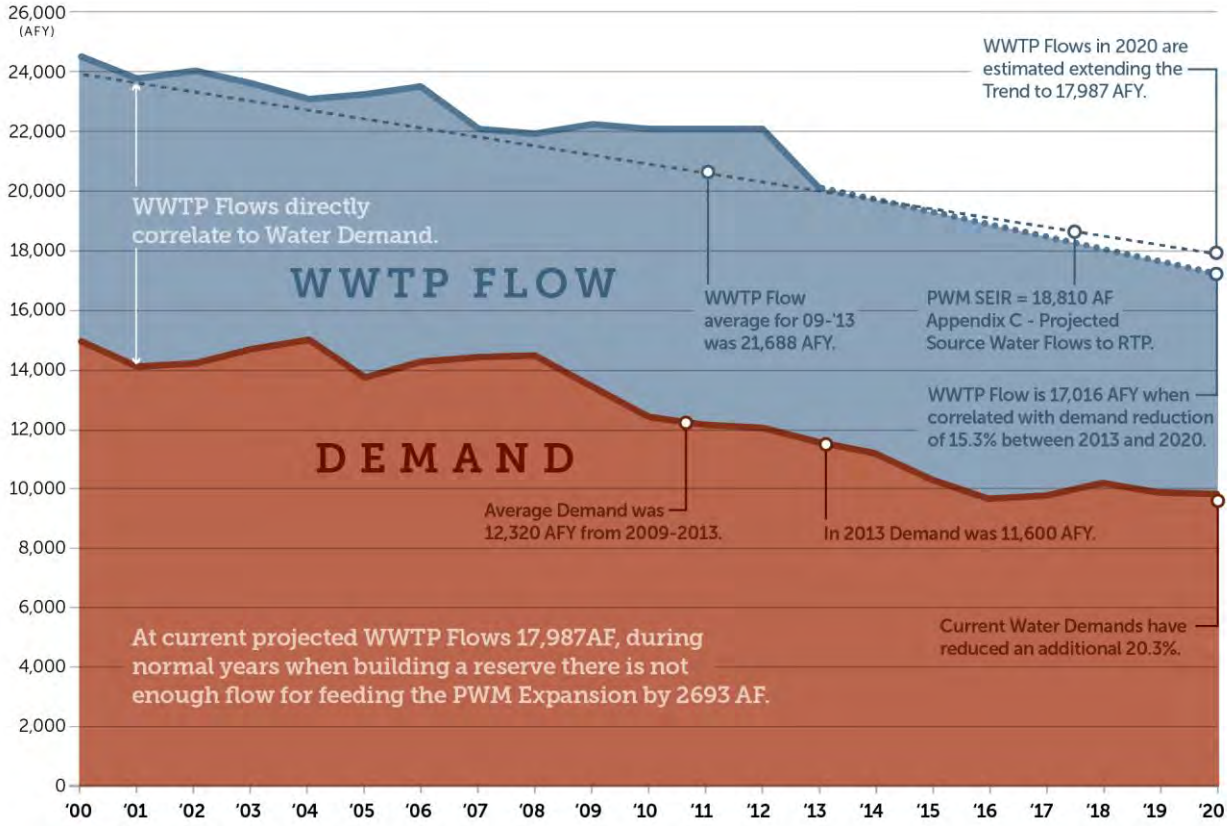
The approach taken in Appendix I ignores that WWTP flows correlate to water demand/use, which has continued to decrease on the Peninsula due to conservation and other factors. Based on available data, Figure 3 below depicts an overall downward trend in WWTP flows that is consistent with the observed decline in water demand on the Peninsula. The EIR from 2016 for PWM Phase One shows WWTP flows trending downward from approximately 25,000 AF in 2000 to approximately 20,000 AF in 2013.[8] A separate appendix to the Supplemental EIR (Appendix E) shows further reduced WWTP flows to 18,810 AF (16.79 MGD) .[9] However, this number was not utilized in the Supplemental EIR to calculate available WWTP flows as source water for either PWM Phase One or PWM Expansion, which is a significant error.

Moreover, additional data collected by M1W and presented to its Ad-Hoc JPA Revision Committee on July 20, 2020, indicates that since the beginning of 2020 WWTP flows are yet again further reduced to 17,980 AF or 16.05 mgd, as specified in Exhibit 5.[10]

Figure 3 shows that the WWTP Flows correlate with demand reductions on the Peninsula. For example, as shown in Figure 3, since 2013 demand has declined 20.3% when compared to the average demand from 2009 to 2013. Additionally, 2013 drought year demand compared to current demand, represents a 15.3% reduction.[11] Calculating the WWTP flows over these same time periods using these respective reduction percentages (20.3% and 15.3%), a conservative estimate of current average WWTP flows is 17,296 AF to as low as 17,016 AF, respectively. An alternative method of determining todays WWTP flows based on a linear trend of the existing flow data indicates that current flows are 17,987 AF, as shown in Figure 3. All of these WWTP flow estimates, which are based on a more complete picture of recent data, are much lower than those used in the SEIR Appendix I -Tables 8 to 11. As result the SEIR substantially overstates the availability of WWTP flows available as source water available to PWM Phase One and the PWM Expansion.

Figure 3: Reduced Demand = Reduced WWTP Flow (=Reduced Recycled Water Supply)

Monterey Wastewater Flows shown in the SEIR Appendix I-Table 8,9,10 (Normal Yr) and Table 11(Dry Yr) use data from 2009-2013 which does not represent the current WWTP Flows. The graph below estimates current WWTP flows in 2020 based on demand correlation from MPWMD Supply and Demand Report-Fig 1.



SEIR Appendix I -Tables 8 to 11 have been updated in Table 1 below to reflect more realistic estimates of WWTP flows, along with minor reductions to Reclamation Ditch flows in the Surface Waters category based on the analysis provided in the next section of this memorandum demonstrating these flows also are expected to be reduced compared to amounts claimed in the SEIR. When realistic estimates of WWTP flows are utilized, it becomes clear, the MPMWD Supply and Demand Study and the SEIR failed to assess how reduced WWTP flows would adversely affect production of the PWM Phase One or the PWM Expansion. The following Table 1 provides a comparison of Supply and Demand from SEIR Appendix I - Tables 8 to 11 with updated WWTP flows and Reclamation Ditch flows to show the impact of these expected reductions on the water available to use for the CSIP, PWM Phase One, PWM Expansion, and the Regional Urban Water Augmentation Project (RUWAP). In all conditions there is a supply deficit.

TABLE 1 – IMPACTS OF REDUCED WWTP FLOW ON TABLES 8 – 11 FROM SEIR APPX. I

	Original SEIR Appx. I Data				Updated Appx. I Data			
Supply and Demand *in Acre-Ft*	**Table 8**	**Table 9**	**Table10**	**Table11**	**Table 8** Updated	**Table 9** Updated	**Table10** Updated	**Table11** Updated
SUPPLY								
WWTP Flow[a]	21764	21764	21764	20090	17987	17987	17987	17016
Domestic Flows	82	82	82	82	82	82	82	82
New Sources[b]	2579	2579	2579	2430	2579	2579	2579	2430
Surface Water[c]	3721	2052	2041	2840	3641	1972	1961	2304
TOTAL	**28146**	**26477**	**26466**	**25442**	**24289**	**22620**	**22609**	**21832**
DEMAND								
CSIP and CSIP Well	17227	17227	17227	22619	17227	17227	17227	22619
PWM	4320	4320	4320	2963	4320	4320	4320	2963
PWM drought	248	248	0	0	248	248	0	0
PWM Expansion	2778	2778	2778	2778	2778	2778	2778	2778
RUWAP	741	741	741	741	741	741	741	741
TOTAL	**25314**	**25314**	**25066**	**29101**	**25314**	**25314**	**25066**	**29102**
Annual Supply Excess[d]	**2833**	**1164**	**1400**	**-3659**	**-1025**	**-2693**	**-2457**	**-7270**

Notes:

a Updated WWTP Flows based on Figure 2 Trends and calculated Dry Year from Demand Correlation

B New sources from Table 8-11

c Surface water updated by reducing Reclamation Ditch Values from USGS 10yr average.

d Annual supply excess calculated from Supply minus Demand. A negative value means a supply deficit.

Table 2 represents a flow balance to compare SEIR Appendix I Tables 8 to 11 compared to updated Table 8 to 11 with updated WWTP flow and Reclamation Ditch waters from Figure 3. Based on the flow balance for the updated Normal/Wet Year when building a reserve "Table 9 Updated column" would allow for 84 Acre-Ft to be fed to the PWM Expansion. The available supply for the Dry Year, as shown in the "Table 11 Updated" column, demonstrates that there is no flow available for PWM Phase One and PWM Expansion during a dry year, and flow for RUWAP would have to be taken as a water right to serve those flows. All scenarios analyzed demonstrate that there is little to no WWTP flow available to PWM Expansion. As a result, PWM Expansion would not have sufficient source water to produce the promised supply of 2,250 AFY.

TABLE 2 – IMPACTS OF REDUCED WWTP FLOW ON SUPPLY FLOW BALANCE

Flow Balance – *in Acre-Ft*	**Table 8**	**Table 9**	**Table 10**	**Table 11**	**Table 8** Update	**Table 9** Update	**Table 10** Update	**Table 11** Update
Flow to CSIP + CSIP Well Pumping	17227	17227	17227	22619	17227	17227	17227	21091[e]
Flow to PWM[f]	4320	4320	4320	2963	4320	4320	4320	0
Flow to PWM Drought	248	248	0	0	248	248	0	0
Flow to PWME[g]	2778	2778	2778	2778	1753	84	321	0
Flow to RUWAP	741	741	741	741	741	741	741	741
Actual Use Flows[h]	**25314**	**25314**	**25066**	**29101**	**24289**	**22620**	**22609**	**21832**
Flow to ASR[i]	5950	5950	5750	4650	5120	3768	3759	0
Concentrate Flow to Outfall[j]	1536	1536	1489	1232	1342	1025	1023	141
Deficit To ASR	**0**	**0**	**0**	**-1100**	**-830**	**-2182**	**-1991**	**-4651**

Notes:

e CSIP and CSIP Well Flows from Table 8-11 Demand. Reduced CSIP in "Table 11 Updated" by taking Water Right
f Revised flow to PWM down for Table 11 to match actual Use to supply
g Flow available to PWME is calculated based on maintaining flow to PWM and RUWAP and to Concentrate
h Actual Use is calculated to confirm balance with Supply
i ASR Flow is from the AWT product water flow without RUWAP
j Concentrate flow is 19% of Flow for PWM, PWM Drought, PWME, and RUWAP
k Deficit to ASR based on Flow to ASR minus the PWM AND PWME DEMAND from Table 1

The above analysis of the WWTP flows demonstrates the need for a very thorough and transparent analysis of the current WWTP flows and the impact to the reliability of PWM Phase One and PWM Expansion. At present, there appear to be significant limitations on the availability of source water from WWTP Flows for the PWM Expansion.

Surface Water Flow Analysis

As discussed above, another area that requires consideration is the flow available to the PWM Phase One and PWM Expansion from the proposed Surface Water supplies. The Reclamation Ditch flows were analyzed originally in the Schaaf & Wheeler Agricultural Ditch Yield Study, March 2015 based on 2006-2014 data, and were updated in the SEIR Appendix I Tables 8-11. A detailed analysis of the Reclamation Ditch flows using the most recent USGS data reveals that average flows are lower than indicated in Schaaf & Wheeler and the SEIR Appendix I. The following Table 3 below shows the average monthly flow according to USGS for the last 5 years, 10 years and 2013 as compared to the values in the SEIR Appendix I Tables 8 to 11.

Table 3: Reclamation Ditch Flows[12]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Normal Years (Ac-ft)												
USGS 5 yr Avg minus Instream	>360	>360	>360	340	123	74	83	77	35	108	>360	>360
USGS 10 yr Avg minus Instream	>360	>360	>360	356	59	93	98	96	45	129	>360	>360
Table 8	70	66	70	106	79	99	113	109	72	65	89	76
Table 9	0	0	0	106	79	99	113	109	72	11	0	0
Table 10	0	0	0	106	79	99	113	109	72	0	0	0
Dry Years (Ac-ft)												
USGS 2013(Same Jan/Feb as Tbl11)	0	0	42	4	0	28	53	57	23	16	43	0
Table 11	0	0	70	106	79	99	113	109	72	65	89	0

Note: >360 is when diversion flows above 6 cubic feet per second (CFS) after subtraction of the instream of 2 CFS.

Table 3 shows that for the months of May through September there is a reduction of average flow per month of 16% between the Table 8, 9 and 10 compared to the USGS flows for a 10 year comparison. Table 3 also shows that for the months of June through September there is a reduction of average flow per month of 16% between the Table 8, 9 and 10 compared to the USGS flows for a 5 year comparison. In addition, using the USGS flows for 2013 with similar assumptions for December-February, there is a 67% reduction

in flow as compared to the predicted dry year in SEIR Table 11. As a result, the SEIR overstates the availability of Reclamation Ditch flow potentially available as source water for PWM Phase One and the PWM Expansion. Again, in this case the available flow to the PWM Phase One and the PWM Expansion should be reconsidered and revised accordingly.

The Schaaf & Wheeler report for the Reclamation Ditch indicates that agricultural flows are continuing to drop, and have dropped 1/3 in recent years. This would likely mean there are reductions in the monthly flows from Blanco Drain as well as the Agricultural Wash Water below what is projected in the SEIR. The flows for these two proposed sources were not updated beyond what was provided in the original Draft EIR for the PWM Phase One in 2016 in Appendix B – Source Water Assumptions Memorandum dated March 26, 2015. Both of those data sources in the SEIR Appendix I Tables 8 through 11 are based on similar dated information from 2014. If the flows from the Blanco Drain and Agricultural Wash Water are considered to have similar percentage reductions during the April to October period as Reclamation Ditch flows, then there are likely conditions where the actual flows available may not be able to supply the PWM Phase One let alone the PMW Expansion.

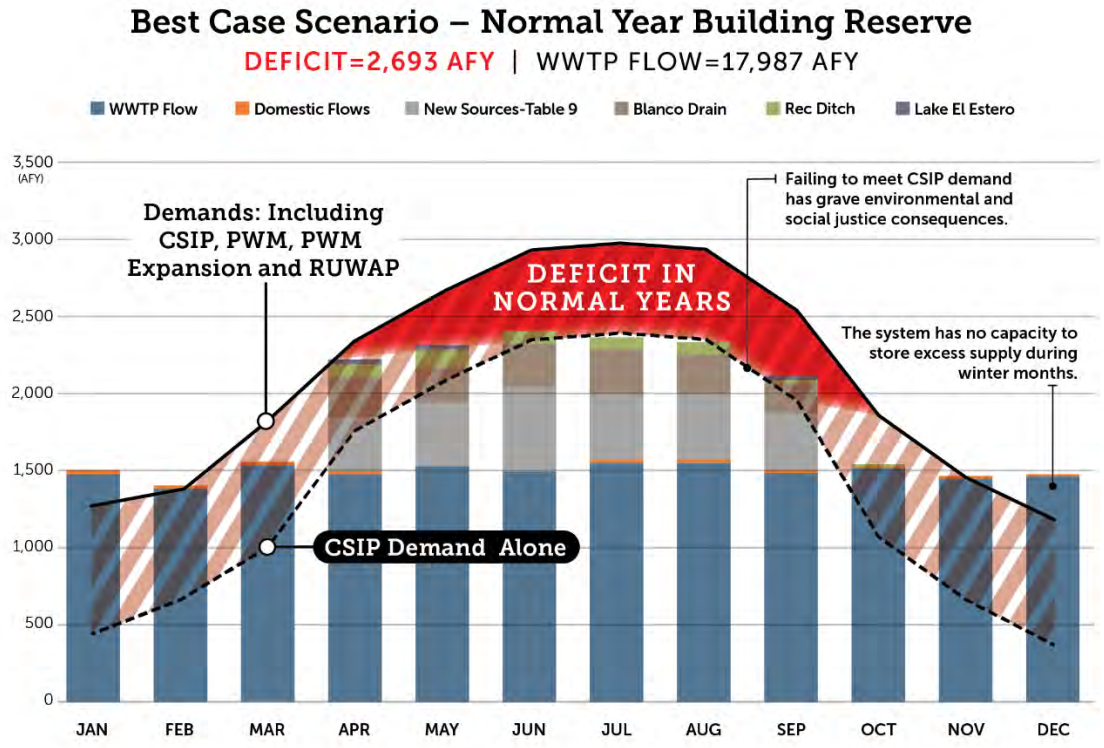
Supplies and Demands

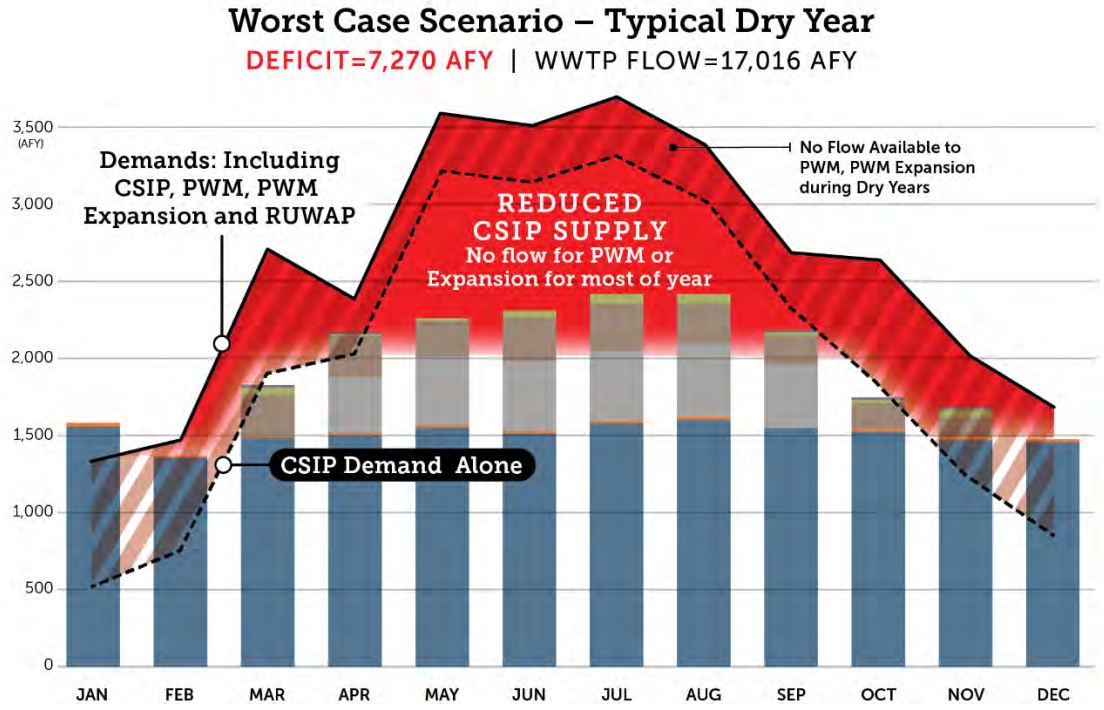
The combined analysis of supplies and demand illustrated in Figure 4 below (Normal/ Wet Year Building ASR) and (Dry Year) are based on monthly supply and demand from SEIR Appendix I-Tables 9 and 11 with data updated as noted in Table 1 above. Figure 4 shows that when lower WWTP Flow from Figure 3 and lower Reclamation Ditch flows from Table 3 and all other available sources are accounted for, that demand for those specific source waters far exceeds available supplies in Normal/Wet Years and in Dry Years.

Table 2 above shows that in Normal Years Building a Reserve (Table 9 Updated Column), there is potentially only 84 AF available from all of the available supplies for the PWM Expansion. Then in Dry Years, Table 2 shows there is actually no flow available from all of the supplies for the PWM Phase One or the PWM Expansion assuming water is still supplied to the CSIP with some flow taken from CSIP as a water right (as described in the Final Supplemental EIR-3.3 Master Response #3: Comments on Water Supply and Source Water Availability) to serve the Regional Urban Water Augmentation Project (RUWAP). Based on this analysis, PWM Phase One and PWM Expansion would not be able to provide their promised product water to the Peninsula during dry years, which are 3,500 AFY and 2,250 AFY, respectively.

Figure 4: Impacts of Demands Exceeding Limited Supplies

Best Case Scenario based upon SEIR Appendix I-Table 9 with revised WWTP Flows (Updated Table 9) shows a supply deficit such that 84 Acre-Ft is available to PWM Expansion. The Worst Case Scenario based upon SEIR Appendix I – Table 11 Dry Year with revised WWTP Flows (Updated Table 11) shows a deficit with Zero flow available to PWM, PWM Expansion and reduced flow to CSIP.





The demand assumptions in Figure 4 use the same values in SEIR Appendix I Tables 9 and 11 for CSIP, PWM Phase One, PWM Expansion and RUWAP which are the same values used in Table 1 above.

As shown in Figure 4 above there is a demonstrable water deficit. Monthly supply of water as compared to demand even when the additional proposed supplies of Agricultural Wash Water, Urban Runoff, Blanco Drain, and Reclamation Ditch are included does not satisfy the demand during a significant portion of the year – particularly during the summer months.

Water Supply Deficit for either PWM Expansion or CSIP

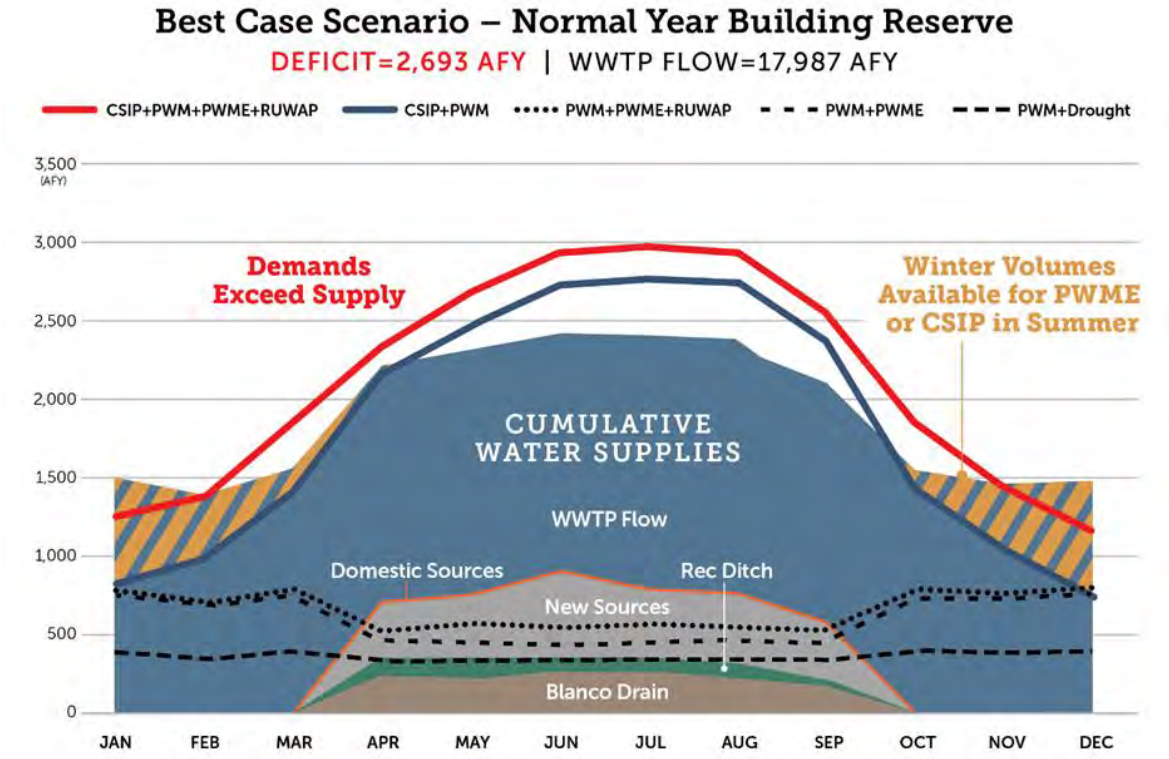
Without an adequate supply of source water, the Peninsula is placed in a difficult position of whether to supply water to the PWM Expansion or the CSIP system, which will impact the environment long term. Although there are water rights for the water that MWMWD proposes to use to supply the PWM Expansion, there are overstatements of the actual flows that need to be addressed. Protecting public health and the environment requires determining the true volumes available for the project and whether those flows can be counted on day in and day out for supply of water to the Peninsula.

Figure 5 closely correlates the cumulative water supplies to the respective cumulative demands. The water supplies are shown in the order of use with the PWM Phase One using Blanco Drain and Rec Ditch. Based on agreements, such as the Amended and Restated Water Recycling Agreement between the M1W and the Monterey County Water Resources Agency, those flows are unavailable to the PWM Expansion. Then New Sources are added to serve as the supplies for the PWM Expansion according to the priorities and water rights as defined in SEIR Appendix M. The supplies are cumulative by month. The graphs are based on SEIR Appendix I -Table 9 and 11 with the WWTP and Reclamation Ditch flows updated. These graphs include Lake El Estero and AWW, which are now not included in the water supply as noted in SEIR Appendix M as a best-case supply scenario (SEIR Appendix M-Page 5).

The demands in Figure 5 are each shown cumulatively for PWM, then PWM+PWME, then PWM+PWME+RUWAP, and ultimately PWM+PWM+RUWAP and CSIP. There is a separate blue line of PWM+CSIP to show a normal year today without the PWM Expansion. That line is necessary to determine available volume in the winter.

Figure 5: Supply Available for PWM Expansion or CSIP (Not Both)

Best Case Scenario based upon SEIR Appendix I-Table 9 with revised WWTP Flows (Updated Table 9) shows winter volume available for PWM Expansion or if injected could be used for CSIP in the summer. The Worst Case Scenario is based upon SEIR Appendix I – Table 11 Dry Year with revised WWTP Flows (Updated Table 11) shows there is near Zero flow available for the PWM Expansion in winter and significant reduced flow to CSIP.



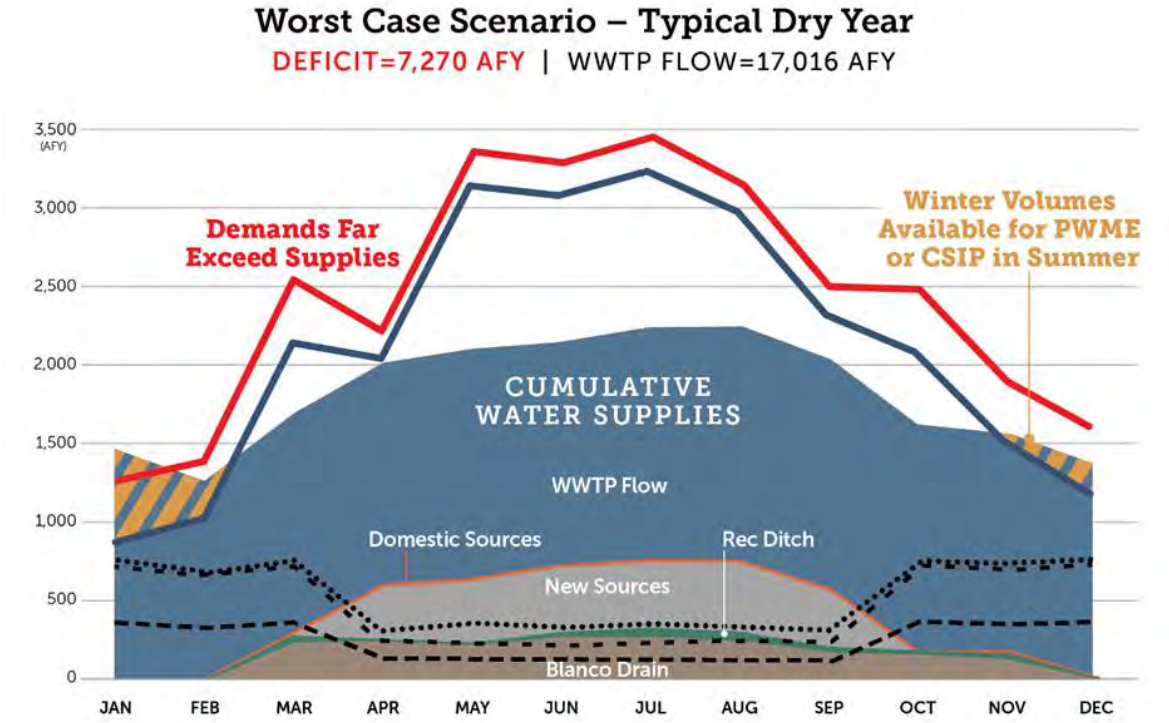


Figure 5 demonstrates that in normal years, excess winter effluent that would ultimately go to the Ocean can be used or it is otherwise wasted. However, with current CSIP demand the system will always be in a deficit. If CSIP could capture winter flow (such as the proposed but not implemented improvements to the Salinas Valley Reclamation Project (SVRP) (SEIR Master Response #3 p. 3-20, SEIR Appendix M- Page 5)) to run SVRP and CSIP at lower flows without using wells in conjunction with water storage or groundwater infiltration, then excess winter water could be available for use in the summer for CSIP. Implementing such a storage program would be a sizable new development project and would require a significant investment to secure and develop the necessary property where the storage program could be implemented (such as a reservoir). Further, for CSIP and CSIP well demands in SEIR Appendix I Tables 9-11 to be met, this would require all of the other New Water sources, Blanco Drain and Reclamation Ditch as well to meet the combined CSIP and CSIP well flows now and especially in dry years.

CSIP flows are shown in Figure 5 based on the SEIR Tables 8-11 including the CSIP well pumping. It should be noted that the improvements to SVRP have not been completed and therefore, the CSIP must rely on well pumping.

It should be highlighted that the flows shown in SEIR Appendix I for Tables 8-11 were not updated to match the assumptions in Final SEIR Appendix M. If the flows shown in Tables 8 to 11 were updated to account for the assumptions made in Final SEIR Appendix M, then the water supply deficit depicted in Figures 4 and 5 above would be even greater. For example, the Agricultural Wash Water and Lake El Estero were assumed to be unavailable in Final SEIR Appendix M. Moreover, Reclamation Ditch Flows were not reduced as noted in Table 3-B in the Final SEIR Master Response #3.

In addition, the SEIR Master Response #3 Table 3-A and SEIR Appendix M Table 2 both support the reduced flow of wastewater highlighted in Figure 3 above. One example is the use of 5,811 AFY as the Secondary Effluent available from the Outfall which is 3,000 AFY less than the estimated amount in Table 8, 9 and 10 of the SEIR Appendix I of 8,809 AFY. Assuming this is the updated Outfall flow, this would correlate to roughly 18,810 AFY of WWTP flow in 2018. Again, this was not highlighted in Source Water Availability, Use and Yield in SEIR Appendix I and as discussed earlier in this memorandum the regional wastewater flows have reduced since then. When these reductions are accounted for, the supply deficit will only increase. As a result, the technical analysis of the PWM Expansion has greatly overstated the reliability and availability of the source water. It is not feasible to achieve the PWM Expansion's projected water deliveries of 2,250 AFY based on the proposed water sources.

Responding to MPMWD and Water Demand Analysis

CalAm is responsible for assessing water demand on the Peninsula and continues to evaluate the impacts from climate change, regulatory drivers, growth in residential and commercial demands, impacts from water rates and restrictions imposed, and considers a future when the MPWSP is in place and how available water will shift demands. CalAm is contributing to conservation programs, participating in cutting edge research on leakage to apply the latest approaches to loss to their system.

All of this is done to ensure their customer demands are met, the environment is protected, and that water is not wasted. In performance of these duties, CalAm is continuing to assess the risks associated with meeting average demands, maximum day demand and peak hour demands. Hazen has participated in the studies with CalAm on system loss and is providing water resources planning services.

Hazen and Sawyer response to comments from MPMWD and WaterDM regarding prior memorandum:

Hazen and Sawyer is a national consulting engineering firm with a focus on all aspects of water supplies, planning, treatment and demands. We have local and national experts working on evaluation of water supplies and demands. It should be noted that WaterDM is a firm that collaborates with Hazen and Sawyer on large water supply projects and is currently a team partner for projects on the East Coast.

MPWMD and WaterDM reviewed Hazen's prior memorandum dated January 2020 and point to many areas that they consider deficient, in error or misleading. Hazen disagrees with this claim. The Hazen memorandum as written highlights the substantial concern with assuming lower water demands on the Peninsula with no discussion of range of uncertainty. We feel the higher demands are warranted to provide a buffer for uncertainty. WaterDM and MPMWD have been unwilling to address the risk of the potential demand increases on supply. For supply to the PWM Expansion, these entities have avoided updating the flow data with transparent information on the proposed supplies.

WaterDM does not address variability or uncertainty of supplies in their report to a level to assess the risk of the supplies to meeting the lowest projected demands that they developed.

Hazen asserts that supply and demand planning in an area like the Monterey Peninsula that is dependent on new sources of water must look at the risk and must apply an appropriate level of reliability and resiliency as good engineering principles. MPMWD has not addressed the current supply as required by the California CWC Section 10635 for normal, dry and multiple dry years to prove the resilience of that supply. Our analysis highlights the need for more analysis with recent data including consideration of historical impacts to supply. This also gets to the heart of our prior memorandum.

Current codes and regulations as well as their interpretation are important to establishing a reliable and resilient water supply across a range of likely supply and demand conditions. MPMWD focused on the interpretation of Maximum Day Demand and Peak Day Demand versus annual demand which is well understood, but avoided the topic of assessing the long-term historical data in determining future demands and not just picking data to fit a narrative.

In addition, interpreting the latest revisions to American Waterworks Association (AWWA) M50 Manual to say that MPWMD can use 3 or 5 years of data when there is over 20 years of data available is not in line with the intent and spirit of the latest version of that document which Hazen participated in developing.

Hazen and Sawyer had the MPMWD Supply and Demand Report reviewed independently by Hazen's nationally recognized demand expert, Dr. Jack Kiefer. He noted: "*There is not a standard or minimum amount of empirical rigor formally promulgated, which leads many to focus on simple averaging and story-telling instead of modeling cause and effect and then using official economic forecasts for evaluating and predicting growth. In addition, it is seldom when you see uncertainty explicitly accounted for or at least addressed which detracts from a higher-level objective of identifying, reducing and mitigating risks.*"

Hazen's intentions with our comments on MPWMD's analysis are consistent with that objective – a desire to see the Water Supply Solutions for the Monterey Peninsula truly evaluated and the risks of the water supply mitigated.

(Continued next page)

The demand analysis performed by WaterDM assumes that existing water conservation measures will result in increased conservation without implementing more stringent measures, such as use moratoriums and water rationing. CalAm has invested heavily in Conservation Programs as well as paying for research into water loss and loss detection and mitigation strategies in an assertive effort to minimize the impact to the area in the absence of a water supply solution meeting the basic requirements noted herein. WaterDM and MPMWD do not acknowledge that the MPWSP was designed to avoid the need for further implementation of stringent measures, like moratoriums and water rationing. Those types of measures may be necessary to achieve the demands that WaterDM and MPWMD are projecting.	**MPMWD's response** to the Hazen memorandum regarding ASR, states that there is "no immediate present-day demands" for the PWM Expansion flow. If the PWM Expansion is the backup project to satisfy the CDO, as noted in the SEIR (Final SEIR Page 1-1), to supply water if MPWSP is not available then the water demand today would require all of that flow and flow from ASR that is not available. **MPMWD references** multiple times the SEIR Appendix I-Tables 9 through 11 and states "the annual use of the new sources exceeds the annual AWPF demands." The SEIR documents however do not provide recent flow data as a basis for the claim that the multiple sources of water in the Appendix M of the SEIR actually available to the PWM Expansion. It highlights those flows are from assumptions and flow balance calculations. As noted herein, there is a need to assess the current water supplies with recent data from the water sources to fully validate that statement.	To assume that paper water is presently available without evaluating actual flow data is a significant error. **The WaterDM Supplemental Study maintains the same errors at the first WaterDM Study.** The water projections in the WaterDM Supplemental Study remain unreasonable, including an over estimation of the availability of ASR and PWM Phase One. Likewise, the WaterDM Supplemental Study understates demand on the Peninsula and overlooks M1W's July 20, 2020 report that indicates since the beginning of 2020 WWTP flows were reduced to 17,980 AF or 16.05 mgd. Nonetheless, meeting even the lowest demand projection in the Supplemental Study is unrealistic without the MPWSP and would require full capacity operation of the PWM Phase One and the PWM Expansion, supplies that have yet to prove reliable and are vulnerable to high-probability risks.

Recommendations and Conclusions

This memorandum is based on extensive analysis and a thorough review of the MPWMD Supply and Demand Report, the WaterDM Study, the Supplemental EIR for the PWM Expansion as well as other supporting documents. The following recommendations and conclusions are offered to the California Coastal Commission to consider as it evaluates the MPWSP and considers the feasibility of the PWM Expansion:

1. MPWMD Supply and Demand Report and SEIR for the PWM Expansion put the Peninsula in jeopardy of not having water available for meeting current demands with no recognition and accommodation for future uncertainty within the supplies proposed. (Refer to Figure 2).

2. MPWSP is the only currently proposed and feasible solution that provides safe secure reliable and resilient supply for a diversified portfolio for the Peninsula. (Refer to Figure 2).

3. The water supplies proposed for the PWM Expansion need further analysis with recent flow data to assess that water is actually available. Even if it is assumed that MPWMD has sufficient water rights to the source water for the PWM Expansion, which we understand it does not, holding adequate water rights will not actually secure water for the PWM Expansion if there is not actual water available to treat. (Refer to Figure 3).

4. The complex water supply management strategy to prioritize water supplies with limited historical flow information is a risk that must be considered in evaluating flows used for ensuring potable water supplies.

5. There is a deficit in water that will be available to the PWM Expansion when considering todays wastewater flows and Reclamation Ditch flows based on the most recent available data. Figure 4 highlights the deficit in supplies available to meet demands of PWM Phase One , CSIP, RUWAP and PWM Expansion.

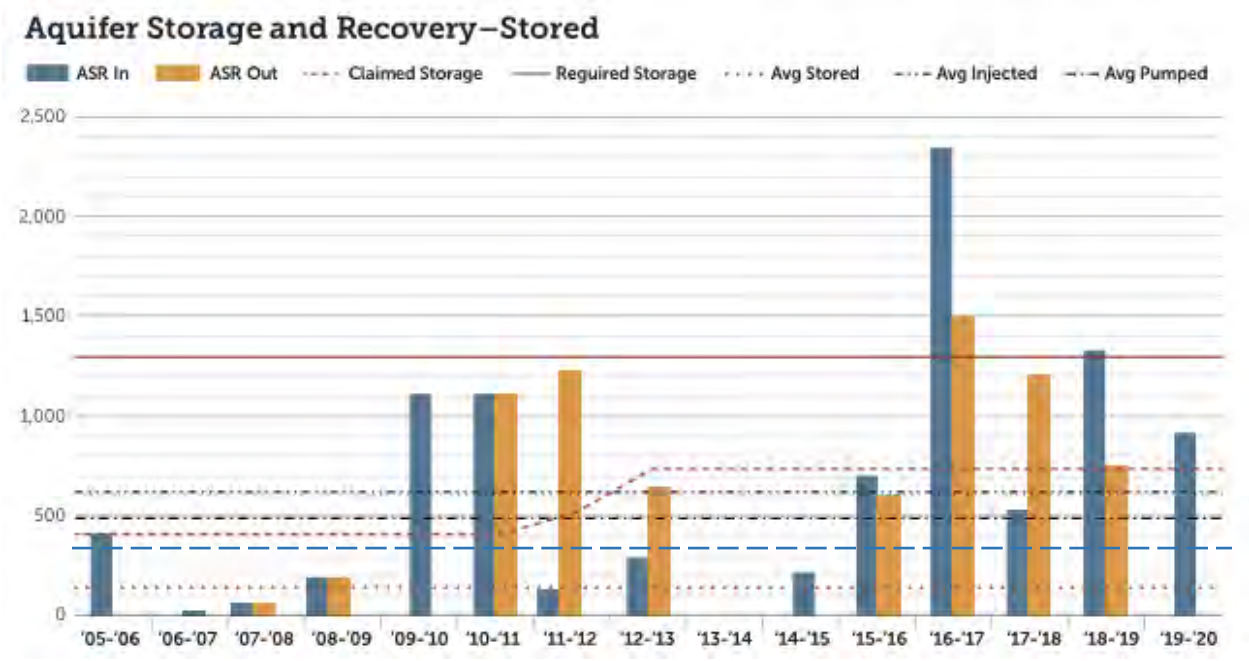
6. Assuming that there are adequate water rights for the water supplies that MPMWD proposes to supply the PWM Expansion, the SEIR and supporting studies overstate the actual flows available for the PWM Expansion. The true flow available to the PWM Expansion needs to be addressed to determine the true volumes available and to determine if those flows can be counted on day in and day out to supply the Peninsula. Based on the proposed supplies as studied to date, PWM Expansion appears infeasible.

7. The PWM Expansion should be reevaluated based on updated and accurate flow data and demands such as CSIP and PWM. Current flows even in best of water supply cases shows that CSIP will always be in a deficit. The impact of the CSIP deficit should be evaluated to avoid unintended environmental impacts if seawater intrusion is not mitigated by CSIP flows.

Appendix

Figure 6 represents the current Aquifer Storage and Recovery program over the past 15 years in operation. Figure 4 shows the average annual injected and annual average pumped volume. The average stored volume annually over 15 years is 138 acre-ft. Over 15 years there is only 700 acre-ft claimed as storage yet the MPMWD Supply and Demand Report indicates they can store 1,300 acre-ft per year. There are only two years the system has achieved more than 1,300 acre-ft into the aquifer. The limited average storage coupled with the injection limitations being experienced at PWM Phase One means these supplies are not yet reliable to be considered as a source that CalAm or any other public agency.

Figure 6: Aquifer Storage and Recovery



Figures 7 and 8 are provided as further information for Updated Tables 8 and 10 to highlight that in all conditions, there is a flow deficit with updated WWTP and Reclamation Ditch Flows. In the above document, Best Case and Worst Case were used to keep the discussion simple and direct. There is a flow deficit in all conditions and there is a need to update the relevant calculations with recent flow data to give an accurate assessment of supply and demand in a clear and transparent way.

Figure 7: Supply Deficit – SEIR Appendix I - Updated Table 8

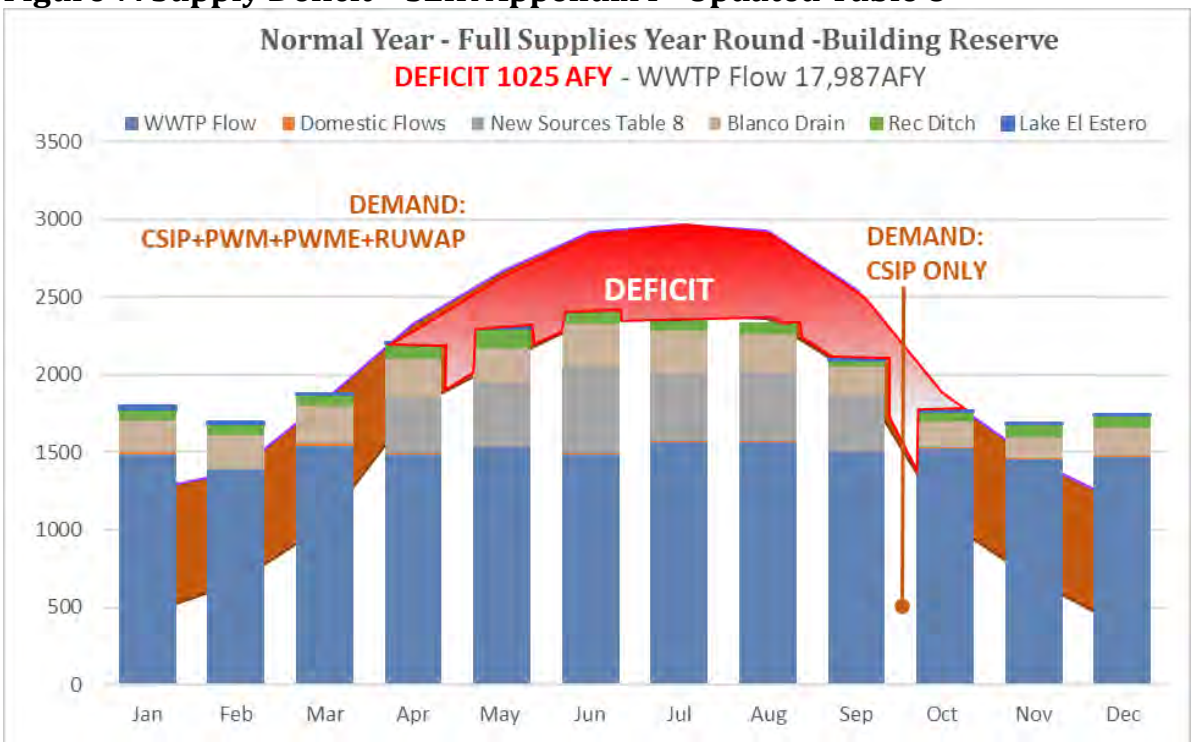
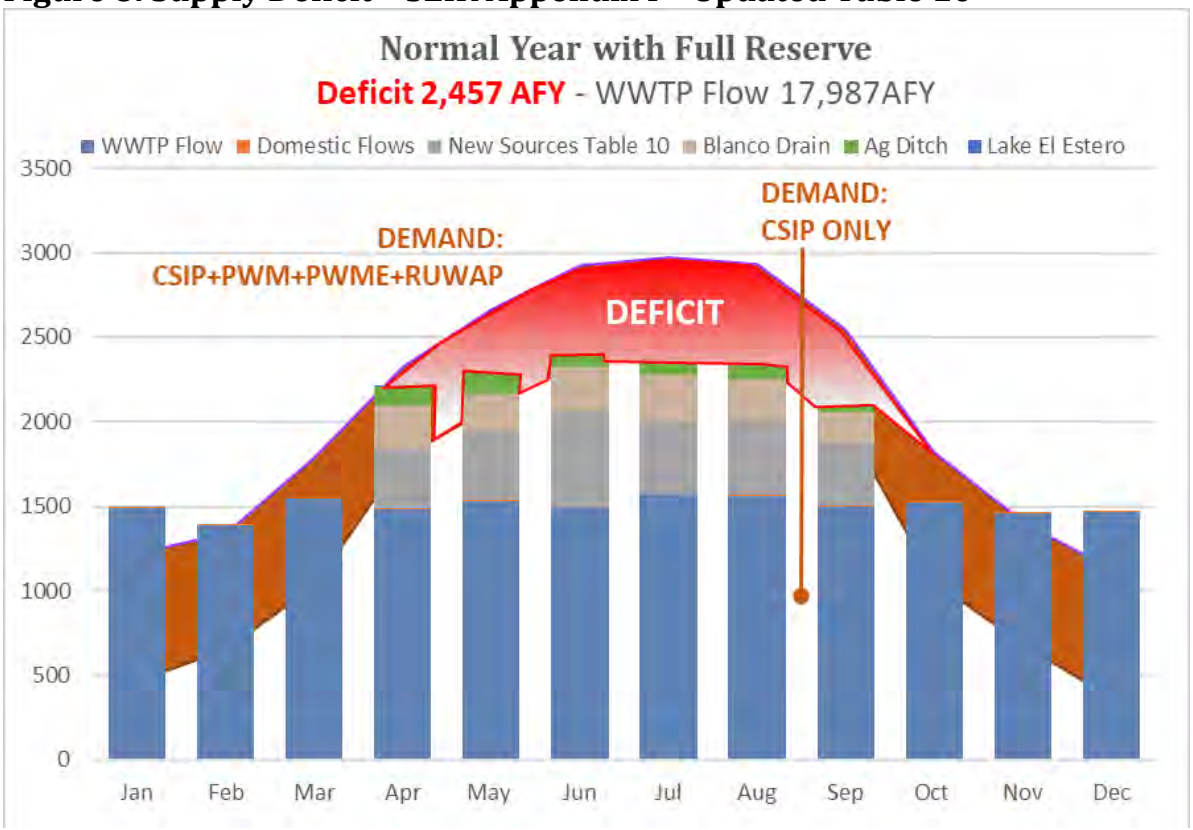


Figure 8: Supply Deficit – SEIR Appendix I – Updated Table 10



References

[1] Governor Gavin Newsome's 2020 Water Supply Portfolio – Executive Summary-Page 1

[2] PWM Phase One 2016 Draft EIR Appendix P-Reclamation Ditch Yield Study - Page 12

[3] PWM Expansion Supplemental EIR, April 2020 – Main Body, Page 3-1

[4] PWM Expansion Final Supplemental EIR, Appendix O, Supply and Demand for Water on the Monterey Peninsula, March 13, 2020. Page 20

[5] PWM Expansion Supplemental EIR, April 2020 – Main Body, Page S-1

[6] Exhibit 4-B Expert Report and Recommendations of Peter Mayer, P.E. Regarding Water Supply and Demand in the California American Water Company's Monterey Main System, prepared for The Marina Coast Water District, April 21, 2020 page 26

[7] PWM Expansion Supplemental EIR, April 2020, Appendix I – Source Water Availability, Yield, and Use Technical Memorandum, Tables 8-11.

[8] Final PWM Phase One 2016 EIR Consolidated – Jan 2016 - Volume I - Figure 2-9 Historic Regional Treatment Plant Flows

[9] Supplemental EIR, April 2020, Appendices to the M1W Draft Supplemental EIR 11-7-2019 -Appendix E - Water Quality and Statutory Compliance Report-Appendix C – Projected Monthly Flows of Source Waters to the Regional Treatment Plant Influent

[10] M1W Adhoc Committee Meeting, July 20, 2020 supporting documents.

[11] PWM Expansion Final Supplemental EIR, Appendix O, Supply and Demand for Water on the Monterey Peninsula, March 13, 2020, Page 7 [Figure 1 – Annual Water Production for Customer Service (Demand) Last 21 Years]

[12] USGS Website - https://waterdata.usgs.gov/nwis/uv?site_no=11152650

EXHIBIT 1

Jack Kiefer, PhD Resume

Hazen and Sawyer

Water Resources Expert

Jack C. Kiefer, PhD

Senior Associate

Dr. Kiefer is an economist and geographer specializing in multiple consulting areas of water resource economics and planning, econometrics, and integrated water demand and supply planning and management.

Education

PhD, Geography, Southern Illinois University

MA, Monetary and Development Economics, Southern Illinois University

BA, Economics, Southern Illinois University

Areas of Expertise

- Water Resources Planning
- Economic Analysis
- Econometrics
- Water Demand Forecasting
- Impact and Process Evaluation
- Risk and Uncertainty Analysis
- Water Supply Reliability Planning

Experience

- 30 total years
- 13 years with Hazen

Professional Activities

American Water Works Association

American Water Resources Association

Prior to joining Hazen and Sawyer, Dr. Kiefer led CDM's Water Economics group and was a Lead Practitioner in the area of Water Resources. Before joining CDM, Dr. Kiefer directed Planning and Management Consultants, Ltd.'s Water Resources Research program and its five business service lines of Integrated Water Demand and Supply Planning, Resource Economics and Quantitative Analysis, Navigation Analysis, Military Resources Planning and Environmental Planning.

Dr. Kiefer is an expert in forecasting the demand for potable water. He has performed numerous analyses of water demand, including the development of long term water demand forecasts for some of the largest water utilities in the United States, including the Metropolitan Water District of Southern California, Tampa Bay Water, and San Diego County Water Authority. Dr. Kiefer is also an expert in conducting empirical evaluations of demand management programs. He has led water conservation studies for large utilities in the Southwest and demand management plans for Tampa Bay Water, the City of Phoenix, and New York City. He has also served as principal investigator on several Water Research Foundation (WaterRF), projects where he has led evaluations of urban water demands as part of WaterRF's Strategic Climate Change initiative and Water Demand Forecasting focus area.

Dr. Kiefer has more than 15 years of consulting experience with the U.S. Army Corps of Engineers (Corps) for whom he directed economic and water resources planning studies. He has addressed the Corps' major Civil Works program functions, including Water Supply, Hydropower, Navigation, Recreation, Ecosystem Restoration, and Flood Damage Reduction. Dr. Kiefer has considerable expertise in the areas of risk analysis, multipurpose planning, and multi-criteria decision support techniques.

In 1997, he received the Commander's Award for Public Service from the Department of the Army for outstanding performance in support of the U.S. Army Corps of Engineers Cost Savings Task Force, which helped to identify and automate cost savings measures and to facilitate the analysis of those same measures nationwide.

Hazen

Technical Publications

Evaluation of Customer Information and Data Processing Needs for Water Demand Planning and Management. Kiefer, J. and L. Krentz. 2016. Denver, Colo.: Water Research Foundation.

"Differentiating the Impacts of the Economy, Efficiency, and Conservation on Water Demands." J. Kiefer. 2016. The Georgia Operator, Volume 53, No.3, Summer 2016.

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Evaluation of Water Ratemaking Practices and Rate Structure Complexity in Illinois Water Systems. 2004. J. Kiefer. Doctoral dissertation. Copyright © 2004, Jack C. Kiefer.

"Water Supply Planning and Risk Management: Coping with the Costs of Uncertainty." 2004. J. Kiefer. Proceedings of North

Water Demand Planning and Management

Principal Investigator, Portfolio of Applied Research for the Water Research Foundation

- Uncertainty in Long Term Water Demand Forecasting (Project 4558)
- Water Use in the Multifamily Sector (Project 4554)
- Water Demand Forecasting in Uncertain Times: Isolating the Effects of the Great Recession (Project 4458)
- Methodology for Evaluating Water Use in Commercial, Institutional and Industrial Sectors (Project 4375) –
- Analysis of Changes in Water Use under Regional Climate Change Scenarios (Project 4263)
- Evaluation of Customer Information and Data Processing Needs for Water Demand Planning and Management (Project 4527)
- Principal Investigator, Water Research Foundation Project 4735, Methodology for Determining Baseline Commercial, Institutional and Industrial End Uses of Water

Long-Term Demand Forecasting System (LTDFS) Update, Tampa Bay Water, Tampa Bay, FL

Technical Director leading a team to redevelop all elements of LTDFS, including estimation of econometric and end use water efficiency models, focusing on exploratory data analysis of an expanded time-series and cross-sectional database of water demands in the Tampa Bay region.

Long-term Water Demand Forecasts, San Diego County Water Authority, San Diego, CA

Project Manager of development of five consecutive water demand forecasts and forecast updates for the San Diego County Water Authority, in support of the Agency's periodic development of its Urban Water Management Plan. Original efforts involved the development of econometric models of M&I water demands, which were followed by development of predictive models for agricultural demands. More recent support to the Authority has included the analysis of climate change impacts on water demand and the development and application of risk-based simulation procedures to support long-term supply reliability and capital improvement planning.

Modeler/Analyst, Water Research Foundation Project 4309, Residential End Uses of Water Update

Dr. Kiefer was responsible for developing models of key indoor and outdoor residential end uses of water, using end use logging data for a large sample of households across the US and Canada, relating end use water consumption to household demographic and economic characteristics, as well as the price for water and sewer services.

Carolina American Water Works Association/Water Environment Association 84th Annual Conference, November 14-17, 2004, Charlotte, NC.

"Development of Probabilistic Water Demand Forecast for the Tampa Bay Region: A Review of Methodological Features." 2003. J. Kiefer. Proceedings of American Water Works Association 2003 Annual Conference and Exposition, Anaheim, CA.

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Residential End Uses of Water. 1999. P. Mayer, W. DeOreo, E. M. Opitz, B. Dzigielewski, J. Kiefer, W. Y. Davis and J. Nelson. American Water Works Association Research Foundation. Denver, Colorado.

"The Search for Acceptable Water Rates: Research Needs and Possibilities." 1999, J. Kiefer. Journal of Contemporary Water Research and Education (formerly Water Resources Update), Vol. 114.

"Demand Uncertainty: Portraying and Quantifying the Risks for Planning." 1998. J. Kiefer. Proceedings of the American Water Works Association (AWWA) 1998 Annual Conference. AWWA. Denver, Colorado.

Technical Director, Water Conservation Planning Support, NYC-DEP, NY

Technical Director, of the development of NYC DEP's Water Demand Management Plan (WDMP) through a series of investigations involving pilot efficiency projects, water reuse at specific facilities, spatial demand profiling, and assessment of large users, drought management, and water pricing strategies. The objective of this project was to assist NYC DEP in the development of its WDMP through a series of investigations involving pilot efficiency projects, water reuse at specific facilities, spatial demand profiling, assessment of large users, drought management, and water pricing strategies.

Enhancements to New York City's Long-Term Water Demand Forecasting Model, NYCDEP, NY

Technical Director for this project. The objective was to make incremental improvements to NYCDEP's long-term water demand forecasting model to incorporate key future trends and uncertainties related to water efficiency and climate. The updated model included a water efficiency index, climatic variables, and residual variance factors at both annual and monthly time steps, which supports development of multiple forecast scenarios.

Other Relevant Experience

- Co-Principal Investigator, Water Reuse Research Foundation Project 09-04, The Value of Water Supply in the Commercial, Industrial, and Institutional (CII) Sector
- Principal Investigator, Water Conservation Metrics Study
- Water Demand Management Plan, Tampa Bay Water, FL
- Project Manager, Phoenix Water Demand Management Plan Support, AZ
- Technical Director, Long-Term Forecast Performance Monitoring, Tampa Bay Water, FL
- Principal Investigator, Long-Term Probabilistic Water Demand and Supply Reliability Forecast for Tampa Bay Water, FL
- Project Manager, Future Needs Analysis, Tampa Bay Water, FL
- Project Director, Development of Water Demand Forecasting Methodologies for the Delaware River Basin Commission, FL
- Principal Investigator, Phoenix Meter Accuracy Study, AZ
- Project Manager, Study of Institutional and Legal Environment of Texas Water Supply Allocation, TX
- Project Manager, Model Development and Long-Term Water Demand Forecasts for Metropolitan Water District of Southern California, CA

"Anticipating Nonresidential Flood Damages: A Report of Findings of a Survey of Businesses in the Wyoming Valley of Pennsylvania." 1998. J. Kiefer and S. Davis. Proceedings of the 22nd Annual Conference of the Association of State Floodplain Managers (ASFPM).

Incorporating Risk and Uncertainty into Forecasts of Waterborne Traffic Flows: A Reference Manual of Methodologies and Hypothetical Examples. 1997. J. Kiefer. U.S. Army Corps of Engineers, Institute for Water Resources. Alexandria, Virginia.

Analysis of Non-residential Content Value and Depth-Damage Data for Flood Damage Reduction Studies. 1996. J. Kiefer and S. Willett. U.S. Army Corps of Engineers, Institute for Water Resources. Alexandria, Virginia.

"Statistical Analyses of Water Conservation Issues: The Case of Phoenix, Arizona." 1996. J. Kiefer and J. DeWitt. Proceedings of CONSERV96. Conference hosted by the American Water Works Association in Orlando, Florida.

Guidebook for the Preparation and Use of Project Study Plans. 1996. J. Kiefer and J. Prather. U.S. Army Corps of Engineers, Institute for Water Resources. Alexandria, Virginia.

"Estimation of Single-Family Residential Irrigation Demands: A Model-Based Approach." In Water in the 21st Century: Conservation, Demand and Supply. J. Kiefer and J. DeWitt. April 23-26, 1995. Proceedings of AWRA Annual Spring Symposium. Salt Lake City, Utah.

"Isolating the Impact of a Change in Rate Structure." In Water in the 21st Century: Conservation, Demand and Supply. Proceedings of AWRA Annual Spring Symposium. April 23-26, 1995. J. Kiefer and J. DeWitt. Salt Lake City, Utah.

Urban Water Conservation Programs Volume I: Annotated Bibliography. 1994. Opitz, E.M., B. Dziegielewski, N.A. Hanna-Somers, J. Kocik, J.R.M. Steinbeck, H.P. Garbharran, J.C. Kiefer and K.L. O'Grady. U.S. Army Corps of Engineers, Institute for Water Resources; U.S. Geological Survey; Metropolitan Water District of Southern California; Southern Nevada Water Authority; California Urban Water Agencies; Phoenix Water Services Department and American Water Works Association.

- Project Manager, IWR-MAIN Water Demand Management Suite
- Project Manager/Principal Investigator, City of Albuquerque Water Conservation Program, NM
- Coauthor and Principal Modeler, AWWARF Residential End Uses of Water and Commercial & Institutional Uses of Water Studies
- Project Manager/Principal Investigator, Cost-Effectiveness Evaluations of Pilot Water Conservation Projects for the Cities of Lacey, Olympia and Tumwater (LOTT Wastewater Partnership)

Water Resources Planning and Economics

- Principal Investigator, Civil Works Program Strategy Papers. USACE Institute for Water Resources
- Principal Investigator, Review of Computer-Aided Decision-Making in Water Resources Planning and Management. USACE Institute for Water Resources
- Project Manager, Expert Independent Reviews of Corps of Engineers Economics and Planning Studies, USACE Institute for Water Resources
- Economics Team Leader, National Economic Analysis of Water Use for the Republic of Ireland
- Principal Investigator, USACE New Orleans District, Economic Impact Analysis of Louisiana Coastal 2050 Restoration Initiative, LA
- Project Manager/Principal Investigator, Evaluation of National U.S. Army Corps Capital Stock Investments and Programmatic Benefits
- Project Manager, National Dredging Needs Study of U.S. Ports and Harbors
- Principal Investigator, Plan Formulation Training Course for the Corps of Engineers
- Project Manager, America's Water Resources Challenges for the 21st Century
- Project Manager, USACE/BPA Hydroelectric Investment Guide
- Project Manager/Principal Investigator, USACE Flood Damage Reduction Studies

EXHIBIT 2

SEIR Appendix I – Source Water Availability, Yield and Use Technical Memorandum-

Tables 8, 9, 10 and 11

Table 8: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Full Surface Water Yields, Normal Water Year, Building a Drought Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Existing RTP Inflows (Average 2009 to 2013)	**1,798**	**1,678**	**1,867**	**1,796**	**1,850**	**1,799**	**1,893**	**1,888**	**1,813**	**1,844**	**1,762**	**1,776**	**21,764**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	52	41	34	16	2	0	0	0	2	8	23	47	225
	Urban runoff to ponds	*52*	*41*	*34*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*23*	*47*	*205*
	Urban runoff to RTP	*0*	*0*	*0*	*16*	*2*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*20*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	684	763	847	647	362	0	0	0	0	253	466	605	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	172	0	0	0	0	0	0	304
8	AWW and Salinas Runoff to RTP	0	0	0	355	413	563	435	444	369	0	0	0	2,579
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	209	223	246	252	225	274	277	244	184	168	133	185	2,620
10	Reclamation Ditch at Davis Road [10]	70	66	70	106	79	99	113	109	72	65	89	76	1,014
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	24	15	14	5	1	0	0	0	1	4	10	13	87
13	**Subtotal New Waters Available**	**303**	**304**	**330**	**718**	**718**	**936**	**825**	**797**	**626**	**237**	**232**	**274**	**6,299**
	Total Projected Water Supply	**2,115**	**1,987**	**2,207**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**2,085**	**1,999**	**2,057**	**28,145**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Average SVRP deliveries to CSIP (2009-2013)	13	459	726	1,376	1,763	1,750	1,866	1,854	1,698	984	448	18	12,955
14	FIVE YEAR AVERAGE CSIP AREA WELL WATER USE (2009-2013)	448	195	304	412	324	606	519	504	300	75	233	352	4,272
	TOTAL CSIP Demand (excludes SRDF use)	**461**	**654**	**1,030**	**1,788**	**2,087**	**2,356**	**2,385**	**2,358**	**1,998**	**1,059**	**681**	**370**	**17,227**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	355	367	355	367	367	355	367	355	367	4,320
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	42	38	42							42	41	42	248
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP[18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,087**
	Total Projected Water Demand	**1,260**	**1,376**	**1,829**	**2,328**	**2,668**	**2,922**	**2,971**	**2,929**	**2,547**	**1,860**	**1,455**	**1,169**	**25,314**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	461	654	1,030	1,735	1,747	1,693	1,785	1,802	1,733	1,059	681	370	14,750
20	New sources available to CSIP [13]	0	0	0	249	245	480	353	319	162	0	0	0	1,808
21	**Total Supply to CSIP**	**461**	**654**	**1,030**	**1,984**	**1,993**	**2,173**	**2,138**	**2,121**	**1,894**	**1,059**	**681**	**370**	**16,558**
	Net CSIP Increase													**3,603**
22	Surface waters at RTP to AWPF	303	304	330	114	106	101	105	111	109	237	232	274	2,325
23	Secondary effluent to AWPF	468	398	437	0	0	0	0	0	0	513	520	517	2,854
24	AWW and Salinas urban runoff to AWPF	0	0	0	355	367	355	367	367	355	0	0	0	2,166
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,086**
	Subtotal- all waters (including secondary effluent)	**1,260**	**1,376**	**1,829**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,860**	**1,455**	**1,169**	**24,644**
27	FIVE YEAR AVERAGE WASTE WATER EFFLUENT TO OCEAN OUTFALL (2009-2013)[15]	1,785	1,219	1,141	420	88	49	27	34	114	859	1,314	1,759	8,809
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	854	611	377	0	0	0	0	0	0	226	545	887	3,501
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(468)	(398)	(437)	249	245	480	353	319	162	(513)	(520)	(517)	(1,046)
30	AWT BRINE TO OCEAN OUTFALL	152	137	152	102	110	108	111	109	104	152	147	152	1,536

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

2 Table 2-1, p. 5, Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler Consulting Engineers, August 2015.

3 Volume of effluent from City of Salinas agricultural wash water to be directed into ponds 1,2,3, and the aeration pond for storage.

4 Average monthly flow from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015.

5 Rainfall from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015. Pond area presumed to be Ponds 1,2, 3 + Aeration lagoon. No rainfall/evaporation or storage assigned to drying beds.

6 Table 3, Todd Groundwater, Memorandum, Pure Water Monterey Groundwater Replenishment Project: Impacts of Changes in Percolation at the Salinas Industrial Wastewater Treatment Facility on Groundwater and the Salinas River, February 11, 2015.

7 Table 4, Ibid.

8 Ponds 1,2,3 and aeration basin hold up to 1,065 acre-feet (one foot of freeboard). If flow to ponds would exceed the maximum volume, it is presumed that excess flow can be diverted to the RIBs or drying beds or flow can be diverted to the RTP. Presume that pond storage goes to zero sometime during the year (shown here starting in July).

9 Water right application 32263A. Max diversion = 6 cfs diversion. If SRDF is not operating (drought year), 2 cfs is bypassed to the Salians River. See final water right permit 21376

10 Water right applciation 32263B. Max. diversion = 6 cfs. See final water right permit 21377. Assumes 2 cfs instream bypass requirement Dec-May, 1 cfs bypass in June and 0.7 cfs instream bypass requirement for July-Nov. Also assumes diversion stopped when flows reach 30 cfs (migration window) and restart when flow declines to 20 cfs. See final water right permit 21377

11 Water right application 32263C. Max. diversion = 3 cfs. Removed from project portfolio during water rights process. See RECLAMATION DITCH YIELD STUDY, Schaaf and Wheeler, March 2015.

12 Includes secondary effluent wastewater currently used to produce recycled water at the Salinas Valley Reclamation Project (SVRP), and additional amounts which may be used during periods of low demand (<5 mgd) with the proposed improvements to the SVRP.

13 New source waters not used by AWPF will be available to SVRP for CSIP.

14 A drought reserve of up to 1,000 AF would be created over five years by producing 200 AFY additional product water from the GWR Project AWTF during winter months and storing the water in the Seaside Basin. This would establish a "water bank" that the CSIP can draw on in droughts. The drought reserve would allow flow at the RTP for the GWR Project to be temporarily reduced during critically dry periods, thus freeing up more of the newly available inflows to the RTP to be sent to the CSIP area. Extraction from the Seaside Basin would continue at the average rate to supply the Monterey Peninsula.

15 Average monthly RTP discharge, 2009-2013 (reported by M1W).

16 Secondary treated municipal effluent not used for SVRP or the AWPF.

17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

Table 9: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Diversion Pattern for a Normal Water Year, Building a Drought Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Existing RTP Inflows (Average 2009 to 2013)	**1,798**	**1,678**	**1,867**	**1,796**	**1,850**	**1,799**	**1,893**	**1,888**	**1,813**	**1,844**	**1,762**	**1,776**	**21,764**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	52	41	34	16	2	0	0	0	2	8	23	47	225
	Urban runoff to ponds	*52*	*41*	*34*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*23*	*47*	*205*
	Urban runoff to RTP	*0*	*0*	*0*	*16*	*2*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*20*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	684	763	847	647	362	0	0	0	0	253	466	605	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	172	0	0	0	0	0	0	304
8	AWW and Salinas Runoff to RTP	0	0	0	355	413	563	435	444	369	0	0	0	2,579
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	0	0	0	252	225	274	277	244	184	0	0	0	1,456
10	Reclamation Ditch at Davis Road [10]	0	0	0	106	79	99	113	109	72	11	0	0	589
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	0	0	0	5	1	0	0	0	1	0	0	0	7
13	**Subtotal New Waters Available**	**0**	**0**	**0**	**718**	**718**	**936**	**825**	**797**	**626**	**11**	**0**	**0**	**4,631**
	Total Projected Water Supply	**1,812**	**1,683**	**1,877**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,860**	**1,767**	**1,783**	**26,477**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Average SVRP deliveries to CSIP (2009-2013)	13	459	726	1,376	1,763	1,750	1,866	1,854	1,698	984	448	18	12,955
14	FIVE YEAR AVERAGE CSIP AREA WELL WATER USE (2009-2013)	448	195	304	412	324	606	519	504	300	75	233	352	4,272
	TOTAL CSIP Demand (excludes SRDF use)	**461**	**654**	**1,030**	**1,788**	**2,087**	**2,356**	**2,385**	**2,358**	**1,998**	**1,059**	**681**	**370**	**17,227**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	355	367	355	367	367	355	367	355	367	4,320
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	42	38	42							42	41	42	248
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP[18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,087**
	Total Projected Water Demand	**1,260**	**1,376**	**1,829**	**2,328**	**2,668**	**2,922**	**2,971**	**2,929**	**2,547**	**1,860**	**1,455**	**1,169**	**25,314**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	461	654	1,030	1,735	1,747	1,693	1,785	1,802	1,733	1,059	681	370	14,750
20	New sources available to CSIP [13]	0	0	0	249	245	480	353	319	162	0	0	0	1,808
21	**Total Supply to CSIP**	**461**	**654**	**1,030**	**1,984**	**1,993**	**2,173**	**2,138**	**2,121**	**1,894**	**1,059**	**681**	**370**	**16,558**
	Net CSIP Increase													**3,603**
22	Surface waters at RTP to AWPF	0	0	0	114	106	101	105	111	109	11	0	0	657
23	Secondary effluent to AWPF	771	702	767	0	0	0	0	0	0	738	752	791	4,522
24	AWW and Salinas urban runoff to AWPF	0	0	0	355	367	355	367	367	355	0	0	0	2,166
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,086**
	Subtotal- all waters (including secondary effluent)	**1,260**	**1,376**	**1,829**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,860**	**1,455**	**1,169**	**24,644**
27	FIVE YEAR AVERAGE WASTE WATER EFFLUENT TO OCEAN OUTFALL (2009-2013)[15]	1,785	1,219	1,141	420	88	49	27	34	114	859	1,314	1,759	8,809
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	552	308	47	0	0	0	0	0	0	0	313	614	1,833
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(771)	(702)	(767)	249	245	480	353	319	162	(738)	(752)	(791)	(2,714)
30	AWT BRINE TO OCEAN OUTFALL	152	137	152	102	110	108	111	109	104	152	147	152	1,536

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

2 Table 2-1, p. 5, Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler Consulting Engineers, August 2015.

3 Volume of effluent from City of Salinas agricultural wash water to be directed into ponds 1,2,3, and the aeration pond for storage.

4 Average monthly flow from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015.

5 Rainfall from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015. Pond area presumed to be Ponds 1,2, 3 + Aeration lagoon. No rainfall/evaporation or storage assigned to drying beds.

6 Table 3, Todd Groundwater, Memorandum, Pure Water Monterey Groundwater Replenishment Project: Impacts of Changes in Percolation at the Salinas Industrial Wastewater Treatment Facility on Groundwater and the Salinas River, February 11, 2015.

7 Table 4, Ibid.

8 Ponds 1,2,3 and aeration basin hold up to 1,065 acre-feet (one foot of freeboard). If flow to ponds would exceed the maximum volume, it is presumed that excess flow can be diverted to the RIBs or drying beds or flow can be diverted to the RTP. Presume that pond storage goes to zero sometime during the year (shown here starting in July).

9 Water right application 32263A. Max diversion = 6 cfs diversion. If SRDF is not operating (drought year), 2 cfs is bypassed to the Salians River. See final water right permit 21376

10 Water right applciation 32263B. Max. diversion = 6 cfs. See final water right permit 21377. Assumes 2 cfs instream bypass requirement Dec-May, 1 cfs bypass in June and 0.7 cfs instream bypass requirement for July-Nov. Also assumes diversion stopped when flows reach 30 cfs (migration window) and restart when flow declines to 20 cfs. See final water right permit 21377

11 Water right application 32263C. Max. diversion = 3 cfs. Removed from project portfolio during water rights process. See RECLAMATION DITCH YIELD STUDY, Schaaf and Wheeler, March 2015.

12 Includes secondary effluent wastewater currently used to produce recycled water at the Salinas Valley Reclamation Project (SVRP), and additional amounts which may be used during periods of low demand (<5 mgd) with the proposed improvements to the SVRP.

13 New source waters not used by AWPF will be available to SVRP for CSIP.

14 A drought reserve of up to 1,000 AF would be created over five years by producing 200 AFY additional product water from the GWR Project AWTF during winter months and storing the water in the Seaside Basin. This would establish a "water bank" that the CSIP can draw on in droughts. The drought reserve would allow flow at the RTP for the GWR Project to be temporarily reduced during critically dry periods, thus freeing up more of the newly available inflows to the RTP to be sent to the CSIP area. Extraction from the Seaside Basin would continue at the average rate to supply the Monterey Peninsula.

15 Average monthly RTP discharge, 2009-2013 (reported by M1W).

16 Secondary treated municipal effluent not used for SVRP or the AWPF.

17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

Table 10: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Diversion Pattern for a Normal Water Year with a Full Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Existing RTP Inflows (Average 2009 to 2013)	**1,798**	**1,678**	**1,867**	**1,796**	**1,850**	**1,799**	**1,893**	**1,888**	**1,813**	**1,844**	**1,762**	**1,776**	**21,764**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	52	41	34	16	2	0	0	0	2	8	23	47	225
	Urban runoff to ponds	*52*	*41*	*34*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*23*	*47*	*205*
	Urban runoff to RTP	*0*	*0*	*0*	*16*	*2*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*20*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	684	763	847	647	362	0	0	0	0	253	466	605	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	172	0	0	0	0	0	0	304
8	AWW and Salinas Runoff to RTP	0	0	0	355	413	563	435	444	369	0	0	0	2,579
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	0	0	0	252	225	274	277	244	184	0	0	0	1,456
10	Reclamation Ditch at Davis Road [10]	0	0	0	106	79	99	113	109	72	0	0	0	578
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	0	0	0	5	1	0	0	0	1	0	0	0	7
13	**Subtotal New Waters Available**	**0**	**0**	**0**	**718**	**718**	**936**	**825**	**797**	**626**	**0**	**0**	**0**	**4,620**
	Total Projected Water Supply	**1,812**	**1,683**	**1,877**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,849**	**1,767**	**1,783**	**26,466**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Average SVRP deliveries to CSIP (2009-2013)	13	459	726	1,376	1,763	1,750	1,866	1,854	1,698	984	448	18	12,955
14	FIVE YEAR AVERAGE CSIP AREA WELL WATER USE (2009-2013)	448	195	304	412	324	606	519	504	300	75	233	352	4,272
	TOTAL CSIP Demand (excludes SRDF use)	**461**	**654**	**1,030**	**1,788**	**2,087**	**2,356**	**2,385**	**2,358**	**1,998**	**1,059**	**681**	**370**	**17,227**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	355	367	355	367	367	355	367	355	367	4,320
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	0	0	0							0	0	0	0
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP[18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**757**	**683**	**757**	**539**	**581**	**566**	**585**	**572**	**549**	**758**	**733**	**758**	**7,839**
	Total Projected Water Demand	**1,218**	**1,338**	**1,787**	**2,328**	**2,668**	**2,922**	**2,971**	**2,929**	**2,547**	**1,818**	**1,414**	**1,127**	**25,066**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	461	654	1,030	1,735	1,747	1,693	1,785	1,802	1,733	1,059	681	370	14,750
20	New sources available to CSIP [13]	0	0	0	249	245	480	353	319	162	0	0	0	1,808
21	**Total Supply to CSIP**	**461**	**654**	**1,030**	**1,984**	**1,993**	**2,173**	**2,138**	**2,121**	**1,894**	**1,059**	**681**	**370**	**16,558**
	Net CSIP Increase													**3,603**
22	Surface waters at RTP to AWPF	0	0	0	114	106	101	105	111	109	0	0	0	646
23	Secondary effluent to AWPF	729	664	724	0	0	0	0	0	0	707	712	749	4,285
24	AWW and Salinas urban runoff to AWPF	0	0	0	355	367	355	367	367	355	0	0	0	2,166
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**757**	**683**	**757**	**539**	**581**	**566**	**585**	**572**	**549**	**758**	**733**	**758**	**7,839**
	Subtotal- all waters (including secondary effluent)	**1,218**	**1,338**	**1,787**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,818**	**1,414**	**1,127**	**24,397**
27	FIVE YEAR AVERAGE WASTE WATER EFFLUENT TO OCEAN OUTFALL (2009-2013)[15]	1,785	1,219	1,141	420	88	49	27	34	114	859	1,314	1,759	8,809
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	594	346	90	0	0	0	0	0	0	31	354	656	2,070
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(729)	(664)	(724)	249	245	480	353	319	162	(707)	(712)	(749)	(2,477)
30	AWT BRINE TO OCEAN OUTFALL	144	130	144	102	110	108	111	109	104	144	139	144	1,489

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

2 Table 2-1, p. 5, Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler Consulting Engineers, August 2015.

3 Volume of effluent from City of Salinas agricultural wash water to be directed into ponds 1,2,3, and the aeration pond for storage.

4 Average monthly flow from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015.

5 Rainfall from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015. Pond area presumed to be Ponds 1,2, 3 + Aeration lagoon. No rainfall/evaporation or storage assigned to drying beds.

6 Table 3, Todd Groundwater, Memorandum, Pure Water Monterey Groundwater Replenishment Project: Impacts of Changes in Percolation at the Salinas Industrial Wastewater Treatment Facility on Groundwater and the Salinas River, February 11, 2015.

7 Table 4, Ibid.

8 Ponds 1,2,3 and aeration basin hold up to 1,065 acre-feet (one foot of freeboard). If flow to ponds would exceed the maximum volume, it is presumed that excess flow can be diverted to the RIBs or drying beds or flow can be diverted to the RTP. Presume that pond storage goes to zero sometime during the year (shown here starting in July).

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10 Water right applciation 32263B. Max. diversion = 6 cfs. See final water right permit 21377. Assumes 2 cfs instream bypass requirement Dec-May, 1 cfs bypass in June and 0.7 cfs instream bypass requirement for July-Nov. Also assumes diversion stopped when flows reach 30 cfs (migration window) and restart when flow declines to 20 cfs. See final water right permit 21377

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12 Includes secondary effluent wastewater currently used to produce recycled water at the Salinas Valley Reclamation Project (SVRP), and additional amounts which may be used during periods of low demand (<5 mgd) with the proposed improvements to the SVRP.

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15 Average monthly RTP discharge, 2009-2013 (reported by M1W).

16 Secondary treated municipal effluent not used for SVRP or the AWPF.

17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

Table 11: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Diversion Pattern for a Drought Year, Starting with a Full Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Minimum Year RTP Inflows (2013)	***1,725***	***1,494***	***1,645***	***1,657***	***1,722***	***1,675***	***1,748***	***1,773***	***1,715***	***1,690***	***1,634***	***1,612***	**20,090**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	17	14	11	5	1	0	0	0	1	3	8	16	76
	Urban runoff to ponds	*17*	*14*	*11*	*0*	*0*	*0*	*0*	*0*	*0*	*3*	*8*	*16*	*69*
	Urban runoff to RTP	*0*	*0*	*0*	*5*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*7*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	598	650	711	511	226	0	0	0	0	248	446	554	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	36	0	0	0	0	0	0	168
8	AWW and Salinas Runoff to RTP	0	0	0	344	412	427	435	444	368	0	0	0	2,430
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	0	0	246	252	225	274	277	244	184	168	133	0	2,003
10	Reclamation Ditch at Davis Road [10]	0	0	70	106	79	99	113	109	72	65	89	0	802
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	0	0	14	5	1	0	0	0	1	4	10	0	35
13	**Subtotal New Waters Available**	**0**	**0**	**330**	**707**	**717**	**800**	**825**	**797**	**625**	**237**	**232**	**0**	**5,270**
	Total Projected Water Supply	**1,739**	**1,499**	**1,985**	**2,373**	**2,444**	**2,479**	**2,578**	**2,578**	**2,345**	**1,931**	**1,871**	**1,619**	**25,442**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Max Year SVRP deliveries to CSIP (2013)	*0*	*692*	*1,558*	*1,669*	*1,799*	*1,675*	*1,786*	*1,803*	*1,725*	*1,548*	*1,127*	*88*	15,469
14	PEAK CSIP AREA WELL WATER USE (10/2013-09/2014)	*509*	*9*	*221*	*242*	*1,197*	*1,261*	*1,303*	*1,025*	*453*	*165*	*35*	*730*	7,150
	TOTAL CSIP Demand (excludes SRDF use)	**509**	**701**	**1,779**	**1,911**	**2,996**	**2,936**	**3,089**	**2,828**	**2,178**	**1,713**	**1,162**	**818**	**22,619**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	133	137	133	137	137	133	367	355	367	2,963
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	0	0	0							0	0	0	0
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP [18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**757**	**683**	**757**	**317**	**351**	**344**	**355**	**342**	**327**	**758**	**733**	**758**	**6,482**
	Total Projected Water Demand	**1,266**	**1,384**	**2,537**	**2,228**	**3,348**	**3,280**	**3,444**	**3,170**	**2,505**	**2,471**	**1,894**	**1,575**	**29,102**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	509	701	1,227	1,596	1,619	1,569	1,640	1,687	1,635	1,173	1,138	818	15,312
20	New sources available to CSIP [13]	0	0	0	460	474	567	583	549	383	0	0	0	3,015
21	**Total Supply to CSIP**	**509**	**701**	**1,227**	**2,056**	**2,093**	**2,136**	**2,223**	**2,236**	**2,018**	**1,173**	**1,138**	**818**	**18,328**
	Net CSIP Increase													**2,858**
22	Surface waters at RTP to AWPF	0	0	330	114	106	101	105	111	109	237	232	0	1,445
23	Secondary effluent to AWPF	729	664	394	0	0	0	0	0	0	471	480	749	3,487
24	AWW and Salinas urban runoff to AWPF	0	0	0	133	137	133	137	137	133	0	0	0	809
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**757**	**683**	**757**	**317**	**351**	**344**	**355**	**342**	**327**	**758**	**733**	**758**	**6,482**
	Subtotal- all waters (including secondary effluent)	**1,266**	**1,384**	**1,985**	**2,373**	**2,444**	**2,479**	**2,578**	**2,578**	**2,345**	**1,931**	**1,871**	**1,575**	**24,810**
27	*DRY YEAR WASTEWATER EFFLUENT TO OCEAN OUTFALL (2013)* [15]	*1,725*	*802*	*87*	*0*	*0*	*0*	*0*	*0*	*0*	*142*	*507*	*1,607*	4,870
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	473	115	0	0	0	0	0	0	0	0	0	43	632
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(729)	(664)	(394)	460	474	567	583	549	383	(471)	(480)	(749)	(471)
30	AWT BRINE TO OCEAN OUTFALL	144	130	144	60	67	65	68	65	62	144	139	144	1,232

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

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10 Water right applciation 32263B. Max. diversion = 6 cfs. See final water right permit 21377. Assumes 2 cfs instream bypass requirement Dec-May, 1 cfs bypass in June and 0.7 cfs instream bypass requirement for July-Nov. Also assumes diversion stopped when flows reach 30 cfs (migration window) and restart when flow declines to 20 cfs. See final water right permit 21377

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17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

EXHIBIT 3

Volume I – Consolidated Final PWM EIR, January 2016 - Figure 2-9
Historic Regional Treatment Plant Flows

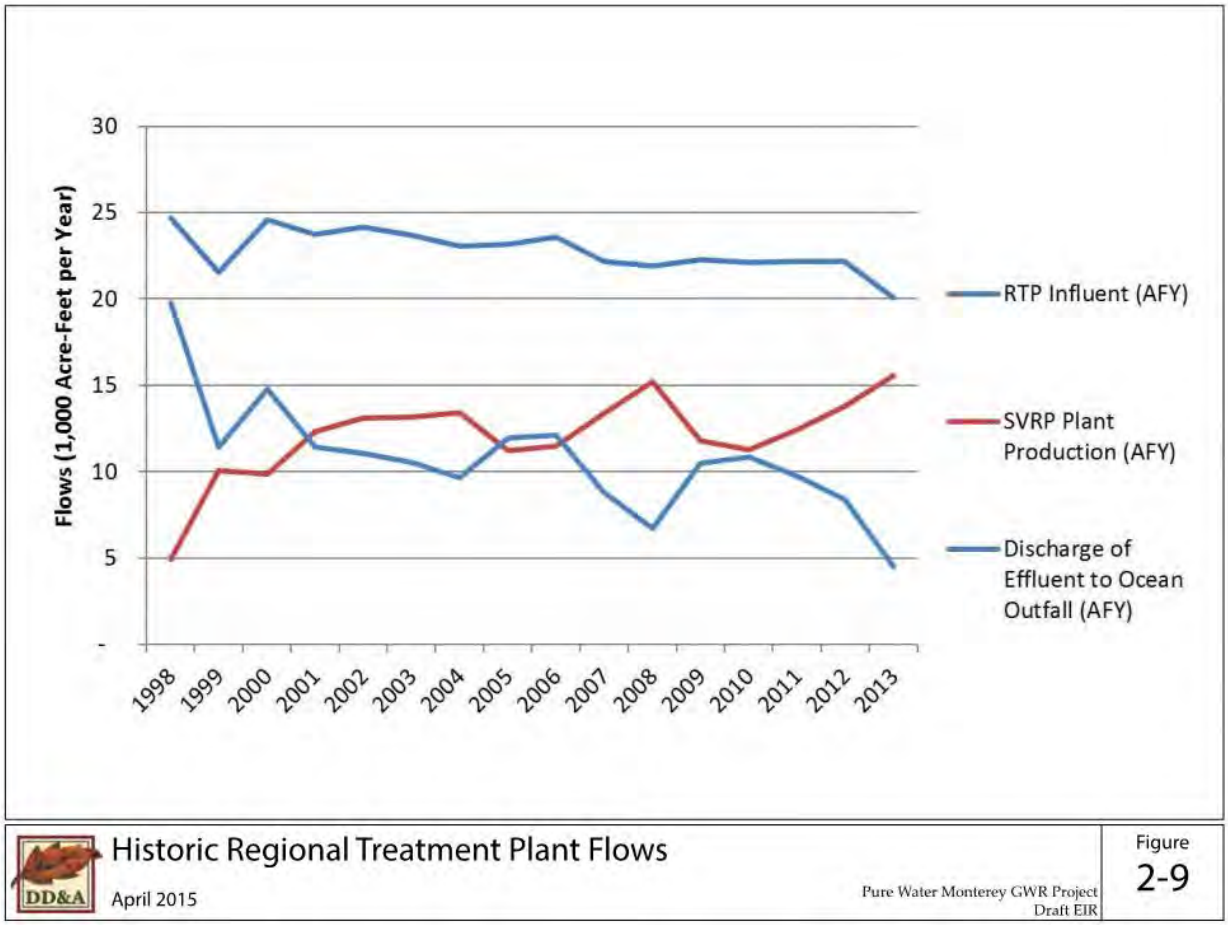

EXHIBIT 4

SEIR Appendices to the M1WS Draft Supplemental EIR 11-7-2019

Appendix E - Water Quality and Statutory Compliance Report- Appendix C – Projected Monthly Flows of Source Waters to the Regional Treatment Plant Influent

10/24/19 Appendix C - Projected Source Water Flows to the RTP

	RTP Source Water Flow Blends by Scenario and Month (flows in ac-ft per month)													
	Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Maximum New Source Waters	Municipal WW	1,578	1,387	1,643	1,598	1,601	1,563	1,609	1,610	1,541	1,563	1,551	1,567	18810
	Agricultural Wash Water	0	0	0	309	407	477	318	319	307	0	0	0	2137
	Blanco Drain	209	223	246	252	225	274	277	244	184	168	133	185	2620
	El Estero	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tembladero Slough	0	0	0	0	0	0	0	0	0	0	0	0	0
	Reclamation Ditch	70	66	70	106	79	99	113	109	72	65	89	76	1014
Winter Peaking Operation	Municipal WW	1,578	1,387	1,643	1,598	1,601	1,563	1,609	1,610	1,541	1,563	1,551	1,567	18810
	Ag Wash	0	0	0	309	407	477	318	319	307	0	0	0	2137
	Blanco Drain	0	0	246	252	225	274	277	244	184	168	0	0	1870
	El Estero	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tembladero Slough	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rec Ditch	0	0	70	106	79	99	113	109	72	65	5	0	718

EXHIBIT 5

Monterey One Water

July 20, 2020 Special Meeting of the Ad-Hoc JPA Revision Committee

Attachment 3: Table 1 Member Entity Population Revenue and Account Data

Table 1 - Monterey One Water Member Entity Data

Member Entity	Population	Population Percentage	Avg. Dry Weather Flows (MGD)	Flow Percentage	Revenue Contribution			Revenue Percentage	Accounts			Accounts Percentage
					Residential (Monthly)	Commercial (Monthly)	Annual Total		Residential	Commercial	Total	
Boronda CSD	1,325	0.49%		#	$ 8,925.20	$ 2,527.65	$ 137,434.20	0.51%	424	65	489	0.48%
Castroville/Moss Landing	7,097	2.63%	0.64	3.99%	$ 50,625.25	$ 10,690.60	$ 735,790.20	2.73%	2,405	322	2,727	2.65%
County of Monterey*												
Del Rey Oaks	1,662	0.62%		+	$ 14,970.80	$ 1,310.70	$ 195,378.00	0.73%	712	59	771	0.75%
MCWD	28,233	10.48%	2.09	13.02%	$ 264,543.95	$ 29,920.27	$ 3,533,570.64	13.13%	12,569	737	13,306	12.93%
Monterey	28,170	10.45%	1.97	12.27%	$ 269,517.00	$ 103,043.34	$ 4,470,724.08	16.61%	12,828	2,973	15,801	15.36%
Pacific Grove	15,265	5.66%	1.15	7.17%	$ 168,139.50	$ 25,798.91	$ 2,327,260.92	8.65%	7,998	1,009	9,007	8.76%
Salinas	162,222	60.20%	8.39	52.27%	$ 906,380.10	$ 179,299.36	$ 13,028,153.52	48.41%	43,074	8,339	51,413	49.98%
Sand City	385	0.14%		+	$ 3,692.25	$ 4,227.85	$ 95,041.20	0.35%	177	242	419	0.41%
Seaside	33,537	12.45%	1.81	11.28%	$ 172,475.60	$ 26,357.76	$ 2,386,000.32	8.87%	8,200	736	8,936	8.69%
TOTALS	269,474		16.05		$ 1,859,269.65	$ 383,176.44	$ 26,909,353.08		88,387	14,482	102,869	

Notes - Residential totals include vacant residences
Population Numbers are per the department of Finance as of 1/1/20
Flows are averages for January through June 2020
* - Monterey County data needs to be confirmed prior to inclusion in this table
# - Boranda flows accounted for in Salinas
+ - Del Rey Oaks and Sand City flows accounted for in Seaside

EXHIBIT 6 - Water Use Figure

SEIR Appendix O - Supply and Demand for Water on the Monterey Peninsula

FINAL

March 13, 2020, Page 7

Figure 1
Annual Water Production for Customer Service (Demand)
Last 21 Years
(Acre-Feet)

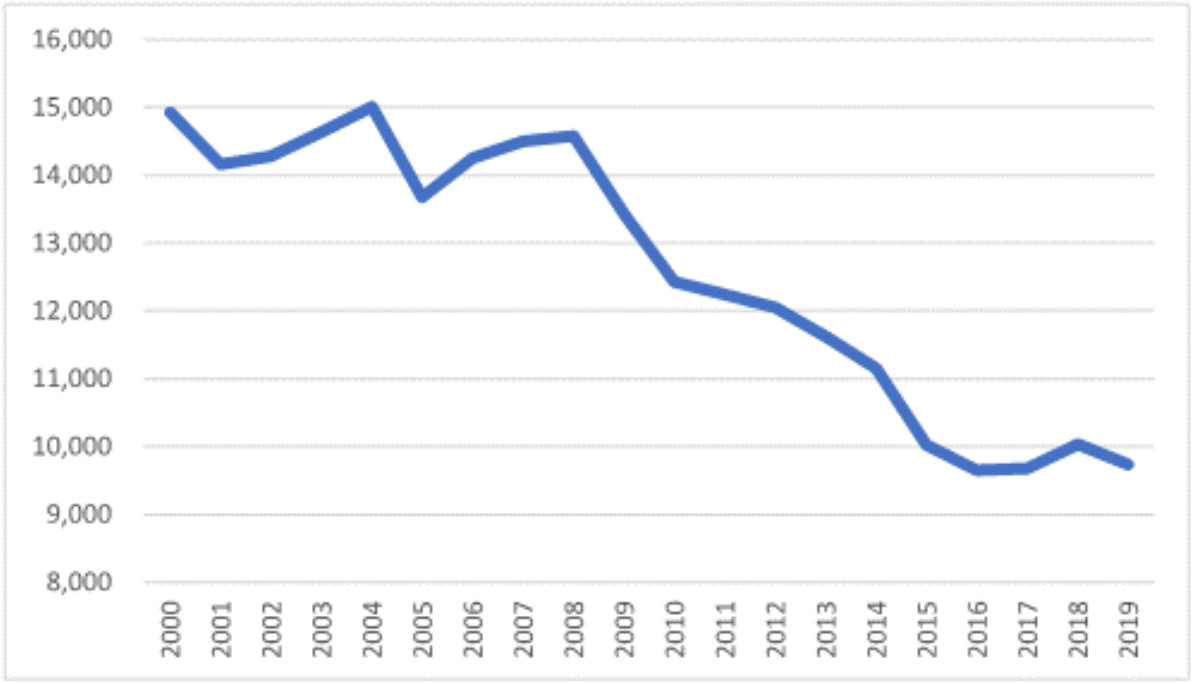

EXHIBIT 7 - Reclamation Ditch Flow

USGS 5 year Monthly Discharge Data from Reclamation Ditch Monitoring Station at Davis Road

USGS 11152650 RECLAMATION DITCH NR SALINAS CA

Available data for this site | Time-series: Monthly statistics | GO

Monterey County, California Hydrologic Unit Code 18060015 Latitude 36°42'18", Longitude 121°42'14" NAD27 Drainage area 53.2 square miles Gage datum 16 feet above NGVD29	**Output formats** HTML table of all data Tab-separated data Reselect output format

00060, Discharge, cubic feet per second,												
YEAR	Monthly mean in ft3/s (Calculation Period: 2015-01-01 -> 2020-03-31) Period-of-record for statistical calculation restricted by user											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	0.978	4.63	1.75	2.92	1.58	1.12	0.951	1.37	0.933	0.988	9.37	18.9
2016	69.3	8.66	72.1	4.42	2.78	2.07	2.15	1.86	1.48	7.69	7.44	16.8
2017	191.1	194.6	37.1	12.3	3.29	2.35	1.96	1.78	1.05	0.965	2.13	0.821
2018	10.6	1.83	17.5	15.2	2.23	2.32	2.28	2.04	1.23	1.59	15.3	15.4
2019	10.9	107.8	24.7	3.77	10.1	3.36	2.93	2.73	1.77	1.05	3.96	42.9
2020	7.8	1.78	16.4									
Mean of monthly Discharge	48	53	28	7.7	4	2.2	2.1	2	1.3	2.5	7.6	19

** No Incomplete data have been used for statistical calculation

USGS 10 year Monthly Discharge Data from Reclamation Ditch Monitoring Station at Davis Road

USGS 11152650 RECLAMATION DITCH NR SALINAS CA

Available data for this site | Time-series: Monthly statistics | GO

Monterey County, California Hydrologic Unit Code 18060015 Latitude 36°42'18", Longitude 121°42'14" NAD27 Drainage area 53.2 square miles Gage datum 16 feet above NGVD29	**Output formats** HTML table of all data Tab-separated data Reselect output format

00060, Discharge, cubic feet per second,												
YEAR	Monthly mean in ft3/s (Calculation Period: 2010-01-01 -> 2020-04-30) Period-of-record for statistical calculation restricted by user											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	36.7	29.1	43.3	29	5.6	3.93	3.93	3.21	2.11	2.89	12.2	23.8
2011	19.7	32.7	75.8	9.47	5.24	4.6	3.71	2.9	2.28	7.78	7.67	1.24
2012	10.3	3.39	17.9	17.1	2.38	3.11	2.33	3.6	1.44	1.57	9.77	45.8
2013	15.2	3.64	2.68	2.07	1.52	1.47	1.57	1.63	1.08	0.964	1.42	1.38
2014	1.4	13.3	10.6	4.59	1.23	1.23	1.33	1.54	1.39	2.45	7.12	74.5
2015	0.978	4.63	1.75	2.92	1.58	1.12	0.951	1.37	0.933	0.988	9.37	18.9
2016	69.3	8.66	72.1	4.42	2.78	2.07	2.15	1.86	1.48	7.69	7.44	16.8
2017	191.1	194.6	37.1	12.3	3.29	2.35	1.96	1.78	1.05	0.965	2.13	0.821
2018	10.6	1.83	17.5	15.2	2.23	2.32	2.28	2.04	1.23	1.59	15.3	15.4
2019	10.9	107.8	24.7	3.77	10.1	3.36	2.93	2.73	1.77	1.05	3.96	42.9
2020	7.8	1.78	16.4	13.6								
Mean of monthly Discharge	34	36	29	10	3.6	2.6	2.3	2.3	1.5	2.8	7.6	24

** No Incomplete data have been used for statistical calculation

California American Water
Peer Review of CCC Staff Report, Lon House Report and MCWD Media Statement

Prepared By: Kevin Alexander, P.E.
Hazen and Sawyer – September 10, 2020

This memorandum is in response to a review of the September 25, 2020 California Coastal Commission (CCC) Staff Report concerning California-American Water Company's (Cal-Am) proposal to construct and operate the Monterey Peninsula Water Supply Project (Project), the Energy and Water Consulting memorandum by Lon House, PhD. dated April 2020 that was provided to the CCC, and the Media Statement by Marina Coast Water District issued September 9, 2020.

I. RESPONSE TO STAFF REPORT

The following are Hazen's comments on the CCC Report:

- Hazen and Sawyer's August 11, 2020 and August 23, 2020 memoranda demonstrate that water supply and demand analysis provided to the CCC by Monterey One Water (M1W) and Monterey Peninsula Water Management District (MPWMD) relied on outdated wastewater flow data and that M1W and MPWMD were aware that wastewater flows were decreasing. Moreover, outdated and misleading assumptions of 2009 to 2013 wastewater flows were carried throughout the Draft and Final SEIR for the Pure Water Expansion, which indicates that the SEIR analysis of water supply and demand was inadequate. In response to Hazen and Sawyer's August 11 memorandum demonstrating these inadequacies, on August 20, 2020, M1W provided for the first time its purported wastewater flows from 2014 to 2019 (though without the underlying data). Hazen and Sawyer's August 23 memorandum reviewed the 2014 to 2019 flow information provided by M1W and confirmed that wastewater flows are insufficient to supply the Pure Water Expansion as previously concluded by Hazen.

  The Staff Report largely ignores Hazen's August 11, 2020 and August 23, 2020 memoranda and does not consider M1W's recent flow information. As a result, the Staff Report does not address the significance of Hazen's conclusion that the Pure Water Expansion project simply does not have an adequate source of water supplies for it to produce its promised 2,250 acre-feet per year (afy). It is clear that the CCC staff has not reviewed or relied upon the latest information provided by Hazen or by M1W. Page 7 of the Staff Report states: "However, based on staff's evaluation of technical information provided by Monterey One Water and others, staff believe there is sufficient source water, include at least one certain source – i.e., no less than about 8,000 acre-feet per year of treated wastewater – to provide the approximately 3,000 acre-feet per year the Pure Water Expansion will need to produce its expected 2,250 acre-feet per year and satisfy the service area's water demand."

- The Staff Report is incorrect in stating there is 8,000 acre-feet of wastewater flows available. Although the Draft SEIR indicated that there was approximately 8,000 afy of wastewater effluent available to the ocean outfall in a normal year, the Final SEIR updated this assumption and states that only 5,811 afy is assumed to be available. (Appendix M Table 2.)

- When average flows per year for the past 3 years of 18,555 afy are considered, the 5,811 afy of available wastewater is further reduced to 5,732 acre-feet. When considering the most current data for 2020, wastewater flows are 17,980 acre-feet, which will reduce the available wastewater flow to the ocean outfall to 5,554 acre-feet.

- The current Pure Water project requires 4,320 acre-feet of that wastewater to produce the 3,500 acre-feet of water for Cal-Am's customers, and 4,568 acre-feet of wastewater to produce 3,700 acre-feet when building a drought reserve.

- The Regional Urban Water Augmentation Project (RUWAP) must be supplied from wastewater effluent at 822 acre-feet; however, with backwash flows re-introduced, that flow is reduced to 741 acre-feet.

- Therefore, the remaining amount of wastewater available for the Pure Water Expansion is 5,732 minus 4,568 minus 741, which equals **432 acre-feet**. 432 afy is not sufficient source water for the Pure Water Expansion to produce 2,250 afy. Instead, at least 2,778 afy of source water would be required.

- In Dry Years as noted, the actual wastewater flows are estimated to be substantially less and therefore, no flow is available for the Pure Water Expansion.

- The quantity of source water to supply the Pure Water project and the Pure Water Expansion are evaluated in the Staff Report. However, as noted above, the Staff Report incorrectly relies on the availability of source water base on flawed analysis from M1W and MPWMD without consideration for whether the availability of a given source is documented and reliable year round or during drought. CCC Staff are directed to Appendix M of the SEIR Table 2 and Table 3 for available sources for the Pure Water Expansion. The Staff Report noted that M1W has agreements for more than enough water actually needed to supply the Pure Water Expansion. This conclusion is incorrect based on the methodology and assumptions and Table 2 and 3 of the SEIR Appendix M. Continuing the calculation from above:

    - When all available assumed and estimated flows, including the 432 acre-ft calculated above, according to the Source Water Priority Table 3 in Appendix M of the SEIR are available, there is only 2,297 acre-feet actually available for Pure Water Expansion. The maximum flow that could be produced at best case is 1,860 acre-feet. This assumes all flows from all of the sources "allowed" to feed the Pure Water Expansion are available 100 percent of the time. That flow is further reduced to 1,597 afy if the flows are reduced for the current wastewater

flow of 17,980 afy. The following Table 1 shows the flows from SEIR Appendix M Table 2 used in assessing the available water to the Pure Water Expansion:

TABLE 1

Source Water	**Quantity of Water Available to M1W in a Typical Year (Acre Feet Per Year)**
Secondary Effluent to Ocean Outfall	432 afy remaining from calculation above. (245 afy if WW flow to ocean outfall is 5,554 based on current year at 17,980 afy)
Reclamation Ditch	0 - (SEIR Appx M, Pg 9) "The new source waters conservatively are not assumed toe available for the Proposed Modification, regardless whether condition precedence are met."
Blanco Drain	0 - (SEIR Appx M, Pg 9) "The new source waters conservatively are not assumed toe available for the Proposed Modification, regardless whether condition precedence are met."
Agricultural Wash Water (AWW)	0 - (SEIR Appx M, Pg 9) "The new source waters conservatively are not assumed toe available for the Proposed Modification, regardless whether condition precedence are met."
Recycle Sump #1	41
Recycle Sump #2	104
Approved PWM Project and MCWD AWPF Backwashes	290
Proposed Modifications AWPF Backwashes (only available for Modifications)	152 at 2250 AFY (36 when producing 528 AFY with current WW flows at 17,980)
SVRP Backwash	515 in 2018 (492 when WW flow reduced from 18,810 to 17,980 in 2020)
Boranda	95
Farmworker Housing	18
M1W's ARWRA Summer Water (ARWRA Section IV 4.01 1(d))	650
SRDF Screening	0 - SEIR Appendix M -Table 2, "*** SRDF Screening and Salinas IWTF Pond System waters are assumed to not be available."
Salinas IWTF Pond System	0 - SEIR Appendix M -Table 2, "*** SRDF Screening and Salinas IWTF Pond System waters are assumed to not be available."
Total Available for feed to the M1W AWPF	2,297 (1,971 including current 17,980 WW flow)

- M1W stated in the SEIR Appendix M that its assumptions are conservative. Hazen does not agree, as it is clear there is not enough wastewater flow, since

M1W's own flow information from 2014 to 2019 shows that wastewater flow has declined significantly since 2013, the last year evaluated in the SEIR. Additionally, the other surface water flows proposed as source water for the Pure Water Expansion are based on unverified flows that were stated to be "assumed and estimated" in the SEIR. (SEIR Appendix M, pp. 7, 9 10 and 12.)

- The "Assumed Flows and Estimated Flows" in SEIR Appendix M do not have backup information that validates the reliability of these flows in recent years or over multiple years. Additionally, according to SEIR Appendix M, Methodology and Assumptions, the Blanco Drain, Reclamation Ditch and Agricultural Wash Water are not included as source water available to the PWM Expansion. These flows, although not part of the source water to the Pure Water Expansion, have not been updated with recent information and the validity, availability and reliability of flow from those supplies even to the existing Pure Water project are speculative.

- Staff Report page 110 states that the August 20, 2020 letter from M1W to the CCC addresses Cal-Am's contentions and clarifies that Cal-Am's concerns about inadequate wastewater were based on incorrect analysis. The Staff Report asserts that Cal-Am's concerns about source water quality are misplaced because the Pure Water Project has treated wastewater from agricultural operations.

  - M1W states that wastewater flows from the Peninsula make up a portion of the influent to the Wastewater Treatment Plant and asserts that because they are only a portion of the flows, the demand reductions are not proof that the wastewater flows are reducing. The data provide by M1W in the August 2020 memorandum clearly reveals otherwise and supports the deficit conclusions in the Hazen Memorandum from August 11, 2020.

  - In an area where demands are weighed down by moratoria, outdoor watering is limited by regulations, and tiered rates are used as a mechanism to drive down, excess use results in water use being closer to wastewater flow since indoor water ends up in the sewer. The contributing agencies to M1W all use such tools to control water demand meaning reductions in demand declines would be similar across the area. Hazen reaffirms its analysis that clearly shows wastewater flows are reduced to the levels predicted in Hazen's August 11, 2020 memorandum. Hazen's August 11 memorandum estimated 17,987 acre-feet of wastewater flow today using a demand corollary. Based on M1W's new flow information, flows are 17,980 acre-feet today.

  - Regarding Water Quality of the source waters, the Draft SEIR Appendix E -Water Quality and Statutory Compliance Report, at Appendix B-1 (2013-2014 test data) used testing procedures for perfluorooctanoic acid and perfluorooctanesulfonate (PFOA/PFOS) compounds that had a higher detection limit than current procedures. M1W was recently added to the list of agencies having to provide updated data for 31 PFOA/PFOS compounds in its effluent and RO concentrate

using updated testing methods that detect such compounds at much lower levels.[1] It should be noted that even with the older test data that the Lake El Estero has PFOA/PFOS compounds at detectible levels. With current regulations for drinking water supplies being much lower, it will be important to understand each source of supply and if the levels will be required to be removed. The RO Technology will remove the compound, however it will end up in the Bay as concentrate at much higher concentrations which could be another issue. This issue has not been evaluated by M1W or the CCC.

- The Staff Report fails to consider the limited availability of ASR. Throughout the 2020 and 2019 MPWMD reports and in the CCC Staff Report there are references to ASR being a proven approach. Hazen would agree with that statement that ASR when used appropriately can be a solution. However, what is not addressed by MPWMD or the SEIR (as noted in the Hazen Memorandum dated August 11, 2020 and August 23, 2020) is that *there must be water available to treat to be able to inject into the aquifer for storage and ultimate recovery*. ASR using excess Carmel River water in the past 15 years has not shown the ability to build adequate storage. In the context of the proposed Pure Water Expansion, there is not enough flow available to build the drought reserve over time let alone meet current demand.

- Regarding startup related issues, the CCC Staff Report references the Orange County Water District (OCWD) Groundwater Replenishment System (GWRS) and notes that the system did not start up at full capacity for various reasons. It should be noted that the reason the system did not produce at the full capacity in the first years of operation is that wastewater flows had dropped at Orange County Sanitation District (OCSD) Wastewater Treatment Plant No. 1 similar to the situation being faced by M1W. That reduction in wastewater flow ultimately forced OCWD to install very large 15 million gallon equalization tanks to capture excess flows during the day to allow the system to operate at nearly full flow at night. The Author of this memorandum was the lead process engineer for OCWD during development of the Phase 1, planning of the Phase 2 and ultimate build out of the GWRS projects for OCWD. Further, the Author is intimately familiar with that system and how it started and continues to operate.

- The Draft and Final SEIR have water supply projections that have not been updated to address lower wastewater flows. The environment will be impacted if MPMWD and M1W divert effluent by Water Right from the CSIP program to the Pure Water projects. No analysis has been provided with regard to how to prioritize CSIP and reducing seawater intrusion from continued groundwater pumping versus supplying the Pure Water project.

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[1] State Water Resources Control Board, Water Code Sections 13267 and 13383 Order for the Determination of The Presence of Per and Polyfluroralkyl Substances at Publicly Owned Treatment Works, ORDER WQ 2020-0015-DWQ, Attachment 2, available at https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2020/wqo2020_0015_dwq.pdf.

- Table 6 on page 121 of the Staff Report provides a comparison of Cal-Am's water supply portfolio with Cal-Am's desalination Project or with the Pure Water Expansion. What is not made clear is what the table looks like when actual available water supplies and updated SEIR Tables 9, 10, and 11 based on the most recent 3 years of wastewater flow data are accounted for. Appendix A below provides that updated accounting. Although Hazen and Sawyer used the same methodology and approaches used to calculate predictions of current and future demand by MPWMD and House, as shown in Appendix A, when ASR is accounted for at a realistic level, the Pure Water Expansion cannot meet MPWMD lowest demand estimate of 10,855 acre-feet per year. Likewise, when WWTP flows and Reclamation Ditch flows are accounted for based on current flow data, the Pure Water Expansion cannot meet 10,855 acre-feet per year demand. When the SEIR tables are updated to account for current WWTP flow and Reclamation Ditch Flow, it is apparent that MPWMD has overestimated supplies. In Appendix A, Updated SEIR Table 9 reveals there is enough flow to produce 528 acre-feet from the Pure Water Expansion. Appendix A, Updated Table 10 would likely never apply because there is not adequate flow to build a reserve. Appendix A, Updated Table 11 reveals that during drought years, there must be 5,311 acre-feet available from ASR that is not actually available because, as explained in the August 11, 2020 report from Hazen and Sawyer, between 1997 and 2019, annual ASR reinjection only reached the 1,300 acre-feet per year twice, averaging only 450 acre-feet per year over a 22 year period. During drought conditions, ASR is essentially unavailable. These are significant issues that MPMWD and M1W must address before the CCC can consider the Pure Water Expansion as a potential alternative to Cal-Am's Project. The future demand ranges presented in House Table 3 are similar to the demand ranges provided by MPWMD and for the same reasons that the Pure Water Expansion cannot meet MPWMD's lowest estimate of demand, it is speculative to assume that the demand levels presented by House are attainable.

II. RESPONSE TO LON HOUSE MEMORANDUM

The following response is based on a review of the Lon House Memorandum:

- The House Report asserts that MPWMD is an expert at water supply and demand determinations "and has no reason to defer to the CPUC or any other agency[.]" (House Report, p. 1.) Based on Hazen and Sawyer's peer review of MPWMD's supply and demand analysis, it is clear that their evaluation of these issues neglected to consider the complete and current picture of how the supplies and demands work together, which is especially important when supply is inextricably linked to demand as is the case with wastewater. In this case, MPMWD did not make available or evaluate key information on wastewater flows and the impacts of those flows on the availability of water supplies to the community. In the case of supply, MPWMD selectively used outdated data that supported its narrative that there is plenty of supply for the Pure Water Expansion. In the case of demand, the MPWMD elected to use up to the minute demand information and actually updated its report between September 2019 and December 2019 to better support MPWMD's narrative. In our judgement, an expert should not selectively choose a dataset to sway results to achieve an outcome.

- Page 2 of the House Report states: "Three more full years (2017-2019) of recorded water demand data is now available. This recent data makes the CPUC data set obsolete, reducing the existing customer 10-year average water demand available in the CPUC proceeding by 1,275 acre-feet per year (afy), a reduction of 10.7 percent."

    - The House Report overlooks the data that M1W presented to its Ad-Hoc JPA Revision Committee on July 20, 2020 that indicates since the beginning of 2020, wastewater treatment plant (WWTP) flows were reduced by 20.3.% since 2013 to 17,980 afy or 16.05 mgd.[2] If the CPUC data set is rendered "obsolete" because of new demand data, then so is the WWTP flow data in the SEIR and in the analysis by Stoldt that only relied on WWTP flow data from 2009 to 2013. 2013 to 2020 WWTP flow information demonstrates that WWTP flows are inadequate to supply the Expansion so that it could provide product water to meet the most restrictive demand projections by MPWMD (10,855 afy). Appendix A below and the Hazen memorandum from August 11, 2020 and August 23, 2020 show how the current wastewater flows translates directly to reduced capacity for supply.

- Page 3 of the House Report states: "The CPUC recognizes the importance of using the latest water demand data. In its decision in CalAm's last General Rate Case, the CPUC concluded "'Given the declining consumption pattern in the Monterey main district, the most recent data available is likely to be the most accurate.' What could substitution of a couple more years of recent water demand information make? It turns out – a lot."

    - Similar to the CPUC's consideration of the last 3 years of data for demand, the same could be said for the WWTP Flows. ***What could substitution of a couple more years of recent wastewater flow information make? It turns out – a lot.***

    - The Expansion SEIR relied on WWTP flow data from 2009 to 2013. Hazen and CalAm commented that the WWTP flow data did not reflect actual WWTP flow available to M1W. In Hazen's August 11 memo, Hazen identified publicly available data (including evidence of 2020 flows) indicating that WWTP flows have declined significantly since 2013. On August 20, 2020, M1W provided WWTP flow data from 2014 to 2019. So what difference does a few years make? "It turns out – a lot." Since 2009 to 2013, WWTP flows have decreased from 21,764 afy to 17,980 afy, a reduction of 3,209 afy. Using M1W's own updated numbers, it is evident that WWTP is not a sufficient or reliable source water for the Pure Water project or the Pure Water Expansion to produce its promised product water to CalAm's customers of 3,500 afy and 2,250 afy, respectively.

- Pages 3, 4 and 5. The House Report confuses various characterizations of demand by calling CPUCs Planning Level Demand of 12,350 the "current" demand. It is not the current demand but is the planning level that is used to identify what level of demand to use based on the 2021 CDO date for starting the future projections of demand to use in planning for future water supplies. Planning level demand makes various additions

[2] Attached as Exhibit 5 to Hazen's August 11, 2020 memorandum.

including tourism bounce back, Lots of Record, and Pebble Beach to the "current" demand to account for uncertainty in the demand when the pressures to suppress demand are lifted as supply constraints are mitigated.

- Similarly, House developed the table below as a comparison of Customer Existing Water Demand. None of the values in that table are Customer Existing Water Demand. These numbers are Planning Level Demand.

- In addition, it appears there is an error in the analysis between the 10-year average Demand and the 5-year average demand when compared to the 2020 Stoldt Memorandum at 10,863 and 9,825 afy, respectively. The Lon House Memorandum table below appears to use different values that are not explained in the memorandum for the same time period. With no transparency in how this was determined, these numbers form a speculative base to calculate future demand.

Table 1. Comparison of Estimates of CalAm Customer Existing Water Demand

CalAm Application	CPUC Adopted	10-year average (2010-2019)	5-year average (2015-2019)
13,290 afy	12,350 afy	10,619 afy	9,727 afy

- As noted above, House provides updated 10-year and 5-year average data that do not agree with the Stoldt updates from March 2020. House carries those numbers into the House Table 3 below estimating the Eventual Demand ranges.

Table 3. Comparison of Estimates of Eventual Monterey Peninsula Water Demand

	MPWSP Application	CPUC Adopted	10-yr Average Customer Demand plus MPWMD New Demands	5-yr Average Customer Demand plus MPWMD New Demands
Existing Customer Demand	13,290 afy	12,000 afy	10,619 afy	9,727 afy
New Water Demand	2,006 afy	2,000 afy	1,067-1,424 afy	1,067-1,424 afy
Total Eventual Demand	**15,296 afy**	**14,000 afy**	**11,686-12,043 afy**	**10,794-11,151 afy**

14 to 17% lower than CPUC adopted

20 to 23% lower than CPUC adopted

House again references Existing Customer Demand and adds New Water Demand and introduces the concept of Eventual Demand. Eventual Demand would appear to mean the demand to use in starting future planning and future demand projection efforts rather than relying on current water demand data that does not account for uncertainty. House

does not address uncertainty in the estimates of Existing Customer Demand that can be weighed down by measures such as the moratorium and the cost of purchasing allocations. Secondly, he does not address uncertainty in the estimates of the New Water Demands but continues to use the Range of Eventual Demands. Although the demand projections made by House appear to be uncertain and in error, the demand range presented by House is well within the range presented by MPWMD and others, which the Pure Water Expansion is unable to satisfy.

- House does not appear to analyze the water supply of 2,250 afy that can be produced from the PWM Expansion. The House memorandum does not evaluate available wastewater supply necessary to produce that 2,250 afy and therefore does not come to the conclusion that the PWM Expansion cannot meet "existing" and "eventual" demands. This is a mistake considering the updated wastewater flow information that calls further into question supply availability, reliability or sustainability. However, what is key is that House understands that another water supply is necessary and given the updated supply information would have only been able to state that the MPWSP is the only project that will add a new supply of water that is critical to meeting todays demands and future demands.

    - Due to lack of wastewater flows and other supplies, the PWM Expansion fails to meet even the lowest Eventual (future) demand projection of 10,855 from Stoldt and the 10,794 afy from House.

    - Refer to Updated Table 2 below from August 11, 2020 with the Flows updated with the latest WW Flows from M1W. The importance of the Updated Table 2 shown in the ERRATA below is that in Normal Years while building a reserve (Updated Table 9 column) there is only 652 afy available as feed to the PWM Expansion. ***The Pure Water Expansion will therefore only produce 528 afy.***

    - Refer to the Table 2, Updated Table 9 column, for actual water supplies available to meet current and future demands with the Pure Water Expansion. The demands above 9,772 afy cannot be met even with a speculative maximum ASR output of 1,300 afy.

- Page 7. House introduces a calculation for instantaneous and permanent water demand increase of 881 afy. The calculation is based on an increase from 2019 demand up to the 10 year average demand or a 9% change. We do not agree with this calculation which underestimates the demand that should be used for planning and does not account for uncertainty in demand.

- Page 9. House notes that MPMWD has clearly identified water supplies and demands. This is an incorrect statement. House does not look at the where the water is originating similar to the errors made by MPWMD and the SEIR. Paper water without actual flow is not an adequate source.

III. ERRATA TO AUGUST 23, 2020 UPDATED TABLE 2

Table 2 in the Hazen and Sawyer August 11 and August 23, 2020 memorandums highlight the impact of the reduced wastewater flow on the actual supply flow balance and ultimately in the amount of flow to ASR.

In Hazen's August 11, 2020 memorandum, wastewater flows were based on the 17,987 afy calculated from the correlation with demand. In Hazen's August 23, 2020 memorandum, wastewater flows were revised based on the 18,555 afy average of the last 3 years of wastewater flows provided by M1W.

The Flow to PWME in the Table 8-11 Updates are adjusted to reduce flow to allow the Actual Use Flows to match with the available Supplies in the Updated Table 1 from the August 23, 2020 memorandum. The ASR Deficit calculated for the Table 8-11 Updates are calculated by subtracting the planned ASR value from the amount of ASR calculated in the Table 8-11 Update. In all cases, there is and will be a deficit to ASR based on the reduced wastewater flows. Updated TABLE 2 from Hazen's August 23, 2020 memoranda is replaced with the Updated TABLE 2 below to correct a tabulation error highlighted herein. This revision does not impact or modify Hazen and Sawyer's conclusion that due to reduced wastewater flows, there is only enough supply flows available to send 652 afy feed to the Pure Water Expansion to produce 528 afy in the normal years.

UPDATED TABLE 2 – IMPACTS OF REDUCED WWTP FLOW ON SUPPLY FLOW BALANCE

Flow Balance in Acre-Ft	Table 8	Table 9	Table 10	Table 11	Table 8 Update	Table 9 Update	Table 10 Update	Table 11 Update
Flow to CSIP + CSIP Well Pumping	17227	17227	17227	22619	17227	17227	17227	21091[e]
Flow to PWM[f]	4320	4320	4320	2963	4320	4320	4320	0
Flow to PWM Drought	248	248	0	0	248	248	0	0
Flow to PWME[g]	2778	2778	2778	2778	2321 ~~1753~~	652 ~~84~~	889 ~~321~~	0
Flow to RUWAP	741	741	741	741	741	741	741	741
Actual Use Flows[h]	**25314**	**25314**	**25066**	**29101**	**24857** ~~**24289**~~	**23188** ~~**22620**~~	**23177** ~~**22609**~~	**21832**
Flow to ASR[i]	5950	5950	5750	4650	5580 ~~5120~~	4228 ~~3768~~	4219 ~~3759~~	0
Concentrate Flow to Outfall[j]	1536	1536	1489	1232	1450	1133	1130	141
Deficit To ASR	**0**	**0**	**0**	**-1100**	**-370**	**-1722**	**-1530**	**-4650**

Notes:

e CSIP and CSIP Well Flows from Table 8-11 Demand. Reduced CSIP in "Table 11 Updated" by taking Water Right

f Revised flow to PWM down for Table 11 to match actual Use to supply

g Flow available to PWME is calculated based on maintaining flow to PWM and RUWAP and to Concentrate

h Actual Use is calculated to confirm balance with Supply

i ASR Flow is from the AWT product water flow without RUWAP

j Concentrate flow is 19% of Flow for PWM, PWM Drought, PWME, and RUWAP

k Deficit to ASR based on Flow to ASR minus the PWM AND PWME DEMAND from Table 1

IV. REVIEW OF THE MCWD MEDIA STATEMENT ISSUED SEPTEMBER 9, 2020

The Marina Coast Water District issued a Media Statement on September 9, 2020 titled Contractual Agreements Guarantee Source Water To Monterey One Water For Pure Water Monterey Expansion. Hazen and Sawyer reviewed the Media Statement and provide the following comments:

- The Media Statement is continuing to mislead the community as to the volume of surface water and wastewater that are available as compared to "paper" water rights. Possession of certain water rights and agreements does not mean there is actually water available. This is similar to the Colorado River, where there are more water rights than available water. Recent wastewater flow information provided by Monterey One Water for years 2013 to 2020 prove that wastewater volumes available on an annual basis have dropped substantially compared to what was indicated and planned in the SEIR for the Pure Water Monterey Expansion.

- According to the SEIR, the newly identified sources proposed by MCWD for use by the Pure Water Expansion are not available to be used by that project. (SEIR Appendix M, pg. 9). Therefore, claiming the volume of water from these sources can be used does not demonstrate that these source are actually available and conflicts with the SEIR already circulated under CEQA.

- The Salinas Urban Runoff/Stormwater requires additional agreements as stated in the SEIR Appendix M, pg. 5. Therefore, the contractual agreements for this source are not in place and reliance on the availability of this source is speculative.

- The Reclamation Ditch and wastewater water volumes assumed available by MCWD and M1W in the SEIR have been shown to be much less than estimated. The Agricultural Wash Water flows and the Blanco Drain flows are both unverified and remain speculative. The agricultural waste water volumes have not been verified on an annual basis beyond 2013 and were only estimated according to the yield studies in the SEIR. The Blanco Drain flows beyond 2013 have not been provided and were estimated based on very limited data as stated in the Blanco Drain Yield Study, page. 7. Knowing that the Reclamation Ditch and wastewater flows have been shown to be much less than claimed in the SEIR, there is a need for verifiable data and values for these new sources identified by MCWD's media statement.

- The EIR for the Pure Water Monterey project included modifications to the Salinas Valley Reclamation Plant (SVRP) to allow for more treated wastewater to be sent to Castroville Seawater Intrusion Project (CSIP) during winter months. Although, the proposed modifications to the SVRP have not been completed, it will further reduce the wastewater available to the Pure Water Monterey Expansion. Additionally, MCWRA intends to take wells offline in the CSIP area to reduce the increasing seawater intrusion.

    - In conclusion, MCWD by its own Media Statement is continuing to mislead the community that water is available for the PWM Expansion.

- The “New Sources” referenced are not to be used for the Pure Water Monterey Expansion accordingly to its own SEIR.

- The volume of wastewater available has been shown to be much less than planned.

- Finally, MCWRA is planning to expand CSIP and is reducing the number of wells in the area of seawater intrusion thus needing more of the treated wastewater effluent.

- Having adequate, reliable, sustainable water supplies for the Peninsula are critical to the community. When there are competing interests for limited supplies of water, it is critical to know that water supplies will actually be available and not just the paper volume stated in a water rights document or agreement.

Appendix A: Identified Available Water Supplies In Acre-Feet Per Year

Source / Assumption Scenario	Proposed by Others			ASR Controlled*			Wastewater & Reclamation Ditch Controlled*		
	CPUC	MPWMD 2020	MPWMD 2019	No ASR	Half ASR (650 AFY)	Full ASR (1,300 AFY)	Updated Table 9 – Normal Year building Reserve	Updated Table 10 – Normal Yr after full Reserve	Updated Table 11 – Dry Year
1. Carmel River	3,376	3,376	3,376	3,376	3,376	3,376	3,376	3,376	3,376
2. Seaside Groundwater Basin	774	774	774	774	774	774	774	774	774
3. Aquifer Storage and Recovery	1,300	1,300	1,300	0	650	1,300	1,300	1,300	1,300
4. Sand City Desalination Facility	94	94	94	94	94	94	94	94	94
5. Pure Water Project	3,500	3,500	3,500	3,500	3,500	3,500	3,700	3,500	0
6. Pure Water Expansion	-	2,250	2,250	2,250	2,250	2,250	528	719	0
7. Other Available Supplies	-	300	406	-	-	-	-	-	-
Total without desalination Project	9,044	11,594	11,700	9,994	10,644	11,294	9,772	9,763	5,544
Surplus/Deficit assuming 10,855 afy demand	**-1,811**	**739**	**845**	**-861**	**-211**	**439**	**-1083**	**-1,092**	**-5,311**

* Figure 2 from the August 11, 2020 Hazen and Sawyer report depicts these alternative scenarios. (August 11, 2020 Hazen Memo, p. 19.)

Technical Memorandum

Date: 6/8/2021

To: Candace Coleman
California American Water

Prepared by: Heather Freed, PE

Reviewed by: Jeroen Olthof, PE

Project: California American Water Monterey County District 2020 Urban Water Management Plan

SUBJECT: DRAFT - PURE WATER MONTEREY AND PURE WATER MONTEREY EXPANSION SUPPLY AVAILABILITY FOR THE 2020 UWMP

California American Water (CAW) Monterey Main Water System has a contractual agreement to 3,500 acre-feet per year (AFY) of water from the Pure Water Monterey (PWM) Project. The PWM Project is a joint project between the Monterey Peninsula Water Management District (MPWMD) and the Monterey One Water (M1W). The PWM Project provides indirect potable reuse for storage in the Seaside Groundwater Basin and subsequent potable use in the Monterey Main System, as well as purified recycled water for landscape irrigation, the Castroville Seawater Intrusion Project (CSIP) and the Regional Urban Water Augmentation Project (RUWAP). In April 2021, the MPWMD and M1W certified the Supplement Environmental Impact Report (SEIR) for the PWM Expansion Project, which is envisioned to provide an additional 2,250 AFY to the Seaside Basin and subsequent potable use for Monterey Main.

In 2020, CAW contracted Hazen and Sawyer to evaluate the source waters available for the PWM, PWM Expansion, CSIP, and RUWAP Projects (Hazen Analysis). The SEIR at that time was relying on wastewater flows from 2009 to 2013. The Hazen Analysis updated the tables in the Supplemental EIR using 2020 source water flowrates, and it found that the current flowrates cannot support all projects. Table 1 presents the original Supplemental EIR source water supply and demand balance and the updated tables using 2020 flowrates. The Tables 8 through 11 of the SEIR represent various hydrologic conditions. The Hazen analysis represents Table 9 as the normal year hydrologic conditions and Table 11 as the worst-case dry year hydrologic conditions.

Table 1. Hazen Analysis Updated PWM and PWM Expansion Supply and Demand Balance

	Original SEIR App. I (2009 – 2013 Flows)				Modified SEIR App I (2020 Flows)			
SUPPLY	**Table 8**	**Table 9**	**Table 10**	**Table 11**	**Table 8**	**Table 9**	**Table 10**	**Table 11**
WW Flows	21,764	21,764	21,764	20,090	17,987	17,987	17,987	17,016
Domestic Flow	82	82	82	82	82	82	82	82
New Sources	2,579	2,579	2,579	2,430	2,579	2,579	2,579	2,430
Surface Water	3,721	2,052	2,041	2,840	3,641	1,972	1,961	2,304
TOTAL WW Flow	**28,146**	**26,477**	**26,466**	**25,442**	**24,289**	**22,620**	**22,609**	**21,832**
DEMAND								
CSIP	17,227	17,227	17,227	22,619	17,227	17,227	17,227	22,619
PWM	4,320	4,320	4,320	2,963	4,320	4,320	4,320	2,963
PWM drought	248	248	0	0	248	248	0	0
PWME	2,778	2,778	2,778	2,778	2,778	2,778	2,778	2,778
RUWAP	741	741	741	741	741	741	741	741
TOTAL Demand	**25,314**	**25,314**	**25,066**	**29,101**	**25,314**	**25,314**	**25,066**	**29,101**
Supply Surplus/ Deficit	**2,832**	**1,163**	**1,400**	**-3,659**	**-1,025**	**-2,694**	**-2,457**	**-7,269**

As shown in the modified SEIR Appendix I tables, there is an anticipated supply deficit in all year types. The CSIP and RUWAP both need to be provided their total demand in all years, and reductions will apply to the PWM and the PWM Expansion projects first.

Future water use on the Monterey Peninsula is anticipated to increase when the new Monterey Peninsula Water Supply Project (MPWSP) Desalination Plant is online. As water use increases, the wastewater flows would also be expected to increase. This technical memorandum was prepared to support the CAW Monterey Main 2020 Urban Water Management Plan (UWMP) and updates the Hazen Analysis for conditions from 2025 through 2045 in five-year increments to estimate the reliably available supply from the PWM and PWM Expansion Project in normal and dry year types.

1 Demand and Wastewater Flow Projections

The only updates to the Hazen Analysis to support the 2020 UWMP are the estimated wastewater flows (Line 1 of the supplies presented in Table 1) based on the UWMP demand projections. The 2020 water demand is the actual water demand in Monterey Main in 2020, and wastewater flow values are based on the 2020 flows in the Hazen Analysis. The wastewater flows for future years were estimated using the 2020 ratio of demand to wastewater flows. For year 2025, the projected demands are anticipated to exceed the available supply, and CAW would need to enact its Water Shortage Contingency Plan (WSCP) to reduce demands. The reduced demand is based on the projected available supply. Water use and wastewater flows are not expected to increase until 2030 when the MPSWP Desalination Plant is online and provides a drought proof supply source for the region.

2 Projected PWM and PWM Expansion Supply Availability

Table 2 presents the modified SEIR Appendix I tables for future conditions. As shown, the PWM Project is expected to be 100 percent reliable in normal hydrologic years (Table 9 of the SEIR). By 2030, with the MPWSP Desalination Plant online, water use and wastewater flows are projected to have increased to levels such that the PWM Project will also be 100 percent reliable in the worst-case dry year scenario (Table 11 of the SEIR). Until the MPWSP is online, the PWM Project is not anticipated to have enough source water for dry years.

The PWM Expansion project is anticipated to be online by 2025. Without the MPWSP Desalination Plant providing additional supply, there is insufficient source water for the full 2,250 AFY design supply from the PWM Expansion project. In 2025 only 528 AFY of water will be available for the PWM Expansion project in normal years, and no water would be available in the worst-case dry year scenario. In 2030 when the MPWSP Desalination Plant comes online, the PWM Expansion Project is projected to be 100 percent reliable in a normal hydrologic year. During a dry year, the PWM Expansion is expected to become more reliable as wastewater flows increase over time.

Table 2. PWM and PWM Expansion Supply Availability 2020- 2045, AFY

	Modified SEIR App I (2020 Flows)				Modified SEIR App I (2025 Flows)				Modified SEIR App I (2030 Flows)			
SUPPLY	**Table 8**	**Table 9**	**Table 10**	**Table 11**	**Table 8**	**Table 9**	**Table 10**	**Table 11**	**Table 8**	**Table 9**	**Table 10**	**Table 11**
WW Flows	17,987	17,987	17,987	17,016	18,431	18,431	18,431	17,436	23,390	23,390	23,390	22,128
Domestic Flow	82	82	82	82	82	82	82	82	82	82	82	82
New Sources	2,579	2,579	2,579	2,430	2,579	2,579	2,579	2,430	2,579	2,579	2,579	2,430
Surface Water	3,641	1,972	1,961	2,304	3,641	1,972	1,961	2,304	3,641	1,972	1,961	2,304
TOTAL WW Flow	**24,289**	**22,620**	**22,609**	**21,832**	**24,733**	**23,064**	**23,053**	**22,252**	**29,692**	**28,023**	**28,012**	**26,944**
DEMAND												
CSIP	17,227	17,227	17,227	22,619	17,227	17,227	17,227	22,619	17,227	17,227	17,227	22,619
PWM	4,320	4,320	4,320	2,963	4,320	4,320	4,320	2,963	4,320	4,320	4,320	2,963
PWM drought	248	248	0	0	248	248	0	0	248	248	0	0
PWME	0	0	0	0	2,778	2,778	2,778	2,778	2,778	2,778	2,778	2,778
RUWAP	741	741	741	741	741	741	741	741	741	741	741	741
TOTAL Demand	**22,536**	**22,536**	**22,288**	**26,323**	25,314	25,314	25,066	29,101	**25,314**	**25,314**	**25,066**	**29,101**
Supply Surplus/ Deficit	**1,753**	**84**	**321**	**-4,491**	**-581**	**-2,250**	**-2,013**	**-6,849**	**4,378**	**2,709**	**2,946**	**-2,157**
Water Available for PWM + drought		**4,568 (100%)**		**0 (0%)**		**4,568 (100%)**		**0 (0%)**		**4,568 (100%)**		**2,963 (100%)**
Water Available for PWM Expansion		**N/A- not online**		**N/A- not online**		**528 (23%)**		**0 (0%)**		**2,778 (100%)**		**503 (22%)**

	Modified SEIR App I (2035 Flows)				Modified SEIR App I (2040 Flows)				Modified SEIR App I (2045 Flows)			
SUPPLY	**Table 8**	**Table 9**	**Table 10**	**Table 11**	**Table 8**	**Table 9**	**Table 10**	**Table 11**	**Table 8**	**Table 9**	**Table 10**	**Table 11**
WW Flows	24,546	24,546	24,546	23,221	25,717	25,717	25,717	24,329	26,880	26,880	26,880	25,429
Domestic Flow	82	82	82	82	82	82	82	82	82	82	82	82
New Sources	2,579	2,579	2,579	2,430	2,579	2,579	2,579	2,430	2,579	2,579	2,579	2,430
Surface Water	3,641	1,972	1,961	2,304	3,641	1,972	1,961	2,304	3,641	1,972	1,961	2,304
TOTAL WW Flow	**30,848**	**29,179**	**29,168**	**28,037**	**32,019**	**30,350**	**30,339**	**29,145**	**33,182**	**31,513**	**31,502**	**30,245**
DEMAND												
CSIP	17,227	17,227	17,227	22,619	17,227	17,227	17,227	22,619	17,227	17,227	17,227	22,619
PWM	4,320	4,320	4,320	2,963	4,320	4,320	4,320	2,963	4,320	4,320	4,320	2,963
PWM drought	248	248	0	0	248	248	0	0	248	248	0	0
PWME	2,778	2,778	2,778	2,778	2,778	2,778	2,778	2,778	2,778	2,778	2,778	2,778
RUWAP	741	741	741	741	741	741	741	741	741	741	741	741
TOTAL Demand	**25,314**	**25,314**	**25,066**	**29,101**	**25,314**	**25,314**	**25,066**	**29,101**	**25,314**	**25,314**	**25,066**	**29,101**
Supply Surplus/ Deficit	**5,534**	**3,865**	**4,102**	**-1,064**	**6,705**	**5,036**	**5,273**	**44**	**7,868**	**6,199**	**6,436**	**1,144**
Water Available for PWM + drought		**4,568 (100%)**		**2,963 (100%)**		**4,568 (100%)**		**2,963 (100%)**		**4,568 (100%)**		**2,963 (100%)**
Water Available for PWM Expansion		**2,778 (100%)**		**1,388 (62%)**		**2,778 (100%)**		**2,778 (100%)**		**2,778 (100%)**		**2,778 (100%)**

Appendix I. Water Shortage Contingency Plan

2021 Water Shortage Contingency Plan

Final

JUNE 2021

CALIFORNIA AMERICAN WATER CENTRAL DIVISION- MONTEREY COUNTY DISTRICT

CALIFORNIA AMERICAN WATER CENTRAL
DIVISION – MONTEREY COUNTY DISTRICT

2021 Water Shortage Contingency Plan

JUNE 2021

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CALIFORNIA AMERICAN WATER MONTEREY COUNTY DISTRICT

Water Shortage Contingency Plan

A water shortage occurs when the water supply is reduced to a level that cannot support typical demand at any given time. The WSCP is used to provide guidance to the California American Water (CAW) Central Division – Monterey County District's (Monterey Main), local government, staff, and the public by identifying response actions to allow for efficient management of any water shortage with predictability and accountability. Preparation provides the tools to maintain reliable supplies and reduce the impacts of supply interruptions due to extended drought or catastrophic supply interruptions. This WSCP addresses such potential water shortage conditions resulting from future droughts as well as other causes such as impacts to distribution system infrastructure, regulatory imposed shortage restrictions, catastrophic events, etc. The WSCP describes the following:

1. **Water Supply Reliability Analysis:** Summarizes Monterey Main's water supply analysis and reliability and identifies any key issues that may trigger a shortage condition.
2. **Annual Water Supply and Demand Assessment Procedures:** Describes the key data inputs, evaluation criteria, and methodology for assessing the system's reliability for the coming year and the steps to formally declare any water shortage levels and response actions.
3. **Six Standard Shortage Stages:** Establishes water shortage levels to clearly identify and prepare for shortages.
4. **Shortage Response Actions:** Describes the response actions that may be implemented or considered for each stage to reduce gaps between supply and demand as well as minimize social and economic impacts to the community.
5. **Compliance and Enforcement:** Defines compliance and enforcement actions available to administer demand reductions
6. **Legal Authority:** Lists the legal documents that grant CAW the authority to declare a water shortage and implement and enforce response actions.
7. **Financial Consequences of WSCP Implementation:** Describes the anticipated financial impact of implementing water shortage stages and identifies mitigation strategies to offset financial burdens.
8. **Monitoring and Reporting:** Summarizes the monitoring and reporting techniques to evaluate the effectiveness of shortage response actions and overall WSCP implementation. Results are used to determine if additional shortage response actions should be activated or if efforts are successful and response actions should be reduced.
9. **WSCP Refinement Procedures:** Describes the factors that may trigger updates to the WSCP and outlines how to complete an update.
10. **Special Water Features Distinctions:** Identifies exemptions for ponds, lakes, fountains, pools, and spas, etc.
11. **Plan Adoption, Submittal, and Availability:** Describes the process for the WSCP adoption, submittal, and availability after each revision.

This WSCP was prepared in conjunction with the Monterey Main's 2020 UWMP and is a standalone document that can be modified as needed. The current authorized Water Shortage Contingency Plan is detailed in Rule and Schedule 14.1.1 (Attachment 1) which CAW might revise and adopt to the updated version that meets the requirements set forth by DWR. Each section within this chapter discusses the

planned changes the Monterey Main district intends to include in the revised Rule 14.1.1 in order to create a complete Water Shortage Contingency Plan.

This Plan (Rule 14.1.1) shall remain dormant until activated by Commission authorization via a Tier 2 advice letter. Once activated, CAW can implement Stages of the Plan by filing a Tier 2 advice letter to the Commission. This Plan will remain in effect until CAW files a Tier 1 advice letter to deactivate a specific stage of the Water Shortage Contingency Plan and such is authorized by the Commission.

This document is compliant with the California Water Code (CWC) Section 10632 and incorporated guidance from the State of California Department of Water Resources (DWR) UWMP Guidebook (Department of Water Resources, 2020) and the American Water Works Association (AWWA) Manual of Water Supply Practices (M60) Drought Preparedness and Response (American Water Works Association (AWWA), 2019). Water purveyor planning for possible water supply shortages has become an increasingly important subject considering the drought conditions over the last several years. The plan is intended to provide guidance, rather than absolute direction, for CAW action in response to water shortages and provide the Monterey Main district with options to responsibly manage water shortages.

1.1 Water Supply Reliability Analysis

Chapter 7 of the Monterey UWMP discusses the potential of future water supply shortages a normal year, single-dry year, and five-consecutive dry years. The supply from the Carmel River Aquifer, Seaside Groundwater Basin, Sand City Desalination Plant, and MPWSP Desalination Plant are all anticipated to be reliable and provide their contractual or design supply in all year types. Supplies from the PWM Expansion are expected to be limited by available source water (wastewater flows) until the MPWSP is online. Until the MPWSP is online, it is expected that demands will need to be constrained through the enaction of the Water Shortage Contingency Plan (WSCP).

1.2 Annual Water Supply and Demand Assessment

As established by CWC Section 10632.1, urban water suppliers must conduct annual water supply and demand assessments and submit an annual water shortage assessment report to DWR. The Annual Assessment is an evaluation of the short-term outlook for supplies and demands to determine whether the potential for a supply shortage exists and whether there is a need to trigger a WSCP shortage level and response actions in the current fiscal year to maintain supply reliability. Beginning by July 1, 2022, Monterey Main must prepare the annual water supply and demand assessment and submit an Annual Water Shortage Assessment Report to DWR. The preparation of this report will inform Monterey Main, the public, and state and other local agencies about the water supply conditions and the likelihood of water shortages. The annual report should report the approved anticipated shortage level, triggered shortage response actions, compliance and enforcement actions, and communication actions that will be implemented to mitigate the shortage identified in the Annual Assessment. The Annual Water Shortage Assessment Report will be due by July 1 of every year. Per CWC, the annual assessment must include:

- The written decision-making process that CAW will use each year to determine its water supply reliability.
- The key data inputs and assessment methodology used to evaluate the supplier's water supply reliability for the current year and one dry year, including:
  - Current year unconstrained demand.
  - Current year available supply in the current year and one dry year.
  - Existing infrastructure capabilities and plausible constraints.

- A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.
- A description and quantification of each source of water supply.

See Section 1.3 on how CAW's Monterey Main district determines water shortage levels.

1.3 Six Standard Water Shortage Levels

CAW filed the Water Shortage Contingency Plan, Rule 14.1.1 (Attachment 1), in response to the adoption of Regulation XV, Water Conservation and Rationing Plan by the Monterey Peninsula Water Management District ("MPWMD"), the regulatory agency of the Monterey Peninsula's water resources and as amended to comply with regulatory Orders as required by the Commission through Resolution W-5041 and referenced predecessors. The plan is intended to help ensure that all responsible measures are instituted to enable the Company's Monterey Main District to comply with the limitations on productions found in State Board's Cease and Desist Order (CDO), SWRCB Order No. WR 95-10, 2016-0016) and the Seaside Basin Decision, as well as other State mandated restrictions and requirements. This Rule applies to Monterey's Main System which is the Company's largest distribution system in its Monterey District that serves customers in the Cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Sand City, Seaside, and Pacific Grove, and portions of unincorporated Monterey County in the Carmel Valley, Del Monte Forest, and Carmel Highland areas. The Main System derives its source of supply from the Carmel River System and Coastal Subareas of the Seaside Basin. All other non Monterey Main areas follow the currently authorized 5 stage Rule and Schedule 14.1.

The Monterey Main Rule establishes a 4-stage system of increasing water conservation. Stage 1 is in effect at all times. Stages 2 and 3 are triggered when the Monterey Main exceeds its allocation from the Carmel River System and Seaside Basin or by a regulatory or emergency trigger. Stage 4 is enacted by a regulatory trigger, which includes any subsystem that relies on production or production offsets from the Main Monterey system, physical storage limitations, or as an emergency response to ensure public health, safety, or welfare. In the need to enact the WSCP and enter a shortage stage, CAW will notify California Public Utilities Commission (CPUC) through an advice letter and then MPWMD will implement the appropriate stage and enforce demand reduction methods. Below is a summary of the 4 water conservation stages of the Water Conservation Plan.

There are a number of criteria that will trigger the water shortage stages of the Water Conservation plan including, but not limited to: 1) physical storage trigger; 2) emergency trigger; and 3) regulatory trigger. Water shortage stages and a description of the corresponding water supply conditions are included in Table 1and described further in separate sections below the table. The menu of potential reduction measures for each stage are described in Section 1.4.1.

Table 1. DWR 8-1 Water Shortage Contingency Plan Levels

SHORTAGE LEVEL	PERCENT SHORTAGE RANGE	WATER SUPPLY CONDITION
1		In effect at all times during any supply condition
2	<5%	**Physical Shortage Trigger:** Stage 2 shall take effect on June 1, or such earlier date as may be determined by MPWMD, if the Total Storage Available in Table XV-4 in MPWMD's Rule 160 is below the Total Storage Required, but at least 95% of the Total Storage Required. The amount of voluntary reduction shall equal the percentage shortfall in Total Storage Required. **Regulatory Trigger – Production Targets:** Stage 2 shall take effect when the most recent 12month Company production from the Monterey Peninsula Water Resource System (MPWRS)[1] is greater than the then-current annual production target as determined in Table XV-1 of MPWMD Rule 160 but no greater than 105% of the annual production target. The amount of voluntary reduction shall equal the percentage overage of the annual production. **Regulatory Trigger – Regulatory Order:** Stage 2 shall take effect when that system is directed to reduce use by a governmental or regulatory agency. The amount of voluntary reduction shall equal the percentage directed by that governmental or regulatory agency relative to a base year determined by the governmental or regulatory agency. **Emergency Trigger:** Stage 2 shall take effect when the MPWMD or Company finds that a water supply emergency exists. Stage 2 shall take effect upon adoption of a Resolution of the MPWMD Board of Directors, or a declaration of a Water Supply Emergency by the Company or a State or County entity, due to a catastrophic event. In that Resolution or declaration, there shall be a finding of an immediate need to reduce production. The amount of voluntary reduction shall be determined by MPWMD, the Company, or the State or County entity. The Requirements of Stage 1 remain in effect
3	>5%	**Trigger: Stage 2 Deemed Unsuccessful :** Stage 3 shall take effect if Stage 2 has been implemented and has failed to sunset after a period of 6 months, except in the case of a government required targeted percentage implementation that has been met and continues to be met. **Physical Shortage Trigger:** Stage 3 shall take effect when production or production offsets from the Carmel River System or the Seaside Coastal Subareas, on June 1 or such earlier date as may be set by the MPWMD Board following MPWMD's May Board meeting if Total Storage Available in Table XV-4 of MPWMD's Rule 160 is below 95% of Total Storage Required. **Regulatory Trigger – Production Targets:** Stage 3 shall take effect when the most recent 12 month Company production from the MPWRS is greater than 105% of the then-current annual production target as determined in Table XV-1 of Rule 160 and Stage 2 has not been implemented **Regulatory Trigger – Regulatory Order:** Stage 3 shall take effect when requested by a governmental or regulatory agency to implement Stage 3, when Stage 2 has been deemed unsuccessful in meeting the governmental or other regulatory agency targets, or a governmental or other regulatory agency has increased the requested reduction to a level greater than that achieved in Stage 2. **Emergency Trigger:** Stage 3 shall take effect when the MPWMD Board or Company finds that a water supply emergency exists and upon adoption of a Resolution of the MPWMD Board or declaration of a catastrophic event by a governing body. In that Resolution or declaration of a catastrophic event, there shall be a finding of an immediate need to reduce production

		through the imposition of Stage 3 Conservation Rates. The Requirements of Stage 1 and 2 remain in effect
4	As Needed	**Trigger - Stage 3 Deemed Unsuccessful:** Stage 4 shall take effect if Stage 3 has been implemented and has failed to sunset after a period of 8 months. **Regulatory Trigger:** Stage 4 shall take effect when requested by a governmental or regulatory agency to implement Stage 4, when Stage 3 has been deemed unsuccessful in meeting the governmental or other regulatory agency targets, or a governmental or other regulatory agency has increased the requested reduction to a level greater than that which can be achieved in Stage 3. **Emergency Trigger**: Stage 4 shall take effect when the MPWMD Board finds that a water supply emergency exists and upon adoption of a Resolution of the MPWMD Board, or a declaration of a water supply emergency by the Company, or a State or County entity, due to a catastrophic event. In that Resolution or declaration of a catastrophic event, there shall be a finding of an immediate need to reduce production through the imposition of Stage 4 Water Rationing. The Requirements of Stage 1, 2 and 3 (if applicable) remain in effect

Notes: 1. **"**Monterey Peninsula Water Resource System" or "MPWRS" means the surface water in the Carmel River and its tributaries, groundwater in the Carmel Valley Alluvial Aquifer which underlies the Carmel River, and groundwater in the Seaside Groundwater Basin;

Each of the water shortage stages will be rescinded by resolution of the MPWMD when the usable storage in the Carmel River System and Seaside Coastal Subareas is greater than the physical storage trigger for that stage.

1.3.1 Shortage Level 1

As part of Stage 1 of the Water Shortage Contingency Plan, Monterey Main must maintain its Water Year production from the Carmel River System below amounts specified in the CDO, as amended, and must comply with the production limits imposed by the Seaside Watermaster.

Monterey Main's customers must comply with the water waste and non-essential water use prohibitions. A few examples of the water waste and non-essential water use prohibitions are listed below; a full list can be seen in MPWMD Regulation XV in Attachment 2.

- Operation of fountains, ponds, lakes, or other ornamental use of potable water without recycling.
- Using unmetered fire hydrant water by individuals for any reason other than fire suppression or utility system maintenance.
- Use of potable water for washing buildings, structures, driveways, patios, parking lots, tennis courts, or other hard surfaced areas, except in the cases where health and safety are at risk.
- Use of potable water to irrigate turf, lawns, gardens, or ornamental landscaping between 9:00 AM and 5:00 PM by means other than drip irrigation or hand-watering without quick acting positive action shut-off nozzles. Exceptions may be granted by MPWMD to professional gardeners where the only option is to water between 9:00 AM and 5:00 PM.
- Operation of commercial car washes without recycling at least 50% of the potable water used per cycle
- Use of potable water for street cleaning

1.3.2 Shortage Level 2

Stage 2 comes into effect when Monterey Main exceeds its year-to-date at month-end production as defined in Rule 14.1.1, by regulatory order or by an emergency trigger. When Stage 2 or higher of the Water Shortage Contingency Plan has been activated by Commission authorization, the water use restrictions of Stage 1 in the Water Shortage Contingency Plan in Section G.2 of Rule 14.1.1 become subject to fines imposed by the utility. When Monterey Main's year-to-date at month-end targets are met for two consecutive months in the subsequent water year, Monterey Main will revert back to Stage 1.

1.3.3 Shortage Level 3

Stage 3 of the water shortage contingency plan implements specific Conservation Rates. Level 1 Conservation Rates are comprised of a 25% surcharge on the then existing rates for a minimum of 3 months. The surcharges do not apply to Rate Tier 1 residential Customers. Level 2 Conservation Rates are comprised of a 40 percent surcharge implemented on the then existing rate (without the 25 percent Level 1 surcharge) if after the imposition of Level 1 Conservation Rates for 3 months the monthly production in the Company's system exceeds the monthly production target for the previous two (2) consecutive months. When Stage 3 comes into effect, all of the reduction measures identified in Stage 1 and 2 remain enacted.

1.3.4 Shortage Level 4

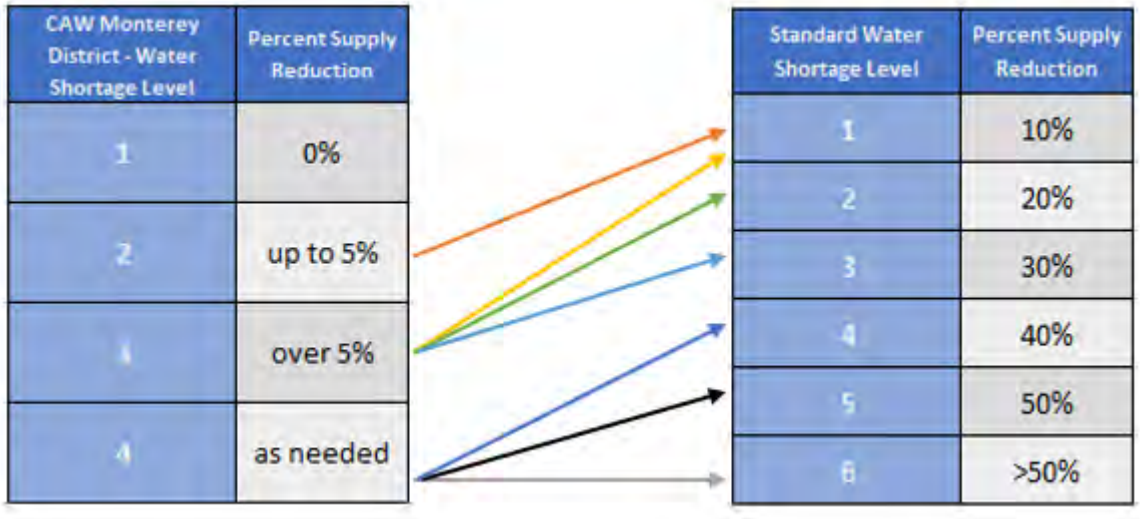
Water shortage Level 4 enforces water rationing. While CAW's Monterey Main district does not hold the authority to implement the water rationing stage, CAW will aid the MPWMD in implementing all water rationing measures. As part of the water rationing stages, CAW will send written notice of mandatory

water rationing upon the determination. For stage 4, CAW's Monterey Main district will send monthly reminders of the water rationing stage in the water bill and include the customer's water ration and the quantity of the water ration consumed by the customer. Water rations will be determined in accordance with MPWMD Rule 165 for each customer by dividing the reduced available production by the percentage of use for each Customer Category. However, water rationing care will be taken to ensure health, safety, and welfare. Under no circumstances will residential water rations be less than 35 gallons per person per day. In addition to the water rationing measures outlined below, all previously enacted measures through from Stage 1 will be enforced.

1.3.5 Standard Water Shortage Level Crosswalk

CWC Section 10632(a)(3)(A) includes six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. If the supplier's water shortage levels do not correspond with the six standard levels, then a crosswalk between the supplier's stages and the standard levels is required for compliance, shown in Figure 1.

Figure 1. Water Shortage Level Crosswalk



1.4 Shortage Response Actions

Water Code Section 10632 (a)(4) requires the WSCP to specify shortage response actions that align with the defined shortage levels. MPWMD has defined specific shortage response actions that align with the defined shortage levels in Table 1. **Error! Reference source not found.**These shortage response actions were developed with consideration to the system infrastructure and operations changes, supply augmentation responses, customer-class or water use-specific demand reduction initiatives, and increasingly stringent water use prohibitions.

1.4.1 Demand Reduction

The demand reduction measures that would be implemented to address shortage levels are described in Table 2. This table indicates which actions align with specific defined shortage levels and estimates the extent to which that action will reduce the gap between supplies and demands to demonstrate that choose suite of shortage response actions can be expected to deliver the expected outcomes necessary to meet the requirements of a given shortage level. The table also identifies the enforcement action, if any, associated with each demand reduction measure.

Table 2. DWR 8-2 Demand Reduction Actions by Customer

SHORTAGE LEVEL	DEMAND REDUCTION ACTIONS	HOW MUCH IS THIS GOING TO REDUCE THE SHORTAGE GAP?	ADDITIONAL EXPLANATION OR REFERENCE	PENALTY, CHARGE, OR OTHER ENFORCEMENT?
STAGE 1 - MONTEREY MAIN				
RESTRICTIONS - DEMAND REDUCTION ACTIONS BY CUSTOMER				
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	0-1%	Prohibit allowing potable water to escape from breaks within the customer's plumbing system for more than seventy-two (72) hours after the customer is notified or discovers the break	YES
1	Other - Prohibit use of potable water for washing hard surfaces	0-1%	Including driveways, patios, parking lots, tennis courts, streets, or other hard surfaced areas	YES
1	Landscape - Limit landscape irrigation to specific times	0-1%	Irrigation is prohibited between 9am and 5pm on any day	YES
1	Landscape - Limit landscape irrigation to specific days	0-5%	Irrigation is prohibited on any day besides Wednesday and Saturdays, except irrigation by a professional gardener or landscaper on site limited to 2 watering days per week	YES
1	Other - Require automatic shut of hoses	0-1%	For landscape irrigation, washing private vehicles, and washing livestock	YES
1	Landscape - Other landscape restriction or prohibition	0-1%	Prohibiting irrigation during rainfall and for 48 hours after measurable precipitation	YES
1	Water Features - Restrict water use for decorative water features, such as fountains	0-1%	Fountains, ponds, lakes, and other ornamental water features must use recirculating water	YES
1	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	0-1%	Vehicle-washing facilities must recycle and reuse at least 50% or 60% water depending on if constructed before or after January 1, 2014, respectively.	YES
1	Other	0-1%	When washing commercial aircraft, cars, buses, boats, trailers, or other commercial vehicles, use of potable water is prohibited, except at water efficient facilities	YES
1	CII - Restaurants may only serve water upon request	0-1%	No restaurant, hotel, café, cafeteria, or other public place where food is sold is served or offered for sale, shall serve drinking water to any customer unless expressly requested.	YES
1	CII - Lodging establishment must offer opt out of linen service	0-1%	Hotels/motels must provide guests with option to reuse towels and linens for more than one day	YES
1	Other - Prohibit use of potable water for construction and dust control	0-1%	Prohibit use of potable water for construction, compaction, dust control, street or parking lot sweeping, building wash down where non-potable or recycled water is sufficient.	YES

1	Other	0-1%	Delivery, receipt, and/or use of water from an unpermitted Mobile Water Distribution System	YES
1	Other	0-1%	Use of an unmetered fire hydrant by individuals other than for fire suppression or utility system maintenance	YES
DEMAND REDUCTION ACTIONS BY UTILITY				
1	Offer Water Use Surveys	0-1%	Use of water leak surveys to all community members	NO
1	Expand Public Information Campaign	0-1%	Community outreach that includes educational information and saving tips included in billing inserts	NO
STAGE 2 - WATER SHORTAGE				
RESTRICTIONS - DEMAND REDUCTION ACTIONS BY CUSTOMER				
All Restrictions of Stage 1 remain in place, additional restrictions below apply				
DEMAND REDUCTION ACTIONS BY UTILITY				
2	Other - Fines for Water Waste	0-2%	Increasing fines for violating Stage 1 water waste prohibitions	
STAGE 3 - WATER SHORTAGE				
RESTRICTIONS - DEMAND REDUCTION ACTIONS BY CUSTOMER				
All Restrictions of Stage 1 & 2 remain in place, additional restrictions below apply				
DEMAND REDUCTION ACTIONS BY UTILITY				
3	Implement or Modify Drought Rate Structure or Surcharge	5-15%	Will implement Commission-approved emergency conservation rates	YES
STAGE 4 - WATER SHORTAGE				
RESTRICTIONS - DEMAND REDUCTION ACTIONS BY CUSTOMER				
All Restrictions of Stage 1, 2 & 3 remain in place, additional restrictions below apply				
4	Other	varies	New Annexations to service area are prohibited	YES
4	Other water feature or swimming pool restriction	0-1%	Prohibit draining or refilling of swimming pools and spas except to prevent or correct structural damage or to comply with public health regulations	YES
4	Other	varies	Implement residential and non-residential water rations at the discretion of MPWMD. See MPWMD Regulation XV Rule 165 Section E and F for more detail.	YES
Demand Reduction Actions by Utility				
4	Moratorium or Net Zero Demand Increase on New Connections	0-2%	Temporarily limit or ban new water service connections within the service area	NO

Notes: Reduction in the shortage gap is estimated and can vary significantly.

1.4.2 Supply Augmentation

Although CAW has no immediate plan to augment supply, Monterey Main strives to build carryover storage during wet years in order to utilize full allotment of water volume during dry years to meet demands, as indicated in Table 3. Monterey Main injects excess Carmel River flows during the wet years into the Seaside Groundwater Basin as part of its Aquifer Storage and Recovery (ASR) Program to be pumped back out and used in the summer months or for dry years. This volume of additional extracted groundwater can vary significantly dependent on previous seasons injections and the current demand gap. These options are discretionary and quantifying their ability to reduce the shortage gap can vary significantly.

Table 3. DWR 8-3R Supply Augmentation & Other Actions

SHORTAGE LEVEL	SUPPLY AUGMENTATION METHODS AND OTHER ACTIONS BY WATER SUPPLIER	HOW MUCH IS THIS GOING TO REDUCE THE SHORTAGE GAP?	ADDITIONAL EXPLANATION OF REFERENCE
CAW Discretion	Stored Emergency Supply	As Needed	Additional pumping of stored groundwater

1.4.3 Operational Changes

California American Water will make operational changes such as decreasing lengths and frequency of line flushing in Stages 3 and higher among other water savings measures. The Monterey district will evaluate additional operational measures to further increase its system efficiency and minimize leaks by potentially expediting infrastructure repairs or altering maintenance cycles.

1.4.4 Emergency Response Plan

This section describes the response to emergency situations which interrupt water supply including earthquakes, regional power outages, system failures and other events specific to CAW's sources.

CAW has analyzed the nature and extent of likely catastrophes which could affect the ability to provide water supply for both consumptive and emergency use. Catastrophes are broadly classified as "naturally occurring" and "manmade". Natural catastrophes include such incidents as fire, flood, earthquake, and electrical supply failure. Manmade catastrophes include such incidents as chemical spill, vandalism, and sabotage, including terrorist attack, and mechanical failure. Manmade catastrophes can also have the same end result as those of natural disasters. As an example, a dam break regardless of the cause, could flood and damage or destroy facilities.

CAW has installed a broad range of systems, procedures, and facilities to reduce the potential of significant water supply interruptions regardless of cause. Some of these systems, procedures and facilities are summarized here:

- All production facilities are fenced and locked to prevent unauthorized entry.
- Emergency generators are located at critical facilities. The generators are equipped with automatic transfer switches which upon a power failure will automatically disconnect the facility from commercial power source, start the generator, and power up the facility. While some generators are stationary, most are trailer mounted thus allowing movement within the various service areas should that be required.
- System pressure, water production flow rate, and power status are monitored and reported at representative locations throughout the various water systems. Reports are sent to Monterey Main

office where they are displayed, monitored, and recorded. Additionally, approximately twenty representative water supply and production sites are equipped with "mission controllers", a web-based monitoring system. The mission controllers alert both on-duty and on-call staff by cell phone when operational problems arise.

- CAW maintains on-call staff twenty-four hours a day for rapid response.
- CAW maintains a stockpile of service line repair parts and associated construction equipment for repair of small leaks and line breaks.
- CAW has blanket contracts with two local contractors to assist with larger emergency repairs caused by earthquake or other major events.
- CAW has completed an Emergency Operations Plan detailing procedures and contacts and outlining responses to several most probable catastrophic events and has filed it with the Department of Public Health.

An inherent strength in the CAW system is the fact that water is produced from multiple wells spread more or less uniformly throughout the various service areas. As a result, the system has a high degree of redundancy.

1.4.5 Seismic Risk Assessment and Mitigation Plan

A seismic risk assessment has been completed as part of the America's Water Infrastructure Act of 2018 Risk and Resilience Assessment (RRA) requirements. The RRA includes detailed information about the water system's assets and an assessment of seismic risk and potential mitigation measures. Additionally, the Monterey district maintains an emergency response plan that addresses seismic risk.

1.4.6 Shortage Response Action Effectiveness

In CAW's Monterey district, all accounts are metered. During a water shortage, a comparison of delivery records would be carried out to determine if water is being conserved. All water sources, including all groundwater wells and the desalination plant, are metered and have continuous recording equipment. During a water shortage, a comparison of total water purchased would be carried out to determine if water is being conserved.

For each specific Shortage Level Response Action identified in the plan, the WSCP also estimates the extent to which that action will reduce the gap between supplies and demands identified in Table 2. To the extent feasible, Monterey Main has estimated percentage savings for the chosen suite of shortage response actions, which can be anticipated to deliver the expected outcomes necessary to meet the requirements of a given shortage level.

1.5 Communication Protocols

As discussed in Rule 14.1.1, Section G Water Conservation Plan triggers customers notifications through bill messaging or direct mail. Notifications must occur prior to rate changes or fines. Any change in stage level (up or down) shall be notified via press release and on the Company's website and in emails sent to customers when provided. Notification occurs one week prior to fines, drought surcharge, or rate changes. CAW will maintain communications and updates on supply conditions. Updates on supply status and results of the customers conservation efforts included in every bill. The following Communications Matrix (Figure 2) summarizes the Company's Communication Tactic for each Shortage stage:

Figure 2. WSCP Communications Matrix

2021 Water Shortage Contingency Plan Communications Matrix					
	Stage 1	*Stage 2*	*Stage 3*	*Stage 4*	
Communication Tactic					**Notes**
Regulatory Notice			x	x	CPUC requires customer notice when mandatory conservation stages are activated or changed
Public Hearing			x	x	CPUC may require formal public hearings when mandatory conservation stages are activated or changed
Press Release		x	x	x	CAW conducts media outreach when conservation levels are activated or changed
Social Media	x	x	x	x	CAW regularly communicates information about water conservation and efficiency via social media channels. Message frequency and information will be appropriate for each stage
Website	x	x	x	x	CAW maintains a website with information to local conservation programs and services. Appropriate information about stages will be added to website as appropriate.
Television/Radio				x	CAW occasionally purchases advertising on broadcast and digital platforms as appropriate.
Water Waste Reporting on Website	x	x	x	x	CAW maintans a water waste reporting portal on its website and reports are followed on by local staff
Community Outreach	x	x	x	x	CAW regularly holds community meetings, attends community events and local government meetings. Conservation and efficiency information is shared as appropriate.
Direct mail, email and Bill Onserts	x	x	x	x	CAW regularly provides conservation and efficiency information through bill onserts and messages. CAW may also utilitize direct mail and email as needed.
Reverse 911 Messages				x	CAW may utilitize its emergency communications system to provide critical information via phone, text and email as appropriate in the event of a severe water shortage.
Customer Service	x	x	x	x	CAW Customer service center and local employees are provided relevant information for customers who call or visit our offices.

1.6 Compliance and Enforcement

When a shortage stage of the WSCP has been activated by Commission authorization, the water use restrictions of Stage 1 in Section D of Rule 14.1.1 become subject to fines and penalties imposed by CAW. CAW will first work closely with local law enforcement and MPWMD with enforcing the mandatory water use restrictions. MPWMD has penalties for violation of the water waste restrictions that were mentioned above in Table 2. The fines are noted in Figure 3 and based on MPWMD Regulation XV, Rule 162, Table XV-5 Water Waste Fines.

Figure 3. Penalties for Water Wastage

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WATER CONSERVATION PLAN
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3. Applies to all Enforcement Stages of Water Shortage Contingency Plan.

	Violation 1	Violation 2 (of the same restriction)	Violation 3 (of the same restriction)	Violation 4 (of the same restriction)	Violation 5/6 [2] (of the same restriction)
Proof of violation	Employee or Customer reports, with no additional verification required	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW	Verification with a written report by employee or contractor of CAW
Letter/fine	Warning letter mailed to premise and billing address	Violation letter posted and mailed with $100 fine on next bill	Violation letter posted and mailed with $250 fine on next bill	Violation letter posted and mailed with $500 fine on next bill	Violation letter posted and mailed, shut off per Rule 11 and $500 fine on next bill
Fixing leaks All Stages	Customer has: 72 hours	Customer has: 72 hours	Customer has: 72 hour	Customer has: 72 hours	Customer has: 72 hours
Time to correct violation	5 days	5 days	5 days	5 days	5 days
Time Customer has to request variance of the alleged violation	14 days to contact CAW in writing	14 days to contact CAW in writing	10 days to file an appeal with CAW in writing	10 days to file an appeal with CAW in writing	10 days to file an appeal with CAW in writing
If the Customer does not agree with CAW's resolution [1] Reference Section K of Rule 14.1	Further reported violations of the same restricted use will not be counted in the determination of further action until one week after the variance request is resolved	If the Customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the Customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the Customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC	If the Customer disagrees with CAW's resolution, they may file a formal complaint with the CPUC

[1] If a Customer has appealed the receipt of the fine, the fine will continue to be posted on the Customer's account, but will not result in further service action, until at least 14 days after the resolution of appeals. Once resolved, if in the Customer's favor, the fine will be immediately removed from the account. If not resolved in the Customers favor, then the fine will be due and payable as part of the next billing cycle and subject to all such further actions as with any other billed charge.

[2] For violation 6 instead of shut-off for 3 days and $500 fine, a flow restrictor will be installed for duration of enforcement.

1.7 Legal Authorities

CAW does not have authority to adopt resolutions or ordinances as a public utility company. However, CAW can support local jurisdictions in developing ordinances or resolutions within its Monterey District service areas that would be compatible with CAW's WSCP. For all intents and purposes of this UWMP, the Rule No. 14.1.1 (Attachment 1) serves as the WSCP resolution and anticipated course of action to achieve all necessary requirements of the WSCP if needed.

CAW as a public utility does not have the authority to declare a water shortage emergency, but will advise the CPUC of a water shortage emergency and then the MPWMD will implement the appropriate stage and enforcement. CAW will coordinate with the MPWMD for communication with adjacent cities and Monterey County for the possible proclamation of a local emergency.

1.8 Financial Consequences of WSCP

CAW develops a proposed rate structure on a three-year cycle and submits it to the CPUC for review and approval. To assist in revenue stabilization and provide an incentive to promote conservation, CAW requested a full decoupling Water Revenue Adjustment Mechanism (WRAM) in its General Rate Case. WRAM is the mechanism through which sales are decoupled from revenues, so that conservation is encouraged without having a negative financial impact. Currently, all of CAW's districts have received CPUC approval for a WRAM.

The WRAM tracks the differences between total quantity charge revenues authorized by CPUC ("Total Actual Quantity Revenues") and the total revenues actually recovered through the quantity charge based on actual sales ("Total Actual Quantity Revenues") during conservation rates, emergency rates or rationing rates. The revenue requirements are the same under conservation rates as they are under the current Commission "standard" rate structure. To recover any under collection or refund any over collection CAW implements a surcharge/ surcredit that considers the net balance of the WRAM balancing account. The WRAM will provide a cost accounting means to stabilize revenues and ensuring protection of revenue shortfalls.

In 2020, the CPUC ordered that regulated water utilities may not include the continuation of the WRAM and MCBA in their next general rate case filing but may propose the use of a Monterey-Style Revenue Adjustment Mechanism and Incremental Cost Balancing Account.

In the absence of a WRAM/MCBA, during a water shortage, California American Water will file for a Drought Memorandum Account, or similar, to track incremental shortage-related expenses to be reviewed by the CPUC for future recovery in rates. California American Water will also file for a Drought Lost Revenue Memorandum Account, or similar, to track reduced sales to be reviewed by the CPUC for future recovery in rates.

Both the Drought Memorandum Account and Drought Lost Revenue Memorandum Account are mechanisms that have been approved by the CPUC in previous droughts.

1.9 Monitoring and Reporting

As described in Section 1.2, CAW intends to track its supplies and project demands on an annual basis and, if supply conditions described in Table 1 are projected, CAW will enact the WSCP through an advice letter sent to CPUC, and work with MPWMD to aid in communicating to the water service area of any relevant restrictions of water use. Monitoring demands is essential to ensure the WSCP response actions are adequately meeting reductions and decreasing the supply/demand gap. This will help to analyze the effectiveness of the WSCP or identify the need to activate additional response actions.

The water savings from implementation of the WSCP will be determined based on monthly production reports which will be compared to the supply from prior months, the same period of the prior year, and/

or the allocation. At first, the cumulative consumption for the various sectors (e.g., residential, commercial, etc.) will be evaluated for reaching the target demand reduction level. Then if needed, individual accounts can be monitored. Weather and other possible influences may be accounted for in the evaluation.

1.10 WSCP Refinement Procedures

CAW intends to use this WSCP as an adaptive management plan to respond to foreseeable and unforeseeable water shortages. The WSCP is used to provide guidance to Monterey Main and its staff and the public by identifying response actions to allow for efficient management of any water shortage with predictability and accountability. To maintain a useful and efficient standard of practice in water shortage conditions, the requirements, criteria, and response actions need to be continually evaluated and improved upon to make sure it provides the tools to maintain reliable supplies and reduce the impacts of supply shortages.

1.11 Special Water Feature Distinction

Per Water Code Section 10632 (b), CAW has defined water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas. As listed in Table 2 there are separate demand reduction actions for decorative water features, including decorative fountains, lakes, or ponds, and for pools and spas. Non-pool or non-spa water features may use or be able to use recycled water, whereas pools and spas must use potable water for health and safety considerations. Limitations to pools and spas may require different considerations compared to non-pool or non-spa water features.

1.12 Plan Adoption, Submittal, and Availability

Per Water Code Section 10632 (a)(c), CAW sent letters of notification of preparation of the 2020 UWMP to all cities and counties within its Monterey Main service areas 60 days prior to the public hearing. CAW made the draft 2021 WSCP available for public review and held a public hearing on June 17, 2021. The notice of the public review hearing was distributed June 2, 2021.

Once the 2021 WSCP has been adopted, a copy of the WSCP will be submitted to the California State Library, DWR, and all cities and the County of Monterey within 30 days of adoption. Based on DWR's review of the WSCP, CAW will make any amendments in its adopted WSCP, as required, and directed by DWR. If CAW revises its WSCP after approved by DWR, then an electronic copy of the revised WSCP will be submitted to DWR within 30 days of its adoption.

Attachment 1: CPUC Water Shortage Contingency Plan, Rule 14.1.1

Rule No. 14.1.1.
WATER SHORTAGE CONTINGENCY PLAN
MONTEREY COUNTY DISTRICT

A. GENERAL INFORMATION

This Water Shortage Contingency Plan, filed in response to the adoption by the Monterey Peninsula Water Management District's ("MPWMD") Regulation XV, a Water Conservation and Rationing Plan[1], and as amended to comply with Regulatory Orders as required by the Commission through Resolution W-5041 and referenced predecessors, is intended to help insure that all responsible measures are instituted to enable the Company's Monterey District to comply with the limitations on productions found in SWRCB Order No. WR 95-10 and the Seaside Basin Decision, as well as other State mandated restrictions and requirements. (C)

The Commission shall authorize Tariff Schedule MO-14.1.1, which sets forth charges for the removal of flow restrictors, fines for violation of water use restrictions, and emergency conservation rates to indicate the need to further reduce water use. The Company will continue to make water conservation devices available to its Customers as required by its Rule 21 and to remind Customers of the availability of conservation devices and all rebate programs. (L)

(Continued)

[1] As amended by MPWMD through Ordinance No. 169, adopted on February 17, 2016. A full copy of the Regulation is appended to this Rule as Attachment 1.

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B. DEFINITIONS

1. "Bishop" shall mean the Company's Bishop Water Distribution subsystem as described in the purchase agreement between Bishop Water Company and the Company dated September 1, 1996; (C)
2. "Carmel River System" means the surface water in the Carmel River and its tributaries, and groundwater in the underlying Alluvial Aquifer; (C)
3. "CCF" or "ccf"" means one hundred cubic feet, which equals 748 gallons or one unit; (L)
4. "Commission" or "CPUC" means the California Public Utilities Commission;
5. "Company" means California-American Water Company;
6. "Customer" means any person who uses water supplied by the Company in its Monterey District;
7. "Dedicated Irrigation Meter" means a water meter exclusively used to measure outdoor water consumption;
8. "Final Production Orders" means any Cease and Desist Order, final order by the SWRCB or Seaside Watermaster or any other final court decision issued after December 10, 2008 that explicitly requires the Company, on a certain date, to reduce its production of water. For the purposes of this Rule, the effective date of any such order shall be the same date that the water production reduction limit is imposed;
9. "Flow Restrictor" means a device placed into the water distribution system by the Company that restricts the volume of flow to the Customer by 50%;
10. "Hidden Hills" means the Company's Hidden Hills subsystem as described in the purchase agreement between Carmel Valley Mutual Water Company and the Company recorded July 8, 1994, Document #49389, Reel 3125, Page 696; (L)
11. "Household" means all the people who occupy a housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room occupied (or if vacant, intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live separately from any other people in the building and that have direct access from the outside of the building or through a common hall; (N) (N)
12. "Main System" means the Company's largest distribution system in its Monterey District that serves Customers in the Cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Sand City, Seaside, and Pacific Grove, and portions of unincorporated Monterey County in the Carmel Valley, Del Monte Forest, and Carmel Highland areas. The Main System derives its source of supply from the Carmel River System and Coastal Subareas of the Seaside Basin; (L) (L)
13. "Measurable Precipitation" means rainfall of 0.1 inch or more; (C)
14. "Mobile Water Distribution System" means any potable or sub-potable water delivery that originates at a location apart from the site of use and that is delivered via a truck or other movable container. This definition shall not apply to deliveries of water by commercial companies in volumes less than or equal to 55 gallons per container; (L)
15. "MPWMD" means the Monterey Peninsula Water Management District and its designated representatives acting on its behalf;
16. "MPWMD Board" or "Board" means the Board of Directors of the Monterey Peninsula Water Management District; (L)

(Continued)

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B. DEFINITIONS, Cont'd

17. "Monterey Peninsula Water Resource System" or "MPWRS" means the surface water in the Carmel River and its tributaries, groundwater in the Carmel Valley Alluvial Aquifer which underlies the Carmel River, and groundwater in the Seaside Groundwater Basin; (L) (L) (L)
18. “Non-Residential” means all Customers not falling within the definition of Residential, including commercial, industrial, public authority, golf course, and non-revenue metered Customers; (N)
19. "Plan" means this Water Shortage Contingency Plan; (N)
20. "Regulation XV" means MPWMD Regulation XV, The 2016 Monterey Peninsula Water Conservation and Rationing Plan; (L) (L) (L)
21. “Regulatory Order” means an order by the California State Water Resources Control Board, the Commission, or other governmental or regulatory agency; (N)
22. “Residential” means single-family residential or multi-family residential Customers;
23. "Rule" means this Rule 14.1.1;
24. "Ryan Ranch" means the Company's Ryan Ranch Water Distribution subsystem as described in the purchase agreement between Neuville Co. N.V. (a Delaware Corporation) and the Company dated April 30, 1990;
25. "Seaside Basin" means the water in Seaside Groundwater Basin as described in the Seaside Basin Decision;
26. "Seaside Basin Decision" means the California American Water v. City of Seaside, et. al, Case No.M66343, California Superior Court, Monterey County;
27. "Seaside Watermaster" means either (a) the court appointed Seaside Basin Watermaster Board pursuant to Section 111-L of the Decision rendered for Monterey County Superior Court Case No. M66343 (California American Water vs. City of Seaside, et. al,) dated March 22, 2006, as it may be amended from time to time or (b) the Superior Court, when issuing any order in California American Water vs. City of Seaside, et al.;
28. “SWRCB" means the California State Water Resources Control Board;
29. "SWRCB Order" means Order No. WR 95-10 issued by the SWRCB; (N)
30. "System Production Limit" means the Company's maximum annual production from the Carmel River System and the Seaside Basin as summarized in Table XV-1 of MPWMD Rule 160; (C) (C)
31. "Water" means water supplied by the Company; (L)
32. "Water Ration" means a specific amount of water available to each Customer during water rationing Stage 4. The Water Rations will be determined on a Household basis for Residential Customers and by percentage reductions by user category based on a prior year as necessary to achieve the required reductions to the allotments of all Non-Residential Customers. Variances for verifiable medical needs are available. In no circumstance shall the Residential Water Ration be lower than 90 gallons per Household per day; (C)
33. "Water Year" means the period from October 1 of any year to September 30 of the following year; (L)
34. "Water Year Allocation" means the annual regulatory production limit from the Carmel River System and Seaside Basin. (L)

Rule No. 14.1.1. (Continued)
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C. APPLICABILITY

This Rule applies to water Customers of the Monterey County District's Main System and Customers of the Ryan Ranch, Bishop and Hidden Hills systems all of which are served under rate schedule MO-1, MO-1MU, and MO-1C authorized by the Commission. This Rule applies to Customers supplied by water from the Carmel River System and Seaside Basin (including the Ryan Ranch, Hidden Hills and Bishop systems). It does not apply to Customers in Toro, Ambler Park, Ralph Lane, Garrapata and Chualar systems. (C)

D. TERRITORY (L)

The territory includes the incorporated Cities of Monterey, Pacific Grove, Carmel-by-the-Sea, Del Rey Oaks, Sand City, a portion of Seaside, and unincorporated areas in the County of Monterey served by the Company, except for Toro, Ambler Park, Ralph Lane, Garrapata and Chualar.

E. WATER CONSERVATION INITIATION

This Plan shall commence immediately upon approval of the Commission. Trigger criteria for the various Stages are found in this Rule and MPWMD Regulation XV.

F. CUSTOMER NOTIFICATION

1. When a utility requests authorization of Schedule 14.1.1 – Water Shortage Contingency Plan tariff, via a Tier 2 advice letter, it shall provide notice of the Tier 2 advice letter and associated public meeting provided to Customers, per Resolution W-4976, and shall comply with all requirements of Sections 350-358 of the California Water Code (CWC), including but not limited to the following:
    a. In order to be in compliance with both the General Order (GO) and CWC, the utility shall provide notice via both newspaper and bill message/direct mailing.
    b. Utility shall file one notice for each advice letter filed, that includes both notice of the filing of the Tier 2 advice letter as well as the details of the public meeting (date, time, place, etc.).
    c. The public meeting shall be held after the utility files the Tier 2 advice letter, and before the Commission authorizes implementation of the tariff.
    d. Utility shall consult with DWA staff prior to filing advice letter, in order to determine details of public meeting.
2. In the event that the Company's Schedule 14.1.1- Water Shortage Contingency Plan is triggered, and the utility requests activation of an increased Stage, or an increased level of Emergency Conservation Rates in Stage 3, of the Water Shortage Contingency Plan through the filing of a Tier 2 advice letter, the utility shall notify its Customers and provide each Customer with a summary of Rule 14.1.1 and Schedule 14.1.1 Stage changes by means of bill message or direct mailing. Notification shall take place prior to imposing any fines or conservation rates associated with this Plan. (L)
3. The Company shall notify Customers via press release, messages on the Company website, and email where an email address is provided on a Customer's account before the effective date of any change in Stages either moving up Stages, e.g. from Stage 2 to Stage 3, or moving down Stages, e.g. from Stage 3 to Stage 1; or when moving up or down in the Stage 3 level of Emergency Conservation Rates. Notification will occur at least one week before any fines are levied or emergency conservation rates are enacted. In addition, the Company shall maintain communication with Customers regarding the ongoing water supply situation, and related conservation requirements. During the period that a stage of the Company's Schedule 14.1.1 is activated, the utility shall provide Customers with periodic updates regarding its water supply status and the results of Customers' conservation efforts. (C) (C)

(Continued)

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WATER SHORTAGE CONTINGENCY PLAN
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4. After Schedule 14.1.1 has been activated and it is determined that water supplies are again sufficient to meet demands, and staged reduction measures are no longer necessary, the utility shall seek Commission authority via a Tier 1 advice letter to de-activate the particular stage of reduction that was previously authorized. (C) (C)

G. WATER CONSERVATION

1. Company Responsibilities (L)
   a. Communicate conservation messages to Customers. At all times during Stages 2 through 4 the Company shall send monthly conservation reminders. (C) (C)
   b. Include conservation message on water bills. (L)
   c. Participate in a joint rebate program with the MPWMD. (L)
   d. Promote water conservation and undertake conservation programs in coordination with MPWMD. (L) (L)
   e. Cooperate with the MPWMD to establish and maintain a water conservation website that responds to local concerns. (C) (C)
   f. Provide conservation bill inserts. (L)
   g. Amend its Urban Water Management Plan and its Rule 14.1.1, Water Shortage Contingency Plan--Monterey District, to conform to MPWMD Regulation XV. A copy of Rule 14.1.1 shall be filed with the CPUC and the MPWMD within thirty (30) days of the effective date of any amendment to this Regulation. (N) (N) (N) (N) (N)
   h. Provide Residential and Non-Residential water audits upon request. (L)
   i. Make water-saving conservation devices available to all Customers and provide notices of availability.
   j. Provide MPWMD with all Customer data required by Regulation XV as authorized by Commission Decision 09-02-006 and in accordance with the terms and conditions of a nondisclosure agreement.
   k. Shall not provide portable water meters unless an MPWMD permit has been issued and in compliance with any tariff moratorium provisions. (L)

2. Customers' Responsibilities
   a. All Customers shall comply with Rule 14.1.1 and MPWMD Regulation XV (The 2016 Monterey Peninsula Water Conservation and Rationing Plan). (C)
   b. All Customers shall prioritize the conservation of water at all times. (L)
   c. All Customers are responsible for notifying the Company whenever there is a change of use from Residential to Non-Residential, or Non-Residential to Residential. (C) (C)

3. "Water Waste" shall mean the indiscriminate, unreasonable, or excessive running or dissipation of water. Water Waste shall include, but not be limited to, the following: (L) (L)
   a. Waste caused by correctable leaks, breaks or malfunctions. All leaks, breaks, or other malfunctions in a Customer's plumbing or distribution system must be repaired within 72 hours of notification that a leak exists. This loss of potable water may be cited for water waste after the time period established in Schedule 14.1.1 in which a leak or malfunction was to have been corrected. Exceptions may be granted by the General Manager for corrections, which are not feasible or practical. (C) (C)

(Continued)

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b. Indiscriminate or excessive water use which allows excess to run to waste. (L)
c. Washing driveways, patios, parking lots, tennis courts, or other hard surfaced areas with potable water, except in cases where health or safety are at risk and the surface is cleaned with a water broom or other water efficient device or method. Water should be used only when traditional brooms are not able to clean the surface in a satisfactory manner. (C)
d. Power or pressure washing buildings and structures with potable water, except when preparing surfaces for paint or other necessary treatments or when abating a health or safety hazard.
e. Hand watering by a hose, during permitted hours, without a quick acting positive action shut-off nozzle.
f. Irrigation between 9 a.m. and 5 p.m. on any day, and irrigation on any day other than Saturdays and Wednesdays, except for irrigation overseen by a professional gardener or landscaper who is available on site and that is not exceeding a maximum two watering days per week. This prohibition applies to hand watering with a hose, and irrigation systems whether spray, drip or managed by a smart controller. Limited hand watering of plants or bushes with a small container or bucket is permitted on any day at any time. Subsurface greywater irrigation systems may also be operated at any time. An exemption may be given to a Non-Residential establishment whose business requires water in the course of its business practice (e.g., golf courses, nurseries, recreational space, among others) with notification by the business owner to the MPWMD, and subject to the approval of the MPWMD General Manager.
g. Irrigating during rainfall and for 48 hours after Measurable Precipitation of at least 0.10 inches.
h. Use of water for irrigation or outdoor purposes in a manner inconsistent with California Code of Regulations, Title 23, Water, Division 2, Department of Water Resources, Chapter 2.7, Model Water Efficient Landscape Ordinance, where applicable, or in a manner inconsistent with local regulations.
i. Operation of fountains, ponds, lakes or other ornamental use of potable water without recycling, and except to the extent needed to sustain aquatic life, provided such animals are of significant value and have been actively managed.
j. Individual private washing of cars with a hose except with the use of a Positive Action Shut-Off Nozzle.
k. Washing commercial aircraft, cars, buses, boats, trailers or other commercial vehicles with potable water, except at water efficient commercial or fleet vehicle or boat washing facilities where equipment is properly maintained to avoid wasteful use.
l. In-bay or conveyor car washes permitted and constructed prior to January 1, 2014, that do not recycle and reuse at least 50 percent of the wash and rinse water. In-bay or conveyor car washes that were permitted and constructed after January 1, 2014, that do not either (1) use and maintain a water recycling system that recycles and reuses at least 60 percent of the wash and rinse water; or (2) use recycled water provided by a water supplier for at least 60 percent of its wash and rinse water. (C)
m. Charity car washes. (N)
n. Use of potable water for street cleaning. (L)
o. Failure to meet MPWMD Regulation XIV water efficiency standards for an existing Non-Residential use after having been given a reasonable amount of time to comply. (C)
p. Serving drinking water to any Customer unless expressly requested, by a restaurant, hotel, café, cafeteria or other pubic place where food is sold, served or offered for sale. (N)

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q. Visitor-Serving Facilities that fail to adopt and promote towel and linen reuse programs and provide written notice in the rooms, whereby towels and linens are changed every three days or as requested by action of the guest. (N)
r. Washing of livestock with a hose except with the use of a Positive Action Shut-Off Nozzle. (N)
s. Transportation of water from the Monterey Peninsula Water Resource System without prior written authorization from the MPWMD. (C)
t. Delivery, receipt, and/or use of water from an unpermitted Mobile Water Distribution System. (C)
u. Unreasonable or excessive use of potable water for dust control or earth compaction without prior written approval of the MPWMD General Manager where non-potable water or other alternatives are available or satisfactory. (C)
v. Use of unmetered fire hydrant water by individuals other than for fire suppression or utility system maintenance purposes, except upon prior approval of the MPWMD General Manager. (N)
w. Water use in excess of a Water Ration.
x. Non-compliance with MPWMD Regulations XIV and XV. (N)

4. Non-Essential Water Use shall mean the uses of water that are acceptable during times of normal water availability, as long as proper procedures to maximize efficiency are followed. However, when water is in short supply, Non-Essential Water Uses must be curtailed to preserve limited water resources for essential uses. Non-Essential Water Uses do not have health and safety impacts, are not required by regulation, and are not required to meet the core functions of Non-Residential use. (C)

5. Prohibitions against Water Waste and Non-Essential Water Use shall be enforced by the MPWMD and its designated agents, unless indicated otherwise. (N)
   a. If the MPWMD does not enforce Water Waste and Non-Essential Water Use when Stage 2 or higher of this Rule is activated, then that responsibility will lie with either another governmental agency, or the Company.

6. Each occurrence of Water Waste or Non-Essential Water Use that continues after the Customer has had reasonable notice to cease and desist that type of water use shall constitute a Flagrant Violation, as defined in MPWMD's Rule 167.

7. Repeated occurrences of Water Waste or Non-Essential Water Use, which continue or occur after the Customer has had a reasonable notice to cease and desist that type of water use, or which continues or occurs after the Customer has had a reasonable opportunity to cure any defect causing that type of water use, shall provide cause for MPWMD to request the placement of a Flow Restrictor with a maximum flow rate of six (6) ccf/month within the water line or water meter. The Flow Restrictor installation and removal shall be made by the Company in accordance with Schedule No. MO-14.1.1. (N)

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H. STAGE 1 WATER CONSERVATION: Prohibition on Water Waste (C)

Stage 1 Water Conservation is the first stage of water conservation measures as defined in this Rule and MPWMD Regulation XV. (L)

1. Stage 1 shall be in effect at all times as long as this Rule is active. (L)
2. Schedule MO-14.1.1 shall not be activated during this Stage. (C)
3. The Company shall maintain its Water Year production from the Carmel River System below amounts specified in the CDO, as amended, and shall comply with the production limits imposed by the Seaside Watermaster. (L) (L)
4. Each Customer shall comply with the Water Waste and Non-Essential Water Use prohibitions as stated in this Rule. (L) (C) (C)

I. STAGE 2 WATER CONSERVATION – Voluntary Reduction Use or Commission Ordered Compliance (C)

Stage 2 Water Conservation is the second stage of water conservation as defined in this Rule and MPWMD Regulation XV. In addition to the requirements of Stage 1, the following shall apply in Stage 2 Water Conservation. (L) (L) (L)

1. Triggers (N)(D)
   a. Physical Shortage Trigger: Stage 2 shall take effect on June 1, or such earlier date as may be determined by MPWMD, if the Total Storage Available in Table XV-4 in MPWMD's Rule 160 is below the Total Storage Required, but at least 95% of the Total Storage Required. The amount of voluntary reduction shall equal the percentage shortfall in Total Storage Required.
   b. Regulatory Trigger – Production Targets: Stage 2 shall take effect when the most recent 12 month Company production from the MPWRS is greater than the then-current annual production target as determined in Table XV-1 of MPWMD Rule 160 but no greater than 105% of the annual production target. The amount of voluntary reduction shall equal the percentage overage of the annual production.
   c. Regulatory Trigger – Regulatory Order: Stage 2 shall take effect when that system is directed to reduce use by a governmental or regulatory agency. The amount of voluntary reduction shall equal the percentage directed by that governmental or regulatory agency relative to a base year determined by the governmental or regulatory agency.
   d. Emergency Trigger: Stage 2 shall take effect when the MPWMD or Company finds that a water supply emergency exists. Stage 2 shall take effect upon adoption of a Resolution of the MPWMD Board of Directors, or a declaration of a Water Supply Emergency by the Company or a State or County entity, due to a catastrophic event. In that Resolution or declaration, there shall be a finding of an immediate need to reduce production. The amount of voluntary reduction shall be determined by MPWMD, the Company, or the State or County entity. (N)(D)

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2. The Company shall notice Customers in compliance with the noticing requirements in Section F above and state the reduction necessary to comply with the need in the activation event. (C) (C)

3. Schedule 14.1.1 shall be activated at Stage 2 and remain in effect until Stage 2 sunsets. (N)

4. The requirements of Stage 1 shall remain in effect.

5. Sunset.
   a. Without further action, Stage 2, when implemented pursuant to Rule I-1-a, shall sunset and water use restrictions shall revert to Stage 1 when Total Storage Available computed consistent with Table XV-4 of MPWMD Rule 160 is greater than Total Storage Required for two (2) consecutive months.
   b. Without further action, Stage 2, when implemented pursuant to Rule I-1-b, shall sunset and water use restrictions shall revert to Stage 1 when the Company's 12 month total production has been less than or equal to its then-current annual production target for two (2) consecutive months.
   c. Without further action, Stage 2, when implemented pursuant to Rule I-1-c, shall sunset and water use restrictions shall revert to Stage 1 when the governmental or regulatory agency rescinds the request or MPWMD determines that the voluntary reduction has been met, and conditions I-5-a and I-5-b above have been met.
   d. Stage 2, when implemented pursuant to Rule I-1-d, shall sunset and water use restrictions shall revert to Stage 1 when the MPWMD Board finds that a water supply emergency no longer exists or other government agency declares the catastrophic event is over and service is no longer impaired. (N)

J. STAGE 3 WATER CONSERVATION: Conservation Rates (C)
Stage 3 is the third stage of water conservation as defined in this Rule and MPMWD Regulation XV. The (L)
requirements of Stage 1 and 2 Water Conservation shall remain in effect in Stage 3 Water Conservation. In (L)
addition, the following shall apply in Stage 3 Water Conservation: (L)

1. Trigger (D)(N)
   a. Stage 2 Deemed Unsuccessful: Stage 3 shall take effect if Stage 2 has been implemented and has failed to sunset after a period of 6 months, except in the case of a government required targeted percentage implementation that has been met and continues to be met.
   b. Physical Shortage Trigger: Stage 3 shall take effect when production or production offsets from the Carmel River System or the Seaside Coastal Subareas, on June 1 or such earlier date as may be set by the MPWMD Board following MPWMD's May Board meeting if Total Storage Available in Table XV-4 of MPWMD's Rule 160 is below 95% of Total Storage Required. (D)(N)

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c. Regulatory Trigger – Production Targets: Stage 3 shall take effect when the most recent 12 month Company production from the MPWRS is greater than 105% of the then-current annual production target as determined in Table XV-1 of Rule 160 and Stage 2 has not been implemented (N)

d. Regulatory Trigger – Regulatory Order: Stage 3 shall take effect when requested by a governmental or regulatory agency to implement Stage 3, when Stage 2 has been deemed unsuccessful in meeting the governmental or other regulatory agency targets, or a governmental or other regulatory agency has increased the requested reduction to a level greater than that achieved in Stage 2.

e. Emergency Trigger: Stage 3 shall take effect when the MPWMD Board or Company finds that a water supply emergency exists and upon adoption of a Resolution of the MPWMD Board or declaration of a catastrophic event by a governing body. In that Resolution or declaration of a catastrophic event, there shall be a finding of an immediate need to reduce production through the imposition of Stage 3 Conservation Rates. (N)

2. The requirements of Stage 1 and 2 shall be in effect. (D)(N)

3. The Company shall notice Customers in compliance with the noticing requirements in Section F above and state the necessary reduction.

4. Schedule 14.1.1 shall be effective in Stage 3 and remain in effect as long as in Stage 3. Customers will have at least 30 days prior notice as to the implementation of the required Level 1 Conservation Rates, or a change from Level 1 to Level 2 Conservation Rates prior to implementation.

   a. Level 1 Conservation Rates comprised of a 25 percent surcharge shall be implemented on the then existing rates for a minimum of 3 months. The surcharge shall not apply to Tier 1 Residential Customers.

   b. Level 2 Conservation Rates comprised of a 40 percent surcharge shall be implemented on the then existing rate (without the 25 percent Level 1 surcharge) if after the imposition of Level 1 Conservation Rates for 3 months the monthly production in the Company's system exceeds the monthly production target for the previous two (2) consecutive months. The surcharge shall not apply to Tier 1 Residential Customers.

5. Sunset

   a. Without further action, Stage 3, when implemented pursuant to Rule J-1-a or J-1-b, shall sunset and water use restrictions shall revert to Stage 1 when Total Storage Available computed consistent with Table XV-4 is greater than Total Storage Required for two (2) consecutive months. (D)(N)

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b. Without further action, Stage 3, when implemented pursuant to Rule J-1-a or J-1-c, shall sunset and water use restrictions shall revert to Stage 1 when 12 month total production has been less than or equal to the then-current annual production target for two (2) consecutive months. (N)
c. Without further action, Stage 3, when implemented pursuant to Rule J-1-d, shall sunset and water use restrictions shall revert to Stage 1 when the governmental or regulatory agency rescinds the request, and Rules J-1-b and J-1-c do not apply.
d. Stage 3, when implemented pursuant to Rule J-1-e, shall sunset and water use restrictions shall revert to Stage 1 when the MPWMD Board finds that a water supply emergency no longer exists or other government agency declares the catastrophic event is over and service is no longer impaired, and Rules J-1-b and J-1-c do not apply. (N)

(D)

K. STAGE 4 WATER RATIONING (N)

1. Trigger
   a. Stage 3 Deemed Unsuccessful: Stage 4 shall take effect if Stage 3 has been implemented and has failed to sunset after a period of 8 months.
   b. Regulatory Trigger: Stage 4 shall take effect when requested by a governmental or regulatory agency to implement Stage 4, when Stage 3 has been deemed unsuccessful in meeting the governmental or other regulatory agency targets, or a governmental or other regulatory agency has increased the requested reduction to a level greater than that which can be achieved in Stage 3.
   c. Emergency Trigger: Stage 4 shall take effect when the MPWMD Board finds that a water supply emergency exists and upon adoption of a Resolution of the MPWMD Board, or a declaration of a water supply emergency by the Company, or a State or County entity, due to a catastrophic event. In that Resolution or declaration of a catastrophic event, there shall be a finding of an immediate need to reduce production through the imposition of Stage 4 Water Rationing.
   d. Stage 4 shall not be triggered if it is determined upon credible evidence that the production targets associated with Final Production Orders are likely to be met by adhering to the requirements of a lesser Stage.
   e. Delay of Stage Implementation. A delay in implementation of Stage 4 Water Rationing to ensure adequate operation of the program shall not exceed sixty (60) days.

2. Amount of Reduction.
   a. The amount of mandatory reduction shall equal the shortfall in Total Storage Available as compared to the Total Storage Required; or
   b. The amount of mandatory reduction shall equal the overage of the last 12 months actual production as compared to the then-current annual production target; or
   c. The amount of mandatory reduction shall equal some other amount as reflected in a governmental or regulatory order.

(N)

(Continued)

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(D)

3. Stages 1, 2, and 3 (if applicable) shall remain in effect. (N)

4. Additional Prohibitions.
   a. Consideration should be given to prohibiting all or specific Non-Essential Water Uses. MPWMD or Commission may enact such prohibitions by Resolution.
   b. Moratorium. Upon implementation of Stage 4, the MPWMD Board shall declare a moratorium on all Water Permit applications other than those applications that rely upon a water credit, water use credit, or water use permit. The Board may amend the moratorium to include the use of water credits and/or water use credits if warranted.
   c. No New Potable Water Service: Upon declaration of Stage 4 Water Rationing, no new potable water service will be provided, no new temporary meters or permanent meters will be provided, and no statements of immediate ability to serve or provide potable water service (e.g. will-serve letters, certificates, or letters of availability) will be issued, except under the following circumstances:
      i. The project is necessary to protect the public health, safety, and welfare;
      ii. The setting of meters in the Company's service area shall not be terminated or diminished by reason of any water emergency, water moratorium or other curtailment on the setting of meters for water use permits issued to entitlement holders; or
      iii. This provision does not preclude the resetting or turn-on of meters to provide continuation of water service or the restoration of service that has been interrupted for a period of one year or less.
   d. No New Annexations: Upon the declaration of a Stage 4, the Company will suspend consideration of annexations to its Monterey Main System service area. This subsection does not apply to boundary corrections and annexations that will not result in any increased use of water from Main System sources of supply, or annexations required by a regulatory agency.
   e. Customers utilizing portable water meters or hydrant water meters or using hydrants to fill water tanks without the use of a water meter, shall be required to cease use of the water. Portable water meters shall be returned to the Company at least thirty (30) days before the implementation of Stage 4.
   f. Draining and refilling of swimming pools or spas except (a) to prevent or correct structural damage or to comply with public health regulations, or (b) upon prior approval of the MPWMD General Manager. (N)

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(D)

g. Restriction on Watering or Irrigating: Watering or irrigating of lawn, landscape or other vegetated area with potable water is subject to restriction. This restriction does not apply to the following categories of use, or where it has been determined that recycled non-potable water is available and may be applied to the use: (N)
   i. Businesses dependent on watering or irrigating in the course of business such as agriculture, nursery, and similar uses;
   ii. Maintenance of existing landscape necessary for fire protection;
   iii. Maintenance of existing landscape for soil erosion control;
   iv. Maintenance of plant materials identified to be rare or essential to the well-being of protected species;
   v. Maintenance of landscape within active public parks and playing fields, day care centers, and school grounds, provided that such irrigation does not exceed one (1) day per week;
   vi. Actively irrigated environmental mitigation projects.

5. Residential Water Rations.
   a. Upon adoption of a Resolution by the MPWMD Board or a specific finding in response to a declaration or order by another government agency for a specific reduction in Residential water use, daily Household Water Rations shall be set at a level to achieve the necessary reduction. In no case shall daily Household Water Rations fall below 90 gallons per Household. Where two or more Households are served by a master meter, it shall be the responsibility of the Customers to divide the Water Rations among the Customers.
   b. Additional Rations for Large Households:

      i. Where four or more permanent residents occupy a single Household served by one water meter, the daily Water Ration may be increased by the amounts listed below:

	Household Gallons per Day
Fourth Permanent Resident	30
Fifth Permanent Resident	25
Sixth Permanent Resident	20
Seventh or More Permanent Resident	15

(N)

(Continued)

Rule No. 14.1.1. (Continued)
WATER SHORTAGE CONTINGENCY PLAN
MONTEREY COUNTY DISTRICT

(D)

c. Procedure for Obtaining Additional Rations for Large Households: (N)

   i. The applicant shall complete a Residency Affidavit (obtained from MPWMD) that requests the name, age and verification of full time permanent residents for each resident in the Household for which the additional Ration is requested. The information on the application shall be presented under penalty of perjury. The additional Water Ration request shall be submitted to the MPWMD General Manager, who will approve or disapprove the request within 10 business days of submission of a completed application.

   ii. If the application is disapproved, the MPWMD General Manager will explain in writing the reason for the disapproval, and if the applicant is not satisfied with the decision, the applicant may appeal the decision to the MPWMD Board.

d. Procedure for Obtaining Additional Water Rations Where Two or More Households are Served by One Meter:

   i. The applicant must fill out the required form that lists the number of residences served by the single meter and submit a use permit issued by the jurisdiction for the multi-residential residences served by the meter. MPWMD shall retain the right to require Residency Affidavits to determine the appropriate Water Rations. The additional Water Ration request shall be submitted to the MPWMD General Manager, who will approve or disapprove the request within 10 business days of submission of a completed application. The application shall be submitted under penalty of perjury.

   ii. If the application is disapproved, the MPWMD General Manager will explain in writing the reason for the disapproval, and if the applicant is not satisfied with the decision, the applicant may appeal the decision to MPWMD's Board.

e. Additional Ration for Special Needs. Where more water than allowed in Sections 5-c or 5-d above is necessary to preserve the health or safety of a Household, the MPWMD General Manager may increase the Water Ration to the Household during the period of need according to the needs of the applicant. (N)

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(Continued)

Rule No. 14.1.1. (Continued)
WATER SHORTAGE CONTINGENCY PLAN
MONTEREY COUNTY DISTRICT

(D)

i. The applicant or his or her representative may file a request for an additional Water Ration and shall state in a letter to the MPWMD General Manager: (1) the amount of the requested additional Water Ration, and (2) a general statement in support of the need. Where appropriate, applicant shall provide a letter from a medical doctor stating the need for additional water usage and projected duration of that need, if possible, or other appropriate justification for the special need. (N)

ii. Additional Water Rations shall require the replacement of inefficient water fixtures to comply with MPWMD Rule 142-E, Residential and Non-Residential Change of Ownership, Change of Use, and Expansion of Use Water Efficiency Standards, which requires installation of, among other items, water efficient toilets, showerheads, faucets, and irrigation rain sensors.

iii. If the MPWMD General Manager does not approve an additional Water Ration, the applicant may appeal to the MPWMD Board. An appeal from the General Manager's decision must contain all of the following: (a) a copy of the original application; (b) a copy of the written explanation of the General Manager's decision; and (c) a written explanation of why the applicant believes the decision should be changed.

f. Misrepresentation. Any Customer intentionally over-reporting the number of permanent residents in a Household may be charged with a misdemeanor punishable as an infraction as provided by Section 256 of the Monterey Peninsula Water Management District Law, Statutes of 1981, Chapter 986, as well as fees and penalties set forth in Regulation XV. During this Stage 4, whenever there is a change in the number of permanent residents in a Household, the Customer shall notify the MPWMD.

6. Non-Residential Water Rations.

a. If Residential rationing does not achieve measurable results as expected after a period of six (6) months, upon adoption of a Resolution by the MPWMD Board for a specific reduction in Non-Residential water use, Non-Residential Water Rations shall be implemented at a level to achieve the necessary reduction in use.

i. Non-Residential Water Rations shall be determined by selection by MPWMD of a previous year for which Stages 2, 3, or 4 conservation or rationing was not in place and then reducing each month's water use by a percentage determined by the MPWMD to achieve the Non-Residential reduction in use.

ii. Exemptions: In the Resolution to implement a level of Non-Residential rationing, the MPWMD Board shall include an exemption for compliance with District Rule 143 and an exemption for a Non-Residential establishment whose business requires water in the course of its business practice (e.g. laundromats, nurseries, among others).

iii. The applicant or his or her representative may file a request for an additional Water Ration. The applicant shall state in a letter to the MPWMD General Manager: (1) the amount of the requested Water Ration, and (2) a general statement in support of the need.

iv. If the request is disapproved, the MPWMD General Manager will explain in writing the reason for the disapproval, and if the applicant is not satisfied with the decision, the applicant may appeal to the MPWMD Board for a hearing. (N)

(Continued)

Rule No. 14.1.1. (Continued)
WATER SHORTAGE CONTINGENCY PLAN
MONTEREY COUNTY DISTRICT

7. Irrigation required by the Mitigation Program adopted when the Water Allocation Program Environmental Impact Report was adopted in 1990, and as required by SWRCB Order No. WR 95- 10 shall not be subject to reductions in use. Required irrigation of the Riparian Corridor shall be identified and reported separately from other non-revenue metered uses.

8. Sunset.

   a. Stage 4 shall sunset and water use restrictions shall revert to Stage 1 when 12 month total production has been less than or equal to the then-current annual production target for two (2) consecutive months. (C)
   b. Stage 4 shall sunset and water use restrictions shall revert to Stage 1 when Total Storage Available computed consistent with Table XV-4 of MPWMD's Rule 160 is greater than remaining Total Storage Required for two (2) consecutive months.
   c. Stage 4, when implemented shall sunset and water use restrictions shall revert to Stage 1 when the governmental or regulatory agency rescinds the request and conditions 8-a. and 8-b, above, have been met.
   d. Stage 4, when implemented pursuant to K-1-c, shall sunset and water use restrictions shall revert to Stage 1 when the MPWMD Board finds that a water supply emergency no longer exists or other government agency declares the catastrophic event is over and service is no longer impaired.
   e. Restoration of Lower Stage. A MPWMD Resolution causing the sunset of one or more provisions of Stage 4 may also activate any lower Stage as may be warranted for good cause. (C)

Attachment 2: MPWMD Regulation XV

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

MPWMD REGULATION XV

2016 MONTEREY PENINSULA WATER CONSERVATION AND RATIONING PLAN

(MPWMD Rules 160-167)

Ordinance No. 169 - adopted February 17, 2016

5 Harris Court, Building G, Monterey, CA 93940 • P.O. Box 85, Monterey, CA 93942-0085
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Contents

Regulatory Production Targets And Physical Storage Target (MPWMD Rule 160)

The monthly distribution of water production from sources within the Monterey Peninsula Water Resource System (MPWRS), as shown in Tables XV-1, XV-2, and XV-3 shall be approved by the Board of Directors as part of the Quarterly Water Supply Strategy and Budget process. The Board shall hold public hearings during the Board's regular meetings in September, December, March, and June, at which time the Board may modify Tables XV-1, XV-2, and XV-3 by Resolution.

The Physical Storage Target, as shown in Table XV-4 shall be approved as of May 1 each year by the Board of Directors. The Board shall hold a public hearing during the Board's regular meeting in May, at which time the Board may modify Table XV-4 by Resolution.

Table XV-1
Regulatory Water Production Targets
for California American Water Systems
Sources within the Monterey Peninsula Water Resource System
(All Values in Acre-Feet)
Approved by Resolution 2015-18 (9/21/2015)

Month	Monthly Target	Year-to-Date at Month-End Target
October	1,076	1,076
November	904	1,980
December	796	2,776
January	797	3,573
February	748	4,321
March	850	5,171
April	914	6,085
May	1,112	7,197
June	1,157	8,354
July	1,258	9,612
August	1,239	10,851
September	1,151	12,002
TOTAL	**12,002**	---

Notes:
Monthly and year-to-date at month-end production targets are based on the annual production limit specified for the California American Water (Cal-Am) systems for Water Year (WY) 2016 from Carmel River sources per State Water Resources Control Board Order WR 2009-0060 (9,703 acre-feet) and adjusted annual production limits specified for the Cal-Am satellite systems from its Coastal Subarea sources (2,251 acre-feet) and Laguna Seca Subarea sources (48 acre-feet) of the Seaside Groundwater Basin per the Seaside Basin Adjudication Decision. These values do not include consideration of any carryover credit in the Seaside Basin for WY 2016. This combined total (12,002 acre-feet) was distributed monthly based on Cal-Am's reported monthly average production for its main and satellite systems during the WY 2006 through 2013 period.

Table XV-2
Regulatory Water Production Targets
for California American Water Satellite Systems
Sources within the Monterey Peninsula Water Resource System
(All Values in Acre-Feet)
Approved by Resolution 2015-18 (9/21/2015)

Month	Monthly Target	Year-to-Date at Month-End Target
October	5	5
November	3	8
December	3	11
January	3	14
February	2	16
March	3	19
April	3	22
May	5	27
June	5	32
July	6	38
August	5	43
September	5	48
TOTAL	**48**	---

Notes:
Monthly and year-to-date at month-end production targets are based on the adjusted annual production limit specified for the California American Water (Cal-Am) satellite systems for Water Year 2016 from its sources in the Laguna Seca Subarea of the Seaside Groundwater Basin per the Seaside Basin Adjudication Decision. This Laguna Seca Subarea total (48 acre-feet) was distributed monthly based on Cal-Am's reported monthly average production for its satellite systems during the WY 2006 through 2013 period.

Table XV-3
Regulatory Water Production Targets
for California American Water Systems
Carmel River Sources within the Monterey Peninsula Water Resource System
(All Values in Acre-Feet)
Approved by Resolution 2015-18 (9/21/2015)

Month	Monthly Target	Year-to-Date at Month-End Target
October	869	869
November	730	1,599
December	644	2,244
January	645	2,889
February	605	3,494
March	687	4,181
April	740	4,920
May	899	5,820
June	934	6,754
July	1,017	7,771
August	1,002	8,773
September	930	9,703
TOTAL	**9,703**	---

Notes:
Monthly and year-to-date at month-end production targets are based on the annual production limit specified for California American Water (Cal-Am) for Water Year (WY) 2016 from its Carmel River system sources per State Water Resources Control Board Order WR 2009-0060 (9,703 acre-feet). This amount was distributed monthly based on Cal-Am's reported monthly average production for its main system sources during the WY 2006 through 2013 period. These values incorporate consideration of the triennial reductions specified for the Cal-Am systems in the Seaside Basin Adjudication Decision, in setting the monthly maximum production targets from each source as part of the MPWMD Quarterly Water Supply Budget Strategy.

Table XV-4
Physical Storage Target
for the Monterey Peninsula Water Resource System
for the Remainder of WY 2015 and all WY 2016

Producer	May-September Demand	Carryover Storage Needs for Next Year Demand	Total Storage Required on May 1
California American Water (Cal-Am)	7,071	12,123	19,194
Non Cal-Am	1,946	3,046	4,992
Total	9,017	15,169	24,186

Total Storage Available on May 1
30,990 [5]

Notes:

1. The May-September period refers to the remainder of the current Water Year.

2. Carryover Storage refers to the volume of usable surface and Groundwater that is in storage at the end of the current Water Year and is projected to be available for use at the beginning of the following Water Year.

3. Total Storage Required refers to the combination of demand remaining from May 1 to September 30 and Carryover Storage for the next Water Year that is required to avoid imposing various levels of water Rationing. The values in **bold type** represent the storage triggers that would be used for the system in Water Year 2015. The values are based on the production limits for California American Water (Cal-Am) from Carmel River sources (9,945 Acre-Feet in WY 2015 and 9,703 Acre-Feet in WY 2016) set by State Water Resources Control Board Order WR 2009-0060, the production limit for Cal-Am from the Seaside Groundwater Basin (2,299 Acre-Feet in WY 2015 and in WY 2016) set by the Court in its March 27, 2006 Seaside Basin Adjudication Decision, and the production limit specified for non-Cal-Am users from the Monterey Peninsula Water Resource System set in the District's Water Allocation Program (Ordinance No. 87)

4. The rationing triggers are based on physical water availability and do not account for legal or environmental constraints on diversions from the Carmel River system.

5. May 1, 2015 System Storage = 30,990 Acre-Feet (26,220 Acre-Feet Carmel Valley Alluvial Aquifer; 3,100 Acre-Feet Seaside Groundwater Basin; 1,670 Acre-Feet Los Padres Reservoir); this is 97 percent of average and 82 percent of System Capacity (37,505 AF).

Table XV-4 added by Resolution 2014-07 (5/19/2014); amended by Resolution 2014-15 (9/15/2014); Resolution 2015-08 (5/18/2015); Ordinance No. 169 (2/17/2016)

General Provisions (MPWMD Rule 161)

A. All Water Users within the Monterey Peninsula Water Management District shall comply with the District's Water Waste Prohibitions of Rule 162 and with the requirements of MPWMD Regulation XIV, Water Conservation.

B. California American Water shall amend its Urban Water Management Plan and its Rule 14.1.1 (Standard Practice U-40-W), Water Shortage Contingency Plan - Monterey County District, to conform to this Regulation. A copy of Rule 14.1.1 shall be filed with the California Public Utilities Commission (CPUC) and the District within thirty (30) days of the effective date of this Regulation and any amendment thereto.

C. Water Distribution Systems regulated by the CPUC shall amend their Rule 14.1 to conform to this Regulation. A copy of Rule 14.1 shall be filed with the California Public Utilities Commission (CPUC) and the District within thirty (30) days of the effective date of this Regulation and any amendment thereto.

D. At least ten (10) days prior to a first reading of amendments to Regulation XV, a copy of the proposed changes shall be provided to the CPUC Office of Ratepayer Advocates (ORA).

E. California American Water shall provide the District with monthly consumption reports by customer classification and Jurisdiction in a format approved by the District. A Water Year summary report shall be provided by December 1 of the next Water Year. Monthly reports shall be provided within fifteen (15) days of the close of the preceding month.

F. Each Water Distribution System Operator shall provide individual consumption data pertaining to any Water User of that Water Distribution System upon written request of the General Manager. Data shall be in the form and manner specified by the General Manager and may be subject to a non-disclosure agreement with the Water Distribution System Owner/Operator. Each failure to respond in full to such written request by the date specified therein shall result in a penalty to the Water Distribution System of five-hundred dollars ($500) per day for each day or portion thereof that the response is delayed.

G. The General Manager shall retain and use any data received under this provision for the sole purposes of testing, administering, evaluating or enforcing water Rationing, Water Waste, or other provisions of the Rules and Regulations.

H. California American Water shall maintain Non-Revenue Water in its Water Distribution Systems at or below seven (7) percent. Average losses of more than seven (7) percent during the most recent twelve-month period shall be considered Water Waste.

I. Each Water Distribution System Operator shall provide written notice of any adjustment to a Water Conservation or Rationing Stage to every customer via first class mail at least thirty (30) days before any change in Stage is imposed.

J. At all times during Stages 2 through 4 each affected Water Distribution System shall send monthly conservation reminders.

K. During a Water Supply Emergency, or at the direction of the Board of Directors, each Owner or Operator or Extractor of a private water Well, Water Distribution System, or other Water-Gathering Facility shall comply with the provisions of this Regulation, as they relate to such Well, Water Distribution System, or other Water-Gathering Facility.

Stage 1 Water Conservation: Prohibition on Water Waste (MPWMD Rule l62)

A. Trigger. Stage 1 shall remain in effect at all times and shall apply to all Water Users subject to modification by the Board.

B. Water Waste Prohibitions. Water Waste shall mean the indiscriminate, unreasonable, or excessive running or dissipation of water. Water Waste shall include, but not be limited, to the following:

1. Waste caused by correctable leaks, breaks or malfunctions. All leaks, breaks, or other malfunctions in a Water User's plumbing or distribution system must be repaired within 72 hours of notification that a leak exists. Exceptions may be granted by the General Manager for corrections which are not feasible or practical;

2. Indiscriminate or excessive water use which allows excess to run to waste;

3. Washing driveways, patios, parking lots, tennis courts, or other hard surfaced areas with Potable water, except in cases where health or safety are at risk and the surface is cleaned with a Water Broom or other water efficient device or method. Water should be used only when traditional brooms are not able to clean the surface in a satisfactory manner;

4. Power or pressure washing buildings and structures with Potable water, except when preparing surfaces for paint or other necessary treatments or when abating a health or safety hazard;

5. Irrigation between 9 a.m. and 5 p.m. on any day, and irrigation on any day other than Saturdays and Wednesdays, except for irrigation overseen by a professional gardener or landscaper who is available on Site and that is not exceeding a maximum two watering days per week. This prohibition applies to hand watering with a hose, and Irrigation Systems whether spray, drip, or managed by a Smart Controller. Limited hand watering of plants or bushes with a small container or a bucket is permitted on any day at any time. Subsurface Graywater Irrigation Systems may also be operated at any time. An exemption may be given to a Non-Residential establishment whose business requires water in the course of its business practice (e.g. golf courses, nurseries, recreational space, among others)

with notification by the business owner to the District, and subject to the approval of the General Manager;

6. Hand watering by a hose, during permitted hours, without a quick acting Positive Action Shut-Off Nozzle;

7. Irrigating during rainfall and for 48 hours after Measurable Precipitation;

8. Use of water for irrigation or outdoor purposes in a manner inconsistent with California's Model Water Efficient Landscape Ordinance (Code of Regulations, Title 23, Water, Division 2, Department of Water Resources, Chapter 2.7, and any successor regulations) where applicable, or in a manner inconsistent with local regulations;

9. Operation of fountains, ponds, lakes or other ornamental use of Potable water without recycling, and except to the extent needed to sustain aquatic life, provided such animals are of significant value and have been actively managed;

10. Individual private washing of cars with a hose except with the use of a Positive Action Shut-Off Nozzle;

11. Washing commercial aircraft, cars, buses, boats, trailers or other commercial vehicles with Potable water, except at water efficient commercial or fleet vehicle or boat washing facilities where equipment is properly maintained to avoid wasteful use;

12. In-Bay or Conveyor Car Washes permitted and constructed prior to January 1, 2014, that do not recycle and reuse at least 50 percent of the wash and rinse water. In-Bay or Conveyor Car Washes that were permitted and constructed after January 1, 2014, that do not either (1) use and maintain a water recycling system that recycles and reuses at least 60 percent of the wash and rinse water; or (2) use recycled water provided by a water supplier for at least 60 percent of its wash and rinse water;

13. Charity car washes;

14. Use of Potable water for street cleaning;

15. Failure to meet MPWMD Regulation XIV water efficiency standards for an existing Non-Residential User after having been given a reasonable amount of time to comply;

16. Serving drinking water to any customer unless expressly requested, by a restaurant, hotel, café, cafeteria or other pubic place where food is sold, served or offered for sale;

17. Visitor-Serving Facilities that fail to adopt and promote towel and linen reuse programs and provide written notice in the rooms, whereby towels and linens are changed every three days or as requested by action of the guest;

18. Washing of livestock with a hose except with the use of a Positive Action Shut-Off Nozzle;

19. Transportation of water from the Monterey Peninsula Water Resource System without prior written authorization from the MPWMD;

20. Delivery, receipt, and/or use of water from an unpermitted Mobile Water Distribution System;

21. Unreasonable or excessive use of Potable water for dust control or earth compaction without prior written approval of the General Manager where Sub-potable water or other alternatives are available or satisfactory;

22. Use of unmetered fire hydrant water by individuals other than for fire suppression or utility system maintenance purposes, except upon prior approval of the General Manager;

23. Water use in excess of a Water Ration;

24. Non-compliance with Regulations XIV and XV;

C. The following activities shall not be cited as Water Waste:

1. Flow resulting from firefighting or essential inspection of fire hydrants;

2. Water applied to abate spills of flammable or otherwise hazardous materials, where water application is the appropriate methodology;

3. Water applied to prevent or abate health, safety, or accident hazards when alternate methods are not available;

4. Storm run-off;

5. Flow from fire training activities during Stage 1 Water Conservation through Stage 3 Water Conservation;

6. Reasonable quantities of water applied as dust control as required by the Monterey Bay Unified Air Pollution Control District, except when prohibited;

7. When a Mobile Water Distribution System Permit is not obtained by a State licensed Potable water handler by reason of an emergency or health related situation, authorization for the Mobile Water Distribution System Permit shall be sought from the District by submittal of a complete application compliant with Rule 21, within five working days following commencement of the emergency or health related event.

D. Prohibitions against Water Waste and Non-Essential Water Use shall be enforced by the District and its designated agents, unless indicated otherwise. All notices and assessments of Water Waste and/or excess water use charges made by a Water Distribution System Operator shall be reported to the District within thirty (30) days.

E. Each occurrence of Water Waste or Non-Essential Water Use that continues after the Water User has had reasonable notice to cease and desist that type of water use shall constitute a Flagrant Violation.

F. Repeated occurrences of Water Waste or Non-Essential Water Use, which continue or occur after the Water User has had a reasonable notice to cease and desist that type of water use, or which continues or occurs after the Water User has had a reasonable opportunity to cure any defect causing that type of water use, shall provide cause for the placement of a Flow Restrictor with a maximum flow rate of six (6) CCF/month within the water line or Water Meter. Exemptions to the installation of a Flow Restrictor as a means to enforce the Water Ration shall occur when there are provable risks to the health, safety and/or welfare of the Water User. An exemption shall be made for Master Meters serving three or more Multi-Family Households or Master Meters serving both

Residential and Non-Residential Users by substituting an excess water use charge equivalent to the appropriate Water Meter size, Rationing stage, and 4th offense amount times the number of Dwelling Units located on the Water Meter during each month in which a violation of the Water Ration occurs. The Responsible Party shall be liable for payment of all excess water use charges.

G. Water Waste Fines shall be assessed as shown in Table XV-5. Table XV-5 may be amended by Resolution of the Board. Amendments to this table shall be concurrently made to the Fees and Charges Table found in Rule 60.

Table XV-5 Water Waste Fines	
First offense	No fee: Written notice and opportunity to correct the situation
Fine for first Flagrant Violation	$100*
Fine for second Flagrant Violation within two (2) months	$250*
Fine for third and subsequent Flagrant Violations within twelve (12) months	$500*
Fine for Administrative Compliance Order or Cease & Desist Order	Up to $2,500 per day* for each ongoing violation, except that the total administrative penalty shall not exceed one hundred thousand dollars ($100,000.00) exclusive of administrative costs, interest and restitution for compliance re-inspections, for any related series of violations
Late payment charges	Half of one percent of the amount owed per month
*Fines triple for customers using over 500,000 gallons/year	

H. In addition to Water Waste fines and fees described in this Rule 162, enforcement of all District Rules and Regulations is subject to District Regulation XI and may include an Administrative Compliance Order, a Cease & Desist Order, or other remedy available to the District under its Regulation XI.

Stage 2 Water Conservation: Voluntary Reduction in Use (MPWMD Rule 163)

A. Trigger.

1. Physical Shortage Trigger (California-American Water Company Distribution Systems): Stage 2 shall take effect for all California-American Water Company Water Distribution Systems that rely, in whole or in part, on production or production offsets from the Carmel River System or the Seaside Coastal Subareas, on June 1 or such earlier date as may be set by the Board following the District's May Board meeting if Total Storage Available in Table XV-4 is below the Total Storage Required, but at least 95 percent of Total Storage Required. The amount of voluntary reduction shall equal the percentage shortfall in Total Storage Required.

2. Physical Shortage Trigger (Non-California-American Water Company Distribution Systems): Stage 2 shall take effect for any Water Distribution System, other than California-American Water Company's Water Distribution Systems, that relies in whole or in part on production or production offsets from the Carmel River System or the Seaside Coastal Subareas on June 1 or such earlier date as may be set by the Board following the District's May Board meeting if Total Storage Available in Table XV-4 is below the Total Storage Required. The amount of voluntary reduction shall equal the percentage shortfall in Total Storage Required.

3. Regulatory Trigger – Production Targets: Stage 2 shall take effect on the California-American Water Company Water Distribution System when the most recent 12 month California American Water production from the MPWRS is greater than the then-current annual production target as determined in Table XV-1 but no greater than 105 percent of the annual production target. The amount of voluntary reduction shall equal the percentage overage of the annual production.

4. Regulatory Trigger – Regulatory Order: Stage 2 shall take effect in any Water Distribution System when that system is directed to reduce use by a governmental or regulatory agency. The amount of voluntary reduction shall equal the percentage directed by that governmental or regulatory agency relative to a base year determined by the governmental or regulatory agency.

5. Emergency Trigger: Stage 2 shall take effect for any Water Distribution System,

private Well, or Water User when the Board finds that a Water Supply Emergency exists for a Water Distribution System. Stage 2 shall take effect upon adoption of a Resolution of the District Board of Directors, or a declaration of a Water Supply Emergency by the Water Distribution System Operator or a State or County entity, due to a catastrophic event. In that Resolution or declaration, there shall be a finding of an immediate need to reduce production and shall name the Water Distribution System(s) affected. The amount of voluntary reduction shall be determined by the Board, the Water Distribution System Operator, or the State or County entity.

B. The Water Distribution System Owner or Operator shall provide notice of the amount of voluntary reduction requested to affected Water Users pursuant to Rule 161. Additional noticing and public outreach may be provided by the District at the direction of its Board of Directors.

C. The District and its agents shall increase enforcement activities related to Water Waste prohibitions.

D. Stage 1 shall remain in effect.

E. Sunset.

1. Without further action of the Board of Directors, Stage 2, when implemented pursuant to Rule 163-A-1 and Rule 163-A-2, shall sunset and water use restrictions shall revert to Stage 1 when remaining Total Storage Available computed consistent with Table XV-4 is greater than remaining Total Storage Required for two (2) consecutive months.

2. Without further action of the Board of Directors, Stage 2, when implemented pursuant to Rule 163-A-3, shall sunset for the California-American Water Company and water use restrictions shall revert to Stage 1 when that Water Distribution System's 12 month total production has been less than or equal to its then-current annual production target for two (2) consecutive months.

3. Without further action of the Board of Directors, Stage 2, when implemented pursuant to Rule 163-A-4, shall sunset for that Water Distribution System(s) and water use restrictions shall revert to Stage 1 when the governmental or regulatory agency rescinds the request.

4. Stage 2, when implemented pursuant to Rule 163-A-5, shall sunset and water use restrictions shall revert to Stage 1 when the Board finds that a Water Supply Emergency no longer exists.

Stage 3 Water Conservation: Conservation Rates (MPWMD Rule 164)

A. Trigger.

1. Stage 2 Deemed Unsuccessful: Stage 3 shall take effect for all California-American Water Company Water Distribution Systems if Stage 2 has been implemented pursuant to Rule 162-A-1 or Rule 162-A-3 and has failed to sunset after a period of six (6) months.

2. Physical Shortage Trigger: Stage 3 shall take effect for all California-American Water Company Water Distribution Systems, on June 1, or such earlier date as may be set by the Board following the District's May Board meeting, if Total Storage Available in Table XV-4 is below 95% of Total Storage Required.

3. Regulatory Trigger – Production Targets: Stage 3 shall take effect for all California-American Water Company Water Distribution Systems when the most recent 12 month California American Water production from the MPWRS is greater than 105 percent of the then-current annual production target as determined in Table XV-1 and Stage 2 has not been implemented.

4. Regulatory Trigger – Regulatory Order: Stage 3 shall take effect for all California-American Water Company Water Distribution Systems when directed by a governmental or regulatory agency to implement Stage 3.

5. Emergency Trigger: Stage 3 shall take affect for all California-American Water Company Water Distribution Systems when the Board finds that a Water Supply Emergency exists and upon adoption of a Resolution of the Board of Directors, or a declaration of a Water Supply Emergency by California American Water, or by a State or County entity due to a catastrophic event. In that Resolution or declaration, there shall be a finding of an immediate need to reduce production through the imposition of Stage 3 Conservation Rates.

B. Stages 1 and 2 shall remain in effect.

C. If Stage 2 has not already been implemented, Stage 2 shall be triggered simultaneously with Stage 3.

D. Thirty days prior to implementation of Stage 3, California American Water shall file to

implement Level 1 Conservation Rates within its Main California-American Water Company Water Distribution System, the Bishop Water Distribution System, Hidden Hills System, and Ryan Ranch Water Distribution System and shall provide notification to its customers that such rates shall be implemented after thirty (30) days. Prior to an increase to Level 2 Conservation Rates, California American Water shall provide notification to its customers that such rates shall be implemented after thirty (30) days.

1. Level 1 Conservation Rates comprised of a 25 percent surcharge shall be implemented on the then existing rates for a minimum of three (3) months. The surcharge shall not apply to Tier 1 Residential customers.

2. Level 2 Conservation Rates comprised of a 40 percent surcharge shall be implemented on the then existing rates (without the 25 percent Level 1 surcharge) if after the imposition of Level 1 Conservation Rates for three (3) months, the monthly production in the California American Water System exceeds the monthly production target for the previous two (2) consecutive months. The surcharge shall not apply to Tier 1 Residential customers.

E. Sunset.

1. Without further action of the Board of Directors, Stage 3, when implemented pursuant to Rule 164-A-2, shall sunset and water use restrictions shall revert to Stage 1 when remaining Total Storage Available computed consistent with Table XV-4 is greater than remaining Total Storage Required for two (2) consecutive months.

2. Without further action of the Board of Directors, Stage 3, when implemented pursuant to Rule 164-A-3, shall sunset and water use restrictions shall revert to Stage 1 when the 12 month total production has been less than or equal to its then-current annual production target for two (2) consecutive months.

3. Without further action of the Board of Directors, Stage 3, when implemented pursuant to Rule 164-A-4, shall sunset and water use restrictions shall revert to Stage 1 when the governmental or regulatory agency rescinds the request.

4. Stage 3, when implemented pursuant to Rule 164-A-5, shall sunset and water use restrictions shall revert to Stage 1 when the Board finds that a Water Supply Emergency no longer exists and Rules 164-A-2 and 164-A-3 do not apply.

Stage 4: Water Rationing (MPWMD Rule 165)

A. Trigger.

1. Stage 3 Deemed Unsuccessful (California-American Water Company Distribution Systems): Stage 4 shall take effect for all California-American Water Company Water Distribution Systems if Stage 3 has been implemented and has failed to sunset after a period of 8 months.

2. Physical Shortage Trigger. Stage 3 Deemed Unsuccessful for California-American Water Company Distribution Systems and Stage 2 Deemed Unsuccessful for Non-California American Water Systems: Stage 4 shall take effect for any Water Distribution System that relies, in whole or in part, on production or production offsets from the Carmel River System or the Seaside Coastal Subareas if Stage 2 (Non-California-American Water Company Water Distribution Systems, private Wells, or Water Users) and Stage 3 (California-American Water Company Distribution Systems) have been implemented and have failed to sunset after a period of eight (8) months.

3. Regulatory Trigger: Stage 4 shall take effect in any Water Distribution System when that system is directed by a governmental or regulatory agency to enact Stage 4.

4. Emergency Trigger: Stage 4 shall take effect for any Water Distribution System, private Well, or Water User when the Board finds that a Water Supply Emergency exists and upon adoption of a Resolution of the Board of Directors, or a declaration of a Water Supply Emergency by the California American Water, or a State or County entity, due to a catastrophic event. In that Resolution or declaration, there shall be a finding of an immediate need to reduce production through the imposition of Stage 4 Water Rationing.

5. Stage 4 shall not be triggered if the General Manager determines upon credible evidence that the production targets associated with a final Cease and Desist Order are likely to be met by adhering to the requirements of a lesser Stage. The General Manager shall record this determination and any amendment thereto, by memorandum which may be appealed to the Board in accord with Regulation VII, Appeals.

6. Delay of Stage Implementation. The Board may delay implementation of Stage 4 Water Rationing for any Water Distribution System to ensure adequate operation of the program. Delays authorized by the Board shall not exceed sixty (60) days.

B. Amount of Reduction.

1. The amount of mandatory reduction shall equal the shortfall in Total Storage Available as compared to the Total Storage Required; or

2. The amount of mandatory reduction shall equal the overage of the last 12 months actual production as compared to the then-current annual production target; or

3. The amount of mandatory reduction shall equal some other amount as reflected in a governmental or regulatory order.

C. Stages 1, 2, and 3 (if applicable) shall remain in effect.

D. Additional Prohibitions.

1. The Board shall consider prohibiting all or specific Non-Essential Water Uses. The Board may enact such prohibitions by Resolution.

2. California American Water shall maintain Non-Revenue Water at or below seven (7) percent.

3. Moratorium. Upon implementation of Stage 4, the Board shall declare a moratorium on accepting Water Permit applications within the affected Water Distribution System other than those applications that rely upon a Water Credit, Water Use Credit, or Water Use Permit. The Board may amend the moratorium to include the use of Water Credits and/or Water Use Credits if warranted. All pending Water Permits not issued within 120 days of declaration shall be suspended. Water Use Permits shall be exempt from any moratorium on Water Permits.

4. No New Potable Water Service: Upon declaration of Stage 4 Water Rationing, no new Potable water service will be provided, no new temporary Water Meters or permanent Water Meters will be provided, and no statements of immediate ability to serve or provide Potable water service (e.g. will-serve letters, certificates, or

letters of availability) will be issued by the Water Distribution System Operator, except under the following circumstances:

a. The project is necessary to protect the public health, safety, or welfare.

b. The setting of meters in the California-American Water Company Water Distribution System shall not be terminated or diminished by reason of any water emergency, water moratorium or other curtailment on the setting of meters for holders of Water Use Permits.

c. This provision does not preclude the resetting or turn-on of Water Meters to provide continuation of water service or the restoration of service that has been interrupted for a period of one year or less.

5. No New Annexations: Upon the declaration of a Stage 4, California-American Water Company will suspend annexations to its Service Area. This subsection does not apply to boundary corrections and annexations that will not result in any increased use of water, or annexations required by a regulatory agency.

6. Customers utilizing portable Water Meters or hydrant Water Meters or using hydrants to fill water tanks without the use of a Water Meter, shall be required to cease use of the water, except upon prior approval of the General Manager. Portable Water Meters shall be returned to the Water Distribution System at least thirty (30) days before the implementation of Stage 4.

7. Draining and refilling of swimming pools or spas except (a) to prevent or correct structural damage or to comply with public health regulations, or (b) upon prior approval of the General Manager.

8. Restriction on Watering or Irrigating: Watering or irrigating of Lawn, landscape or other vegetated area with Potable water will be subject to restriction at the direction of the District. This restriction does not apply to the following categories of use, or where the District has determined that recycled Sub-potable Water is available and may be applied to the use:

a. Businesses dependent on watering or irrigating in the course of business such as agriculture, nursery, and similar uses;

b. Maintenance of existing Landscaping necessary for fire protection;

c. Maintenance of existing Landscaping for soil erosion control;

d. Maintenance of plant materials identified to be rare or essential to the well-being of protected species;

e. Maintenance of Landscaping within active Public parks and playing fields, Day Care Centers and school grounds, provided that such irrigation does not exceed one (1) day per week;

f. Actively irrigated environmental mitigation projects.

E. Residential Rations.

1. Upon adoption of a Resolution by the Board for a specific reduction in Residential water use, daily Household Water Rations shall be set at a level to achieve the necessary reduction. In no case shall daily Household Water Rations be less than 90 gallons per Household. This shall be known as the Minimum Daily Water Ration.

Where two or more Households are served by a Master Meter, it shall be the responsibility of the Water Users to divide the Water Rations among the Water Users.

2. Additional Water Rations for Large Households:

Where four or more Permanent Residents occupy a single Household served by one Water Meter, the Minimum Daily Water Ration may be increased by the amounts listed below:

Number of Permanent Residents	Residential Household Gallons per Day
Fourth Permanent Resident	30
Fifth Permanent Resident	25
Sixth Permanent Resident	20
Seven or More Permanent Residents (Per Additional Resident)	15

3. Procedure for Obtaining Additional Water Rations for Large Households:

   a. The Applicant shall complete a Residency Affidavit (obtained from the District) that requests the name, age and verification of full-time Permanent Residents for each resident in the Household for which the additional Water Ration is requested. The information on the application shall be presented under penalty of perjury. The additional Water Ration request shall be submitted to the General Manager, who will approve or disapprove the request within 10 business days of submission of a completed application.

   b. If the application is disapproved, the General Manager will explain in writing the reason for the disapproval, and if the Applicant is not satisfied with the decision of the General Manager, the Applicant may appeal the General Manager's decision to the Board of Directors.

4. Procedure for Obtaining Additional Water Rations Where Two or More Households are Served by a Master Meter:

   a. The Applicant must fill out the required form that lists the number of Residences served by the Master Meter and submit a use permit issued by the Jurisdiction for the Multi-Residential Dwelling Units served by the Master Meter. The District shall retain the right to require Residency Affidavits to determine the appropriate Water Rations. The additional Water Ration request shall be submitted to the General Manager, who will approve or disapprove the request within 10 business days of submission of a completed application. The Application shall be submitted under penalty of perjury.

b. If the application is disapproved, the General Manager will explain in writing the reason for the disapproval, and if the Applicant is not satisfied with the decision of the General Manager, the Applicant may appeal the General Manager's decision to the Board of Directors.

5. Additional Water Ration for Special Needs. Where more water than allowed in Sections 3 or 4 above is necessary to preserve the health or safety of a Household, the General Manager may increase the Water Ration during the period of need according to the needs of the Applicant.

a. The Applicant or his or her representative may file a request for an additional Water Ration and shall state to the General Manager: (1) the amount of the requested additional Water Ration, and (2) a general statement in support of the need. Where appropriate, Applicant shall provide a letter from a medical doctor stating the need for additional water usage and projected amount and duration of that need, if possible, or other appropriate justification for the special need.

b. Additional Water Rations shall require the replacement of inefficient water fixtures to comply with Rule 142-E, Residential and Non-Residential Change of Ownership, Change of Use, and Expansion of Use Water Efficiency Standards.

c. Additional Water Rations shall require the Connection have a working Pressure Regulating Device that maintains water pressure at a maximum of 60 psi.

d. If the General Manager does not approve an additional Water Ration, the Applicant may appeal to the Board. An appeal from the General Manager's decision must contain all of the following: (a) a copy of the original application; (b) a copy of the written explanation of the General Manager's decision; and (c) a written explanation of why the Applicant believes the decision should be changed.

6. Misrepresentation. Any Water User intentionally over-reporting the number of Permanent Residents in a Household may be charged with a misdemeanor punishable as an infraction as provided by Section 256 of the Monterey Peninsula Water Management District Law, Statutes of 1981, Chapter 986, as well as fines

and penalties set forth in this Regulation. During this Stage 4, whenever there is a change in the number of Permanent Residents, the Water User shall notify the District.

F. Non-Residential Water Rations.

1. If Residential Water Rationing does not achieve measurable results as expected after a period of six (6) months, upon adoption of a Resolution by the Board for a specific reduction in Non-Residential water use, Non-Residential Water Rations shall be implemented at a level to achieve the necessary reduction in use.

2. Non-Residential Water Rations shall be determined by selection by the District of a previous year for which Stages 2, 3, or 4 Conservation or Rationing was not in place and then reducing each month's water use by a percentage determined by the District to achieve the Non-Residential reduction in use. Where a previous year history is deemed to be unavailable or inappropriate by the District, a Non-Residential Water Ration shall be established by the District based on type of Non-Residential water use, building design, and water fixtures.

3. Exemptions: In the Resolution to implement a level of Non-Residential Rationing, the Board shall include an exemption for compliance with District Rule 143 and an exemption for a Non-Residential establishment whose business requires water in the course of its business practice (e.g. laundromats, nurseries, among others.)

4. An Applicant or his or her representative may file a request for an additional Water Ration. The Applicant shall state in a letter to the General Manager: (1) the amount of the requested additional Water Ration, and (2) a general statement in support of the need.

5. Additional Water Rations shall require the Connection have a working Pressure Regulating Device that maintains water pressure at a maximum of 60 psi.

6. If the request for additional Water Ration is disapproved, the General Manager will explain in writing the reason for the disapproval, and if the Applicant is not satisfied with the decision of the Board, the Applicant may appeal to the Board of Directors for a hearing.

G. Irrigation required by the Mitigation Program adopted when the Water Allocation Program Environmental Impact Report was adopted in 1990, and as required by SWRCB Order No. WR 95-10, shall not be subject to reductions in use. Required irrigation of the Riparian Corridor shall be identified and reported by California American Water separately from other Non-Revenue Water.

H. CAWD/PBCSD Wastewater Reclamation Project Recycled Water Users. Recycled Water Irrigation Areas receiving water from the CAWD/PBCSD Wastewater Reclamation Project shall be subject to Stage 4 for Potable water used during an Interruption or emergency, in accordance with contractual Agreements between the District and the respective Owners of the Recycled Water Irrigation Areas.

1. The Owners of the Recycled Water Irrigation Areas shall have the respective irrigation requirements thereof satisfied to the same degree as any non-Project Golf Course or open space which derives its Source of Supply from the California American Water system. The irrigation requirements of the Recycled Water Irrigation Areas will be determined based on the most-recent non-Rationed four-year average irrigation water demand, including both Recycled Water and Potable water, for each respective Recycled Water Irrigation Area.

2. Each Recycled Water Irrigation Area shall be entitled to receive the average irrigation requirement determined above, reduced by the percentage reduction required by the current stage of Water Rationing. If the quantity of Recycled Water that is available is less than the quantity of water that the Recycled Water Irrigation Area is entitled to, Potable water shall be provided to make up the difference and satisfy the irrigation requirements of the Recycled Water Irrigation Areas to the same degree that the irrigation requirements of non-Project Golf Course and open space Users are being satisfied. The preceding sentence shall not apply to the extent that the irrigation requirements of any Recycled Water Irrigation Area are met with water legally available to Buyer from any source other than the Carmel River System or the Seaside Groundwater Basin, including percolating Groundwater underlying Buyer's Property, to make up any such difference.

3. When Recycled Water (as defined in Rule 23.5) is available in sufficient quantities to satisfy the irrigation requirements of the Recycled Water Irrigation Areas, such irrigation shall not be subject to Stage 4, and neither Potable water nor any water described in the preceding sentence (whether or not it is Potable)

shall be used for irrigation of the Recycled Water Irrigation Areas except to the extent allowed in the circumstances described in the next two sentences.

4. If there is an Interruption in Recycled Water deliveries to any Recycled Water Irrigation Area (as the capitalized terms are defined in Rule 23.5), the temporary use of Potable water for irrigating each such Recycled Water Irrigation Area is authorized in the manner described in Rule 23.5, Subsection F.

5. If the District has adopted an ordinance in response to any emergency caused by drought, or other threatened or existing water shortage pursuant to section 332 of the Monterey Peninsula Water Management Law, said ordinance shall prevail over contrary provisions of this Rule. Notwithstanding the preceding sentence, Potable water shall be made available for irrigating tees and greens of the Recycled Water Irrigation Areas in sufficient quantities to maintain them in good health and condition during an Interruption, without any limitation on the duration.

6. The District shall have no obligation to furnish Potable water for irrigation of the Recycled Water Irrigation Areas except in the circumstances set forth above.

7. If (1) an emergency or major disaster is declared by the President of the United States, or (2) a "state of war emergency," "state of emergency," or "local emergency," as those terms are respectively defined in Government Code section 8558, has been duly proclaimed pursuant to the California Emergency Services Act, with respect to all or any portion of the territory of MPWMD, the provisions of this section shall yield as necessary to respond to the conditions giving rise to the declaration or proclamation.

I. Sunset.

1. Without further action of the Board of Directors, Stage 4, when implemented due to non-compliance with regulatory targets, shall sunset for all California-American Water Company Water Distribution Systems and water use restrictions shall revert to Stage 1 when the 12 month total production has been less than or equal to its then-current annual production target for two (2) consecutive months.

2. Physical Shortage Trigger: Without further action of the Board of Directors, Stage 4 shall sunset and water use restrictions shall revert to Stage 1 when remaining Total Storage Available computed consistent with Table XV-4 is

greater than remaining Total Storage Required for two (2) consecutive months.

3. Regulatory Trigger: Without further action of the Board of Directors, Stage 4 shall sunset for that Water Distribution System(s) and water use restrictions shall revert to Stage 1 when the governmental or regulatory agency rescinds the request.

4. Emergency Trigger: Stage 4 shall sunset and water use restrictions shall revert to Stage 1 when the Board finds that a Water Supply Emergency no longer exists.

5. Restoration of Lower Stage. A Resolution causing the sunset of one or more provisions of Stage 4 may also activate any lower Stage as may be warranted for good cause by circumstances affecting a particular Water Distribution System, private Well, or Water User.

Water Rationing Exemptions and Variances (MPWMD Rule 166)

A. Special Needs Exemptions. The following needs shall be given additional Rations:

1. Medical and/or sanitation needs certified by a doctor;

2. Hospital and/or health care facilities that have achieved all BMPs for those uses;

3. Riparian irrigation using water efficient irrigation technology when required as a condition of a River Works Permit issued by the District;

4. Non-Residential Users that can demonstrate compliance with all District regulations appropriate for the type of use and where there is minimal exterior water use on the Water Meter or water supply serving the use.

B. Hardship Variances. The following shall be given consideration of additional Rations to meet extraordinary needs:

1. Health and safety situations on a case-by-case basis;

2. Drinking water for large livestock;

3. Commercial laundromats with signs advising full loads only;

4. Business in a home on a case-by-case basis;

5. Emergency, extreme, or unusual situations on a case-by-case basis.

C. No Exemption or Variance. The following categories of water use shall not qualify for an additional Ration:

1. Short-Term Residential Housing as defined in Rule 11 (Definitions);

2. Guests and short-term visitors;

3. Irrigation, other than variances allowed for required riparian irrigation or safety;

4. Filling pools, spas, ponds, fountains, etc;

5. Leaks that are not repaired within 72 hours of notice.

D. Mandatory Conditions of Approval. Prior to approving any variance, the Site must be in compliance with all applicable District Rules and Regulations and the water conservation standards. Verification by District inspection may be conducted prior to granting a variance.

Definitions Used in the 2016 Monterey Peninsula Water Conservation and Rationing Plan (MPWMD Rule 167)

Acre-Foot – "Acre-Foot" shall mean an amount of water equal to 325,851 gallons.

Administrative Compliance Order – "Administrative Compliance Order" shall mean a written order issued by the General Manager directing any Person responsible for serious, continuing or recurring violations to take affirmative action to remedy consequences of those violations. Administrative Compliance Orders are in addition to all other legal remedies, criminal or civil, which may be pursued by the Water Management District. An Administrative Compliance Order may be issued in conjunction with a Cease & Desist Order.

Applicant – "Applicant" shall mean the Person or Persons responsible for completing the requirements of an application.

Best Management Practices (BMPs) – "Best Management Practices" shall mean a conservation measure or series of measures that is useful, proven, cost-effective, and generally accepted among conservation experts to reduce water consumption and protect water quality.

Bishop Water Distribution System – "Bishop Water Distribution System" or "Bishop" shall mean the California American Water subsystem as described in the purchase agreement between Bishop Water Company and California American Water dated September 1, 1996.

California-American Water Company Water Distribution System – "California-American Water Company Water Distribution System" shall mean all California-American Water Company Water Distribution Systems that rely, in whole or in part, on production or production offsets from the Carmel River System or the Seaside Coastal Subareas.

Carmel River System – "Carmel River System" shall mean water from the Carmel River and underlying alluvial aquifer.

CAWD/PBCSD Wastewater Reclamation Project Recycled Water Users – "CAWD/PBCSD Wastewater Reclamation Project Water Users" shall mean those Users of the wastewater reclamation project undertaken by the Carmel Area Wastewater District and the Pebble Beach Community Services District that supplies Reclaimed Water to the Golf Courses and certain open space areas within Pebble Beach.

Cease & Desist Order – "Cease & Desist Order" shall mean an order issued by the General Manager prohibiting a Person from continuing a particular course of conduct. Cease & Desist Orders are in addition to all other legal remedies, criminal or civil, which may be pursued by the Water Management District. A Cease & Desist Order may be issued in conjunction with an Administrative Compliance Order.

CCF– "CCF" (or one-hundred cubic feet) is equivalent to 748 gallons.

Conservation Rates – "Conservation Rates" shall mean the increase in the water rates for California American Water customers at levels of either 25 percent (Level 1 Conservation Rates) or 40 percent (Level 2 Conservation Rates). Conservation Rates do not apply to Residential Tier 1 water use.

Conveyor Car Wash – "Conveyor Car Wash" shall mean a commercial car wash where the vehicle moves on a conveyor belt during the wash and the driver of the vehicle can remain in, or wait outside of, the vehicle.

District – See Monterey Peninsula Water Management District.

Dwelling Unit – "Dwelling Unit" shall mean single or multiple residences suitable for single household occupancy but shall not refer to non-permanent student or transient housing, the occupancy of which is projected to average 24 months or less.

Extractor – "Extractor" shall means a user, or consumer of water delivered by a water Well or Water-Gathering Facility, which is not a part of any Water Distribution System.

Flagrant Violation – "Flagrant Violation" shall mean any willful or wanton disregard of the Rules and Regulations of the District which results in unreasonable waste, contamination, or pollution of District waters by any Extractor, User, or by the Owner or Operator of a Well, Water-Gathering Facility or Water Distribution System.

Flow Restrictor – "Flow Restrictor" shall mean a device placed into the Water Distribution System by the distribution system Operator, or put into the output of a private Well, that restricts the volume of flow to the User.

Graywater Irrigation System – "Graywater Irrigation System" shall mean an onsite wastewater treatment system designed to collect Graywater and transport it out of the structure for distribution in an Irrigation System.

Hidden Hills System – "Hidden Hills System" shall mean the California American Water subsystem as described in the purchase agreement between Carmel Valley Mutual Water Company and California American Water recorded July 8, 1994, Document #49389, Reel 3125, Page 696.

Household – "Household" shall mean all the people who occupy a housing unit. A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room occupied (or if vacant, intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live separately from any other people in the building and that have direct access from the outside of the building or through a common hall.

In-Bay Car Wash – "In-Bay Car Wash" shall mean a commercial car wash where the driver pulls into bay, parks the car, and the vehicle remains stationary while either a machine moves over the vehicle to clean it or one or more employees of the car wash clean the vehicle, instead of the vehicle moving through a tunnel.

Interruption – "Interruption" shall mean an interruption for longer than 12 hours in the supply of Recycled Water to a Recycled Water Irrigation Area.

Laguna Seca Subarea – "Laguna Seca Subarea" shall mean one of the subdivisions of the Southern Seaside Subbasin. Its boundary is shown on a map maintained at the offices of the Water Management District, as that map may be amended from time to time.

Landscaping – "Landscaping" shall mean the arrangement of plants and other materials that may result in outdoor water use.

Lawn – "Lawn" shall mean an area of land planted with live, healthy grass which is regularly maintained, irrigated and groomed at a low, even height.

Main California American Water System – "Main California American Water System" shall mean the California American Water's Water Distribution System that derives its Source of Supply from the Carmel River System and the Seaside Coastal Subareas of the Seaside Groundwater Basin.

Master Meter – "Master Meter" shall mean a single Water Meter that supplies water to more than one Water User.

Measurable Precipitation – "Measureable Precipitation" shall mean rainfall of 0.1 inch or more.

Minimum Daily Water Ration – "Minimum Daily Water Ration" shall mean a minimum Water Ration of 90 gallons per day per Household.

Mobile Water Distribution System – "Mobile Water Distribution System" shall mean any Potable or Sub-potable Water delivery that originates at a location apart from the Site of use and that is delivered via a truck or other movable container. This definition includes, but is not limited to, trucked water. This definition shall not apply to deliveries of water by commercial companies in volumes less than or equal to 55 gallons per container.

Model Water Efficient Landscape Ordinance – "Model Water Efficient Landscape Ordinance" shall mean the ordinance found at California Code of Regulations, Title 23. Waters, Division 2. Department of Water Resources, Chapter 2.7.

Monterey Peninsula Water Management District (District) – "Monterey Peninsula Water Management District" ("District") is a public agency created by the California State Legislature in 1977 and approved by the voters on June 6, 1978. The enabling legislation is found at West's California Water Code, Appendix Chapters 118-1 to 118-901.

Monterey Peninsula Water Resource System (MPWRS) – "Monterey Peninsula Water Resource System" ("MPWRS") shall mean the surface water in the Carmel River and its tributaries, Groundwater in the Carmel Valley Alluvial Aquifer which underlies the Carmel River, and Groundwater in the Seaside Groundwater Basin.

MPWMD– See Monterey Peninsula Water Management District.

Multi-Family Household – "Multi-Family Household" shall mean a Household where two or more Dwelling Units receive water from a Master Meter.

Non-Essential Water Use – "Non-Essential Water Use" shall mean uses of water that are acceptable during times of normal water availability, as long as proper procedures to maximize efficiency are followed. However, when water is in short supply, Non-Essential Water Uses must be curtailed to preserve limited water resources for essential

uses. Non-Essential Water Uses do not have health or safety impacts, are not required by regulation, and are not required to meet the core functions of a Non-Residential use.

Non-Residential – "Non-Residential" shall mean water uses not associated with Residential use. These uses include Commercial, Industrial, Public Authority, Golf Course, Other Use, Non-Revenue Metered Use, and Reclaimed Water.

Non-Revenue Water – "Non-Revenue Water" shall mean those components of system input volume that are not billed and produce no revenue; equal to unbilled authorized consumption, plus apparent losses, plus real losses.

Open Space – "Open Space" shall mean public land area left in an un-built state as defined in the California Government Code, Section 65560. Open Space includes plazas, parks, and cemeteries.

Owner or Operator – "Owner or Operator" shall mean the Person to whom a Water-Gathering Facility is assessed by the County Assessor, or, if not separately assessed, the Person who owns the land upon which a Water-Gathering Facility is located.

Permanent Resident – "Permanent Resident" shall mean a Person who resides continuously in a Dwelling Unit for more than 30 days or a resident that can submit such other evidence to clearly and convincingly demonstrate permanent residency.

Positive Action Shut-Off Nozzle – "Positive Action Shut-Off Nozzle" shall mean a device that completely shuts off the flow of water from a hose when released.

Potable – "Potable" shall mean water that is suitable for drinking.

Pressure Regulating Device – "Pressure Regulating Device" shall mean a water pressure reducing device installed in the water line after the Water Meter that automatically reduces the pressure from the water supply main to a lower pressure.

Production Limit – "Production Limit" shall mean the maximum production permitted for a Water Distribution System.

Reclaimed Water – "Reclaimed Water" shall mean wastewater that has been treated to the tertiary level, including disinfection. Reclaimed Water is a form of Recycled Water.

Recycled Water – "Recycled Water" shall mean water that originates from a Sub-potable Source of Supply such as wastewater treated to the tertiary level.

Recycled Water Irrigation Areas – "Recycled Water Irrigation Areas" shall mean the golf courses and other vegetated areas located within the Del Monte Forest that are being irrigated with Recycled Water.

Residency Affidavit – "Residency Affidavit" shall mean a document attesting to the number of Permanent Residents in a Household.

Residential – "Residential" shall mean water used for Household purposes, including water used on the premises for irrigating lawns, gardens and shrubbery, washing vehicles, and other similar and customary purposes pertaining to Single-Family and Multi-Family Dwellings.

Responsible Party – "Responsible Party" shall mean the Person or Persons who assume through the District Permit process legal responsibility for the proper performance of the requirements of a Permit holder as defined in the Rules and Regulations and/or in conditions attached to a Permit. "Responsible Party," when used in the context of the 2016 Monterey Peninsula Water Conservation and Rationing Plan, shall mean the Person who is responsible for paying the water bill. When a property is served by a private Well or a small Water Distribution System, the "Responsible Party" shall be the Water Users of the Well and the small distribution system Operator.

Riparian Corridor – "Riparian Corridor" shall mean all that area which comprises the Riverbed and riverbanks of the Carmel River which lies within the boundaries of the Carmel River Management Zone (Zone No. 3), and all those areas which lie within 25 lineal feet of the Riverbank Assessment Line, excepting however, all lands which lie outside of the Zone No. 3 boundary, and exempting Lawns, Landscaping and cultivated areas as shown on the spring 1983 aerial photographs taken by California American Water pursuant to the agreement with the District in accord with MPWMD Rule 123 A.

Ryan Ranch Water Distribution System – "Ryan Ranch Water Distribution System" or "Ryan Ranch" shall mean the California American Water subsystem as described in the purchase agreement between Neuville Co. N.V. (a Delaware Corporation) and California American Water dated April 30, 1990.

Seaside Basin Adjudication Decision – "Seaside Basin Adjudication Decision" or "Seaside Decision" shall mean the March 27, 2006 court adjudication, as amended, determining water rights in the Seaside Groundwater Basin that restrict California American Water production from the Coastal Subareas and Laguna Seca Subarea of the basin.

Seaside Groundwater Basin – "Seaside Groundwater Basin" shall mean the set of geologic formations that stores, transmits, and yields water in the Seaside area, comprising of the Northern Seaside Subbasin and the Southern Seaside Subbasin. The Seaside Groundwater Basin also includes those areas known as the Northern Coastal Subarea, the Northern Inland Subarea, the Southern Coastal Subarea and the Laguna Seca Subarea.

Short-Term Residential Housing – "Short-Term Residential Housing" shall mean one or more Residential Dwelling Units on a property that are occupied by Visitors, are operated as a business and for which a fee is charged to occupy the premises.

Single Residential Household – "Single Residential Household" shall mean a Household that receives its water supply through a Water Meter that is not shared with other Households.

Site – "Site" shall mean any unit of land which qualifies as a Parcel or lot under the Subdivision Map Act, and shall include all units of land: (1) which are contiguous to any other Parcel (or are separated only by a road or easement); and (2) which have identical owners; and (3) which have an identical present use. The term "Site" shall be given the same meaning as the term "Parcel."

Smart Controller – "Smart Controller" shall mean a weather-based device (typically a "timer") that automatically controls an outdoor Irrigation System. Smart Controllers use weather, site or soil moisture data as a basis for determining an appropriate watering schedule. Smart Controllers (commonly referred to as ET controllers, Weather Based Irrigation Controllers, smart sprinkler controllers, and water smart controllers) are a new generation of irrigation controllers that utilize prevailing weather conditions, current and historic Evapotranspiration, soil moisture levels, and other relevant factors to adapt water applications to meet the actual needs of the plants.

Source of Supply – "Source of Supply" shall mean the Groundwater, surface water, Reclaimed Water sources, or any other water resource where a Person, Owner or Operator gains access by a Water-Gathering Facility.

Sub-potable Water – "Sub-potable Water" shall mean water which is not fit for human consumption without treatment and shall include Reclaimed Water as that term is used in the Water Reclamation Law, and particularly in Section 13550 of the Water Code.

Total Storage Available – "Total Storage Available" shall mean the usable water as measured by the District on May 1 in any year that is contained in the Carmel Valley Alluvial

Aquifer plus usable water in the Seaside Groundwater Basin and the usable water in the Los Padres Reservoir.

Total Storage Required – "Total Storage Required" shall mean the combination of demand remaining from May 1 to September 30 and carryover storage for the next Water Year that is required to meet the following Water Year production limit for California American Water from Carmel River sources set by State Water Resources Control Board Order WR 2009-0060, plus the production limit for California American Water from the Seaside Groundwater Basin set by the Court in its March 27, 2006 Seaside Basin Adjudication Decision and the production limit specified for non-California American Water Users from the Monterey Peninsula Water Resource System set in the District's Water Allocation Program.

User – "User" shall mean a customer or consumer of water delivered by a Water Distribution System. User does not include any Owner or Operator of a Water Distribution System. Each residence, commercial enterprise, or industrial enterprise shall be deemed a separate and distinct User.

Visitor-Serving Facility – "Visitor-Serving Facility" shall include all hotels, motels, restaurants, convention/meeting facilities, and service stations within the Monterey Peninsula Water Management District. Other facilities may be designated as a Visitor- Serving Facility by the General Manager upon finding that such facility exists primarily for the use of tourists and the traveling public. Short term rentals of private property are not included under this definition.

Water Broom – "Water Broom" shall mean a water efficient broom-like cleaning device that uses a combination of water and air to clean hard surfaces with no runoff.

Water Credit – "Water Credit" shall mean a record allowing reuse of a specific quantity of water upon a specific Site. A Water Credit differs from a Water Use Credit in that it is not characterized by a Permanent Abandonment of Use, but may be the result of a temporary cessation of use.

Water Distribution System – "Water Distribution System" shall mean all works within the District used for the collection, storage, transmission or distribution of water from the Source of Supply to the Connection of a system providing water service to any Connection including all Water-Gathering Facilities and Water-Measuring Devices. In systems where there is a Water Meter at the point of Connection, the term "Water

Distribution System" shall not refer to the User's piping; in systems where there is no Water Meter at the point of Connection, the term "Water Distribution System" shall refer to the User's piping.

Water Distribution System Operator – "Water Distribution System Operator" shall mean the Person or Persons who assume through the District Permit process legal responsibility for the proper performance of the requirements of a Water Distribution System Permit holder as defined in the Rules and Regulations and/or in conditions attached to a Permit.

Water-Gathering Facility – "Water-Gathering Facility" shall mean any device or method, mechanical or otherwise, for the production of water from dams, Groundwater, surface water, water courses, Reclaimed Water sources, or any other Source of Supply within the Monterey Peninsula Water Management District or a zone thereof. Water-Gathering Facilities shall include any water-production facility as defined in the Monterey Peninsula Water Management District Law. This definition shall not apply to On-Site Cisterns that serve an existing single-Connection Residential situations where rainwater is captured for On-Site Landscape irrigation use.

Water Ration – "Water Ration" shall mean a specific amount of water available to each Water User during Stage 4 Water Rationing.

Water Supply Emergency – "Water Supply Emergency" shall mean a declaration pursuant to Regulation XV, The 2016 Monterey Peninsula Water Conservation and Rationing Plan, that a water shortage emergency condition prevails within one or more Water Distribution Systems.

Water Use Credit – "Water Use Credit" shall mean a limited entitlement by a Person to use a specific quantity of water upon a specific Site. Water Use Credits shall be limited by time, and by other conditions as set forth in the District's Rules and Regulations.

Water User – "Water User" shall mean Users of water for domestic or other uses from any Water Distribution System or private Well.

Water Waste – "Water Waste" shall mean the indiscriminate, unreasonable, or excessive running or dissipation of water as defined in Rule 162.

Water Year – "Water Year" shall mean the period from October 1 of one year to September 30 of the succeeding year.

Well – "Well" shall mean any device or method, mechanical or otherwise, for the production of water from Groundwater supplies within the District excluding seepage pits and natural springs.

Water Meter – "Water Meter" shall mean any measuring device intended to measure water usage. The term "Water Meter" shall have the same meaning as the term "Water Measuring Device."

Attachment 3: Resolution Approving the WSCP

CALIFORNIA AMERICAN WATER

July 1, 2021

Attention: Coordinator, Urban Water Management Plans
California Department of Water Resources
1416 9th Street
Sacramento, CA 95814

Subject: Adoption of California American Water's Monterey County District 2020 Urban Water Management Plan and Water Shortage Contingency Plan

To Whom It May Concern:

This letter confirms that California American Water has formally adopted its 2020 Urban Water Management Plan and Water Shortage Contingency Plan for its Monterey County District as required by the California Water Code Section 10642. These plans will be submitted to the California Department of Water Resources for review.

Sincerely,

Ian C. Crooks
Vice President, Engineering
California American Water

J

Appendix J. Public Notices

Nina Miller

From: Nina Miller
Sent: Sunday, April 18, 2021 11:56 AM
To: Nina Miller
Cc: Ian C Crooks; Catherine A Stedman; Jeroen Olthof
Subject: California American Water Monterey Division 2020 Urban Water Management Plan
BCC mckeec@co.monterey.ca.us; crerig@ci.carmel.ca.us; citymanager@delreyoaks.org; uslar@monterey.org; bharvey@cityofpacificgrove.org; aaron@sandcityca.org; cmalin@ci.seaside.ca.us; Dave Stoldt

California American Water Monterey Division 2020 Urban Water Management Plan

California American Water is in the process of preparing its Monterey County District 2020 Urban Water Management Plan (UWMP) as required by the Urban Water Management Planning Act (Act). The Act requires California American Water to notify cities and counties within its service areas that it is preparing its 2020 UWMP 60 days prior to holding a public hearing thereby encouraging public involvement and agency coordination. California American Water will notify you of the specific date, time, and location of this public hearing when finalized.

This letter serves as your official notice of preparation and intent to adopt the UWMP. A draft of the UWMP will be available for review in June 2021. Until that time, if you have any questions or comments regarding the Monterey County District UWMP, please contact Water Systems Consulting, Inc., the consultant responsible for the preparation of the UWMP at:

Jeroen Olthof, P.E.
Water Systems Consulting, Inc.
9815 Carroll Canyon Road, Suite 205
San Diego, CA 92131
(858) 397-2617 ext. 301
jolthof@wsc-inc.com

Sincerely,

Nina Miller
Manager, Capital Program and Asset Planning
California American Water

From:	Nina Miller
To:	mckeec@co.monterey.ca.us; crerig@ci.carmel.ca.us; citymanager@delreyoaks.org; uslar@monterey.org; bharvey@cityofpacificgrove.org; aaron@sandcityca.org; cmalin@ci.seaside.ca.us; Dave Stoldt
Cc:	Candace Coleman; Catherine A Stedman; Jeroen Olthof
Subject:	Notice of Public Hearing California American Water Monterey District - 2020 Urban Water Management Plan and Water Shortage Contingency Plan
Date:	Thursday, June 10, 2021 10:50:23 AM

Notice of Public Hearing- California American Water Monterey District - 2020 Urban Water Management Plan and Water Shortage Contingency Plan

Notice is hereby given that a public hearing will be held by California American Water on **June 17, 2021 at 1:00 P.M**., via webinar https://bit.ly/3bO0C7O or call in (audio only) +1 916-244-8157, Phone Conference ID: 187 057 3#

The public hearing will be held to receive public comments and consider adoption of the Draft 2020 Urban Water Management Plan (2020 UWMP) and Draft Water Shortage Contingency Plan (WSCP), which have been prepared in compliance with the Urban Water Management Planning Act. Following the public hearing, California American Water may adopt the Draft 2020 UWMP and Draft WSCP with recommended modifications as a result of public input.

The Draft 2020 UWMP is a long-range planning document that assesses current water demand, projects future demand over a minimum 20-year planning horizon and identifies water resources and conservation efforts to meet future demand. The Draft WSCP contains details on California American Water's water shortage contingency planning and shortage response actions.

A copy of the Draft 2020 UWMP, and Draft WSCP will be available for public review beginning on **June 10, 2021,** on the California American Water website https://www.amwater.com/caaw/Customer-Service-Billing/Water-Rates/GRC-Applications-and-Customer-Notifications Please contact California American Water if you require special accommodations.

If you'd like to provide comments on the Plans, you may submit written comments during the public hearing or via email at *2020UWMP_Monterey@amwater.com* no later than 1:00 P.M., June 18, 2021. If you have any questions regarding the 2020 UWMP, WSCP, or public hearing meeting, please contact Nina Miller at nina.miller@amwater.com or 831-884-3175.

Sincerely,

Nina Miller
Manager, Capital Program and Asset Planning
California American Water

MONTEREY HERALD

Published by The Monterey Herald
P.O. Box 271 • Monterey, California 93942
(831) 726.4382

MURPHY NELSON MARKETING
Account No. 2140097
P.O. BOX 33368
SAN DIEGO, CA 92163

Legal No. 0006580196
2020 UWMP Notices Coastal Monterey

Ordered by:

PROOF OF PUBLICATION

STATE OF CALIFORNIA
County of Monterey

I am a citizen of the United States and a resident of the County aforesaid. I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of The Monterey Herald, a newspaper of general circulation, printed and published daily and Sunday in the City of Monterey, County of Monterey, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of Monterey, State of California; that the notice, of which the annexed is a printed copy (set in type not smaller than 6 point), has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

06/02/21, 06/09/21

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Executed on 06/09/2021 at Monterey, California.

Danielle Landaker

Signature

This space is reserved for the County Clerk's Filing Stamp

NOTICE OF PUBLIC HEARING
On California American Water's
Urban Water Management Plan

California American Water will hold a public hearing on Thursday, June 17, 2021, on the final draft of the 2020 Urban Water Management Plan and Water Shortage Contingency Plans for its Monterey County District service area. **This service area includes the cities of Monterey, Pacific Grove, Carmel-by-the-Sea, Del Rey Oaks, Sand City, a portion of Seaside, Hidden Hills and Ryan Ranch subdivisions, Bishop subdivision including the area known as Laguna Seca Ranch Estates and vicinity, and certain unincorporated areas in the County of Monterey.** Copies of the plan will be available for public review, and public comment will be accepted. The hearing will be held online at 1:00 p.m., Thursday, June 17, 2021.
The link for this meeting is as follows:
https://bit.ly/3bO0C7O
Or call in (audio only) +1 916-244-8157
Phone Conference ID: 187 057 3#
Draft plans are available for review in the customer notifications section of
www.californiaamwater.com

Published June 2 & June 9, 2021

The Carmel Pine Cone
Carmel-by-the-Sea
County of Monterey, California

Declaration of Publication

I, the undersigned, **Irma Garcia** declare under penalty of perjury that the following is true and correct:

That during all the times herein mentioned I was, and now am, a citizen of the United States over the age of 18, and a resident of said city, county and state.

That during all of said times I have been and now am the Legal Clerk of THE CARMEL PINE CONE, a weekly newspaper of general circulation published and circulated in said city, and the official newspaper thereof, and that as such I am familiar with the advertising appearing in said newspaper.

That the **Public Notice,** of which the attached is a printed copy, was printed and published in said newspaper on **June** 4 **& June 11, 2021.** And that it was printed and published in each and every edition, issue and number of said newspaper printed, published and circulated on said date, and not in any supplement of said newspaper.

Executed **June 11, 2021**, at Pacific Grove, California.

The Carmel Pine Cone
Pacific Grove
County of Monterey, California

Declaration of Publication

NOTICE OF PUBLIC HEARING
On California American Water's Urban Water Management Plan

CALIFORNIA AMERICAN WATER

California American Water will hold a public hearing on Thursday, June 17, 2021, on the final draft of the 2020 Urban Water Management Plan and Water Shortage Contingency Plans for its Monterey County District service area. **This service area includes the cities of Monterey, Pacific Grove, Carmel-by-the-Sea, Del Rey Oaks, Sand City, a portion of Seaside, Hidden Hills and Ryan Ranch subdivisions, Bishop subdivision including the area known as Laguna Seca Ranch Estates and vicinity, and certain unincorporated areas in the County of Monterey.** Copies of the plan will be available for public review, and public comment will be accepted. The hearing will be held online at 1:00 p.m., Thursday, June 17, 2021.

The link for this meeting is as follows:
https://bit.ly/3bO0C7O
Or call in (audio only)
+1 916-244-8157
Phone Conference ID: 187 057 3#

Publication dates:
June 4 & 11, 2021
[PC604]

MUSIC

From page 27A

varado St., (831) 649-8151.

Hyatt Regency Monterey Hotel — singer and guitarist **Jenna Vivre** (soul, folk and jazz, Friday at 6 p.m.). 1 Old Golf Course Road, (831) 372-1234.

Folktale Winery in Carmel Valley — **The Rough Jazz Combo** (Friday at 3 p.m.), singer-songwriter **Johan Sotelo** (Saturday at 3 p.m.), singer-songwriter **Alex Lucero** (Americana, Sunday at 11:30 a.m.), guitarist **John Sherry** (rock, folk and blues, Monday at 3 p.m.) and singer-songwriter **Adrea Castiano** (Thursday at 3 p.m.). 8940 Carmel Valley Road, (831) 293-7500.

Intercontinental Hotel in Monterey — guitarist **John Sherry** (rock, folk and blues, Friday and Saturday at 6 p.m.). 750 Cannery Row, (831) 375-4500.

Juice and Java in Pacific Grove — Open Mic Night (Friday at 6 p.m.). 599 Lighthouse Ave., (831) 373-8652.

Julia's Vegetarian Restaurant in Pacific Grove — singer-songwriter **Zack Freitas** (Monday at 7:30 p.m.), singer-songwriter **Rachel Williams** (Tuesday at 7:30 p.m.), singer-songwriter **Talmon Owens** (Wednesday at 7:30 p.m.) and singer and guitarist **Andrea Carter** (folk, Thursday at 7:30 p.m.). 1180 Forest, (831) 656-9533.

La Playa — **The David Morwood Band** (jazz, Sunday at 4 p.m.). Camino Real and Eighth, (800) 582-8900.

The Lodge at Pebble Beach — singer-songwriter **Taylor Rae** (Thursday at 6 p.m.) In the Terrace Lounge at 1700 17-Mile Drive, (831) 624-3811.

Midici Pizza in Monterey — **The Stu Reynolds Sextet** with guitarist **Adam Astrup** and bassist **Steve Uccello** (jazz, Sunday at 5 p.m.) and singer **Janice Perl** and guitarist **Bruce Forman** (jazz, Thursday at 6 p.m.). 467 Alvarado St., (831) 264-7013.

Mission Ranch — singer and pianist **Maddaline Edstrom** (jazz and pop, Friday through Sunday at 5 p.m.) and pianist **Gennady Loktionov** (jazz, Monday through Thursday at 5 p.m.). Due to Covid, the singalongs are on hold for now. 26270 Dolores St., (831) 625-9040.

Rio Grill — singer-songwriter **Luis Fer** (Friday at 4 p.m. and Saturday at 1 p.m.) and singer-songwriter **Adrea Castiano** (Sunday at 1 p.m.). Crossroads shopping center, (831) 625-5436.

Tarpy's in Monterey — singer-songwriter **Adrea Castiano** (Friday at 4 p.m.), singer and guitarist **Mark Creech** (acoustic classic rock, Saturday at 1 p.m.) and singer-songwriter **Johan Sotelo** (Sunday at 1 p.m.). 2999 Highway 68, (831) 647-1444.

Trailside Cafe in Carmel Valley — singer and guitarist **Scott Fenton** (Friday at 6 p.m.) and **Sweet Dreams Duo** (rock and r&b, Saturday at 6 p.m.). 3 Del Fino Place, (831) 298-7453.

The Whaling Station in Monterey — singer-songwriter **Matt Masih** (Friday at 6 p.m.), singer **David Marzetti**, accordionist **Mike Marotta** and violinist **David Dally** (world music, Saturday at 6 p.m.) and singer-songwriter and violinist **Razzvio** (rock, Thursday at 6:30 p.m.). 763 Wave St., (831) 373-3778.

ART

From page 33A

■ 'Emerging' artists get $$

Five artists will share $12,500 in grant money, thanks to the the Arts Council for Monterey County. The winners include visual artists **Efrain Jimenez**, **Jesus Nunez Navarroa** and **Natalia Corazza**, performing artist **Janice Rocke** and digital artist **Samantha Saldana**.

The money comes from the arts council's Local Emerging Artists Program. "This year, more than ever, we recognize how much the arts play in our social and emotional well-being to ease us through a crisis, executive director **Jacquie Atchison** said. "We are excited to see these artists expand their creativity with the support of these grants."

A painting by Hayley Armstrong of Carmel High, "Ellis of Monterey," will be displayed in Congressman Jimmy Panetta's office.

CALENDAR

June 12 – Saturday Music Series at The Barnyard. Live music noon to 3 p.m. every Saturday at the Barnyard Shopping Village, 3663 The Barnyard, Carmel. Local musicians perform in the gardens. No cover charge. www.thebarnyard.com

June-July 2021 – Time to book your summertime event at Baum & Blume! Our charming, intimate patio is perfect for celebrations up to 24 ~ Maybe it's a birthday, graduation, wedding rehearsal or ANY festive occasion …let us customize an event for you! Baum & Blume ~ 4 El Caminito Road, Carmel Valley. (831) 659-0400

June 23 – Aspire Health Plan Presents "Jump into Sewing," a Virtual Community Connections Class, 10 to 11 a.m. Always wanted to learn to sew? Or to get back into sewing? This is the class for you. Review basic terminology, materials and equipment. Discussion will include: how to choose a project, quilting,clothes making, patterns, and more. Register for this free class so we can know how many people to expect. RSVP to (877) 663-7651, or www.aspirehealthplan.org/connections2021

June 28 – Aspire Health Plan Presents "Meet the Author – Alka Joshi," a Virtual Community Connections Class, 2-3 p.m. The New York Times bestselling author will participate in a discussion about her book. Joshi is a graduate of Stanford University and received her M.F.A. from the California College of the Arts. She was born in India and now lives on the Monterey Peninsula with her husband. Register for this free event. RSVP to (877) 663-7651, or www.aspirehealthplan.org/connections2021

June 29 – Aspire Health Plan Presents: Discussion – Jo Mora, artist and longtime Monterey County local, a Virtual Community Connections Class, 10 to 11:30 a.m. Join Aspire Health and Peter Hiller for a presentation and audience discussion about artist Jo Mora whose roots run deep in Monterey County. Event is free. Register so we can know how many people to expect. RSVP to (877) 663-7651, or www.aspirehealthplan.org/connections2021.

PUBLIC NOTICES

FICTITIOUS BUSINESS NAME STATEMENT
File No. 20211327
Filing type: ORIGINAL FILING.
The following person(s) is(are) doing business as: **ROSYS HOUSE CLEANING, 850 Munras Ave., Suite #6, Monterey, California 93940.**
Mailing address: 254 Grant St., Marina, California 93933.
County of Principal Place of Business: MONTEREY.
Registered Owner(s):
ROSALBA CARDENAS PEREZ. 254 Grant St., Marina, California 93933.
This business is conducted by an individual.
The registrant commenced to transact business under the fictitious business name or names listed above on May 28, 2021.
S/Rosalba Cardenas Perez
Date: May 28, 2021
BY SIGNING, I DECLARE THAT ALL INFORMATION IN THIS STATEMENT IS TRUE AND CORRECT. A registrant who declares as true any materiel matter pursuant to Section 17913 of the Business and Professions Code the registrant knows to be false is guilty of a misdemeanor punishable by a fine not to exceed one thousand dollars ($1,000). ***I am also aware that all information on this statement becomes public record upon filing pursuant to the California Public Records Act (Government Code Sections 6250-6277).***
This statement was filed with the County Clerk of Monterey County on May 28, 2021.
NOTICE-In accordance with Subdivision (a) of Section 17920, a Fictitious Name Statement generally expires at the end of five years from the date on which it was filed in the office of the County Clerk, except, as provided in Subdivision (b) of Section 17920, where it expires 40 days after any change in the facts set forth in the statement pursuant to Section 17913 other than a change in the residence address of a registered owner. A new Fictitious Business Name Statement must be filed before the expiration. The filing of this statement does not of itself authorize the use in this state of a Fictitious Business Name in violation of the rights of another under Federal, State, or common law (See Section 14411 et seq., Business and Professions Code).
Publication dates: June 4, 11, 18, 25, 2021. (PC608)

FICTITIOUS BUSINESS NAME STATEMENT
File No. 20211333
Filing type: ORIGINAL FILING.
The following person(s) is(are) doing business as: **WINDMILL PRODUCE, 115 Monterey-Salinas Highway, Salinas, CA 93908.**
County of Principal Place of Business: MONTEREY.
Registered Owner(s):
JOSEPH OSCAR MURILLO.
RENATA BERNARDA MURILLO.
This business is conducted by a married couple.
The registrant commenced to transact business under the fictitious business name or names listed above on N/A.
S/Renata Bernarda Murillo
Date: May 28, 2021
BY SIGNING, I DECLARE THAT ALL INFORMATION IN THIS STATEMENT IS TRUE AND CORRECT. A registrant who declares as true any materiel matter pursuant to Section 17913 of the Business and Professions Code the registrant knows to be false is guilty of a misdemeanor punishable by a fine not to exceed one thousand dollars ($1,000). ***I am also aware that all information on this statement becomes public record upon filing pursuant to the California Public Records Act (Government Code Sections 6250-6277).***
This statement was filed with the County Clerk of Monterey County on May 28, 2021.
NOTICE-In accordance with Subdivision (a) of Section 17920, a Fictitious Name Statement generally expires at the end of five years from the date on which it was filed in the office of the County Clerk, except, as provided in Subdivision (b) of Section 17920, where it expires 40 days after any change in the facts set forth in the statement pursuant to Section 17913 other than a change in the residence address of a registered owner. A new Fictitious Business Name Statement must be filed before the expiration. The filing of this statement does not of itself authorize the use in this state of a Fictitious Business Name in violation of the rights of another under Federal, State, or common law (See Section 14411 et seq., Business and Professions Code).
Publication dates: June 4, 11, 18, 25, 2021. (PC611)

FICTITIOUS BUSINESS NAME STATEMENT
File No. 20211339
Filing type: ORIGINAL FILING.
The following person(s) is(are) doing business as: **PONICLOGIC, 395 Del Monte Center 106, Monterey, CA 93940.**
County of Principal Place of Business: MONTEREY
Registered Owner(s):
BRITTON ANTHONY McLEVIS. 395 Del Monte Center 106, Monterey, CA 93940.
This business is conducted by an individual.
The registrant commenced to transact business under the fictitious business name or names listed above on June 1, 2021.
S/Britton Anthony McLevis
Date: June 1, 2021
BY SIGNING, I DECLARE THAT ALL INFORMATION IN THIS STATEMENT IS TRUE AND CORRECT. A registrant who declares as true any materiel matter pursuant to Section 17913 of the Business and Professions Code the registrant knows to be false is guilty of a misdemeanor punishable by a fine not to exceed one thousand dollars ($1,000). ***I am also aware that all information on this statement becomes public record upon filing pursuant to the California Public Records Act (Government Code Sections 6250-6277).***
This statement was filed with the County Clerk of Monterey County on June 1, 2021.
NOTICE-In accordance with Subdivision (a) of Section 17920, a Fictitious Name Statement generally expires at the end of five years from the date on which it was filed in the office of the County Clerk, except, as provided in Subdivision (b) of Section 17920, where it expires 40 days after any change in the facts set forth in the statement pursuant to Section 17913 other than a change in the residence address of a registered owner. A new Fictitious Business Name Statement must be filed before the expiration. The filing of this statement does not of itself authorize the use in this state of a Fictitious Business Name in violation of the rights of another under Federal, State, or common law (See Section 14411 et seq., Business and Professions Code).
Publication dates: June 4, 11, 18, 25, 2021. (PC612)

FICTITIOUS BUSINESS NAME STATEMENT
File No. 20211279
Filing type: ORIGINAL FILING.
The following person(s) is(are) doing business as: **VISION BUILDERS, 590 Brunken Ave., Suite A, Salinas, CA 93901.**
County of Principal Place of Business: MONTEREY.
Registered Owner(s):
JARED DUKE TIKKER. 224 Wildwood Way, Salinas, California 93908.
This business is conducted by an individual.
The registrant commenced to transact business under the fictitious business name or names listed above on May 10, 2021.
S/Jared Duke Tikker
Date: May 21, 2021
BY SIGNING, I DECLARE THAT ALL INFORMATION IN THIS STATEMENT IS TRUE AND CORRECT. A registrant who declares as true any materiel matter pursuant to Section 17913 of the Business and Professions Code the registrant knows to be false is guilty of a misdemeanor punishable by a fine not to exceed one thousand dollars ($1,000). ***I am also aware that all information on this statement becomes public record upon filing pursuant to the California Public Records Act (Government Code Sections 6250-6277).***
This statement was filed with the County Clerk of Monterey County on May 21, 2021.
NOTICE-In accordance with Subdivision (a) of Section 17920, a Fictitious Name Statement generally expires at the end of five years from the date on which it was filed in the office of the County Clerk, except, as provided in Subdivision (b) of Section 17920, where it expires 40 days after any change in the facts set forth in the statement pursuant to Section 17913 other than a change in the residence address of a registered owner. A new Fictitious Business Name Statement must be filed before the expiration. The filing of this statement does not of itself authorize the use in this state of a Fictitious Business Name in violation of the rights of another under Federal, State, or common law (See Section 14411 et seq., Business and Professions Code).
Publication dates: June 4, 11, 18, 25, 2021. (PC613)

FICTITIOUS BUSINESS NAME STATEMENT
File No. 20211277
The following person(s) is(are) doing business as:
The DeLauras, 50300 Partington Ridge Rd., Big Sur, CA 93920,
County of Monterey
Registered Owner(s):
Kendal DeLaura, 50300 Partington Ridge Rd., Big Sur, CA 93920
This business is conducted by An individual
Registrant commenced to transact business under the fictitious business name listed above on 07/26/2018
S/ Kendal DeLaura
This statement was filed with the County Clerk of Monterey County on 05/20/2021
5/11, 6/18, 6/25, 7/2/21
CNS-3472566#
CARMEL PINE CONE
Publication dates: June 11, 18, 25; July 2, 2021. (PC616)

Lien Sale Auction Advertisement

Notice is hereby given that Pursuant to the California Self-Service Storage Facility Act, (B&P Code 21700 et. seq.), the undersigned will sell at public auction; personal property including but not limited to furniture, clothing, tools, and/or other misc. items
Auction to be held at **1pm** on **June 18, 2021** at
www.selfstorageauction.com.
The property is stored at:
Leonards Lockers 816 Elvee Dr Salinas Ca 93901.

NAME OF TENANTS

CARMEN LETICIA G BANDA
JESSICA RIVERA
ADAM LUJAN ORTIZ
DORA HERNANDEZ
DANIEL AGUERO
CHRISTOPHER JAMES RUDDY
ALMA MARINEZ
ELIZABETH LEE ANN DEBMON

Publication date: June 4 & 11, 2021 (PC609)

NOTICE OF PUBLIC HEARING
On California American Water's Urban Water Management Plan

California American Water will hold a public hearing on Thursday, June 17, 2021, on the final draft of the 2020 Urban Water Management Plan and Water Shortage Contingency Plans for its Monterey County District service area. **This service area includes the cities of Monterey, Pacific Grove, Carmel-by-the-Sea, Del Rey Oaks, Sand City, a portion of Seaside, Hidden Hills and Ryan Ranch subdivisions, Bishop subdivision including the area known as Laguna Seca Ranch Estates and vicinity, and certain unincorporated areas in the County of Monterey.** Copies of the plan will be available for public review, and public comment will be accepted. The hearing will be held online at 1:00 p.m., Thursday, June 17, 2021.

The link for this meeting is as follows: https://bit.ly/3bO0C7O
Or call in (audio only) +1 916-244-8157
Phone Conference ID: 187 057 3#

Draft plans are available for review in the customer notifications section of www.californiaamwater.com.

Publication dates: June 4 & 11, 2021 (PC604)

Notice is hereby given that at the next Regular Board meeting of the Carmel Area Wastewater District, held at the District office, 3945 Rio Road, P.O. Box 221428 Carmel, CA. 93922, on

9:00 a.m., Thursday, June 24, 2021

Via **ZOOM**. Please visit our website homepage at www.cawd.org and use Webinar ID# 876 7611 2791 & Password 149153 or call 1 (669) 900-9128 or 1 (346) 248-7799 to access.

The Board will publicly discuss and approve the:

FY 2021/22 Final Budget

No later than June 15, 2021, the full budget documents will be available on the District's web site www.cawd.org
Any member of the public may appear virtually at the meeting and be heard regarding any item in the recommended budget or for the inclusion of additional items.
All proposals for revisions must be submitted (written or oral) to the District Secretary before the close of the public meeting.

Publication dates: June 4 & 11, 2021 (PC610)

LEGALS DEADLINE: Tuesday 4:30 pm

K

Appendix K. Adopting Resolution

CALIFORNIA AMERICAN WATER

July 1, 2021

Attention: Coordinator, Urban Water Management Plans
California Department of Water Resources
1416 9th Street
Sacramento, CA 95814

Subject: Adoption of California American Water's Monterey County District 2020 Urban Water Management Plan and Water Shortage Contingency Plan

To Whom It May Concern:

This letter confirms that California American Water has formally adopted its 2020 Urban Water Management Plan and Water Shortage Contingency Plan for its Monterey County District as required by the California Water Code Section 10642. These plans will be submitted to the California Department of Water Resources for review.

Sincerely,

Ian C. Crooks
Vice President, Engineering
California American Water

ATTACHMENT B

Draft 6th Cycle Regional Housing Needs Allocation Plan 2023-2031

April 2022

Association of Monterey Bay Area Governments

AMBAG Board of Directors

Kristen Brown, City of Capitola, Councilmember
Karen Ferlito, City of Carmel-by-the-Sea, Councilmember
Kim Shirley, City of Del Rey Oaks, Councilmember
Scott Funk, City of Gonzales, Councilmember
Lance Walker, City of Greenfield, Mayor
Rick Perez, City of Hollister, Councilmember
Carlos Victoria, City of King City, Mayor Pro Tem
Lisa Berkley, City of Marina, Councilmember
Ed Smith, City of Monterey, Councilmember
Jenny McAdams, City of Pacific Grove, Councilmember
Steve McShane, City of Salinas, Councilmember
John Freeman, City of San Juan Bautista, Councilmember
Mary Ann Carbone, City of Sand City, Mayor
Justin Cummings, City of Santa Cruz, Councilmember
Derek Timm, City of Scotts Valley, Mayor
Jon Wizard, City of Seaside, Councilmember
Carla Strobridge, City of Soledad, Mayor Pro Tempore
Eduardo Montesino, City of Watsonville, Councilmember
John Phillips, County of Monterey, Supervisor
Mary Adams, County of Monterey, Supervisor
Bob Tiffany, County of San Benito, Supervisor
Bea Gonzales, County of San Benito, Supervisor
Greg Caput, County of Santa Cruz, Supervisor
Manu Koenig, County of Santa Cruz, Supervisor

2022 Officers

Kristen Brown, City of Capitola, President
Jenny McAdams, City of Pacific Grove, 1st Vice President
John Freeman, City of San Juan Bautista, 2nd Vice President

Ex-Officios

Scott Eades, California Department of Transportation (Caltrans), District 5 Richard Stedman, Monterey Bay Air Resources District (MBARD)
Mary Gilbert, San Benito County Council of Governments (SBtCOG)
Guy Preston, Santa Cruz County Regional Transportation Commission (SCCRTC)
Michael Tree, Santa Cruz Metropolitan Transit District (METRO)
Todd Muck, Transportation Agency for Monterey County (TAMC)
Lisa Rheinheimer, Monterey-Salinas Transit (MST)
Catherine Stedman, Central Coast Community Energy (CCCE)
LisAnne Sawhney, Monterey Peninsula Airport District (MPAD)

Acknowledgements

Many individuals aided in the preparation of the 6th Cycle RHNA Plan. In particular, AMBAG appreciated the cooperation and involvement of members of the Planning Directors Forum.

AMBAG Staff

Maura F. Twomey, Executive Director
Heather Adamson, Director of Planning, Project Manager
Paul Hierling, Senior Planner
Miranda Taylor, Planner

Table of Contents

Executive Summary

In August 2021, the California Department of Housing and Community Development (HCD) issued a Regional Housing Need Determination to the AMBAG region for the 6th Cycle planning period of June 30, 2023 to December 15, 2031 and determined that the region must zone to accommodate a minimum of 33,274 housing units during this period. California housing law (Government Code § 65580 et seq.) requires AMBAG, acting in the capacity of Council of Governments (COG), to develop a Regional Housing Needs Allocation (RHNA) Plan to allocate existing and projected housing needs to local jurisdictions within Monterey and Santa Cruz Counties.

Based on the final RHNA Plan, each city and county must update its housing element to demonstrate how the jurisdiction will meet the expected growth in housing need over this period of time. The table below shows the final regional housing need allocation for each jurisdiction in the AMBAG region, broken into four income categories.

Table 1 – RHNA for the AMBAG Region, June 30, 2023 to December 15, 2031

	Income Group Totals				RHNA
	Very Low	Low	Mod.	Above Mod.	Total
Region	7,868	5,146	6,167	14,093	**33,274**
Monterey County					
Carmel-By-The-Sea	113	74	44	118	**349**
Del Rey Oaks	60	38	24	62	**184**
Gonzales	173	115	321	657	**1,266**
Greenfield	101	66	184	379	**730**
King City	97	63	178	364	**702**
Marina	94	62	173	356	**685**
Monterey	1,177	769	462	1,246	**3,654**
Pacific Grove	362	237	142	384	**1,125**
Salinas	920	600	1,692	3,462	**6,674**
Sand City	59	39	49	113	**260**
Seaside	86	55	156	319	**616**
Soledad	100	65	183	376	**724**
Unincorporated Monterey	1,070	700	420	1,136	**3,326**
Santa Cruz County					
Capitola	430	282	169	455	**1,336**
Santa Cruz	859	562	709	1,606	**3,736**
Scotts Valley	392	257	154	417	**1,220**
Watsonville	283	186	521	1,063	**2,053**
Unincorporated Santa Cruz	1,492	976	586	1,580	**4,634**

Introduction

Since 1969, the State of California has required that all local governments (cities and counties) adequately plan to meet the housing needs of everyone in the community. The California Department of Housing and Community Development (HCD) issued a Regional Housing Need Determination to the AMBAG region for the 6th Cycle planning period of June 30, 2023 to December 15, 2031. HCD determined that the region must zone to accommodate a minimum of 33,274 housing units during this period. HCD calculates the regional determination using information provided by the California Department of Finance and the most recent U.S. Census Bureau data regarding overcrowding, cost burden, and vacancy rate. The regional determination includes an overall housing need number, as well as a breakdown of the number of units required in four income distribution categories.

Once HCD issues their determination, the Regional Housing Needs Allocation (RHNA) Plan establishes the total number of housing units that each city and county must plan for within the eight-year planning period. The allocation is based on factors that address the five statutory RHNA objectives, as described below. The RHNA methodology and RHNA Plan are part of the state-mandated housing element law (Government Code § 65580 et seq.). Based on the adopted RHNA, each city and county must update its housing element to demonstrate how the jurisdiction will meet the expected growth in housing need over this period of time.

This document, the RHNA Plan, officially assigns the allocations to cities and counties for two of the three counties within the Monterey Bay Area, Monterey and Santa Cruz Counties. San Benito County conducts a separate RHNA, as explained below. The RHNA process and describes the adopted RHNA methodology including total unit allocations and allocations by income category. This plan also describes how the allocation meets the five statutory RHNA objectives. The appendix includes documents that were part of the planning process such as official correspondence from HCD regarding the regional determination and methodology review, AMBAG Board agenda items, and results of a statutorily-required jurisdiction survey. The table above shows the result of this planning process—an allocation of housing units by income level that jurisdictions plan to accommodate in their housing elements over the June 30, 2023 to December 15, 2031 timeframe.

Housing Element Law and RHNA Objectives

State housing element law, Government Code § 65584 (d), requires the RHNA to be consistent with five objectives:

1. Increasing the housing supply and the mix of housing types, tenure, and affordability in all cities and counties with the region in an equitable manner, which shall result in all jurisdictions receiving an allocation of units for low- and very low income households.
2. Promoting infill development and socioeconomic equity, the protection of environmental and agricultural resources, the encouragement of efficient development patterns, and the achievement of the region's greenhouse gas reductions targets provided by the State Air Resources Board pursuant to § 65080.
3. Promoting an improved intraregional relationship between jobs and housing, including an improved balance between the number of low-wage jobs and the number of housing units affordable to low-wage workers in each jurisdiction.
4. Allocating a lower proportion of housing need to an income category when a jurisdiction already has a disproportionately high share of households in that income category, as compared to the countywide distribution of households in that category from the most recent American Community Survey.
5. Affirmatively furthering fair housing.

As explained below, AMBAG's Metropolitan Transportation Plan and Sustainable Communities Strategy (MTP/SCS) and its RHNA are consistent with these objectives.

The Metropolitan Transportation Plan/Sustainable Communities Strategy and RHNA

Senate Bill (SB) 375, passed into state law in 2008, requires the coordination of housing planning with regional transportation planning through the MTP/SCS. This requires consistency in growth forecasts for land use, housing, and transportation purposes. In prior plans, the RHNA and the MTP were prepared independently and had different timelines and planning periods. SB 375 requires that the RHNA and MTP/SCS process be undertaken together in order to integrate housing, land use, and transportation planning to ensure that the state's housing goals are met and to help reduce greenhouse gas emissions (GHG) from cars and light duty trucks. The goal of this integrated planning is to create opportunities for residents of all incomes to have access to jobs, housing, services, and other common needs by a variety of means, including public transit, walking, and bicycling.

Prior to SB 375, RHNA was updated every five years and the MTP was updated every four years. Because SB 375 requires better coordination between transportation planning with land use and housing planning, the RHNA process is now tied to the adoption of every two cycles of the regional MTP/SCS. As a result, the RHNA Plan must be adopted every eight years, aligning with the adoption of the MTP/SCS. This also means that each city and county with a compliant

housing element will update its housing element every eight years instead of every five years, as required before SB 375.

2022 Regional Growth Forecast

As the MPO, AMBAG carries out many planning functions for the tri-county area including development and maintenance of the regional travel demand model (RTDM), long range transportation planning and programming, and acting as a regional forum for dialogue on issues facing the region. Most of AMBAG's projects are carried out in support of these major functions, including but not limited to the regional growth forecast. AMBAG develops the forecast with a horizon year that matches the planning timeline of the MTP/SCS and the model years for the RTDM. In addition to informing MTP/SCS, the regional growth forecast (RGF) is an important reference point in the RHNA process.

The 2045 MTP/SCS includes a planning period through 2045. The years forecasted include 2025, 2030, 2035, 2040, and 2045. The forecast uses a model that predicts employment growth using a shift-share model based on local data as well as state and national trends. Population growth is then driven by employment growth. Household and housing growth are driven by population growth, demographic factors and external factors. This approach was vetted and approved by the AMBAG Board of Directors in 2014 for use in the metropolitan transportation plan, Moving Forward 2035 Monterey Bay. The framework was used again in 2018 for Moving Forward 2040 Monterey Bay, and remains in use in 2022. While the methodology for the 2022 RGF has remained the same through three planning cycles, the models have been updated for the Moving Forward 2045 Monterey Bay Plan to include current data, a revised base year of 2015 and a new horizon year of 2045.

Process for Development of the 2023-2031 Regional Growth Forecast

In consultation with local planning departments, AMBAG prepared an estimated 2045 growth forecast for the region. The Planning Directors Forum was the primary venue for ongoing coordination between local agency planning staff and AMBAG; however, a number of jurisdiction-specific meetings and comment periods also were held, including over 100 one-on-one meetings held by AMBAG staff with each of the jurisdictions, the University of California, Santa Cruz, and the California State University, Monterey Bay. The development of the 2022 Regional Growth Forecast and the methodology is documented in detail as part of the 2045 MTP/SCS. Both of these documents can be found on the AMBAG website.

Geography

The local jurisdictions addressed in the RHNA process for the AMBAG region include the sixteen incorporated cities and two counties as shown in Table 3. University of California Santa Cruz, California State University Monterey Bay, the Salinas Valley State Prison (SVSP), the Correctional Training Facility (CTF) in Soledad, the Defense Language Institute (DLI), the Naval Post Graduate School (NPS) are not allocated any regional housing need since they are not city or county agencies, located on State or federal lands, and considered exempt entities not part of the RHNA process.

The AMBAG RHNA area is predominantly rural, with urban development clustered long the Monterey Bay coastline and in agricultural inland valleys along US 101. Major urban development in the Monterey Bay Area primarily occurs along the Bay coastal plains and foothills of the Monterey Peninsula from the City of Santa Cruz in the north to the City of Carmel-by-the-Sea to the south. The Santa Cruz, Watsonville, Seaside-Monterey, and Salinas urbanized areas are the most densely developed in the region.

Table 3: Cities and Counties Participating in the AMBAG RHNA Process

Carmel-by-the-Sea	Del Rey Oaks	Gonzales	Greenfield
King City	Marina	Monterey	Pacific Grove
Salinas	Sand City	Seaside	Soledad
Capitola	Santa Cruz	Scotts Valley	Watsonville
County of Monterey	County of Santa Cruz		

A substantial portion of the AMBAG area is forested and hence at an elevated risk of fire. Large forests and wooded areas border many cities and are prevalent throughout County unincorporated areas. In 2020, the Santa Cruz County area was affected by one of the top 20 most destructive fires in California history, destroying 1,490 structures including homes, burning over 86,000 acres of rural forested land including multiple unincorporated communities and towns. In 2016, the Soberanes Fire in Monterey County burned over 132,000 acres and dozens of homes, and in 2020, the Dolan Fire in Monterey County burned over 124,000 acres. These risks make developing housing in suburban and rural areas near forested areas particularly difficult.

Many population centers in the Monterey Bay Area are located on the coast and subject to flooding due to continuing sea level rise. During the plan period, the coastal region in AMBAG will be affected by sea level rise according to the National Oceanic and Atmospheric Administration (NOAA). This threatens existing housing, and limits where new housing can be constructed. Jurisdictions affected include Santa Cruz, Capitola, the County of Santa Cruz,

Marina, Seaside, Sand City, Monterey, Pacific Grove, Carmel, and the County of Monterey. Also affected are the unincorporated communities of Aptos, Live Oak, Moss Landing, and Pebble Beach.

Figure 1: Map of AMBAG RHNA Area

Process for Developing RHNA

The State of California, through the Housing and Community Development Department (HCD), issued a Regional Housing Needs Determination to AMBAG for Monterey and Santa Cruz Counties (see Appendix 4 for the letter of determination). HCD calculated the regional determination using information provided by the California Department of Finance. The regional determination includes an overall housing need number, as well as a breakdown of the percentage of units required in four income distribution categories, as further defined below. The region's overall allocation for Monterey and Santa Cruz Counties is 33,274 housing units. San Benito County receives its own Regional Housing Needs Determination (RHND) from HCD and must complete its own RHNA.

San Benito County

The state mandate for distributing the RHNA is tied to the state designation of a Council of Governments (COG). Each COG is expected to distribute the RHNA to their member jurisdictions. AMBAG is the Metropolitan Planning Organization for the Counties of San Benito, Santa Cruz, and Monterey and has prepared a 2045 MTP/SCS for the tri-county region. However, it is the COG for only the Counties of Santa Cruz and Monterey. For this reason HCD makes a separate determination for San Benito County and tasks the San Benito County Council of Governments (SBtCOG) with developing its own RHNA Plan. AMBAG does coordinate with SBtCOG so that its RHNA Plan is consistent with the 2045 MTP/SCS.

AMBAG's Role in RHNA

Based on the regional determination provided by HCD, AMBAG must develop the allocation of units to each jurisdiction, along with the plan document that contains the allocations. It is AMBAG's responsibility to coordinate with HCD prior to its determination of the regional housing need. Once AMBAG receives the regional determination, including the overall need number and the income category distribution, it must adopt a methodology for distributing the regional growth number throughout the region. The methodology is the basis for the final RHNA Plan that AMBAG adopts.

The methodology used for the RHNA distribution is developed in coordination with the local jurisdictions via the Planning Directors Forum and the AMBAG Board of Directors, as well as with input from the public. The state mandated RHNA Plan establishes the total number of housing units that each city and county must plan for within the eight-year planning period broken into four income categories as described above. Based on the adopted RHNA, each city and county must update its housing element by December 2023.

Importance of RHNA for Local Governments

RHNA allows communities to anticipate growth so that the region can grow in ways that enhance quality of life, improve access to jobs, promote transportation mobility, and address fair share housing needs for all members of the community. Local governments were key to the development of the RHNA allocation methodology and will determine how their jurisdiction's allocation will be accommodated through their Housing Elements.

Once it receives its allocation, each local government must update the Housing Element of its General Plan and its zoning to show how it plans to accommodate its RHNA requirements and meet the housing needs in its community. It is in the community's Housing Element that local governments make decisions about where future housing units could be located and the policies and strategies for addressing specific housing needs within a given jurisdiction, such as

addressing homelessness, meeting the needs of specific populations, affirmatively furthering fair housing, or minimizing displacement. Having a sufficient and housing element compliant with HCD requirements is also critical to securing and maintaining state funding for their community.

State funding programs often consider a local jurisdiction's compliance with housing element law. These competitive funds can be used for fixing roads, adding bike lanes, improving transit, or providing much needed affordable housing to communities. In some cases, funding from state/federal housing programs can only be accessed if the jurisdiction has a compliant housing element. In other cases, a compliant housing element allows grant applicants to receive extra points on their application if they do have a compliant housing element, increasing their chances in the competitive application process. Moving forward, more state grant funds may include housing element compliance factors. State funds which tie housing element compliance to eligibility or scoring include the following:

- Community Development Block Grant Program
- Infill Infrastructure Grant Program
- Local Housing Trust Fund Program
- Affordable Housing and Sustainable Communities Program
- Permanent Local Housing Allocation Program
- Caltrans Sustainable Communities Grant Program
- Local Partnership Program
- Transit and Intercity Rail Capital Program
- Active Transportation Program
- Solutions for Congested Corridors Program
- HOME Investment Partnerships Program

The Regional Housing Needs Determination (RHND)

The California Department of Housing and Community Development (HCD) identifies the total number of homes for which each region in California must plan in order to meet the housing needs of people at all income levels. The total number of housing units from HCD is separated into four income categories that cover everything from housing for very low-income households all the way to market rate housing. AMBAG is responsible for developing a methodology to allocate a portion of this housing need to every local government in the region.

The four income categories included in the RHND are:

- Very Low Income: Less than 50% of Area Median Income
- Low Income: 50-80% of Area Median Income
- Moderate Income: 80-120% of Area Median Income
- Above Moderate Income: 120% or more of Area Median Income

In a letter dated August 31, 2021 the California Department of Housing and Community Development (HCD) provided AMBAG with the RHND for use in this cycle of RHNA (See appendix 4).

Table 2: RHND from HCD for AMBAG – June 30, 2023 to December 15, 2031

Income Category	Percent	Housing Unit Need
Very-Low*	23.6%	7,868
Low	15.5%	5,146
Moderate	18.5%	6,167
Above-Moderate	42.4%	14,093
Total	**100.0%**	**33,274**
*Extremely-Low	13.1%	Included in Very-Low Category

Income Distribution: Income categories are prescribed by California Health and Safety Code (§ 50093, et. Seq.). Percentages are derived based on Census/ACS reported household income brackets and county median income.

The RHND is based on a population and household forecast for the region from the California Department of Finance (DOF) and the application of specific adjustments to determine the total amount of housing needs for the region. Certain adjustments are a result of recent legislation that sought to incorporate an estimate of existing housing need, per Government Code 65584.01, shown below.

- The vacancy rates in existing housing stock, and the vacancy rates for healthy housing market functioning and regional mobility, as well as housing replacement needs. For purposes of this subsection, the vacancy rate for a healthy rental housing market shall be considered no less than 5 percent.
- The percentage of households that are overcrowded and the overcrowding rate for a comparable housing market. For purposes of this subparagraph:
    - The term “overcrowded” means more than one resident per room in each room in a dwelling.
    - The term “overcrowded rate for a comparable housing market” means that the overcrowding rate is no more than the average overcrowding rate in comparable regions throughout the nation, as determined by the council of governments.
- The percentage of households that are cost burdened and the rate of housing cost burden for a healthy housing market. For the purposes of this subparagraph:
    - The term “cost burdened” means the share of very low, low-, moderate-, and above moderate-income households that are paying more than 30 percent of household income on housing costs.

- The term “rate of housing cost burden for a healthy housing market” means that the rate of households that are cost burdened is no more than the average rate of households that are cost burdened in comparable regions throughout the nation, as determined by the council of governments.

The RHNA process only considers the needs of the population in households who are housed in the regular housing market, and excludes the population living in group quarters, which are non-household dwellings, such as jails, nursing homes, dorms, and military barracks. HCD uses the age cohorts of the forecasted population from the California Department of Finance to understand the rates at which people are expected to form households. This can vary for people at different stages of life. This results in the estimate of the total number of households that will need a housing unit in 2031, which is the end date of the projection period for AMBAG’s RHNA cycle.

The total number of projected households is then adjusted using the factors related to vacancy rate, overcrowding, and an estimate of the need for replacement housing for units that were demolished or lost. These adjustments result in a forecast of the number of housing units that will be needed to house all households in the region in 2031. The number of expected occupied housing units at the beginning of the RHND period is subtracted from the total number of housing units needed, which results in the number of additional housing units necessary to meet housing demand. The final step is an adjustment related to cost-burdened households, which leads to the total RHND.

Distributing the RHNA and Income Categories

California’s Housing Element Law (Government Code § 65580 et seq.) mandates that AMBAG develop and approve a RHNA methodology and RHNA Plan for Monterey and Santa Cruz Counties and the cities within. Once AMBAG receives the regional determination, including the overall need number and the income category distribution, it must adopt a methodology for distributing those numbers throughout the region. The methodology is the basis for the final RHNA Plan that AMBAG adopts.

The RHNA has two parts as required by state law:

- Overall Allocation: AMBAG receives a total housing unit number for growth during the planning period for Monterey and Santa Cruz Counties. AMBAG is required to distribute this regional housing growth number to the jurisdictions within the region for the period from January 30, 2023 to December 15, 2031.
- Income Category Distributions: HCD also provides a household income distribution of the total regional housing unit number. As defined by state law, four income categories

make up this distribution: very low income (less than 50 percent area median income [AMI]); low income (50 to 80 percent AMI); moderate income (80 to 120 percent AMI); and above moderate income (above 120 percent AMI). The total housing unit growth AMBAG allocates to each jurisdiction must be further allocated into the four household income categories.

Coordination with Jurisdictions

The most critical factor in the RHNA process is the development of the methodology for allocating housing units within the region. The meetings of the regional Planning Directors Forum, comprised of local government planning staff but open to the public, served as the forum for the technical development of the draft methodologies. The Planning Directors Forum met monthly and provided input on approaches to different methodologies. AMBAG staff developed different methodology options for inquiry, review, and input from the planning directors. The AMBAG Board of Directors received regular updates on the development of the RHNA and the methodologies being considered. Of the various methodologies discussed at the Planning Directors Forum and the Board of Directors' meetings, the methodology emphasizes AFFH and a balanced jobs/housing ratio was selected as the preferred method and was recommended to the Board of Directors. The Board of Directors approved this methodology on April 13, 2022.

Coordination with Regional Stakeholders and the Public

The methodology used in this RHNA allocation was discussed multiple times at the Board of Directors and the Planning Directors Forum as well as presented at city council meetings and other stakeholder meetings. In addition, specific recommendations from the public were included in the selected methodology. These groups expressed support for the methodology and indicated that it was a good representation of housing need in the region. Opportunities for public comment were provided at all Board of Directors and Planning Directors Forum meetings.

Timeline

The RHNA Plan is scheduled for adoption by the AMBAG Board of Directors in Fall 2022. Based on state statutory timelines prescribed in Government Code § 65584.04, below are the key milestones dates for the RHNA:

- February 2021 to December 2021 – The Planning Directors Forum, comprised of the planning directors and local government planners for all of the cities and counties in the region, met seven times over eleven months to discuss RHNA and to develop and evaluate draft RHNA methodologies. The AMBAG Board of Directors were informed

regularly on the development of the different draft methodologies. As meetings open to the public, these meetings also served as opportunities for the public and advocacy groups to provide comments on the process.

- June 2021 to January 2022 – The Board of Directors met seven times over eight months to review progress on the RHNA methodologies, take input from the Planning Directors Forum, and provide feedback on the process. As meetings open to the public, these meetings also served as opportunities for the public and advocacy groups to provide comments on the process.
- January 12, 2022 – The AMBAG Board of Directors adopted the draft RHNA methodology.
- April 13, 2022 – Approval of the final RHNA methodology by the AMBAG Board
- April 22, 2022 – Draft RHNA plan released with RHNA allocations by jurisdictions
- April 22 to June 6, 2022 – Local jurisdictions and HCD may appeal RHNA allocation within 45 days of release of the draft RHNA plan/allocations
- May 2022 – AMBAG releases final 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) accommodating RHNA
- June 7 to July 22, 2022 - Local jurisdictions and HCD may comment on appeals within 45 days of the close of the appeal period (if appeal(s) are received)
- June 8, 2022 – Adoption of Final 2045 MTP/SCS by AMBAG Board
- August 10, 2022 - Adoption of Final 2023-31 RHNA Plan with RHNA allocations by AMBAG Board (if no appeal(s) are received)
- August 10, 2022 - AMBAG to hold public hearing on appeals (if appeals are received)
- September 23, 2022 - AMBAG makes final determination that accepts, rejects, modifies appeals and issues final proposed allocation plan
- October 12, 2022 - Adoption of Final 2023-31 RHNA Plan with RHNA allocations by AMBAG Board (if appeal(s) are received)
- December 15, 2023 - Jurisdiction’s 6th Cycle Housing Elements are due to HCD

Housing Elements

Once a local government has received its final RHNA from AMBAG, it must revise the Housing Element of its general plan and update zoning ordinances to accommodate its portion of the region's housing need. For this cycle, that process must be completed by December 2023. Communities are also required to report their progress to HCD annually.

The four income categories, as listed above, must be addressed in a jurisdiction’s housing element. Specifically, accommodations must be made to ensure that the jurisdiction provides

sufficient zoning capacity to accommodate the projected housing need in each income category. For the very low and low income categories, jurisdictions generally are required to identify sites (constructed or vacant) zoned at multifamily residential densities.

It is important to note that each jurisdiction is responsible for providing sufficient zoning capacity for the units allocated to all four economic income categories, but is not responsible for the construction of these units. The intent of the housing element law is to ensure that jurisdictions do not impede the construction of housing in any income category. Other factors, such as market forces, are beyond a jurisdiction's control and have considerable influence over whether or not housing units in each income category are actually constructed. The HCD website contains more information about Housing Element compliance at https://www.hcd.ca.gov/community-development/housing-element/index.shtml.

Adopted RHNA Methodology and Distribution

Once HCD issued the Regional Housing Need Determination of 33,274 housing units for our region, state housing element law required AMBAG to formulate a methodology to assign a share of the RHND to each jurisdiction in the region. The RHNA methodology was approved by the Board of Directors on April 13, 2022. Before asking the Board to approve a methodology AMBAG reviewed all of the HCD approved RHNA methodologies to date for the 6th Cycle from other COGs and presented the results to the Planning Directors Forum and the Board. The list of options was refined and narrowed with recommendations from the Planning Directors Forum before presentation to the Board. The final methodology that was chosen distributes the RHNA based on the RGF, AFFH, jobs/housing balance, jobs, climate resiliency, and transit service. Using this method creates a direct tie to the objectives of the Housing Element law as well as the goals and concepts in the 2045 MTP/SCS.

RHNA Methodology

This section describes the draft methodology that the AMBAG Board of Directors approved on January 12, 2022. Appendix 1 provides the RHNA unit and income allocation estimates based on the approved draft methodology. To satisfy the requirements of Government Code § 65584.04(a) AMBAG, in consultation with HCD staff, elected to pursue a three-step methodology. The first and second steps allocates the total number of units for the AMBAG region. The third step allocates by income category.

First Step in RHNA Methodology: 2022 Regional Growth Forecast Base Allocation

This RHNA methodology allocates a portion of housing units (6,260) based on data for projected housing growth for the four-year RHNA planning period from the 2022 Regional Growth Forecast (RGF). The 2022 RGF was used in the 2045 Metropolitan Transportation Plan/Sustainable

Communities Strategy (MTP/SCS). The use the 2022 RGF data is important to meeting the RHNA plan statutory objectives of protecting environmental and agricultural resources and achieving the region's greenhouse gas reduction targets. (Gov. Code, § 65584(d)(2).) Use of the 2022 RGF ensures that this RHNA methodology is consistent with the 2045 MTP/SCS, which was released for public review and comment in November 2021.

The 2022 RGF is the most accurate growth forecast available for the region, is more granular than any other available projections, included significant quality control, was reviewed and approved by executive planning staff in all jurisdictions for accuracy, and was accepted by the AMBAG Board. This supports the furtherance of a RHNA plan statutory objective, which focuses on promoting infill development and socioeconomic equity, the protection of environmental and agricultural resources, the encouragement of efficient development patterns, and the achievement of the region's greenhouse gas reductions targets. (Gov. Code, § 65584.04(d)(2).)

The 2022 RGF allocation step is just one element in the RHNA methodology; jobs, jobs/housing balance, transit, resiliency, and AFFH are all used to allocate housing units, which go above and beyond existing jurisdictions' general plans. In fact, HCD's 6th Cycle RHND of 33,274 units is higher than the number of units that jurisdictions within the AMBAG region have planned for through 2050, so general plan changes will be necessary and are not precluded by using the 2022 RGF as a part of the allocation.

The data source for this factor is described below:

- 2022 RGF: Housing growth from 4-year RHNA period from the AMBAG 2022 RGF (accepted for planning purposes by the AMBAG Board in November 2020), based on California Department of Finance (2020)
    - The full RGF can be found at the following location: https://ambag.org/sites/default/files/2021-11/PDFAAppendix%20A_2022%20RGF.pdf and https://www.ambag.org/plans/regional-growth-forecast

Second Step in RHNA Methodology: Jobs, Jobs/Housing Balance, Transit, Resiliency, and AFFH Unit Allocation

The second step in the RHNA methodology allocates the remaining units (27,014) for the AMBAG region by the following categories: 15% jobs (4,000 units), 31% jobs/housing (8,449 units), 4% transit (1,038 units), 8% resilience (2,075 units), and 42% of AFFH (11,452 units). The draft methodology presented here is the result of several rounds of methodology revision to include

feedback from the AMBAG Board, Planning Directors forum, and the community. Revisions also accommodated additional feedback from the public and HCD staff, including adding jobs/housing and AFFH factors and reducing the weight of the RGF in the allocation.

Another revision made to reflect suggestions from HCD staff was to include both the California State Treasurer's Tax Credit Allocation Committee (TCAC) and Racially Concentrated Areas of Affluence (RCAA) data to calculate the AFFH allocation factor for incorporated jurisdictions

Data sources used for this second step in the RHNA methodology are described below.

- Employment: AMBAG 2022 RGF, based on InfoUSA and California Employment Development Department (2020)
    - Jobs data reflects the pre-pandemic distribution of employment opportunities throughout the AMBAG region. Future job growth in Monterey and Santa Cruz Counties is expected to be concentrated in the same areas. Since such a large share of the region's jobs are agricultural, allocating based on jobs helps the region address the housing needs of farmworkers. (Gov. Code, § 65584.04(e)(8).)
    - Focusing a significant share of the RHNA allocation on jobs helps to correct existing jobs/housing imbalances.
- Jobs-Housing Ratio: Number of jobs in 2020 divided by number of housing units, both jobs and housing data are from AMBAG 2022 RGF, based on InfoUSA and California Employment Development Department, and California Department of Finance (2020).
- Transit: Existing (2020) transit routes with 15- and 30-minutes headways, based on existing transit routes and stops from transit operators
    - While the AMBAG region does not have the kind of extensive transit system found in larger urban areas, transit access is important for the sustainability of future growth.
    - Focusing future developing in areas with the region's highest quality transit promotes infill development and encourages efficient development patterns. (Gov. Code, § 65584(d)(2).)
- Resiliency: Percent not in high fire risk or 2' sea level rise risk, CALFIRE, California Public Utilities Commission (CPUC), and National Oceanic and Atmospheric Administration (NOAA)
    - The AMBAG region includes areas at great risk due to climate change, including areas at high risk of wildfire and areas at risk of inundation due to sea level rise. These constraints to development must be considered as the region plans for climate change.

    - This factor furthers the objective of promoting infill development, protecting environmental resources, and encourages efficient development patterns. (Gov. Code, § 65584(d)(2).)
- Affirmatively Furthering Fair Housing Unit Allocation: The AFFH factor is the average of a jurisdiction's RCAA and TCAC score for incorporated jurisdictions, both of which are explained below. For unincorporated areas the AFFH factor is the TCAC score alone and does not include RCAA. Given the size of the unincorporated areas, TCAC better reflects the diversity of high- and low-income communities within the unincorporated areas. Jurisdictions qualifying as RCAAs, partial RCAAs, or TCAC Opportunity Areas are shown in Appendix 2.
    - RCAA: Jurisdictions with higher than the regional average for percentage above 200% of the poverty level and percentage white are defined as RCAAs. Jurisdictions that qualify under one category receive a partial allocation. Data was utilized from the U.S. Census Bureau, American Community Survey (2015-2019) and 2020 Census.
    - TCAC: This score reflects the percent of each jurisdiction's households in high/highest opportunity areas. Data was used from the TCAC Opportunity Map Database (2021) and U.S. Census Bureau, American Community Survey (2015-2019).

Third Step in RHNA Methodology: Income Allocation

Addressing the socioeconomic disparities of the AMBAG region's member jurisdictions was a key focus of the income allocation methodology. Though jurisdiction level disparities cannot be completely corrected within a single RHNA cycle, Planning Directors Forum and AMBAG Board members recommended allocating a high weight to this factor.

There are several ways to measure socioeconomic disparities across jurisdictions. After considering alternatives, the AMBAG Board of Directors suggested a measure of Racially Concentrated Areas of Affluence (RCAA), based on data from the U.S. Census Bureau and a framework described by the U.S. Department of Housing and Urban Development. Using the most recent data available from the U.S. Census Bureau, jurisdictions that are both high income (higher than the regional average for percentage above 200% of the poverty level) and racially-concentrated (above the regional average for percent white non-Hispanic) are defined as RCAAs. Jurisdictions that were either higher income or racially-concentrated, but did not meet both criteria, were identified as "partial RCAA." Consensus from the PDF was that the RCAAs analysis better reflected the AMBAG region's areas of opportunity than alternative measures such as the HCD/TCAC Opportunity Map data.

The third step of the methodology shifts Above Moderate units to Very Low and Moderate units to Low in jurisdictions that qualify as RCAAs. This results in RCAA jurisdictions getting a higher share of their RHNA in the lower income categories. In the draft methodology presented here, just over 53% of the RHNA allocation is Very Low or Low income in jurisdictions that are RCAAs. In partial RCAA jurisdictions, approximately 38% of the RHNA allocation is Very Low or Low income. The comparable share for non-RCAA jurisdictions is less than 23%.

The data sources used for this step are described below.

- AFFH Income Allocation: U.S. Census Bureau, American Community Survey (2015-2019) and 2020 Census

RHNA Objectives

The following section summaries how the development of the RHNA allocation methodology and the income group allocation methodology satisfies the five objectives. Development of the RHNA allocation methodology and the income group allocation methodology was focused on satisfying the five RHNA objectives (Govt. Code §65584(d)(1-5). Appendix 1 illustrates the methodology in further detail.

1. *Increase the housing supply and the mix of housing types, tenure, and affordability in all cities and counties within the region in an equitable manner, which shall result in each jurisdiction receiving an allocation of units for low- and very low-income households.*

The 6th Cycle RHNA methodology allocates units to all jurisdictions in the AMBAG region. The proposed RHNA methodology affirmatively furthers fair housing by allocating units based on TCAC/RCAA data and by allocating a larger share of very low and low income housing in jurisdictions that have an above-average share of households in advantaged areas.

To promote a mix of housing types, the methodology adjusts jurisdictions' allocations by income levels, and provides larger shares of very low- and low-income categories to jurisdictions that have historically been racially concentrated areas of affluence (Carmel by the Sea, Del Rey Oaks, Monterey, Pacific Grove, unincorporated Monterey County, Scotts Valley, and unincorporated Santa Cruz). Jurisdictions which already contain a disproportionately high share of very low and low income households are allocated higher proportions of moderate and above-moderate housing allocations. In accordance with State law, each jurisdiction is allocated housing in all four income groups.

2. *Promoting infill development and socioeconomic equity, the protection of environmental and agricultural resources, the encouragement of efficient development patterns, and the achievement of the region's greenhouse gas reductions targets provided by the State Air Resources Board pursuant to Section 65080.*

The methodology directly complements the region's SCS which seeks to reduce greenhouse gases emitted by light-duty vehicles. AMBAG's SCS achieves the required greenhouse gas emissions (GHG) with a critical strategy that addresses the region's jobs-housing imbalance. AMBAG achieves its GHG target of a 6% reduction per capita for 2035. AMBAG's SCS promotes infill development, socioeconomic equity, and the protection of agricultural resources. In excess of 76% of the region's determination is allocated to incorporated cities, thereby advancing this objective by promoting infill development. In addition, the allocation provided to the unincorporated counties could reasonably be assumed to be accommodated within currently developed areas. In its planning survey responses, both Monterey and Santa Cruz Counties noted that substantial proportions of their unincorporated areas are preserved or protected from urban development as conservation land, state parks, federal ownership, via land trusts, or are protected under federal and state species protection regulations or under the Williamson Act. This largely constrains new development in the unincorporated areas. Much of the existing development in the unincorporated counties is indistinguishable to that of the abutting cities; therefore, it is not expected to place demand on transportation inefficient parcels of land.

By allocating 4% of RHNA by transit, the methodology further promotes more housing in jurisdictions with better transit access, which will further reduce GHG emissions and promote efficient development patterns. By allocating 8% of RHNA using a resiliency factor, the methodology promotes protection of coastal and forest areas by shifting allocations away from these sensitive environmental resources.

3. *Promoting an improved intraregional relationship between jobs and housing, including an improved balance between the number of low-wage jobs and the number of housing units affordable to low-wage workers in each jurisdiction.*

By allocating a substantial share of the RHND based on jobs (15%) and jobs/housing balance (31%), AMBAG's methodology directly addresses the imbalance between jobs and housing. The methodology allocates a majority of units to jurisdictions with jobs-to-housing imbalances.

4. *Allocating a lower proportion of housing need to an income category when a jurisdiction already has a disproportionately high share of households in that income category, as compared to the countywide distribution of households in that category from the most recent American Community Survey.*

Addressing the income-equity disparities of the region's jurisdictions was a key focus of the income allocation methodology. Though jurisdiction-level disparities cannot be completely corrected within a single RHNA cycle, PDF members recommended, and the AMBAG Board of Directors assured this was a significant consideration within the RHNA.

Using the RCAA and TCAC adjustments for AFFH, the RHNA places a higher proportion of very low and low income units in more affluent areas which have a shortage of these types of units. This shift necessarily allocated a significant portion of very low and low income units away from jurisdictions which a preponderance of lower income units, placing more moderate and above moderate units in these communities. The AMBAG methodology directs a higher share of total units to TCAC/RCAA jurisdictions, and a higher share of lower income housing to RCAA jurisdictions. In RCAA jurisdictions, more than 53% of the RHNA allocation is Very Low or Low income. In partial RCAA jurisdictions, approximately 38% of the RHNA allocation is Very Low or Low income. The comparable share for non-RCAA jurisdictions is less than 23%.

5. *Affirmatively furthering fair housing.*

The proposed RHNA methodology affirmatively furthers fair housing by allocating units based on TCAC and RCAA data. The proposed RHNA methodology allocates a large portion of the RHNA (42% of the total allocation) based on AFFH. The methodology assigns additional units to jurisdictions that are above the regional average for percentage of population about 200% of the poverty level and/or which have a higher racially concentrated white population than the regional average and/or have areas of high/highest opportunity. The methodology also focuses a larger share of very low and low income housing in jurisdictions that have an above-average share of advantaged households, as described in Objective 4 above.

RHNA Methodology Metrics

AMBAG evaluated the draft methodology to ensure that it performed well in meeting all of the RHNA objectives. Appendix 3 highlights how the draft methodology supports and furthers the RHNA objectives.

RHNA Factors

To the extent that sufficient data is available, the COG must consider 13 factors when developing the methodology that allocates regional housing needs. The following section summaries how the development of the RHNA allocation methodology satisfies the 13 factors.

1. *Each member jurisdiction's existing and projected jobs and housing relationship. This shall include an estimate based on readily available data on the number of low-wage jobs within the jurisdiction and how many housing units within the jurisdiction are affordable to low-wage workers as well as an estimate based on readily available data, of projected job growth and projected household growth by income level within each member jurisdiction during the planning period.*

The final RHNA methodology directly incorporates each jurisdiction's existing and projected jobs-housing relationship in both the baseline allocation and the allocation factors. Forecasts from the

MTP/SCS 2045 inform the baseline allocation. The final RHNA methodology improves jobs-housing balance by using factors related to job proximity to allocate a significant portion of the RHND. These factors direct housing units to those jurisdictions, allocating 31% of units to areas with jobs to housing imbalances (higher jobs/housing ratios). The methodology also allocates 42% of units based on AFFH, placing more units in higher income areas which correspond to areas with lower jobs to housing ratios. The final RHNA methodology helps to create a more balanced relationship between housing and jobs by directing RHNA units to job-rich jurisdictions and jurisdictions with the most imbalanced jobs-housing fit. Additionally, the jurisdictions with the worst jobs-housing fit receive a larger share of their RHNA as affordable housing than other jurisdictions. An equity adjustment is included in the methodology, directing additional lower-income units to jurisdictions with an imbalanced jobs-housing ratio.

2. *The opportunities and constraints to development of additional housing in each member jurisdiction, including all of the following: (A) Lack of capacity for sewer or water service due to federal or state laws, regulations or regulatory actions, or supply and distribution decisions made by a sewer or water service provider other than the local jurisdiction that preclude the jurisdiction from providing necessary infrastructure for additional development during the planning period; (B) The availability of land suitable for urban development or for conversion to residential use, the availability of underutilized land, and opportunities for infill development and increased residential densities. The council of governments may not limit its consideration of suitable housing sites or land suitable for urban development to existing zoning ordinances and land use restrictions of a locality, but shall consider the potential for increased residential development under alternative zoning ordinances and land use restrictions. The determination of available land suitable for urban development may exclude lands where the Federal Emergency Management Agency (FEMA) or the Department of Water Resources has determined that the flood management infrastructure designed to protect that land is not adequate to avoid the risk of flooding; (C) Lands preserved or protected from urban development under existing federal or state programs, or both, designed to protect open space, farmland, environmental habitats, and natural resources on a long-term basis, including land zoned or designated for agricultural protection or preservation that is subject to a local ballot measure that was approved by the voters of that jurisdiction that prohibits or restricts conversion to nonagricultural uses; and (D) County policies to preserve prime agricultural land, as defined pursuant to Section 56064, within an unincorporated area and land within an unincorporated area zoned or designated for agricultural protection or preservation that is subject to a local ballot measure that was approved by the voters of that jurisdiction that prohibits or restricts its conversion to nonagricultural uses.*

The final RHNA allocation assigns 8% of RHNA using a resiliency factor which allocates RHNA units away from forested areas at high risk of fire, and away from coastal areas that may be inundated should sea levels rise by at least two feet. This approach protects open space, environmental habitats, and natural resources, and encourages housing growth away from these sensitive resources.

All other RHNA factors assign housing units towards incorporated population centers by allocating factors such as jobs, jobs/housing ratio, transit, resiliency, and AFFH. This works to direct housing away from farmland, and towards cities which normally have adequate sewer and water service.

3. *The distribution of household growth assumed for purposes of a comparable period of regional transportation plans and opportunities to maximize the use of public transportation and existing transportation infrastructure.*

The final RHNA methodology allocates 4% of the region's RHNA units based on a jurisdiction's transit service. The methodology will encourage higher-density housing in jurisdictions with existing transit infrastructure, which can maximize the use of public transportation in these communities.

4. *Agreements between a county and cities in a county to direct growth toward incorporated areas of the county and land within an unincorporated area zoned or designated for agricultural protection or preservation that is subject to a local ballot measure that was approved by the voters of the jurisdiction that prohibits or restricts conversion to nonagricultural uses.*

The large majority of the RHNA allocation is within incorporated areas. Monterey County has a policy as well as several agreements with cities to direct growth into incorporated areas. AMBAG considered and incorporated these policies and agreements into the development of the 2022 Regional Growth Forecast by directing the majority of growth in the forecast towards incorporated cities. Because the RHNA is based on the 2022 Regional Growth Forecast the distribution inherently directs growth towards incorporated cities. While most of the growth within Monterey County is planned within incorporated cities, and there are policies reinforcing this growth pattern, the County has made plans to accommodate new population within Community Plan Areas. Based on this and the reality of a continued presence of low income minority populations in the unincorporated areas of the County, Monterey County will also have to plan for affordable housing as allocated in this RHNA Plan. Santa Cruz County does not have similar agreements with cities to direct development towards incorporated areas.

5. The loss of units contained in assisted housing developments, as defined in paragraph (9) of subdivision (a) of Section 65583, that changed to non-low-income use through mortgage prepayment, subsidy contract expirations, or termination of use restrictions.

Comprehensive data about the loss of assisted housing units is not available for all jurisdictions in a consistent format. Given the lack of consistent data, this topic was not included as a

specific factor in the final RHNA methodology. Some jurisdictions indicated that there was a small loss of units contained in assisted housing developments. However, the cumulative loss for any given jurisdiction is relatively small and therefore was not considered as a factor adjustment. The loss of assisted housing units for lower income households is an issued that would be best addressed by local jurisdictions when preparing their Housing Elements.

6. The percentage of existing households at each of the income levels listed in subdivision (e) of Section 65584 that are paying more than 30 percent and more than 50 percent of their income in rent.

The final methodology allocates lower-income unit to all jurisdictions, particularly those with the most access to opportunity, allocating 42% of the region's lower-income units based on the jurisdictions' access to opportunity according to the California Tax Credit Allocation Committee (TCAC) Opportunity Maps and Racially Concentrated Areas of Affluence (RCAA). Jurisdictions with the highest housing costs receive a larger percentage or their HRNA as lower-income units than other jurisdictions in the region, and the jurisdictions with the most houses in High or Highest Resource census tracts also receive a larger percentage of their allocations as lower income unites than other jurisdictions. Local governments will have additional opportunities to address jurisdiction specific issues related to cost burdened households when they update their housing elements.

7. The rate of overcrowding.

To address the needs of overcrowding in the region, HCD's RHNA Determination included an overcrowding adjustment which added housing units to the regional housing need to alleviate overcrowding in the region. As a result, overcrowding is considered throughout the region through inclusion in the base allocation from HCD. Since overcrowding tends to be the worst in lower income communities, including an overcrowding metric in the methodology would have placed more housing in lower income communities. This would have been counter to the AFFH metric, which requires more lower income housing be placed in jurisdictions with an existing higher income housing stock. Such an allocation to would have also been counter to guidance provided by HCD during consultation on the methodology process. While the methodology does not have a specific overcrowding metric, the methodology base allocation is based on the RGF which assigns a significant share of housing growth to areas of high demand, which includes jurisdictions with higher overcrowding rates.

8. Housing needs of farmworkers.

The RHNA allocation benefits farmworker housing due to the rural and agricultural nature of the region. Most of the population is within a few miles of farmland, and nearly every population center is no further than 15 miles from an agricultural area. By encouraging housing development throughout the region, the RHNA will benefit the farmworker community.

9. The housing needs generated by the presence of a private university or a campus of the California State University or the University of California within any member jurisdiction.

The region currently has two major universities, the University of California, Santa Cruz (UCSC) and the California State University, Monterey Bay (CSUMB). Both universities place housing demands on their surrounding jurisdictions. The majority of the RHNA allocation is within the commute sheds of these two universities, primarily within the Santa Cruz metropolitan area near UCSC, and within the Monterey and Salinas metropolitan areas near CSUMB. In addition, UCSC has made efforts to meet some of that demand as there is a binding agreement between the University and the City of Santa Cruz. CSUMB is planning for growth which has generated housing pressure on the surrounding jurisdictions. The City of Marina is actively working to meet some of this demand with plans for housing development in areas close to the campus. Not only will housing be in demand in the City of Marina, but Marina is a closer commute than the Salinas Valley is to those coastal cities that have severe restrictions on new development.

10. Housing needs of individuals and families experiencing homelessness.

Comprehensive jurisdiction-level data about individuals and families experiencing homelessness is not available for most AMBAG jurisdictions. As a result, this topic was not included as a specific factor in the final RHNA methodology. However, the methodology does consider the housing needs of individuals and families experiencing homelessness by allocating very low- and low-income units to all jurisdictions throughout the region.

11. The loss of units during a state of emergency that was declared by the Governor pursuant to the California Emergency Services Act (Chapter 7 (commencing with Section 8550) of Division 1 of Title 2), during the planning period immediately preceding the relevant revision pursuant to Section 65588 that have yet to be rebuilt or replaced at the time of the analysis.

The RHND included HCD's minimum replacement adjustment of 0.5 percent, which exceeds the region's demolition rate. This adjustment added 1,202 housing units to the RHND. Since the demolition adjustment in the RHND included significantly more units than were lost, it was not necessary to include a specific factor in the final RHNA methodology to address the loss of units.

12. The region's greenhouse gas emissions targets provided by the State Air Resources Board pursuant to Section 65080.

By allocating 15% of RHNA according to jobs and 31% based on jobs/housing ratio, 4% by transit, and 42% by AFFH, the RHNA allocates the vast majority of units in existing urban areas with a strong focus on placing more units where jobs/housing ratios are imbalanced. These factors combine to place more units near jobs centers which, over time, will reduce commuting distances and associated GHG emissions throughout the region.

13. Any other factors adopted by the council of governments, that further the objectives listed in subdivision (d) of Section 65584, provided that the council of governments specifies which of the objectives each additional factor is necessary to further. The council of governments may include additional factors unrelated to furthering the objectives listed in subdivision (d) of Section 65584 so long as the additional factors do not undermine the objectives listed in subdivision (d) of Section 65584 and are applied equally across all household income levels as described in subdivision (f) of Section 65584 and the council of governments makes a finding that the factor is necessary to address significant health and safety conditions.

No other planning factors were adopted by AMBAG for the 6th Cycle RHNA.

Appendix 1: Final AMBAG 6th Cycle RHNA Allocation

AMBAG RHNA Methodology Summary

	Income Group Totals				RHNA
	Very Low	Low	Mod.	Above Mod.	Total
Region	7,868	5,146	6,167	14,093	**33,274**
Monterey County					
Carmel-By-The-Sea	113	74	44	118	**349**
Del Rey Oaks	60	38	24	62	**184**
Gonzales	173	115	321	657	**1,266**
Greenfield	101	66	184	379	**730**
King City	97	63	178	364	**702**
Marina	94	62	173	356	**685**
Monterey	1,177	769	462	1,246	**3,654**
Pacific Grove	362	237	142	384	**1,125**
Salinas	920	600	1,692	3,462	**6,674**
Sand City	59	39	49	113	**260**
Seaside	86	55	156	319	**616**
Soledad	100	65	183	376	**724**
Unincorporated Monterey	1,070	700	420	1,136	**3,326**
Santa Cruz County					
Capitola	430	282	169	455	**1,336**
Santa Cruz	859	562	709	1,606	**3,736**
Scotts Valley	392	257	154	417	**1,220**
Watsonville	283	186	521	1,063	**2,053**

AMBAG RHNA Methodology

April 13, 2022

RHNA Total 33,274	Housing	Jobs 15%			Jobs/Housing Ratio 31%				Transit 4%			Resiliency (Wildfire & Sea Level Rise) 8%				AFFH 42%						RHNA
	4-year Unit Change	Jobs 2020	% Reg.	Units	J/H	Jobs 2020	% Reg.	Units	Transit Score	% Reg.	Units	% Area Not in High Risk Zone	Normalize (% Area x Unit Chg)	% Reg.	Units	RCAA	TCAC	Avg.	Normalize (Avg. x 2020 HHs)	% Reg.	Units	Total
Region	6,260			4,000				8,449			1,038				2,075						11,452	33,274
Monterey County																						
Carmel	5	3,566	0.9%	37	1.0	0	0.0%	0	0	0%	0	64%	3	0.1%	1	100%	100%	100%	2,129	2.7%	306	349
Del Rey Oaks	34	748	0.2%	8	1.0	0	0.0%	0	1	8%	87	44%	15	0.3%	6	100%	0%	50%	342	0.4%	49	184
Gonzales	713	6,326	1.7%	66	3.2	6,326	2.5%	215	0	0%	0	100%	713	13.1%	272	0%	0%	0%	0	0.0%	0	1,266
Greenfield	275	7,882	2.1%	82	2.0	7,882	3.2%	268	0	0%	0	100%	275	5.1%	105	0%	0%	0%	0	0.0%	0	730
King City	244	8,195	2.1%	86	2.4	8,195	3.3%	279	0	0%	0	100%	244	4.5%	93	0%	0%	0%	0	0.0%	0	702
Marina	395	6,548	1.7%	68	0.8	0	0.0%	0	1	8%	87	89%	353	6.5%	135	0%	0%	0%	0	0.0%	0	685
Monterey	202	40,989	10.7%	428	3.0	40,989	16.5%	1,396	1	8%	87	63%	126	2.3%	48	100%	73%	87%	10,386	13.0%	1,493	3,654
Pacific Grove	49	8,016	2.1%	84	1.0	0	0.0%	0	0	0%	0	95%	46	0.9%	18	100%	100%	100%	6,779	8.5%	974	1,125
Salinas	2,166	78,874	20.6%	824	1.8	78,874	31.8%	2,687	2	17%	168	100%	2,166	39.9%	829	0%	0%	0%	0	0.0%	0	6,674
Sand City	54	2,092	0.5%	22	11.1	2,092	0.8%	71	1	8%	87	100%	54	1.0%	21	50%	0%	25%	36	0.0%	5	260
Seaside	324	10,476	2.7%	109	1.0	0	0.0%	0	1	8%	87	77%	251	4.6%	96	0%	0%	0%	0	0.0%	0	616
Soledad	236	9,010	2.4%	94	2.2	9,010	3.6%	307	0	0%	0	96%	227	4.2%	87	0%	0%	0%	0	0.0%	0	724
Unincorporated Monterey	255	60,293	15.7%	629	1.5	0	0.0%	0	1	8%	87	19%	48	0.9%	18	n/a	48%	48%	16,268	20.4%	2,337	3,326
Santa Cruz County																						
Capitola	89	12,250	3.2%	128	2.2	12,250	4.9%	417	0	0%	0	83%	74	1.4%	28	100%	97%	98%	4,691	5.9%	674	1,336
Santa Cruz	394	43,865	11.5%	458	1.8	43,865	17.7%	1,494	1	8%	87	75%	296	5.5%	113	50%	23%	37%	8,279	10.4%	1,190	3,736
Scotts Valley	28	10,109	2.6%	106	2.1	10,109	4.1%	344	1	8%	87	50%	14	0.3%	5	100%	100%	100%	4,522	5.7%	650	1,220
Watsonville	512	28,514	7.4%	298	2.0	28,514	11.5%	971	1	8%	87	95%	485	8.9%	185	0%	0%	0%	0	0.0%	0	2,053
Unincorporated Santa Cruz	285	45,264	11.8%	473	0.8	0	0.0%	0	1	8%	87	13%	38	0.7%	15	n/a	50%	50%	26,259	33.0%	3,774	4,634

Calculations are performed on unrounded numbers. Numbers shown here are rounded to the nearest whole number.

Jobs/housing ratio is the 2020 number of jobs divided by the 2020 number of housing units. A higher number reflects a larger imbalance between jobs and housing.

Transit Score: 1 = has transit service with 30-minute headways. 2 = has transit service with both 15- and 30-minute headways.

RCAA = Racially Concentrated Areas of Affluence.

TCAC = California Tax Credit Allocation Committee

AMBAG RHNA Methodology

April 13, 2022

Income Shift: Shifts 40% Units Between Above Moderate and Very Low and Between Moderate and Low

	Baseline Income Allocation				RCAA			Raw RCAA Adjustments				Rebalance to Income Group Totals				RHNA
	V.L.	Low	Mod.	A.M.	RCAA	40% Shift V.L.	40% Shift Low	Very Low	Low	Mod.	Above Mod.	Very Low	Low	Mod.	Above Mod.	Total
Region	7,868	5,146	6,167	14,093				8,092	5,296	6,017	13,869	7,868	5,146	6,167	14,093	**33,274**
Monterey County																
Carmel-By-The-Sea	83	54	65	148	100%	33	22	116	76	43	114	113	74	44	118	**349**
Del Rey Oaks	44	28	34	78	100%	18	11	62	39	23	60	60	38	24	62	**184**
Gonzales	299	196	235	536	0%	-120	-78	179	118	313	656	173	115	321	657	**1,266**
Greenfield	173	113	135	309	0%	-69	-45	104	68	180	378	101	66	184	379	**730**
King City	166	109	130	297	0%	-66	-44	100	65	174	363	97	63	178	364	**702**
Marina	162	106	127	290	0%	-65	-42	97	64	169	355	94	62	173	356	**685**
Monterey	864	565	677	1,548	100%	346	226	1,210	791	451	1,202	1,177	769	462	1,246	**3,654**
Pacific Grove	266	174	209	476	100%	106	70	372	244	139	370	362	237	142	384	**1,125**
Salinas	1,579	1,031	1,237	2,826	0%	-632	-412	947	619	1,649	3,459	920	600	1,692	3,462	**6,674**
Sand City	61	40	48	110	50%	0	0	61	40	48	111	59	39	49	113	**260**
Seaside	146	95	114	261	0%	-58	-38	88	57	152	319	86	55	156	319	**616**
Soledad	171	112	134	307	0%	-68	-45	103	67	179	375	100	65	183	376	**724**
Unincorporated Monterey	786	514	616	1,409	100%	314	206	1,100	720	410	1,096	1,070	700	420	1,136	**3,326**
Santa Cruz County																
Capitola	316	207	248	566	100%	126	83	442	290	165	439	430	282	169	455	**1,336**
Santa Cruz	883	578	692	1,582	50%	0	0	883	578	692	1,583	859	562	709	1,606	**3,736**
Scotts Valley	288	189	226	517	100%	115	76	403	265	150	402	392	257	154	417	**1,220**
Watsonville	485	318	381	870	0%	-194	-127	291	191	508	1,063	283	186	521	1,063	**2,053**
Unincorporated Santa Cruz	1,096	717	859	1,963	100%	438	287	1,534	1,004	572	1,524	1,492	976	586	1,580	**4,634**

Calculations are performed on unrounded numbers. Numbers shown here are rounded to the nearest whole number.

RCAA = Racially Concentrated Areas of Affluence.

ATTACHMENT C

Attachment 1
MAR 21 2022

March 17, 2022

Association of Monterey Bay Area Governments
Board of Directors
Kristen Peterson, City of Capitola
Karen Ferlito, City of Carmel-by-the-Sea
Kim Shirley, City of Del Rey Oaks
Scott Funk, City of Gonzales
Lance Walker, City of Greenfield
Rick Perez, City of Hollister
Carlos Victoria, City of King City
Lisa Berkley, City of Marina
Ed Smith, City of Monterey
Jenny McAdams, City of Pacific Grove
Steve McShane, City of Salinas
John Freeman, City of San Juan Bautista
Mary Ann Carbone, City of Sand City
Justin Cummings, City of Santa Cruz
Derek Timm, City of Scotts Valley
Jon Wizard, City of Seaside
Ana Velazquez, City of Soledad
Eduardo Montesino, City of Watsonville
Mary Adams, County of Monterey
John Phillips, County of Monterey
Betsy Dirks, County of San Benito
Bea Gonzales, County of San Benito
Manu Koenig, County of Santa Cruz
Greg Caput, County of Santa Cruz

RE: City of Monterey Regional Housing Needs Allocation

Dear Board of Directors,

The City of Monterey wanted to update the Association of Monterey Bay Area Governments (AMBAG) on the immediate need for water by 2023.

AMBAG recently completed its State-mandated task of designating the number of housing units that will need to be planned for in each jurisdiction from 2023 to 2031. The State's goal is for those units to be constructed during this timeframe as well.

The City of Monterey wants to build the expected housing units that are ultimately assigned by our fellow jurisdictions through the AMBAG RHNA process.

Monterey was assigned 3,654 housing units (1,177 very low income, 769 low income, 462 moderate-income, and 1,246 market-rate) to place housing closer to jobs and address equity metrics such as placing more housing in communities that are predominately white with higher incomes. The aspirational goal to address these issues is impossible without an immediate water supply.

The City has reviewed with MPWMD staff the water credits needed per residential type. The City estimates needing between **367to 406 acre-feet by 2023** to meet the regionally and State required RHNA.

The City also wanted to update the Board on its efforts to construct housing. In terms of upcoming development, the City continues to lose out on housing development opportunities. While the City's implementation of new policies is working and have attracted experienced and solvent developers, the inability of the SWRCB to respond to requests made by the City and the Monterey Peninsula Water Management District has led to a significant reduction in the scopes of the projects. Stated differently, while the State's legislature and the Governor have repeatedly prioritized increasing the supply of affordable housing opportunities, the SWRCB remains tone-deaf to the requests expressed by the City, the Monterey Peninsula Water Management District, Senator Laird, and housing advocates.

The following example demonstrates what our rental community is losing:

The Garden Road area allows 405 new housing units. The City received applications to construct housing at four sites along Garden Road. The original anticipated unit count was 298 units if the City could obtain additional water from the Water District's reserve category. The District conditionally allocated reserve water; however, the State Water Resources Control Staff indicated it would violate the Cease and Desist Order unless the project used no more water than it did before rezoning. As a result, this opportunity was lost, and projects were reduced to 180 units consistent with the onsite water credits/use. A loss of 118 units could have housed between 300 and 400 residents.

Table 1
Garden Road Housing Opportunities

Address	Original Application - # of Units	Downsized Projects due to Water	Project Status
2000 Garden Road	72	34	AR Preliminary and Final Permit Approved
2300 Garden Road	99	64	ARC Review Scheduled 3/15
2560 Garden Road	63	25	Application Incomplete 2/2022
2600 Garden Road	64	57	ARC Preliminary Review Approved
Total	**298**	**180**	

Source: City of Monterey Community Development Department

There is no quick fix to reverse this fate. The projects were re-scoped, and plans were redrawn. Costs borne by the developers have been incurred.

The City has also inventoried its properties for affordable housing projects. Four sites were identified for 100% affordable housing projects, and a Request for Proposal was released. The City has selected two affordable housing developers for Exclusive Negotiating Agreement (ENA) discussions. These developers can potentially build 150 units that are 100% affordable housing. However, these sites do not have adequate-sized water meters or supply for the housing to be constructed.

In sum, there have been 118 affordable housing units lost as a result of water unavailability for the Garden Road area, and 150 low-income units are in abeyance.

The City of Monterey wanted the AMBAG Board of Directors to understand from our perspective the quandary of meeting State-mandated housing requirements, being designated additional housing units to be constructed between 2023-2031, and the need for water supply to be available in 2023 to meet the City and region's housing targets. The City would appreciate the support from AMBAG in obtaining water through its various partners so that the City can build the RHNA housing allocation. The City requests that the AMBAG Board request an update from the various groups (Monterey One Water, Monterey Peninsula Water Management District, and California American Water) about the water supply and the ability for the region to obtain this water by 2023. Furthermore, the City requests that the AMBAG Board pass a resolution requesting these agencies provide this water by 2023 and that the State Water Resources Control Board immediately lift the Cease and Desist Order since the illegal diversions have ceased. If the CDO is lifted, developers could set new water meters and work within the Monterey Peninsula Water Management District credit system.

Sincerely,

Clyde Roberson,
Mayor

cc. Maura F. Twomey, Executive Director, AMBAG (mtwomey@ambag.org)
Senator John Laird, 17th Senate District
Assemblymember Mark Stone, 29th Assembly District

ATTACHMENT D

MEMORANDUM

TO:	**AMBAG Board of Directors**
FROM:	**Maura F. Twomey, Executive Director**
RECOMMENDED BY:	**Heather Adamson, Director of Planning**
SUBJECT:	**Final 2022 Regional Growth Forecast**
MEETING DATE:	**November 18, 2020**

RECOMMENDATION:

The Board of Directors is asked to accept the final 2022 Regional Growth Forecast for planning purposes as part of the continued development of the 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy.

BACKGROUND/DISCUSSION:

Every four years, AMBAG updates its regional forecast for population, housing and employment to support the development of the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS), Regional Travel Demand Model and other planning efforts.

The regional growth forecast projects the region's population, employment and housing numbers for the tri-county area of Monterey County, San Benito County and Santa Cruz County. The purpose of the regional growth forecast is to show likely changes in employment, population and housing in the region between 2015 and 2045, based on the most current information available. As growth patterns change over time, the forecast is updated on a regular basis to reflect the most current and accurate information available.

This forecast is used to inform regional and local planning projects such as the MTP/SCS, transportation projects, corridor studies, and economic activity analyses. Results from this forecast are used as inputs in the Regional Travel Demand Model to forecast travel patterns.

P.O. Box 2453 Seaside, CA 93955-2453 [ph] 831.883.3750 [fax] 831.883.3755 http://www.ambag.org info@ambag.org

In the 2022 RGF for the AMBAG region, employment is expected to grow at a rate slightly lower than the rate predicted in the 2018 RGF, and population is expected to grow more slowly.

Recent Updates

In March 2020, the Board accepted a preliminary draft RGF for planning purposes and directed staff to begin the disaggregation at the jurisdiction level. Since that time, the California Department of Finance issued revised population and housing estimates. The updated estimates, which now provide data through 2020, resulted in a reduction in regional population relative to the base-year inputs that had been used in the RGF accepted in March.

In addition, local review found a discrepancy whereby employment in Soledad at the Salinas Valley State Prison and Correctional Training Facility in Soledad was dramatically underreported in the source data. At the request of the City of Soledad staff, AMBAG staff investigated the discrepancy and found that a correction should be made—adding 2,325 jobs to the city and the region in the base year.

To accommodate this new information, AMBAG and the consultant produced a revised regional growth forecast and subregional allocation that incorporates the revised data. The revised draft forecast was presented to the AMBAG Board of Directors in August 2020.

In August and September, AMBAG and the consultant conducted a series of meetings with local jurisdictions, the Planning Director's Forum, and the AMBAG Board to review the revised forecast. Input from these meetings was used to make minor modifications to some jurisdictions to achieve this final draft forecast.

In October, AMBAG presented the final draft forecast to the Board. There were concerns regarding the forecast numbers for San Benito County and San Juan Bautista. AMBAG staff met with Board members and staff from San Benito County and San Juan Bautista in late October/early November to discuss their concerns. Based on input from these additional meetings, AMBAG updated the county's forecast with the most recent projection from the California Department of Finance. This resulted in minor revisions to Hollister and San Juan Bautista's forecast numbers, as well as substantial revisions to the forecast for unincorporated San Benito County. These revisions have been incorporated into this final draft of the 2022 Regional Growth Forecast.

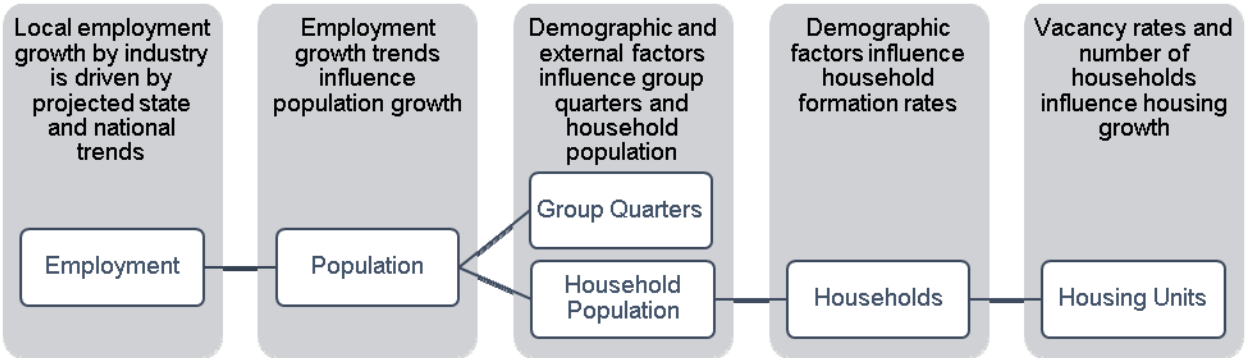
Additionally, a number of comments and questions were raised during the October 14, 2020 Board meeting regarding COVID-19's effect on the forecasting process. At this point, there is no new annual data with which to update the forecast. However, preliminary indicators suggest that trends toward lower births, lower migration, and higher mortality are likely to be more pronounced. These trends may result in even

slower growth, especially in the first five years of the forecast period. Pandemic-related job losses have also been substantial. Data from the California Employment Development Department shows that, comparing September 2020 to September 2019, all major industry sectors have lost jobs, with several sectors falling by 10 percent or more. AMBAG will continue tracking these trends and how they may affect this and future regional plans.

Methodology

As shown in the flow chart below, the forecast is based on a methodology that predicts employment growth using a model based on local data as well as state and national trends. Population growth is then driven by employment growth. Household and housing growth are driven by population growth, demographic factors, and external factors (explained below). While the methodology for the 2022 RGF remains the same as the prior two forecasts, the models have been updated to include current data, a revised base year of 2015 and a new horizon year of 2045.

Regional Forecast Process



1. Employment: Employment is measured as the number of jobs by place of work. Employment growth by industry is driven by projected national and statewide trends for all industries in the region using a shift-share model.
2. Population: Population is the total resident population of the region.
   Job growth trends influence population growth. The forecast of total population is based on historical trends in the ratio of population to employment in the AMBAG region.
   Projections of demographic characteristics (i.e., population by age, sex, and race/ethnicity) in the 2022 RGF relied on a proportional approach based on demographic projections from the California Department of Finance (DOF).
3. Household Population and Group Quarters: Household population is the population that lives in a housing unit. Group quarters population is the population that lives in a group living arrangement such as a dorm, barracks, correctional institution, or congregate care facility.

Demographic factors (e.g., age, sex, race/ethnicity) and external factors (e.g., major group quarters facilities like colleges and universities, correctional facilities, etc.) influence the household population and group quarters population.

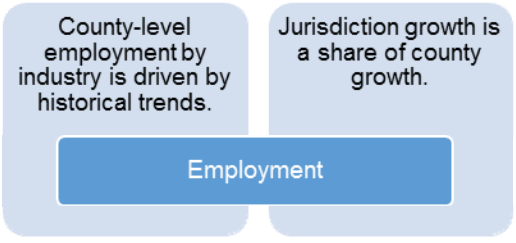
4. Households/Occupied Housing Units: A household is a person, or group of people, living in a house. Because a household, by definition, occupies a housing unit, households are equivalent to and synonymous with occupied housing units.
   Household projections are driven by household formation rates. Household formation rates are calculated as the ratio of households divided by the household population. Household formation rates are the inverse of average household size.
5. Housing Units: Housing is the total number of housing units, including both occupied and vacant structures. Housing includes primary residences, second homes, accessory dwelling units, vacation rentals, farmworker housing, and any other habitable structure—including unauthorized units. The only type of dwelling excluded from the housing inventory is group quarters (dorms, barracks, congregate care, etc.).
   Housing projections are driven by the household population projection, demographic characteristics of the household population (age, sex, race/ethnicity), household formation rates, and housing vacancy rates. Vacancy rates are calculated as the share of all units (including vacation rentals, unauthorized dwellings, etc.) that are not currently occupied.

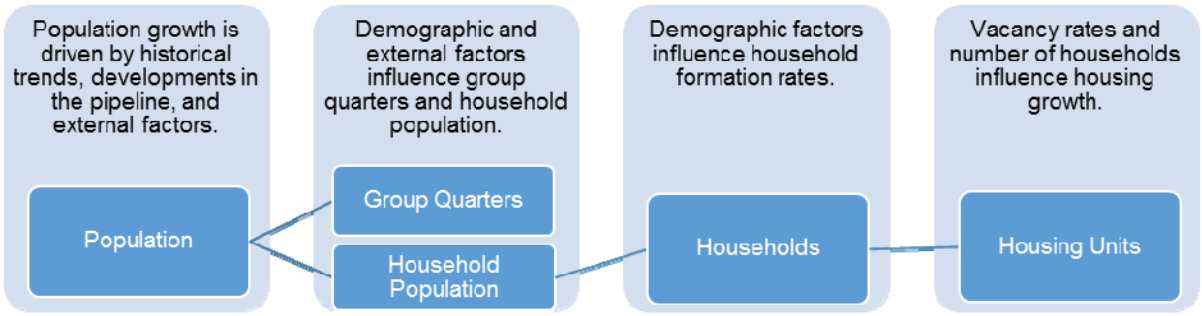
Data sources include the California Department of Finance, California Employment Development Department, Caltrans, U.S. Bureau of Labor Statistics, and U.S. Census Bureau.

Subregional Allocation Process

Following the preparation of the regional forecast figures, AMBAG staff and the consultant began the process of disaggregating the figures to each of the jurisdictions using historical data to develop a baseline disaggregated forecast.

Unlike the regional forecast, in which employment growth drives population and housing growth, the employment forecast is separate from the population and housing forecast in the subregional allocation. This separation reflects differing economic and demographic forces at the regional and local levels.





Employment: For the county-level forecast, employment growth by industry is driven by historical trends (i.e., shift-share model). Total growth across the three counties is constrained by the region-level forecast. For each jurisdiction (cities and unincorporated balance of county), employment growth by industry is a constant share of the jurisdiction's parent county's growth in that industry.

Population: The jurisdiction level forecast is driven by three factors:

1. Historical trends (i.e. shift-share model)
2. Anticipated future developments such as housing projects under development that are likely to be occupied within the forecast horizon
3. External factors (e.g. universities, military, correctional facilities)

Each county's population forecast is a sum of the jurisdiction-level forecasts. All levels (county, city, unincorporated area) are constrained by the region-level forecast.

Household Population and Households: Demographic factors (e.g. age, race/ethnicity) and external factors (e.g. major group quarters facilities like colleges and universities, correctional facilities, etc.) influence the household population and household formation rates (i.e. the number of people per household).

Housing Units: Vacancy rates and the number of households influence housing growth.

Data sources include the California Department of Finance, California Employment Development Department, InfoUSA and the U.S. Census Bureau.

This process resulted in a draft forecast at the jurisdictional level that was used for discussion purposes with staff at each of the cities and counties within the region. In addition to the cities and counties, AMBAG staff met with staff from the University of California, Santa Cruz and California State University, Monterey Bay to discuss the results. Adjustments were made to the draft forecast based on these meetings to incorporate growth on the basis of planned developments, specific and General Plan research and economic development plans. These efforts resulted in a final draft forecast.

The revised final draft growth forecast figures, including subregional allocations, are included as Attachments 1 and 2 respectively.

To date, AMBAG staff has conducted 74 one-on-one meetings with the local jurisdictions, the Local Agency Formation Commissions and both major universities during the forecasting process. These one-on-one meetings occurred between August 2019 and November 2020. In addition, AMBAG discussed the regional growth forecast estimates, subregional allocations, and recent trends at the Planning Directors Forum in August 2019, January 2020, and August 2020. A list of the forecast one-on-one meetings is included as Attachment 3.

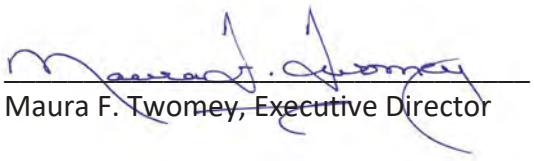
Next Steps

Following acceptance of the Final Draft 2022 Regional Growth Forecast for planning purposes, AMBAG will work with the local jurisdictions to update the traffic analysis zones (TAZs) in the Regional Travel Demand Model. The technical documentation of the 2022 Regional Growth Forecast will also be prepared. This will allow the continued development of the 2045 Metropolitan Transportation Plan/Sustainable Communities Strategy to remain on schedule.

ATTACHMENTS:

1. Final Draft 2022 Regional Growth Forecast Summary
2. Final Draft 2022 Subregional Growth Forecast Summary
3. 2022 Regional Growth Forecast One-On-One Meetings

APPROVED BY:



Maura F. Twomey, Executive Director

Attachment 1: Final Draft 2022 Regional Growth Forecast Summary

Historical and Forecast Jobs, Population, and Housing, 2000-2045

	Historical					Final Draft 2022 Regional Growth Forecast				
	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Jobs (total, all industries)	**354,535**	**359,435**	**351,735**	**377,335**	**406,280**	**410,017**	**418,132**	**425,845**	**434,147**	**442,824**
Agriculture (field work)	28,586	30,557	32,644	36,587	40,066	40,091	40,211	40,339	40,468	40,597
Manufacturing	22,831	19,085	16,348	17,656	19,728	19,802	19,916	20,016	20,120	20,224
Site-based Skilled Trade	39,650	41,048	33,921	38,116	42,895	43,741	44,852	45,637	46,635	47,682
Wholesale	25,383	26,834	27,852	30,553	33,283	32,768	33,169	33,477	33,784	34,096
Retail	44,257	43,481	40,613	43,261	42,080	42,205	42,530	43,018	43,509	44,009
Financial & Prof. Serv.	42,237	38,970	35,496	35,988	37,135	37,434	38,498	39,619	40,760	41,911
Education	23,873	25,243	26,601	27,125	29,875	30,070	30,737	31,403	32,194	33,084
Health Care & Social Assist.	32,619	36,119	39,919	43,619	47,358	48,886	50,189	51,529	52,918	54,373
Other Services	55,024	55,657	54,683	61,875	68,516	69,056	71,222	73,227	75,249	77,289
Public	25,798	26,630	27,199	26,980	29,651	29,799	30,238	30,662	31,229	31,900
Self-employed	14,277	15,811	16,459	15,575	15,693	16,165	16,570	16,918	17,281	17,659
Population	**710,598**	**719,561**	**732,708**	**762,241**	**774,729**	**800,726**	**824,992**	**842,189**	**857,828**	**869,776**
Household Population	680,087	687,644	700,207	728,352	740,321	763,380	784,511	799,310	811,954	822,824
Group Quarters	30,511	31,917	32,501	33,889	34,408	37,346	40,481	42,879	45,874	46,952
Households	**228,260**	**234,869**	**236,059**	**238,862**	**243,863**	**253,106**	**262,493**	**269,175**	**273,462**	**276,730**
Avg Household Size	3.0	2.9	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Housing	**247,080**	**256,467**	**260,256**	**262,660**	**267,812**	**277,645**	**288,386**	**296,352**	**301,307**	**304,900**
Vacancy Rate	7.6%	8.4%	9.3%	9.1%	8.9%	8.8%	9.0%	9.2%	9.2%	9.2%

Sources:

Jobs: Data for 2000-2019 from California Employment Development Department, InfoUSA, and AMBAG. Forecast data 2020-2045 are from AMBAG and PRB.

Population, Households, Housing: Data for 2000 and 2010 reflect decennial Census counts as of April 1 of each year. Data for 2005, 2015, and 2020 are from the California Department of Finance E-5 and E-8 population and housing estimates and reflect values as of January 1 of each year. Forecast data are from AMBAG and PRB and reflect values as of January 1 of each year.

Historical and Forecast Jobs, Population, and Housing, with Change Over Time, 2000-2045

	Historical					Final Draft 2022 Regional Growth Forecast				
	2000	2005	2010	2015	2020	2025	2030	2035	2040	2045
Jobs (total, all industries)	**354,535**	**359,435**	**351,735**	**377,335**	**406,280**	**410,017**	**418,132**	**425,845**	**434,147**	**442,824**
Change from Prior Period		4,900	-7,700	25,600	28,945	3,737	8,115	7,713	8,302	8,677
% Change from Prior Period		1%	-2%	7%	8%	1%	2%	2%	2%	2%
Population	**710,598**	**719,561**	**732,708**	**762,241**	**774,729**	**800,726**	**824,992**	**842,189**	**857,828**	**869,776**
Change from Prior Period		8,963	13,147	29,533	12,488	25,997	24,266	17,197	15,639	11,948
% Change from Prior Period		1%	2%	4%	2%	3%	3%	2%	2%	1%
Housing	**247,080**	**256,467**	**260,256**	**262,660**	**267,812**	**277,645**	**288,386**	**296,352**	**301,307**	**304,900**
Change from Prior Period		9,387	3,789	2,404	5,152	9,833	10,741	7,966	4,955	3,593
% Change from Prior Period		4%	1%	1%	2%	4%	4%	3%	2%	1%

Sources:

Jobs: Data for 2000-2019 from California Employment Development Department, InfoUSA, and AMBAG. Forecast data 2020-2045 are from AMBAG and PRB.

Population, Households, Housing: Data for 2000 and 2010 reflect decennial Census counts as of April 1 of each year. Data for 2005, 2015, and 2020 are from the California Department of Finance E-5 and E-8 population and housing estimates and reflect values as of January 1 of each year. Forecast data are from AMBAG and PRB and reflect values as of January 1 of each year

Attachment 2: Final Draft 2022 Subregional Growth Forecast
AMBAG Region and Jurisdictions

	POPULATION								Change 2015-2045	
	2010	2015	2020	2025	2030	2035	2040	2045	Numeric	%
AMBAG Region	732,708	762,241	774,729	800,726	824,992	842,189	857,828	869,776	107,535	14%
Monterey County	**415,057**	**430,310**	**441,143**	**452,761**	**467,068**	**476,028**	**483,884**	**491,443**	**61,133**	**14%**
Carmel-By-The-Sea	3,722	3,854	3,949	3,946	3,954	3,964	3,974	3,984	130	3%
Del Rey Oaks	1,624	1,663	1,662	1,693	1,734	1,859	2,330	2,650	987	59%
Gonzales	8,187	8,441	8,506	9,650	13,492	14,630	15,398	15,711	7,270	86%
Greenfield	16,330	17,172	18,284	19,342	19,734	19,961	20,202	20,433	3,261	19%
King City	12,874	13,736	14,797	15,376	16,101	16,689	16,881	17,064	3,328	24%
Marina	19,718	21,057	22,321	23,723	25,126	26,713	28,433	30,044	8,987	43%
Marina balance	19,084	20,037	21,371	22,293	22,841	23,238	23,768	24,237	4,200	21%
CSUMB	634	1,020	950	1,430	2,285	3,475	4,665	5,807	4,787	469%
Monterey	27,810	28,086	28,170	28,044	28,650	29,032	29,342	29,639	1,553	6%
Monterey balance	23,583	24,095	24,749	24,623	25,229	25,611	25,921	26,218	2,123	9%
DLI & Naval Postgrad	4,227	3,991	3,421	3,421	3,421	3,421	3,421	3,421	-570	-14%
Pacific Grove	15,041	15,460	15,265	15,290	15,395	15,530	15,676	15,817	357	2%
Salinas	150,441	158,059	162,222	166,226	170,459	173,393	175,358	177,128	19,069	12%
Sand City	334	361	385	430	516	756	1,012	1,198	837	232%
Seaside	33,025	33,815	33,537	34,497	35,107	35,634	36,582	38,316	4,501	13%
Seaside balance	26,836	25,835	26,345	27,285	27,850	28,317	29,205	30,881	5,046	20%
Fort Ord	4,473	4,163	3,083	3,083	3,083	3,083	3,083	3,083	-1,080	-26%
CSUMB	1,716	3,817	4,109	4,129	4,174	4,234	4,294	4,352	535	14%
Soledad	25,738	24,597	25,301	26,112	26,824	27,697	28,419	29,133	4,536	18%
Soledad balance	15,690	16,298	17,190	18,001	18,713	19,586	20,308	21,022	4,724	29%
SVSP & CTF	10,048	8,299	8,111	8,111	8,111	8,111	8,111	8,111	-188	-2%
Balance Of County	100,213	104,009	106,744	108,432	109,976	110,170	110,277	110,326	6,317	6%
San Benito County	**55,269**	**58,138**	**62,353**	**69,324**	**73,778**	**77,638**	**80,788**	**83,366**	**25,228**	**43%**
Hollister	34,928	37,314	40,646	42,604	43,327	44,421	45,345	45,599	8,285	22%
San Juan Bautista	1,862	1,945	2,112	2,269	2,315	2,374	2,410	2,436	491	25%
Balance Of County	18,479	18,879	19,595	24,451	28,136	30,843	33,033	35,331	16,452	87%
Santa Cruz County	**262,382**	**273,793**	**271,233**	**278,641**	**284,146**	**288,523**	**293,156**	**294,967**	**21,174**	**8%**
Capitola	9,918	10,224	10,108	10,485	10,794	10,957	11,049	11,126	902	9%
Santa Cruz	59,946	64,223	64,424	68,845	72,218	75,257	78,828	79,534	15,311	24%
Santa Cruz balance	43,614	46,947	45,324	47,845	49,118	49,957	50,828	51,534	4,587	10%
UCSC	16,332	17,276	19,100	21,000	23,100	25,300	28,000	28,000	10,724	62%
Scotts Valley	11,580	11,946	11,693	11,718	11,837	11,867	11,868	12,010	64	1%
Watsonville	51,199	52,410	51,515	52,918	54,270	55,138	55,786	56,344	3,934	8%
Balance Of County	129,739	134,990	133,493	134,675	135,027	135,304	135,625	135,953	963	1%

Attachment 2: Final Draft 2022 Subregional Growth Forecast
AMBAG Region and Jurisdictions

	HOUSING								Change 2015-2045	
	2010	2015	2020	2025	2030	2035	2040	2045	Numeric	%
AMBAG Region	260,256	262,660	267,812	277,645	288,386	296,352	301,307	304,900	42,240	16%
Monterey County	**137,910**	**139,177**	**141,764**	**146,716**	**153,852**	**159,100**	**162,612**	**165,328**	**26,151**	**19%**
Carmel-By-The-Sea	3,417	3,417	3,437	3,437	3,442	3,450	3,453	3,459	42	1%
Del Rey Oaks	741	741	741	762	809	848	1,052	1,195	454	61%
Gonzales	1,989	1,987	1,987	2,399	3,630	4,182	4,474	4,626	2,639	133%
Greenfield	3,752	3,794	3,981	4,359	4,766	5,047	5,164	5,238	1,444	38%
King City	3,218	3,283	3,432	3,672	4,002	4,282	4,356	4,403	1,120	34%
Marina	7,200	7,334	7,784	8,277	8,837	9,265	9,521	9,693	2,359	32%
Marina NSP	7,200	7,334	7,784	8,277	8,832	9,205	9,445	9,617	2,283	31%
CSUMB (portion)	0	0	0	0	5	60	76	76	76	--
Monterey	13,584	13,637	13,705	13,705	13,920	14,209	14,402	14,549	912	7%
Monterey NSP	13,152	13,205	13,273	13,273	13,488	13,777	13,970	14,117	912	7%
Defence Lang. Inst. & Nav	432	432	432	432	432	432	432	432	0	0%
Pacific Grove	8,169	8,184	8,201	8,214	8,267	8,336	8,400	8,463	279	3%
Salinas	42,651	43,001	43,411	45,552	48,673	50,968	52,229	53,150	10,149	24%
Sand City	145	176	189	198	228	333	446	526	350	199%
Seaside	10,872	10,913	10,920	11,437	11,925	12,248	12,604	13,192	2,279	21%
Seaside NSP	9507	8908	8,942	9,429	9,888	10,190	10,531	11,107	2,199	25%
Fort Ord (portion)	1,119	1,119	1,119	1,119	1,119	1,119	1,119	1,119	0	0%
CSUMB (portion)	246	886	859	889	918	939	954	966	80	9%
Soledad	3,876	3,927	4,137	4,433	4,733	5,024	5,240	5,426	1,499	38%
Soledad NSP	3,876	3,927	4,137	4,433	4,733	5,024	5,240	5,426	1,499	38%
SVSP & CTF	0	0	0	0	0	0	0	0	0	--
Balance Of County	38,296	38,783	39,839	40,271	40,620	40,908	41,271	41,408	2,625	7%
San Benito County	**17,870**	**18,262**	**19,913**	**21,721**	**23,333**	**24,773**	**25,452**	**25,775**	**7,513**	**41%**
Hollister	10,401	10,757	11,917	12,501	13,177	13,701	14,054	14,122	3,365	31%
San Juan Bautista	745	750	819	878	918	951	965	975	225	30%
Balance Of County	6,724	6,755	7,177	8,342	9,238	10,121	10,433	10,678	3,923	58%
Santa Cruz County	**104,476**	**105,221**	**106,135**	**109,208**	**111,201**	**112,479**	**113,243**	**113,797**	**8,576**	**8%**
Capitola	5,534	5,537	5,554	5,786	5,970	6,009	6,017	6,017	480	9%
Balance Of County	23,316	23,535	23,954	24,988	25,578	25,974	26,295	26,525	2,990	13%
Santa Cruz NSP	23,316	23,005	23,424	24,422	24,970	25,342	25,663	25,892	2,887	13%
UCSC (portion)	0	530	530	566	608	632	632	633	103	19%
Scotts Valley	4,610	4,691	4,739	4,798	4,846	4,869	4,887	4,930	239	5%
Watsonville	14,089	14,131	14,226	14,829	15,629	16,108	16,347	16,519	2,388	17%
Balance Of County	56,927	57,327	57,662	58,807	59,178	59,519	59,697	59,806	2,479	4%

Note: Housing forecast for universities reflects housing demand unmet by dorms, not necessarily housing units on campus.

Attachment 2: Final Draft 2022 Subregional Growth Forecast
AMBAG Region and Jurisdictions

	EMPLOYMENT								Change 2015-2045	
	2010	2015	2020	2025	2030	2035	2040	2045	Numeric	%
AMBAG Region Total	351,735	377,335	406,280	410,017	418,132	425,845	434,147	442,824	65,489	17%
Monterey County	**209,152**	**225,268**	**243,015**	**245,054**	**249,613**	**253,918**	**258,553**	**263,437**	**38,169**	**17%**
Carmel-By-The-Sea		3,353	3,566	3,593	3,674	3,752	3,833	3,915	562	17%
Del Rey Oaks		705	748	753	774	794	815	834	129	18%
Gonzales		5,764	6,326	6,382	6,533	6,660	6,788	6,920	1,156	20%
Greenfield		7,227	7,882	7,948	8,061	8,177	8,298	8,423	1,196	17%
King City		7,573	8,195	8,248	8,371	8,511	8,669	8,832	1,259	17%
Marina		6,107	6,548	6,621	6,765	6,899	7,055	7,217	1,110	18%
Monterey		38,133	40,989	41,527	42,506	43,452	44,465	45,509	7,376	19%
Pacific Grove		7,470	8,016	8,061	8,152	8,244	8,343	8,445	975	13%
Salinas		73,009	78,874	79,577	81,079	82,505	84,044	85,683	12,674	17%
Sand City		1,966	2,092	2,102	2,151	2,188	2,224	2,259	293	15%
Seaside		9,667	10,476	10,589	10,833	11,062	11,290	11,543	1,876	19%
Soledad		8,532	9,010	9,079	9,161	9,235	9,333	9,462	930	11%
Unincorporated Monterey		55,762	60,293	60,574	61,553	62,439	63,396	64,395	8,633	15%
San Benito County	**20,260**	**21,631**	**23,263**	**23,572**	**24,203**	**24,802**	**25,475**	**26,126**	**4,495**	**21%**
Hollister		14,428	15,492	15,728	16,207	16,655	17,121	17,613	3,185	22%
San Juan Bautista		515	557	569	580	588	603	612	97	19%
Unincorporated San Benito		6,688	7,214	7,275	7,416	7,559	7,751	7,901	1,213	18%
Santa Cruz County	**122,323**	**130,436**	**140,002**	**141,391**	**144,316**	**147,125**	**150,119**	**153,261**	**22,825**	**17%**
Capitola		11,666	12,250	12,376	12,633	12,902	13,181	13,454	1,788	15%
Santa Cruz		40,840	43,865	44,317	45,594	46,863	48,203	49,636	8,796	22%
Scotts Valley		9,458	10,109	10,185	10,345	10,489	10,637	10,797	1,339	14%
Watsonville		26,403	28,514	28,765	29,156	29,505	29,896	30,303	3,900	15%
Unincorporated Santa Cruz		42,069	45,264	45,748	46,588	47,366	48,202	49,071	7,002	17%

Important Note:

Independent rounding results in some cases in which parts do not sum to the total.

Data Sources:

Population and Housing: 2010 and 2015 from the California Department of Finance; 2020-2045 Draft 2022 Regional Growth Forecast from AMBAG and the Population Reference Bureau

Employment: 2010 and 2015 from AMBAG based on data from California Employment Development Department and InfoUSA; 2020-2045 Final Draft 2022 Regional Growth Forecast from AMBAG and the Population Reference Bureau

Attachment 3: 2022 Regional Growth Forecast One-on-One Meetings

Agency	Meeting Date	Meeting Time	Location	AMBAG Attendees*	Other Attendees*
City of Gonzales	9/3/2019	1:30 PM	147 Fourth Street, Gonzales, CA	Maura Twomey, Heather Adamson and Paul Hierling	Matthew Sundt
City of Hollister	9/10/2019	1:30 PM	375 Fifth Street, Hollister, CA	Maura Twomey, Heather Adamson and Paul Hierling	Abraham Prado and Jamila Saqqa
City of Marina	8/21/2019	11:00 AM	209 Cypress Avenue, Marina, CA	Maura Twomey, Heather Adamson and Paul Hierling	Fred Aegerter, Christy Hopper and Matt Mogensen
City of Salinas	8/28/2019	1:30 PM	65 West Alisal Street, 2nd Floor, Salinas, CA	Maura Twomey, Heather Adamson and Paul Hierling	Megan Hunter and Adam Garrett
City of Santa Cruz	8/23/2019	1:00 PM	809 Center Street, Room 107, Santa Cruz, CA	Maura Twomey, Heather Adamson and Paul Hierling	Lee Butler
City of Seaside	9/10/2019	11:00 AM	656 Broadway Avenue, Seaside, CA 93955	Heather Adamson and Paul Hierling	Rick Medina
County of Monterey	8/7/2019	4:00 PM	1441 Schilling Pl, 2nd Floor, Salinas, CA	Maura Twomey, Heather Adamson and Paul Hierling	Brandon Swanson and John Dugan
County of Monterey	8/12/2019	3:15 PM	168 West Alisal, 3rd Floor, Salinas, CA	Paul Hierling	Darby Marshall and Anastacia Wyatt
County of San Benito	9/4/2019	1:00 PM	2301 Technology Parkway, Hollister, CA	Maura Twomey, Heather Adamson and Paul Hierling	Harry Mavrogenes, Taven Kinison Brown and Jamila Saqqa
County of Santa Cruz	8/23/2019	3:00 PM	701 Ocean Street, Room 400, Santa Cruz, CA	Maura Twomey, Heather Adamson and Paul Hierling	Kathy Molloy and Stephanie Hansen

*All attendees were at the meeting in person unless otherwise noted.

Agency	Meeting Date	Time	Location	AMBAG Attendees*	Jurisdiction Attendees*
City of Capitola	2/3/2020	9:30 AM	420 Capitola Ave., Capitola, CA	Heather Adamson	Katie Herlihy
City of Carmel-By-The-Sea	2/5/2020	9:30 AM	AMBAG Office	Maura Twomey, Gina Schmidt, Miranda Taylor	Marnie Waffle
City of Del Rey Oaks	2/13/2020	11:00 AM	650 Canyon Del Rey Blvd, Del Rey Oaks, CA	Heather Adamson and Miranda Taylor	Dino Pick and Denise Duffy
City of Gonzales	2/7/2020	2:00 PM	City of Gonzales, 147 Fourth Street, Gonzales, CA	Heather Adamson	Matthew Sundt
City of Greenfield	3/3/2020	9:00 AM	Greenfield City Hall, 599 El Camino Real, Greenfield, CA	Heather Adamson, Maura Twomey and Miranda Taylor	Paul Mugan
City of Hollister	3/10/2020	2:00 PM	City of Hollister, Development Services, 375 Fifth Street, Hollister, CA 95023	Heather Adamson	Abraham Prado, Jamila Saqqa, Eva Kelly and Ambur Cameron
City of King City	3/10/2020	11:00 AM	City of King City Hall, 212 South Vanderhurst Avenue, King City, CA 93930	Heather Adamson, Maura Twomey and Miranda Taylor	Doreen Liberto-Blanck and Maricruz Aguilar-Navarro
City of Marina	2/26/2020	2:30 PM	City of Marina, Community Depevelopment Dept, 209 Cypress Avenue, Marina, CA	Heather Adamson, Maura Twomey and Miranda Taylor	Christy Hopper and Lisa Berkley
City of Monterey	2/4/2020	1:00 PM	City of Monterey, 580 Pacific Street, Monterey, CA 93940	Heather Adamson, Maura Twomey, Miranda Taylor	Kim Cole
City of Pacific Grove	2/5/2020	11:30 AM	City of Pacific Grove, 300 Forest Avenue, 2nd Floor, Pacific Grove, CA 93950	Maura Twomey, Gina Schmidt, Miranda Taylor	Anastazia Aziz and Alyson Hunter
City of Salinas	3/2/2020	10:00 AM	City of Salinas, 65 West Alisal Street, 2nd Floor, Salinas, CA	Heather Adamson and Miranda Taylor	Megan Hunter and Tara Hullingers
City of San Juan Bautista	2/24/2020	9:00 AM	San Juan Bautista City Hall, 311 2nd Street, San Juan Bautista, CA	Heather Adamson	Don Reynolds and Mary Gilbert (SBtCOG)
City of Sand City	2/11/2020	3:00 PM	Sand City, City Hall, 1 Pendergrass Way, Sand City, CA	Heather Adamson, Maura Twomey, Miranda Taylor	Chuck Pooler and Aaron Blair
City of Santa Cruz	3/9/2020	11:00 AM	City of Santa Cruz, 809 Center Street, Room 107, Santa Cruz, CA	Heather Adamson	Lee Butler, Katherine Donovan and Eric Marlatt
City of Scotts Valley	2/3/2020	11:30 AM	1 Civic Center Drive, Scotts Valley, CA	Heather Adamson	Taylor Bateman
City of Seaside	3/3/2020	2:00 PM	656 Broadway Avenue, Seaside, CA 93955	Heather Adamson, Maura Twomey, Paul Hierling and Miranda Taylor	Kurt Overmeyer, Gloria Stearns and Sharon Mikesell
City of Soledad	2/24/2020	1:30 PM	City of Soledad, City Hall, 248 Main Street, Soledad, CA	Heather Adamson and Miranda Taylor	Brent Slama
City of Watsonville	2/21/2020	10:00 AM	Community Development Dept., 250 Main Street, Watsonville, CA 95076	Heather Adamson	Suzi Merriam and Justin Meek
	2/21/2020	10:00 AM	Community Development Dept., 250 Main Street, Watsonville, CA 95076	Heather Adamson	Suzi Merriam and Justin Meek
County of Monterey	3/17/2020	2:30 PM	GoTo Meeting	Heather Adamson and Paul Hierling	Brandon Swanson
County of San Benito	3/4/2020	3:00 PM	San Benito County - RMA, 2301 Technology Parkway, Hollister, CA	Heather Adamson and Maura Twomey	Harry Mavrogenes and Taven Kinison Brown
County of Santa Cruz	3/9/2020	3:00 PM	County of Santa Cruz, 701 Ocean Street, Room 400, Santa Cruz, CA	Heather Adamson	Kathy Molloy, Paia Levine, Barbara Mason, Stephanie Hansen and Anais Schenk
CSU Monterey Bay	2/5/2020	3:00 PM	2061 Intergarrison Road, Suite 84-A, Seaside, CA	Maura Twomey, Gina Schmidt, Miranda Taylor	Anya Spear and Matt McCluney
Monterey County LAFCO	2/11/2020	1:00 PM	LAFCO Monterey Co., 132 W. Gabilan Street, Suite 102, Salinas, CA 93901	Heather Adamson, Maura Twomey, Miranda Taylor	Kate McKenna
Santa Cruz County LAFCO	2/21/2020	1:00 PM	LAFCO, 701 Ocean Street, Room 318-D, Santa Cruz, CA 95060	Heather Adamson	Joe Serrano
UC Santa Cruz	2/25/2020	10:30 AM	UC Santa Cruz, 1156 High St, Barn G, Santa Cruz, CA 95064	Heather Adamson	Jolie Kerns and Oxo Slayer

*All attendees were at the meeting in person unless otherwise noted

Agency	Meeting Date	Meeting Time	Location	AMBAG Attendees	Jurisdiction Attendees
City of Capitola	5/19/2020	1:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Katie Herlihy
City of Carmel-By-The-Sea	5/26/2020	1:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Marnie Waffle
City of Del Rey Oaks	6/17/2020	4:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Dino Pick and Denise Duffy
City of Gonzales	5/26/2020	3:00 PM	GoTo Meeting	Heather Adamson, Paul Hierling, and Miranda Taylor	Matthew Sundt
City of Greenfield	6/11/2020	11:00 AM	GoTo Meeting	Maura Twomey, Heather Adamson, and Miranda Taylor	Paul Mugan
City of Hollister	5/29/2020	10:00 AM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Abraham Prado, Jamila Saqqa, Eva Kelly and Ambur Cameron from Hollister; Mary Gilbert from SBtCOG. Additionally, various consulants for the Hollister General Plan attended this meeting.
City of King City	6/2/2020	1:00 PM	GoTo Meeting	Heather Adamson and Miranda Taylor	Doreen Liberto-Blanck and Maricruz Aguilar-Navarro
City of Marina	5/28/2020	10:00 AM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Christy Hopper and Fred Aegerter
City of Monterey	5/29/2020	1:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Kimberly Cole
City of Pacific Grove	5/19/2020	3:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Anastazia Aziz, Alyson Hunter and Terri Schaeffer
City of Salinas	6/8/2020	2:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Megan Hunter, Tara Hullinger, and Jonathan Moore
City of San Juan Bautista	6/1/2020	1:30 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Don Reynolds and Mary Gilbert from SBtCOG
City of Sand City	6/17/2020	9:00 AM	GoTo Meeting	Heather Adamson, Paul Hierling, and Miranda Taylor	Chuck Pooler and Aaron Blair
City of Santa Cruz	5/18/2020	9:00 AM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Lee Butler, Katherine Donovan, Bonnie Lipscomb, Eric Marlatt and Matt Vanhua
City of Scotts Valley	6/3/2020	1:00 PM	GoTo Meeting	Maura Twomey, HPaul Hierling, and Miranda Taylor	Taylor Bateman
City of Seaside	6/11/2020	4:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Kurt Overmeyer and Gloria Stearns

Agency	Meeting Date	Meeting Time	Location	AMBAG Attendees	Jurisdiction Attendees
City of Soledad	6/16/2020	1:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Brent Slama
City of Watsonville	6/2/2020	3:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Suzi Merriam and Justin Meek
County of Monterey	6/3/2020	9:00 AM	GoTo Meeting	Maura Twomey, Paul Hierling, and Miranda Taylor	Brandon Swanson, John Dugan and Anastacia Wyatt
County of Monterey	6/29/2020	1:00 PM	GoTo Meeting	Maura Twomey, Paul Hierling, Miranda Taylor and Beth Jarosz (consultant)	Brandon Swanson, John Dugan, Craig Spencer and Anastacia Wyatt
County of San Benito	6/1/2020	9:00 AM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Harry Mavrogenes, Taven Kinison Brown and Mary Gilbert from SBtCOG
County of Santa Cruz	5/18/2020	3:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling, and Miranda Taylor	Paia Levine, Barbara Mason, Anais Schenk, Kathy Molloy, Stephanie Hansen
CSU Monterey Bay	6/16/2020	3:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling,	Anya Spear, Matt McCluney, and Kathleen Ventimiglia
CSU Monterey Bay	7/10/2020	1:00 PM	GoTo Meeting	Heather Adamson and Beth Jarosz (consultant)	Matt McCluney and Kathleen Ventimiglia
UC Santa Cruz	6/15/2020	3:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson, Paul Hierling,	Oxo Slayer

Agency	Meeting Date	Meeting Time	Location	AMBAG Attendees	Jurisdiction Attendees
City of Del Rey Oaks	8/25/2020	1:00 PM	GoTo Meeting	Heather Adamson	Dino Pick and Denise Duffy (consultant)
City of Greenfield	9/4/2020	2:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson and Beth Jarosz (consultant)	Rob Mullane (consultant) and Paul Mugan
City of Hollister	8/20/2020	11:00 AM	GoTo Meeting	Maura Twomey, Heather Adamson and Beth Jarosz (consultant)	Abraham Prado, Jamila Saqqa, Bryan Swanson, Eva Kelly, Ambur Cameron, Areli Perez and Marian Mendez from Hollister; Mary Gilbert from SBtCOG
City of Hollister	9/4/2020	3:30 PM	GoTo Meeting	Maura Twomey, Heather Adamson and Beth Jarosz (consultant)	Carol Lenoir
City of King City	8/24/2020	11:00 AM	GoTo Meeting	Maura Twomey and Heather Adamson	Doreen Liberto-Blanck and Maricruz Aguilar-Navarro
City of Marina	8/7/2020	3:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson and Beth Jarosz (consultant)	Christy Hopper, Fred Aegerter, Layne Long and Lisa Berkeley
City of Monterey			GoTo Meeting		
City of Pacific Grove	8/7/2020	1:30 PM	GoTo Meeting	Maura Twomey, Heather Adamson and Beth Jarosz (consultant)	Anastazia Aziz and Terri Schaeffer
City of Salinas	9/8/2020	2:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson and Beth Jarosz (consultant)	Megan Hunter and Jonathan Moore
County of Monterey	8/13/2020	3:30 PM	GoTo Meeting	Heather Adamson and Beth Jarosz (consultant)	Brandon Swanson and John Dugan
County of San Benito	8/10/2020	1:00 PM	GoTo Meeting	Maura Twomey, Heather Adamson and Beth Jarosz (consultant)	Harry Mavrogenes, Taven Kinison Brown, Jamila Saqqa, Gary Black (Hexagon), Ollie Zhou (Hexagon), Stan Ketchum (contract planner) and Mary Gilbert from SBtCOG

Agency	Meeting Date	Meeting Time	Location	AMBAG Attendees	Jurisdiction Attendees
City of San Juan Bautista	10/30/2020	9:00 AM	Go To Meeting	Maura Twomey, Heather Adamson and Beth Jarosz (consultant)	John Freeman, Don Reynolds, and Mary Gilbert from SBtCOG
County of San Benito	10/29/2020	3:00 PM	Go To Meeting	Maura Twomey, Heather Adamson and Beth Jarosz (consultant)	Anthony Botelho, Mark Medina, Taven Kinison Brown, Benny Young, Stan Stan Ketchums, and Mary Gilbert from SBtCOG
County of San Benito	11/2/2020	2:00 PM	Go To Meeting	Maura Twomey, Heather Adamson and Beth Jarosz (consultant)	Benny Young, Taven Kinison Brown, and Mary Gilbert from SBtCOG

ATTACHMENT E

A RESOLUTION OF THE ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS (AMBAG) BOARD OF DIRECTORS FINDING THE SUSTAINABLE COMMUNITIES STRATEGY ACHIEVES THE REGIONAL GREENHOUSE GAS REDUCTION TARGETS, ADOPTING THE FINAL 2022 REGIONAL GROWTH FORECAST, AND ADOPTING THE 2045 METROPOLITAN TRANSPORTATION PLAN, INCLUDING ITS SUSTAINABLE COMMUNITIES STRATEGY

WHEREAS, AMBAG is the federally designated metropolitan planning organization (MPO), pursuant to Title 23 United States Code Sections 134(a) and (g); and

WHEREAS, Title 23, Part 450 and Title 49 of the Code of Federal Regulations (CFR), require AMBAG as the MPO to prepare and update a long-range Metropolitan Transportation Plan (MTP) every four years; and

WHEREAS, Section 65080(d) of the California Government Code requires AMBAG to prepare and update a Sustainable Communities Strategy (SCS) every four years; and

WHEREAS, AMBAG has coordinated with the Santa Cruz County Regional Transportation Commission, the Transportation Agency for Monterey County and San Benito County Council of Governments, which each prepared a County Regional Transportation Plan; and

WHEREAS, each respective County Regional Transportation Plan is integrated within the 2045 MTP/SCS; and

WHEREAS, from March 2019 through June 2022, through the conduct of a continuing, comprehensive and coordinated transportation planning process in conformance with applicable federal and state requirements, AMBAG developed its latest MTP with a 2045 horizon year, which incorporates an SCS for the Monterey Bay Area region; and

WHEREAS, the 2045 MTP, including its SCS, contains an integrated set of public policies, strategies and investments to maintain, manage and improve the transportation system in the AMBAG region through the year 2045 and calls for development of an integrated intermodal transportation system that facilitates the efficient, economic movement of people and goods; and

WHEREAS, the 2045 MTP/SCS considers, analyzes and reflects, as appropriate, the metropolitan transportation planning process as identified in federal law, including the federal the Moving Ahead for Progress in the 21st Century Act and the Fixing America's Surface Transportation Act, as well as the National Highway System Designation Act of 1995, and is based on reasonably available funding provisions; and

WHEREAS, the 2022 MTP/SCS integrates a Congestion Management Process identifying the most serious congestion problems and evaluating and incorporating, as appropriate, all reasonably available actions to reduce congestion, such as travel demand management and operational management strategies for all corridors with any proposed capacity increase; and

WHEREAS, the North Central Coast Air Basin, within which the AMBAG region is located, meets Federal Criteria Pollutant Ambient Air Quality Standards, is in Attainment Status for these standards, and is therefore exempt from a Clean Air Act conformity analysis; and

WHEREAS, the 2022 Regional Growth Forecast was developed for planning purposes by working with local jurisdictions, and projects growth based on the most recent planning assumptions, including existing land use plans and policies and demographic and economic trends; and

WHEREAS, the Draft 2022 Regional Growth Forecast was accepted by the AMBAG Board of Directors on November 18, 2020, for planning purposes; and

WHEREAS, pursuant to Government Code Section 65080(b)(2)((E) and federal public participation requirements, the 2045 MTP/SCS, was developed through a strategic, proactive, comprehensive public outreach and involvement program, which included: an adopted public participation plan; advertising in local and regional newspapers; distribution of public information materials, such as brochures and newsletters; a dedicated website; nine noticed public hearings to receive testimony on the Draft 2045 MTP/SCS and its Environmental Impact Report; four workshops and public hearings in January 2022 to facilitate public comment on the Draft 2045 MTP/SCS, and interagency coordination and involvement; and

WHEREAS, pursuant to Government Code Section 65080(b)(2)(B), the AMBAG MTP/SCS: (i) identifies the general location of uses, residential densities and building intensities within the region; (ii) identifies areas within the region sufficient to house all the population of the region, including all economic segments of the population, over the course of the planning period of the regional transportation plan taking into account net migration into the region, population growth, household formation and employment growth; (iii) identifies areas within the region sufficient to house an eight-year projection of the regional housing need for the region pursuant to Government Code Section 65584; (iv) identifies a transportation network to service the transportation needs of the region; (v) gathers and considers the best practically available scientific information regarding resource areas and farmland in the region as defined in subdivisions (a) and (b) of Government Code Section 65080.01; and (vi) considers the state housing goals specified in Sections Government Code 65580 and 65581; and

WHEREAS, pursuant to Government Code Section 65080(b)(2)(G), the SCS considered spheres of influence adopted by the Santa Cruz, Monterey and San Benito County Local Agency Formation Commissions; and

WHEREAS, pursuant to Government Code Section 65080(b)(2)(B)(vii), the SCS set forth a forecasted development pattern for the region, which, when integrated with the transportation network and other transportation measures and polices, will reduce the greenhouse gas emissions from automobiles and light trucks to achieve the regional greenhouse gas emission targets set by the California Air Resources Board (CARB); and

WHEREAS, for the 2045 MTP/SCS, CARB set the per capita greenhouse gas emission reduction targets for automobiles and light trucks for the AMBAG region at 3 percent by 2020 and6 percent by 2035 from a 2005 base year; and

WHEREAS, by separate resolution on this date, the AMBAG Board of Directors certified the Final EIR for the 2045 MTP/SCS, and adopted Findings of Fact, a Statement of Overriding Considerations and a Mitigation Monitoring and Reporting Program, as required by the California Environmental Quality Act (CEQA); and

WHEREAS, on this date, the AMBAG Board of Directors held a duly noticed public hearing prior to considering certifying the Final EIR; adopting the CEQA findings, Statement of Overriding Considerations, and Mitigation Monitoring and Reporting Program; and adopting the Final 2045 MTP/SCS; and

WHEREAS, prior to taking action on the 2045 MTP/SCS, the AMBAG Board of Directors has heard, been presented with, reviewed and considered all of the information and data in the administrative record, including the Final EIR, and all oral and written evidence presented to it during all meetings and hearings;

NOW THEREFORE:

BE IT RESOLVED BY the AMBAG Board of Directors that the foregoing recitals are true and correct and incorporated by this reference; and

BE IT FURTHER RESOLVED that the AMBAG Board of Directors finds that the 2045 MTP/SCS achieves the regional greenhouse gas reduction targets established by the CARB and meets the requirements of Senate Bill 375 as codified in Government Code §65080(b) et seq.; and

BE IT FURTHER RESOLVED that the AMBAG Board of Directors does hereby adopt the Final 2022 Regional Growth Forecast and the Final 2045 MTP/SCS for the Monterey Bay Area region.

PASSED AND ADOPTED this 15th day of June 2022.

Kristen Brown, President

Maura Twomey, Secretary

ATTACHMENT F

Regional Housing Needs Assessments

The Department of Housing and Community Development Must Improve Its Processes to Ensure That Communities Can Adequately Plan for Housing

March 2022

REPORT 2021-125

CALIFORNIA STATE AUDITOR
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March 17, 2022
2021-125

The Governor of California
President pro Tempore of the Senate
Speaker of the Assembly
State Capitol
Sacramento, California 95814

Dear Governor and Legislative Leaders:

As directed by the Joint Legislative Audit Committee, my office evaluated the Regional Housing Needs Assessment (needs assessment) process that the Department of Housing and Community Development (HCD) uses to provide key housing guidance for the State's local governments. The availability of sufficient housing is of vital statewide importance, and HCD's needs assessments are what allow jurisdictions to plan for the development of that housing. Overall, our audit determined that HCD does not ensure that its needs assessments are accurate and adequately supported.

In reviewing the needs assessments for three regions, we identified multiple areas in which HCD must improve its process. For example, HCD does not satisfactorily review its needs assessments to ensure that staff accurately enter data when they calculate how much housing local governments must plan to build. As a result, HCD made errors that reduced its projected need for housing in two of the regions we reviewed. We also found that HCD could not demonstrate that it adequately considered all of the factors that state law requires, and it could not support its use of healthy housing vacancy rates. This insufficient oversight and lack of support for its considerations risks eroding public confidence that HCD is informing local governments of the appropriate amount of housing they will need.

HCD's needs assessments also rely on some projections that the Department of Finance (Finance) provides. While we found that most of Finance's projections were reasonably accurate, it has not adequately supported the rates its uses to project the number of future households that will require housing units in the State. Although these household projections are a key component in HCD's needs assessments, Finance has not conducted a proper study or obtained formal recommendations from experts it consulted to support its assumptions in this area. Finance intends to reevaluate its assumptions related to household growth as more detailed 2020 Census data becomes available later in the year, but without such efforts, Finance cannot ensure that it is providing the most appropriate information to HCD.

Respectfully submitted,

MICHAEL S. TILDEN, CPA
Acting California State Auditor

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CONTENTS

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SUMMARY

The Legislature recognizes that the availability of housing is of vital statewide importance and that the State and local governments have a responsibility to facilitate the development of adequate housing. State law requires the Department of Housing and Community Development (HCD) to conduct assessments to determine the housing needs (needs assessments) throughout regions in the State. The needs assessments rely on projections of future population and households developed by the Department of Finance (Finance). HCD is required to consider certain factors identified in state law and then can adjust the needs assessments for any of the factors. For example, it makes an adjustment to achieve a healthy vacancy rate in the housing market and an adjustment to reduce the number of overcrowded households. Regions use the needs assessments to plan for additional housing to accommodate population growth and address future housing needs.

HCD's Housing Needs Assessment Process Lacks Sufficient Reviews and Support

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HCD does not have a formal review process for the data it uses to determine its needs assessments. As a result, the needs assessments for two of three regions we reviewed included errors. One data error reduced a region's needs assessment by nearly 2,500 housing units. HCD also did not demonstrate that it adequately considered certain factors when creating the needs assessments of the three regions we reviewed. For one of those factors, the healthy vacancy rate, HCD did not perform a formal analysis to adequately support its assumptions. HCD's insufficient oversight of its process and the lack of adequate documentation supporting the healthy vacancy rate risks eroding public confidence in HCD's ability to address the State's housing needs.

Finance Provides Reasonable Population Projections, but It Has Not Provided Sufficient Support for Its Household Formation Projections

Page 25

Finance's projections of the statewide future population are reasonably accurate, but it did not sufficiently support its projections of the number of future households. To calculate the household projections, Finance identifies rates at which it expects individuals in different age groups to form new households and applies those rates to its population projections. Although Finance worked with HCD to solicit some advice from experts when it established these rates, it did not conduct a formal study or receive clear recommendations to support them. As a result, Finance cannot ensure that it is providing the most appropriate information for HCD to include in its needs assessment process.

Finance stated that it intends to reevaluate its assumptions related to household growth after it reviews 2020 Census data when those data become available later this year.

Summary of Recommendations

Legislature

To provide HCD additional clarity and guidance in conducting its vacancy rate adjustments, the Legislature should amend state law to clarify whether HCD should continue to use a healthy vacancy rate that includes both rental and owned housing or whether it should determine and use separate healthy vacancy rates for owned housing and rental housing.

HCD

To ensure that its needs assessments are accurate and do not contain unnecessary errors, by June 2022 HCD should institute a process to ensure that its staff performs multiple reviews of data in its assessments.

To demonstrate that its needs assessments are complete and address all relevant factors, by September 2022 HCD should establish a formal process to document its consideration of all factors required by state law in its needs assessments.

To ensure that it adequately supports the vacancy rate adjustments it makes to needs assessments, by February 2023 HCD should perform a formal analysis of healthy vacancy rates and historical trends to inform those adjustments.

Finance

To ensure that the household formation rates that it provides HCD are appropriate, Finance should, by February 2023, conduct a comprehensive review of its assumptions about the household formation rates it uses in projections, and it should document that review.

Agency Comments

HCD and Finance agreed with our recommendations and plan to implement them over the next year.

Introduction

Background

As part of the Legislature's efforts to ensure that the State is planning for the construction of enough homes to meet its housing needs and that local governments are facilitating that development, state law requires the Department of Housing and Community Development (HCD) to conduct periodic housing needs assessments to determine existing and projected housing needs throughout California. HCD fulfills its responsibilities under state law by creating Regional Housing Needs Assessments (needs assessments). As Figure 1 shows, HCD provides the needs assessments to councils of governments, which we describe in the text box, across the State and directly to counties that are not in such a council. Figure 2 provides an overview of the councils of government in the State and also shows counties that are not part of a council. After a council of governments receives its needs assessment from HCD, it then must allocate the region's housing needs to the cities and counties within its boundaries. For counties without a council of governments, HCD provides allocations to those counties as well as to the cities within them.[1] Cities and counties must then develop plans to accommodate the existing and projected housing need. HCD performs needs assessments every five to 11 years. HCD does not complete all assessments at the same time and does not always cover the same period, because it attempts to align the needs assessment process with other planning processes, such as regional transportation planning. The three needs assessments that we reviewed are those of the Santa Barbara County Association of Governments (Santa Barbara Association), the Sacramento Area Council of Governments (Sacramento Council), and Amador County.

Definition of Council of Governments

A voluntary association, generally of county and city governments, created by a joint powers agreement.

Source: State law and a council of governments' website.

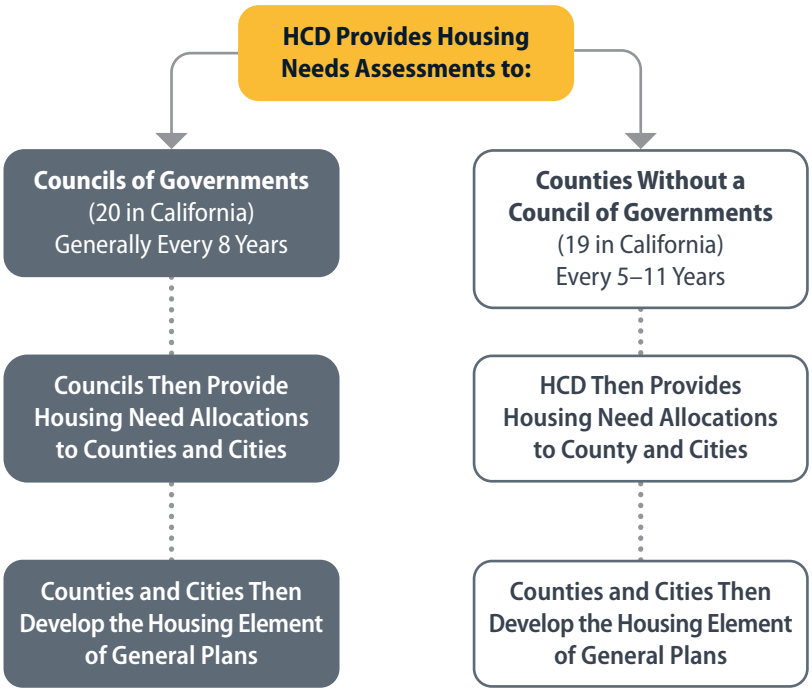
Needs Assessment Components

State law requires HCD to use population projections developed by the Department of Finance (Finance) when it completes the needs assessments. Finance factors into its projections multiple sources of information, including data from the U.S. Census Bureau (Census) and records of driver's licenses, births and deaths, school enrollments, and tax filings. Finance provides state- and county-level population projections to assist state, regional, and local planning, among other purposes. Finance also projects the number of future households, based on the population projections

[1] Counties that receive their assessments and allocations directly from HCD represent just 3 percent of the State's population.

and the percentage of people in the population who are expected to form their own households in the future, which is known as the household formation rate.

Figure 1
HCD's Housing Needs Assessments Inform County and City Housing Plans



Source: State law and HCD housing needs assessments.

Table 1 describes the factors that state law requires HCD to consider in its needs assessments, including vacancy rates. State law requires HCD to consider vacancy rates in existing housing and the vacancy rates for healthy housing markets when developing the needs assessments. A low supply of housing can result in low rental vacancy rates, which in turn can lead to housing price increases. Therefore, HCD adjusts its needs assessments so that housing markets can achieve a healthy vacancy rate. In some cases, that adjustment will add to the number of housing units HCD determines a region needs so that the region can obtain a healthy vacancy rate. State law specifies that the minimum vacancy rate for a healthy rental housing market is 5 percent, but the law does not define the healthy vacancy rate for owned housing.

Figure 2
Most California Counties Have a Council of Governments That Receives Needs Assessments From HCD

Source: HCD housing needs assessment letters.

Table 1
Factors HCD Must Consider in Its Assessments

FACTOR	DESCRIPTION
Anticipated Population Growth	Projection of future population growth in the region.
Household Formation Rate	The rate at which individuals form new households in the region.
Household Size	The number of people per household in the region.
Vacancy Rates	The percentage of homes available for rent or sale compared to the total number of housing units, less vacation and seasonal homes.
Overcrowding	The percentage of households that have more than one resident per room in a housing unit.
Replacement Needs	Replacement of housing units lost during the planning period, such as because of deterioration.
Cost-Burdened Households	The percentage of households that are paying more than 30 percent of their income on housing costs.
Units Lost to Emergencies	The loss of housing units during a state of emergency declared by the Governor, such as in wildfires, if the lost units have not yet been rebuilt or replaced.
Jobs/Housing Balance	The relationship between the number of jobs in a region and the number of housing units in that same region.
Other Characteristics	Other characteristics of the composition of the projected population.

Source: State law, the Census website, HCD needs assessments, HCD work group reports, and interviews with HCD staff.

Note: State law does not require HCD to consider these factors for its needs assessments in counties that do not have a council of governments; however, HCD's practice is to do so.

State law also requires HCD to adjust its needs assessments to account for long-term housing challenges, such as overcrowding, which occurs when a housing unit has more than one resident per room. The Legislature added this overcrowding factor to the needs assessment process in 2017. HCD must also consider cost-burdened households, which are households that pay more than 30 percent of their income for housing costs. When it determines it is appropriate to do so, HCD includes in its assessments adjustments for cost burden and overcrowding. Among the sources HCD uses to determine these adjustments is data that state law requires councils of governments to provide. The councils provide data comparing the cost burden and overcrowding for their respective regions with that of other comparable regions in the United States. HCD then uses this information to calculate adjustments for each council of governments' needs assessment. Table 2 shows a hypothetical example of how HCD incorporates adjustments for the various factors to determine the number of housing units in its needs assessments. Appendix A shows the three needs assessments that we reviewed.

Table 2
Housing Needs Assessments Contain Many Factors and Adjustments

	HYPOTHETICAL EXAMPLE OF HCD NEEDS ASSESSMENT CALCULATIONS	
	FACTOR/SOURCE	**PROJECTED CALCULATION**
JUNE 2020–JUNE 2028 (8 YEARS)	**8-year Population Projection (Finance)**	**1,500,000**
	– Group Quarters Population (Finance)*	– 35,000
	Population Needing Housing (Finance)	**1,465,000**
	Household Formation Rate Adjustment (Finance)†: 36.6% average	
	Projected Households (Finance)	**540,000**
	+ Vacancy Rate Adjustment (HCD): 2.2%	11,900
	+ Overcrowding Adjustment (HCD): 0.6%	3,200
	+ Replacement Needs Adjustment (HCD): 0.5%	2,700
	Units Lost to Emergencies (HCD)‡	—
	Jobs/Housing Balance (HCD)‡	—
	– Occupied Units (Finance)	– 480,500
	Subtotal	77,300
	+ Cost Burden Adjustment (HCD)§: 0.55%	3,100
	Total Needs Assessment	**80,400 Housing Units**

Source: Auditor review of HCD housing needs assessments.

* This reduction includes individuals housed in prisons and in college dormitories.

† The household formation rate represents the likelihood that individuals in the region's projected population will head their own households. Finance uses different household formation rates for different age groups, which we have simplified for illustrative purposes here.

‡ Factors that state law requires HCD to consider, but that it did not include as an adjustment in the needs assessments we reviewed.

§ HCD makes the cost burden adjustment only after applying all the other adjustments.

Finally, state law requires HCD to consider housing units that communities will need to plan to replace. Some housing units become uninhabitable during the future period covered by the assessments, such as housing lost due to damage, deterioration, and house or apartment building fires. State law requires HCD to review housing replacement needs, and HCD does so by obtaining from Finance the number of housing units a council of governments or county has lost over the past 10 years. HCD then determines the rate at which the region loses housing units and makes an adjustment in the needs assessment to replace those houses. In response to recent wildfires that have destroyed a significant number of houses, the Legislature added the requirement in 2018 that HCD must also consider any housing recently lost during a state of emergency that the Governor declared. Similar to the cost burden factor discussed

above, state law requires councils of governments to provide data to HCD on housing lost during a state of emergency for consideration in the needs assessments.

Local Actions After HCD Completes a Needs Assessment

After HCD makes a final determination for a needs assessment, state law requires the council of governments to create housing needs allocations for the cities and counties within its region. The council, in consultation with HCD, must develop a proposed methodology for distributing the allocation. The council of governments must conduct a survey and ensure public participation when developing the methodology. The council of governments establishes a draft allocation and then may hear appeals of the allocation, if any are raised. It then must make the allocation final and adopt it.

State law requires local governments, such as cities and counties, to create plans to meet housing needs. Local governments must adopt a general plan, which is a blueprint for meeting the community's long-term vision for the future. Within the general plans, state law requires local governments to include a housing element, which contains an analysis of existing and projected housing needs in their communities. Cities and counties must state their goals, policies, and programs related to the development of housing, to accommodate projected housing needs allocated by their council of governments or HCD. The community, through the housing element, must attempt to meet these housing needs, such as by changing the zoning on specific parcels to allow residential development.

Needs Assessments Can Be Contentious but Are a Critical Component of Addressing Housing Challenges

Some stakeholders have criticized the needs assessment process and HCD's needs assessments. For example, some homeowners and advocacy organizations believe that HCD's needs assessments have produced higher numbers of housing needs than are reasonable. Changes to state law that became effective in January 2019 allow HCD to account for present unmet housing needs in addition to future housing needs. Potentially as a result of these statutory changes, some regions received housing needs allocations that are more than double the amount of their previous allocations.

We are aware of two lawsuits that challenge HCD's process, including one that alleges that HCD did not consider all factors as required by state law. In one lawsuit, the Orange County Council

of Governments, which is independent from the larger Southern California Association of Governments, sued HCD, alleging that HCD failed to use the appropriate population forecast, failed to appropriately evaluate household overcrowding and cost burden rates, and used unreasonable vacancy rates. In the other lawsuit, several interested individuals and two nonprofit corporations filed a lawsuit alleging that HCD failed to consider data regarding the relationship between jobs and housing in its assessment for the Association of Bay Area Governments, which is the San Francisco Bay Area council of governments. Both lawsuits are pending final resolution. To avoid interference, we did not review the needs assessments for either of the councils involved in these lawsuits as part of this audit.

The needs assessments affect the planning for housing availability across the State and are an important but sometimes contentious component in addressing California's housing crisis. Housing availability and affordability has become a key economic issue, as the Legislative Analyst's Office (LAO) reported in 2019. The LAO noted that the significant shortage of housing, particularly within coastal communities, contributed to higher housing costs for Californians. The LAO also noted that high housing costs increase the State's poverty rate and, in particular, put low-income Californians at risk of instability and homelessness. As discussed above, the State's role in identifying existing and future housing needs to guide the housing planning process is under public scrutiny. Determining accurate, appropriate, and defensible housing needs is a key step in facilitating state and local efforts to plan for housing development.

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HCD's Housing Needs Assessment Process Lacks Sufficient Reviews and Support

Key Points

- HCD made several errors when entering data into calculations for its needs assessments, which reduced the amount of housing needs in the needs assessments for two of the three regions we reviewed. HCD does not have a sufficient management review process to ensure that it identifies such errors before finalizing needs assessments. Without effective review processes, HCD may be making similar errors in needs assessments for other councils of governments.

- HCD could not demonstrate that it followed work group recommendations when it considered the balance between jobs and housing, and did not maintain consistency in its consideration of housing destroyed during a state of emergency, when it produced the needs assessments for the three regions we reviewed. In at least one needs assessment, the omission led HCD to understate housing needs by not accounting for units that had been destroyed in a wildfire.

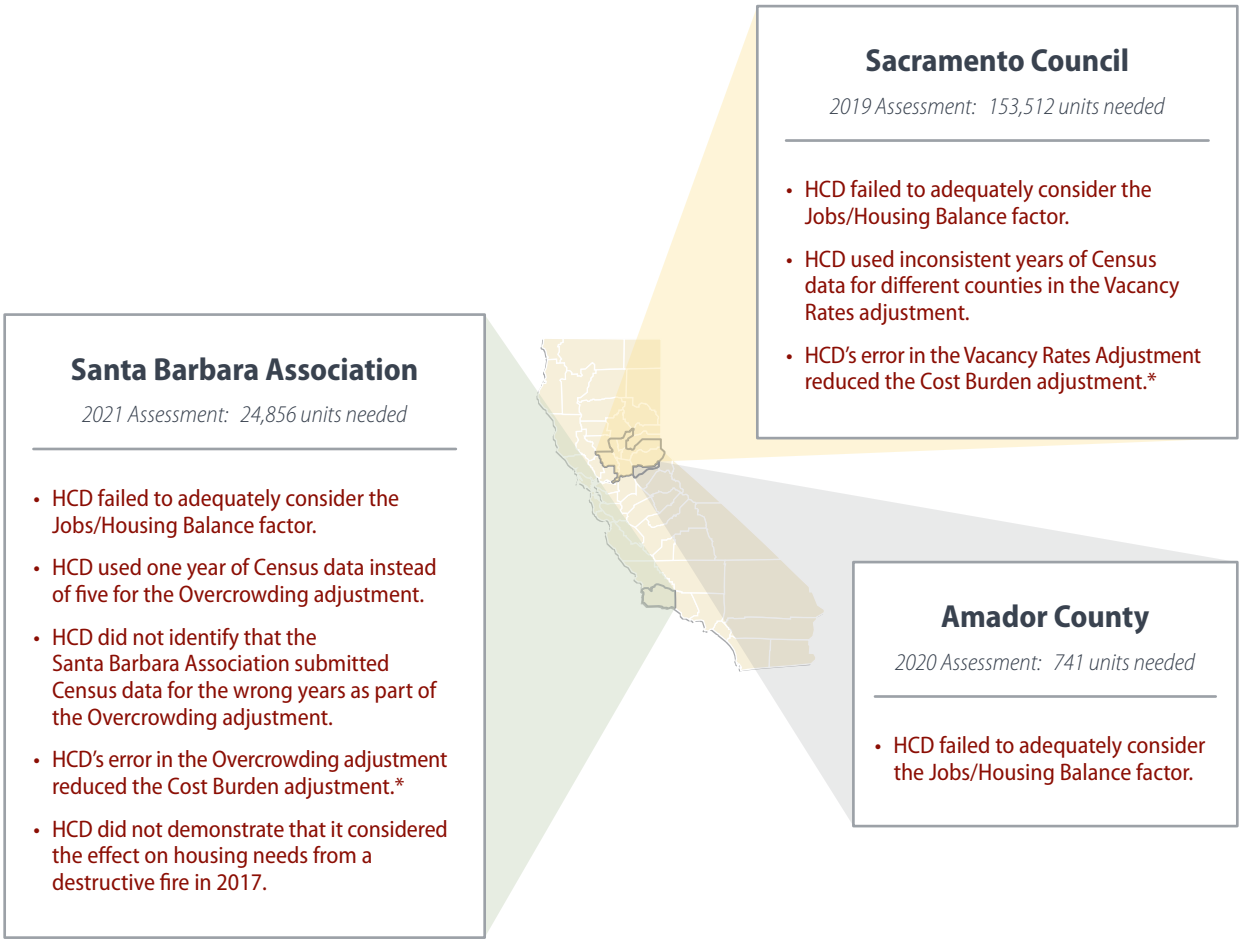
- HCD did not adequately support its adjustment to the needs assessments to address vacancy rates for the councils of governments we reviewed. Despite the significant effect that HCD's vacancy rate adjustments have on needs assessments, it has not completed a thorough analysis to determine whether it used the most appropriate value in its calculations.

- HCD's reviews of comparable regions selected by councils of government have been inconsistent because the department does not have a formal process for such reviews. As a result, it did not identify a problematic proposal from a region and inappropriately reduced its needs assessment.

HCD Has Made Errors When Completing Its Needs Assessments Because It Does Not Sufficiently Review and Verify Data It Uses

HCD does not have an adequate review process to ensure that its staff members accurately enter data that it uses in the needs assessments. As Table 1 shows, state law requires HCD to consider a variety of information for its needs assessments for councils of governments, including population projections, housing vacancy rates, and income data. HCD staff members enter the data the department obtains from various sources into a spreadsheet for each council of governments and uses the information to determine the housing needs. However, HCD does not sufficiently review its staff member's data entries for accuracy. As Figure 3 shows, we noted data entry errors in two of the three assessments we reviewed. We discuss the other issues presented in Figure 3, including an inadequate consideration of the relationship between jobs and housing, in the following section.

Figure 3
HCD's Errors and Omissions Understated the Needs Assessments for Multiple Regions



Source: Analysis of state law, HCD needs assessments, and HCD's 2010 SB 375 implementation work group report.

Note: We were able to determine the impact on needs assessments from some, but not all errors and omissions presented in this figure. For example, HCD did not collect data on the jobs/housing balance, and therefore we could not quantify the effect of HCD not considering this factor. We discuss selected errors' impacts on HCD's needs assessments on pages 13 and 22 in the report text.

* Because HCD makes the cost burden adjustment after applying the other adjustments, errors that increase or reduce other adjustments also increase or reduce the cost burden adjustment.

One data entry error resulted in a lower, inaccurate number of needed housing units in the Santa Barbara Association's needs assessment. HCD's needs assessment letter explained that its overcrowding adjustment relied on Census estimates from five years of survey data. However, HCD had only used Census data from a one-year estimate when determining the overcrowding adjustment, which is both less accurate and inconsistent with other steps in the calculation that used the five-year estimates. HCD explained that staff members entered data from the wrong table on the Census website. Had HCD used the five-year estimates as

it intended for this step in its calculation, Santa Barbara's needs assessment would have included 1,338 more housing units, or about 5 percent more than the inaccurate assessment HCD provided to the Santa Barbara Association.

HCD made a similar error when using Census estimates to adjust the Sacramento Council's assessment. It had intended to use the 2013–2017 Census vacancy estimate for all the counties within the Sacramento Council, but it mistakenly entered the 2012–2016 estimate for Sacramento County. This error reduced the Sacramento Council's needs assessment by 2,484 units. Although this number represents a small portion of the region's overall needs assessment of more than 153,000 units, it still represents homes for individuals and families for which the Sacramento Council needs to plan to accommodate.

Because HCD did not verify the information the Santa Barbara Association submitted for its needs assessment, it made an additional error. HCD incorporates into the needs assessments some information it receives from the councils of governments, such as data on overcrowding. The Santa Barbara Association submitted data on comparable regions' overcrowding rates using the 2014–2018 Census data, which HCD then incorporated into its overcrowding calculation. However, HCD had intended for its calculation to incorporate 2015–2019 data. Although this particular error was not large, it was in addition to the other errors in the assessments we reviewed, as discussed above. It concerns us that HCD does not have a formal review process to ensure that these important housing needs assessments are as accurate as possible.

HCD does not have a formal review process to ensure that these important housing needs assessments are as accurate as possible.

We identified these errors, which would be difficult to detect in documentation supporting HCD's needs assessments, by comparing the data in the needs assessments to the correct source documents. Therefore, we expected that HCD would have a robust process for dedicated reviewers and management to verify that staff members retrieve and enter the correct data in the spreadsheets. However, HCD told us that its primary process for identifying errors in its needs assessments is to send a draft assessment to each council of governments for review rather than to have HCD supervisors or other HCD staff members review the drafts.

HCD's reliance on the councils of governments for checking the accuracy of the needs assessments is problematic. As we discuss in the Introduction, the needs assessment process can be contentious and draws attention from numerous stakeholders. Therefore, some councils of governments may be reluctant to propose changes or corrections to their needs assessments that increase their own housing needs. In fact, two of the errors we identified inaccurately lowered the needs assessments, but HCD stated that neither the Santa Barbara Association nor the Sacramento Council notified HCD of the errors, and no record we reviewed indicated whether the two councils of governments noticed the errors at all.

When we brought these concerns to HCD's attention, its deputy director of housing policy development (housing policy deputy) stated that the department plans to conduct and document supervisor reviews of its needs assessments for its next planned round of assessments in 2023. It is crucial that HCD do so to ensure that councils of governments plan for the appropriate amount of housing and to maintain public confidence in the validity of the State's assessments of local housing needs.

It is crucial that HCD conduct and document supervisor reviews of its needs assessments to ensure that councils of governments plan for the appropriate amount of housing and to maintain public confidence in the validity of the State's assessments.

HCD Did Not Demonstrate That It Adequately Considered Certain Factors That State Law Requires for Housing Needs Assessments

HCD did not demonstrate that it adequately considered two factors listed in state law when preparing the three needs assessments we reviewed, which potentially further reduced the reliability of its needs assessments. The law requires HCD to review data and assumptions that councils of governments submit for the factors considered in housing needs assessments, and it allows HCD to make adjustments to the needs assessments after this consideration. HCD may accept or reject the submitted information, and it must issue a written determination on the data assumptions for each factor and the methodology it will use.

Although HCD generally included most of the factors outlined in state law in the three needs assessments we reviewed, it did not adequately demonstrate how it considered two factors: the balance between jobs and housing in the region (jobs/housing balance) and housing lost in emergencies, such as wildfires. The housing policy deputy stated that HCD addresses these factors through its projected household data and other adjustment factors, and currently documents that consideration with an assertion in its final needs assessment that it considered all factors specified in state law.

HCD did not adequately demonstrate how it considered the balance between jobs and housing in the region and housing lost in emergencies, such as wildfires.

When we asked HCD about its specific consideration of the jobs/housing factor, HCD indicated that it relied on a work group's draft analysis of jobs/housing relationships. However, this analysis is outdated and provided limited direction for how the jobs/housing balance would affect needs assessments. The housing policy deputy stated that HCD had studied the jobs/housing balance factor in 2010, 12 years ago. The analysis noted that the inconsistent data available between regions makes regional comparisons of jobs and housing difficult and that statewide standardized employment data are not available for comparison purposes. Although it did not recommend specific adjustments for the jobs/housing balance factor, the 2010 work group indicated that HCD should solicit specific information from councils of governments to address this factor. However, HCD did not specifically request such information from the Sacramento Council, the Santa Barbara Association, or Amador County—the three needs assessments we reviewed—in order to determine those needs assessments.

HCD believes that its other adjustments for different factors also addressed the jobs/housing balance factor. Specifically, HCD asserted that its adjustments to address low vacancy rates, high overcrowding, and high cost burdens address jobs/housing balance issues. However, HCD did not provide an analysis that demonstrated how, or to what extent, these adjustments address the jobs/housing balance. The housing policy deputy also noted the potential for inequitable adjustments for jobs/housing balance between regions because regions receive needs assessments at different times but agreed to review data sources and seek academic perspectives on approaches to account for the jobs/housing balance

in the next round of needs assessments. HCD also agreed that as part of its review of the jobs/housing balance factor, it would consider either adding a specific adjustment or modifying its other adjustments, such as increasing the cost burden adjustment, to better account for the factor in the future.

HCD agreed that as part of its review of the jobs/housing balance factor, it would consider either adding a specific adjustment or modifying its other adjustments, such as increasing the cost burden adjustment, to better account for the job/housing balance factor in the future.

The second factor HCD inadequately considered was housing lost during emergencies. HCD did not consider housing lost during emergencies in a consistent manner across different regions, which led it to understate housing needs in the Santa Barbara Association's needs assessment. State law requires HCD to consider data and assumptions submitted by a council of governments on housing lost during a state of emergency declared by the Governor if that lost housing has not been rebuilt or replaced at the time of the collection of data for the needs assessment. In 2017 the Governor declared a state of emergency in Santa Barbara and Ventura counties due to the Thomas Fire, which destroyed more than 1,000 housing units and other structures. HCD did not consider the loss of units caused by this wildfire, as required by state law, and did not make an adjustment for this factor in the 2021 Santa Barbara Association needs assessment, as it did in another region, which we discuss below. We believe HCD should have worked with state and county officials to consider this factor in the assessment so that the Santa Barbara Association can plan to address actual housing needs.

HCD's housing policy deputy explained that HCD believes another factor addresses housing lost to fire emergencies. As we discuss in the Introduction, HCD determines the replacement rate at which each council of governments' region loses housing units and applies an adjustment in the needs assessment to replace housing. The replacement adjustment reflects the average annual rate of housing loss over the past 10 years that a council of governments needs to replace for units that have been destroyed or demolished, or are no longer inhabitable. The housing policy deputy stated

that Finance provides it with information on the rate of housing replacement, such as when there is a fire that requires a building to be replaced. Although HCD considered replacement units in the Santa Barbara Association needs assessment, it did not include a separate consideration for units destroyed in emergencies. HCD's replacement adjustment identified the average rate that housing is replaced in Santa Barbara County based on 10 years of data from Finance. However, this approach minimized the effect of a wildfire by combining it with normal years of housing losses, resulting in less overall housing than actually needed.

Furthermore, HCD's approach to the Santa Barbara Association's declared state of emergency was not consistent with the approach it took in another assessment. Specifically, for the Butte County Association of Governments, HCD worked with county and state officials, including Finance, when it considered and then included an adjustment specifically for housing destroyed in the 2018 Camp Fire, for which the Governor also declared a state of emergency. HCD noted that it included the adjustment for the Butte County Association of Governments because this fire and associated housing loss was particularly large. We expected HCD to consider housing lost in declared emergencies consistently.

It is critical that HCD's actions increase confidence in the needs assessment process.

HCD needs to thoroughly document its required consideration of each factor because the needs assessment process is complex and can be contentious, drawing significant attention from local governments as well as interest groups. Therefore, it is critical that HCD's actions increase confidence in the needs assessment process. Although state law permits HCD to determine what adjustments, if any, to make in response to a particular factor, documenting the specific methodology and determination will enhance transparency and public trust. It will also allow HCD to more effectively justify its conclusions to stakeholders and potentially avoid litigation. It is also important that HCD conduct its needs assessments consistently across different regions and in compliance with state requirements, especially when adjusting for sensitive issues such as wildfire disasters.

The Healthy Vacancy Rate HCD Used in Assessments We Reviewed Was Poorly Supported

HCD did not provide adequate support for a critical determination it made about the healthy housing vacancy rate that it used in the three needs assessments we reviewed, raising questions about whether HCD can support the rate in its other assessments. State law requires HCD to consider how councils of governments' vacancy rates compare with healthy vacancy rates when determining housing needs assessments. As we discuss in the Introduction, state law specifies that a healthy vacancy rate for rental housing should not be less than 5 percent, but it does not specify a healthy vacancy rate for owned housing, allowing HCD to make that determination.

HCD used a 5 percent healthy vacancy rate for the combined rental and ownership markets for two of the councils of governments' assessments we reviewed.[2] HCD calculated the vacancy rate adjustment by subtracting the region's overall vacancy rate from the 5 percent healthy vacancy rate. Based on that rate, the vacancy rate adjustment for the Santa Barbara Association resulted in an increase of more than 4,000 housing units to the overall housing needs. Even a 1 percent difference—higher or lower—can make a significant difference in the needs assessment. For example, if HCD had used a 1 percent higher healthy vacancy rate target, the adjustment would have increased by 40 percent, to 5,600 housing units. Therefore, it is important that the rate that HCD uses is adequately supported.

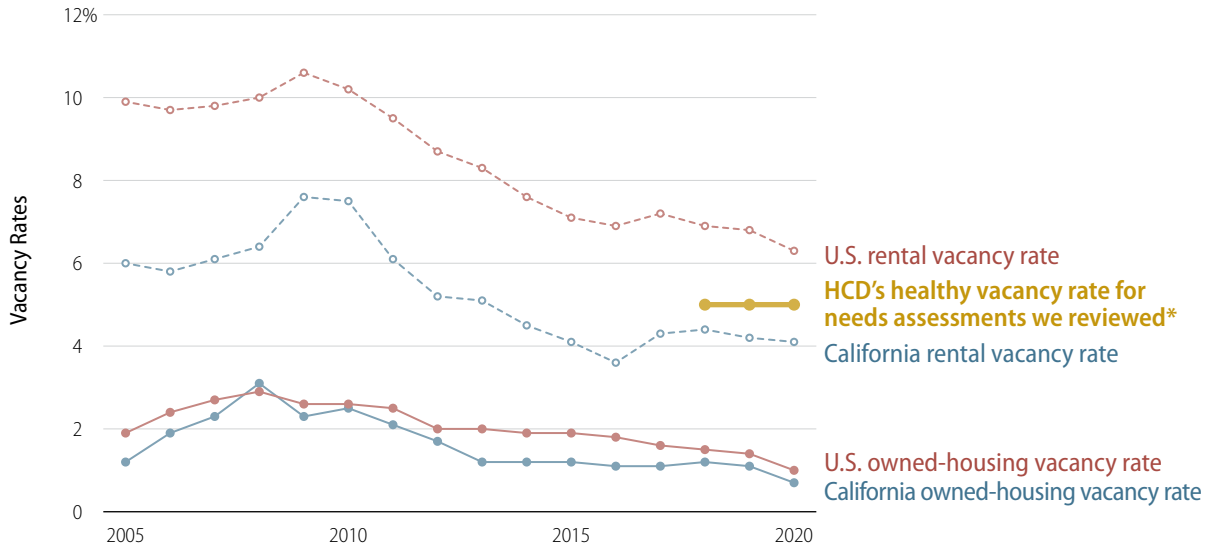
Even a 1 percent difference—higher or lower—in the healthy vacancy rate assumption can make a significant difference in the needs assessment.

HCD concluded that its choice of a single healthy vacancy rate for the overall market instead of separate rates for owned and rental housing was appropriate. HCD stated that in 2018, for the current round of needs assessments, it began evaluating vacancy rates across the total number of homes available, a change from its previous approach of separating the rental and ownership markets before

[2] HCD used a 4 percent healthy vacancy rate to perform the adjustment for Amador County—a county without a council of governments. HCD explained that it used a lower rate for rural areas because they have a higher proportion of owned housing compared to rental housing and the ownership market typically has less turnover, and thus fewer homes on average will be empty at any given time in rural areas than in the State as a whole.

evaluating vacancy rates in each of them. HCD stated that it changed its approach to reflect the fact that some owned housing becomes rental housing over time. Conversely, a development may be rented for an initial period and then sold to owners after a condominium conversion. However, as shown in Figure 4, the vacancy rates of the two categories are significantly different—ownership vacancy was much lower than rental vacancy over the past 15 years. We are concerned that HCD has not completed a formal analysis to support its claim that a single healthy vacancy rate was appropriate.

Figure 4
HCD Targeted a Vacancy Rate That Is Between Historical Rates for Rented and Owned Housing



Source: Data from the Census and HCD websites.

* Before it started using a single 5 percent vacancy rate in 2018, HCD used separate rates for rental and owned housing for each assessment.

When we asked HCD for its support for using the 5 percent healthy vacancy rate in the assessments, it provided only limited information that did not adequately support its assumptions. HCD explained that although it understands that the ownership vacancy rate is somewhat lower than 5 percent, the literature it reviewed indicated that a healthy rental vacancy rate is likely somewhat higher than 5 percent, and it believes the 5 percent is defensible for the combined market. However, HCD did not thoroughly analyze vacancy rates when it began to use this healthy vacancy rate assumption in 2018. HCD provided a summary document from a work group it convened in 2010 that reviewed historical vacancy rates in different regions, but the work group's summary did not reach a conclusion on a

healthy vacancy rate. Instead, the summary referenced information the work group had reviewed, including government reports, and noted a range of vacancy rates among other states that included separate rates for owned and rented housing. Additionally, some of the information was outdated because several of the government reports the summary cited were published in the 1980s. The summary also stated that HCD had used the same healthy vacancy rates—using separate rates for owned and rental housing—since 2006 and may adjust them for current economic conditions.

Despite the large impact of the vacancy rate adjustment on a region's total needs assessment, HCD has relied on the 5 percent healthy vacancy rate without providing adequate support for its approach. For example, HCD made a vacancy rate adjustment to increase Sacramento's needs assessment by more than 22,700 units, or nearly 15 percent of the total housing needs. Therefore, we expected HCD to provide sufficient analysis and support for its assumptions underlying the healthy vacancy rate it used in the assessments we reviewed. When HCD does not develop a strong analysis with clear justification for its assumptions, especially those that have significant impact on the size of its final assessments, it risks making adjustments that are not reflective of a region's true housing needs.

When HCD does not develop a strong analysis with clear justification for its assumptions, especially those that have significant impact on the size of its final assessments, it risks making adjustments that are not reflective of a region's true housing needs.

HCD Did Not Identify a Problematic Proposal From a Region and Inappropriately Reduced Its Needs Assessment

HCD did not sufficiently review the regions that councils of governments compared themselves to as part of the needs assessment process. For two factors in its needs assessments, state law requires HCD to consider how a council of governments' regional data compares to that of other similar regions in the nation. For these factors—overcrowding and cost burden—the law requires councils of governments to provide data from regions they propose as "comparable." For the cost burden adjustment, state law requires councils to provide data from "healthy" housing markets. State law

allows HCD to adjust a council of governments' needs assessment based on these factors, thus allowing communities to plan for more housing to better address the housing crisis. Under state law, HCD must consider the information a council of governments submits, though it does not have to use that information in its final needs assessment. State law does not provide criteria for the councils of governments to select comparable regions to propose. However, in correspondence to the council of governments we reviewed, HCD recommended that several non-housing factors—such as population, median income, and jobs per capita—be included for comparison to help guide councils of governments in their selections of comparable, healthy regions.

HCD's reviews of comparable regions selected by councils of government have been inconsistent because the department does not have a formal process for such reviews. The housing policy deputy explained that HCD reviews the appropriateness of the regions that councils of governments propose as comparable and has rejected a proposal in the past. However, HCD does not have a documented process to guide its evaluation of councils of governments' proposals to ensure that its reviews are consistent. HCD explained that even though it does provide guidance on what criteria councils of governments could use for their proposals of comparable regions, it has avoided instituting a specific, formal review process because state law specifically allows councils of governments to determine what regions are comparable. However, state law also gives HCD the ability to reject those same proposals. Therefore, we believe it is important for HCD to have a formal process to review the comparable regions that councils of governments propose so it can ensure that it is using this authority consistently for different needs assessments.

It is important for HCD to have a formal process to review the comparable regions that councils of governments propose so it can ensure that it is using its authority consistently for different needs assessments.

The Santa Barbara Association provided HCD with a comparable region proposal that we found problematic. In January 2021, after working with HCD to adjust its comparable region proposal, the Santa Barbara Association provided a memo to HCD explaining that it based its selection of comparable regions on certain categories,

such as population, household size, rent-to-income ratio, age distribution, and poverty. These criteria resulted in the Santa Barbara Association choosing regions that were likely experiencing housing problems similar to its own region because they also had higher, unhealthy, rates of overcrowding and cost-burdened households compared to national averages. The use of household sizes and rent-to-income ratios to select comparable regions was problematic. For example, the overcrowding rate—reflecting the number of housing units that have more than one person per room in a region—is likely higher in a region with a higher average household size. Similarly, a region with a higher rent-to-income ratio is likely to have more households with heavy cost burdens. Higher overcrowding and heavier cost burdens than the national average indicate that those housing markets are not healthy.

HCD accepted the comparable regions the Santa Barbara Association proposed, which likely lowered the needs assessment from what it would have been had HCD used healthy housing markets for one of the adjustments. HCD explained that it views its role as providing guidance to councils of government in their process of selecting comparable regions, rather than being prescriptive. However, our concern is that the Santa Barbara Association specifically used certain criteria that resulted in it selecting unhealthy housing markets, which HCD acknowledges is an approach that has led it to reject other councils' comparisons. Had HCD compared the Santa Barbara Association to regions with cost burden rates closer to the national average, we estimate that its needs assessment would have increased by 470 housing units to about 25,300, or an increase of 1.9 percent. Without a consistent process to review the criteria that councils of governments propose to identify comparable regions, HCD may be allowing some regions to plan for less housing than they otherwise should.

Recommendations

Legislature

To provide HCD additional clarity and guidance in conducting its vacancy rate adjustments, the Legislature should amend state law to clarify whether HCD should continue to use a healthy vacancy rate that includes both rental and owned housing or whether it should determine and use separate healthy vacancy rates for owned housing and rental housing.

HCD

To ensure that its needs assessments are accurate and do not contain unnecessary errors, by June 2022 HCD should institute a process to ensure that its staff performs multiple reviews of data in its assessments, including data that staff members input and councils of governments submit.

To demonstrate that its needs assessments are complete and address all relevant factors, by September 2022 HCD should establish a formal process to document its consideration of all factors required by state law in its needs assessments.

To ensure that it adequately supports the vacancy rate adjustments it makes to needs assessments, by February 2023 HCD should perform a formal analysis of healthy vacancy rates and historical trends to inform those adjustments.

To ensure that it does not reduce its needs assessments based on inappropriate information provided by councils of governments, by June 2022 HCD should develop a formal process to review the appropriateness of councils of governments' proposed comparable regions, including identifying the criteria it will consider when reviewing councils of governments proposals. HCD should use this formal process and criteria to consistently evaluate the appropriateness of the proposals to ensure that they identify regions with healthy housing markets.

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Finance Provides Reasonable Population Projections, but It Has Not Provided Sufficient Support for Its Household Formation Projections

Key Points

- Finance's population projections are the basis of HCD's needs assessments, and they are generally accurate. Projections for counties with less than 250,000 residents were less accurate than for counties with more than 1 million residents, but the accuracy of projections has improved over time.
- Finance also creates projections of the number of future households in the State by county. Although HCD uses the household projections in its needs assessments, Finance has not conducted a rigorous analysis to support the household formation rates it uses for the projections.

Finance's Population Projections Have Generally Been Accurate

The basis of housing needs assessments are population forecasts that Finance produces. State law requires Finance to produce short- and long-range projections of the population, and it does so for the entire State and its counties. To develop its population projections, Finance projects future births, deaths, and migration, or movement into and out of the State, to determine the State's future population by county. HCD then uses the projections for five to 10 years into the future in its needs assessments, depending on the period the assessment covers.[3] To review the accuracy of Finance's previous population projections and their potential impact on HCD's needs assessment process, we compared the statewide population projections for 2020 that Finance published in 2011 to Census data for 2020. We found that its projections were overestimated by just 2.7 percent. The variables that affect population estimates, such as the number of deaths, births, and migration, are not constant values and are difficult to predict precisely; therefore, we considered Finance's statewide projections reasonable.

We also reviewed the process and data that Finance uses to make its projections and found that it is appropriate. Finance has programmed the software that it uses to make projections to identify and remove illogical results and fix errors in the results. Finance staff members also perform reviews of these projections. Staff members compare the projections to previous projections to ensure that there are no unexpected or dramatic changes. Finance also stated that managers review the results before the department provides the data to HCD.

When we reviewed Finance's county-level projections over several years, we noted that their accuracy varied. The projections Finance made in 2011 for the 2020 population were less accurate in counties with less than 250,000 residents than in counties with

[3] HCD's needs assessments we reviewed are for eight to 10 years in the future, ranging from 2029 to 2031.

more than 1 million residents. For example, Finance projected that Colusa County's 2020 population would be nearly 25,000, but the actual population according to the 2020 Census was only about 22,000, a difference of 12 percent. In contrast, Finance projected that Orange County's 2020 population would be 3.2 million, and the actual 2020 population was 3.19 million, a difference of 0.4 percent. However, we reviewed subsequent projections that Finance published in 2013, 2016, and 2019 of 2020 county populations and found, as would be expected, that its 2019 projections were more accurate.

Finance plans to account for 2020 Census results when making its next population projections in 2023. When we asked Finance about the differences that we identified in its projections compared to Census data, it had already begun reviewing those differences in preparation for its next population projections. In fact, it had identified a series of events and changes that may have affected the accuracy of its projections in specific counties. For example, Finance noted that its projection for Mono County was inaccurate due to population reductions resulting from staffing changes at a military facility in that county. Further, it explained that it overestimated international migration into Imperial County, leading to differences between the Census data and its projection. As a result, Finance told us that it plans to make adjustments in its approach for projections as it incorporates 2020 Census data into its next population projections, which it expects to release in early 2023.

Finance plans to make adjustments in its approach for projections as it incorporates 2020 Census data into its next population projections.

Finance Has Not Adequately Supported Rates It Uses to Develop Household Formation Projections

Finance did not have a rigorous process to support its projections of the number of households in each region, despite the importance of this data in determining a region's housing needs. One of the factors that HCD's needs assessments include are the projections of the number of households that Finance expects in future years in communities across the State. Finance estimates the number of expected households by identifying a household formation rate for different age groups in each county. The household formation rate

represents the likelihood that individuals in particular age groups will have their own households. HCD applies the rate by age group to the population projections to estimate the number of households that will exist in the future in a region. Because local governments will need to plan housing to accommodate these new households, HCD includes this expected new demand in its needs assessment process.

We expected Finance to use household information in the 2010 Census as its basis for projecting household formation rates, as 2010 data forms the basis of its current set of population projections.[4] However, Finance explained that instead it estimated current household formation rates using information from earlier Census data as well as the 2010 Census. Specifically, Finance projects that Californians will be increasingly likely to form their own households in the coming years until household formation rates reach levels seen before 2010. Finance explained that before 2010, more people were willing to live independently than do currently. However, Finance noted the 2010 Census identified a relatively low household formation rate, which may have resulted from cultural, demographic, or economic changes, such as the Great Recession that began in 2007. According to Finance, its household formation rate reflects an assumption that household formation patterns in California will increase over time to pre-2010 levels—those before that recession, when people were more likely to own homes or take on fewer roommates.

Finance did not formally study how Californians would form households; rather, its household formation rates were the result of deliberations among members of the advisory committee.

However, Finance did not formally study how Californians would form households. In partnership with HCD in 2014, it solicited advice from some experts participating on the 2015–2025 Statewide Housing Plan Technical and Research Advisory Committee (advisory committee) to guide its decisions on household formation rates. Finance noted that its household formation rates were the result of deliberations among members of the advisory committee.

[4] Finance expects to receive detailed 2020 Census information by county in August or September 2022. It plans to release new population projections, which will include information that accounts for the effects of the COVID-19 pandemic, in January or February 2023.

This advisory committee is different from the work group mentioned previously that HCD convened in 2010 that discussed vacancy rates. However, our review of available documentation from the advisory committee found that it did not make any conclusions about household formation rates. The advisory committee also did not provide Finance any formal guidance, analysis, or report on household formation rate trends.

In 2015 and 2016, Finance and HCD staff members reached out to several university professors and other experts from the advisory committee to discuss household formation rates. In a series of emails, staff members from Finance and HCD communicated with experts to discuss factors that may affect household formation rates, such as changes in young adult behavior after the Great Recession and slowing immigration and birth rates. This discussion also reflected concerns about relying on 2010 Census data, because the data reflected conditions during a recession. As part of these conversations, HCD and Finance proposed to the experts several different household rate trends, one of which Finance now uses. Although Finance believes its household formation rates are reasonable, these discussions do not constitute a thorough analysis. Given that this rate is an important component of the household projections that Finance used for multiple years, we expected Finance to better support the assertion that it is using the most appropriate rate. For example, Finance could have documented an analysis of historical household formation trends, a review of academic literature, and its consideration of all factors relevant to household formation rates to demonstrate that its household projections are defensible.

Slight changes to household formation rates, which directly increase or decrease the number of projected households, can change HCD's needs assessments by thousands of units.

Needs assessments can change significantly depending on the accuracy of Finance's assumptions. Slight changes to household formation rates, which directly increase or decrease the number of projected households, can change HCD's needs assessments by thousands of units. For example, if HCD's needs assessment for the Santa Barbara Association used household formation rates 1 percent lower, the region's needs assessment would decrease by

17.5 percent, or about 4,350 fewer units of housing.[5] Similarly, if the needs assessment used 1 percent higher household formation rates, the needs assessment would increase by as many units.

Finance plans to reevaluate its household formation rates soon. Finance believes the household formation rates it uses are still reasonable because available Census data generally indicated that it was still a reasonable expectation for household formation rates to increase in the future and that it would make sense to wait to formally reevaluate its assumption after detailed 2020 Census data is available. Finance also explained that its assumption that household formation rates will grow over time helps it to avoid projecting that recession-era economic issues and housing affordability problems will persist and affect household growth indefinitely in the State. However, without a formal comprehensive review of more recent demographic and economic information, Finance cannot adequately assure the public, stakeholders, and HCD that it is providing the most appropriate household formation rates that HCD includes in the critical needs assessment process.

Recommendations

Finance

To ensure that the population projections it provides to inform HCD's needs assessments are as accurate as possible, by February 2023 Finance should review its projections for the counties with the most significant projection inaccuracies and adjust its methodology as necessary based on 2020 Census data and other information.

To ensure that the household formation rates that it provides HCD are appropriate, Finance should, by February 2023, conduct a comprehensive review of its assumptions about the household formation rates it uses in projections, and it should document that review.

[5] The Santa Barbara Association's current needs assessment calculates the number of projected households using a set of eight household formation rates for different age groups, ranging from 11 percent for residents 15 through 24 years old to 72 percent for residents who are 85 and older. Finance explained that older residents have a higher household formation rate because they are likely to be financially independent and thus live in their own households.

We conducted this performance audit in accordance with generally accepted government auditing standards and under the authority vested in the California State Auditor by Government Code section 8543 et seq. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on the audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Respectfully submitted,

MICHAEL S. TILDEN, CPA
Acting California State Auditor

Date: March 17, 2022

Appendix A

HCD HOUSING NEEDS ASSESSMENTS WE REVIEWED

The chair of the Joint Legislative Audit Committee (Audit Committee) directed the California State Auditor (State Auditor) to conduct an emergency audit to examine HCD's regional housing needs determination process. We reviewed three of HCD's regional housing needs assessments: the Sacramento Council, the Santa Barbara Association, and Amador County. We provide those assessments in tables A.1 through A.3 to give context to the findings in our report. As noted in the Introduction, for counties without a council of governments, HCD also provides allocations of housing needs to the county and cities within it. Table A.4 provides the allocation HCD provided to Amador County and the cities within that county. In contrast, the councils of governments provide allocations of housing needs by income category to their member counties and cities.

HCD did not provide consistent details in the three assessments reviewed, and as a result, there are some differences among the assessments we display below. The time covered by the assessments, and the total housing needs that communities must accommodate, vary. HCD does not complete all assessments at the same time and does not always cover the same period because it aligns the needs assessment process with other planning processes, such as regional transportation planning. The total regional housing needs assessment corresponds to the time period displayed either in the assessment header as in the case of the Sacramento Council, or in the population projection.

Table A.1
HCD Regional Housing Needs Assessment for the Sacramento Council

SACRAMENTO COUNCIL: JUNE 30, 2021–AUGUST 31, 2029 (8.2 YEARS)	
STEPS TAKEN TO CALCULATE REGIONAL HOUSING NEEDS	**AMOUNT**
Population: August 31, 2029 (Finance June 30, 2029, projection adjusted +2 months to August 31, 2029)	**2,844,860**
– Group Quarters Population	– 57,315
Adjusted Household Population	**2,787,545**
Projected Households Minus South Lake Tahoe*	**1,021,005**
+ Vacancy Rate Adjustment (2.23%)	22,730
+ Overcrowding Adjustment (0.60%)	6,111
+ Replacement Needs Adjustment (0.50%)	5,105
– Occupied Units Estimated (June 30, 2021)	– 908,396
+ Cost Burden Adjustment	6,957
Sixth Cycle Regional Housing Needs Assessment Total	**153,512 Housing Units**

Source: HCD's needs assessment for the Sacramento Council.

* South Lake Tahoe is not in the Sacramento Council planning area, but it is included in Finance's population and household projections for El Dorado County. Discussions between HCD, the city of South Lake Tahoe, the Tahoe Regional Planning Agency (TRPA), and the Sacramento Council have resulted in the determination that the households projected by TRPA for the 2021–2029 needs assessment cycle (445 units) should not be included in the needs assessment determined for the Sacramento Council region.

Table A.2
HCD Regional Housing Needs Assessment for the Santa Barbara Association

SANTA BARBARA ASSOCIATION: PROJECTION PERIOD (8.6 YEARS)	
STEPS TAKEN TO CALCULATE REGIONAL HOUSING NEEDS	**AMOUNT**
Population: February 15, 2031 (Finance June 30, 2031, projection adjusted -4.5 months to February 15, 2031)	**488,190**
– Group Quarters Population	– 27,525
Adjusted Household Population	**460,665**
Projected Households	**160,850**
+ Vacancy Rate Adjustment (2.51%)	4,030
+ Overcrowding Adjustment (6.44%)	10,359
+ Replacement Needs Adjustment (0.50%)	804
– Occupied Units	– 152,576
+ Cost Burden Adjustment	1,389
Sixth Cycle Regional Housing Needs Assessment Total	**24,856 Housing Units**

Source: HCD's needs assessment for the Santa Barbara Association.

Table A.3
HCD Regional Housing Needs Assessment for Amador County

AMADOR COUNTY: PROJECTION PERIOD (10.9 YEARS)	
STEPS TAKEN TO CALCULATE REGIONAL HOUSING NEEDS	**AMOUNT**
Population: September 15, 2029 (Finance June 30, 2029, projection adjusted to September 15, 2029)	**40,090**
– Group Quarters Population	– 4,405
Adjusted Household Population	**35,685**
Projected Households	**15,330**
+ Vacancy Rate Adjustment (0.04%)	6
+ Overcrowding Adjustment (0%)	0
+ Replacement Needs Adjustment (0.50%)	68
– Occupied Units	– 14,697
+ Cost Burden Adjustment	34
Sixth Cycle Regional Housing Needs Assessment Total	**741 Housing Units**

Source: HCD's needs assessment for Amador County.

Table A.4
HCD Distribution of Regional Housing Needs Allocation for Amador County

	REGIONAL HOUSING NEEDS ALLOCATION BY INCOME CATEGORY				
JURISDICTION	**VERY LOW**	**LOW**	**MODERATE**	**ABOVE MODERATE**	**TOTAL**
Amador County Total	**189**	**123**	**140**	**289**	**741**
Amador	1	1	1	2	5
Ione	30	20	25	42	117
Jackson	27	23	24	64	138
Plymouth	7	5	5	13	30
Sutter Creek	15	12	13	34	74
Unincorporated Amador County	109	62	72	134	377

Source: HCD's needs assessment for Amador County.

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Appendix B

SCOPE AND METHODOLOGY

The Audit Committee directed the State Auditor in October 2021 to conduct an emergency audit to examine the regional housing needs determination process. The audit was approved under Joint Legislative Audit Committee Rule 17. Recognizing that Rule 17's cost limitations prevented us from satisfying all objectives of the emergency audit, we focused our work on the first three objectives contained in the emergency audit request. The table below lists those objectives and the methods we used to address them.

Audit Objectives and the Methods Used to Address Them

	AUDIT OBJECTIVE	METHOD
1	Review and evaluate the laws, rules, and regulations significant to the audit objectives.	Reviewed relevant laws, rules, regulations, policies, and procedures related to the housing needs assessment process.
2	Assess Finance's process for developing population projections used by HCD. Determine what changes Finance made to its projections in response to economic and demographic changes caused by the pandemic as well as new Census information. Evaluate historical accuracy of Finance's population projections.	• Reviewed Finance's calculation process for its most recent set of projections and assessed the reasonableness of its process and the information Finance uses to generate its projections. • Assessed Finance's planned modifications to future projections based on COVID-19 impacts and found them to be reasonable. Finance intends to update its projections in January or February 2023 to take into account recent Census data that reflects reduced births and increased deaths due to the pandemic in 2020 and early 2021. • Compared Finance's past population projections to 2020 Census data to assess their accuracy.
3	Evaluate HCD's process for developing regional housing needs determinations to ascertain whether it complies with state law and results in appropriate calculations. Assess whether HCD properly used vacancy rates for rental markets and for the entire housing market.	• Reviewed the process HCD used to create three needs assessments for the Sacramento Council, the Santa Barbara Association, and Amador County, and determined which factors listed in state law it considered, and whether its consideration was appropriate. • For the same three assessments, which HCD completed after changes to state law in 2018, reviewed each adjustment HCD made in the assessments and determined the relative impact of the adjustments on the overall assessment. • For the three assessments we reviewed, assessed HCD's support for the 5 percent healthy vacancy rate it uses for the overall housing market, including reviewing available historical information and economic research.

Source: Audit workpapers.

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State of California
BUSINESS, CONSUMER SERVICES AND HOUSING AGENCY

Gavin Newsom, Governor
Lourdes M. Castro Ramírez, Secretary

March 4, 2022

Michael S. Tilden*
Acting State Auditor
California State Auditor
621 Capitol Mall, Suite 1200
Sacramento, CA 95814

RE: Agency Response to 2021-125 Regional Housing Needs Assessments: The Department Of Housing And Community Development Must Improve Its Processes To Ensure Communities Can Adequately Plan For Housing

Dear Mr. Tilden:

Thank you for the opportunity to review and provide comments to the audit pertaining to the Regional Housing Needs Assessment (RHNA) process led by the Department of Housing and Community Development (HCD).

As noted, the state's RHNA process requires consultation with Councils of Governments and intensive data analysis to determine the housing needs for regions. We appreciate that the audit found that HCD follows a sound methodology in administering this responsibility and offers some process improvement recommendations. (1)

Attached you will find a detailed response from HCD summarizing the additional resources and process improvements that are underway including increasing staff and standardizing documentation processes.

The Business, Consumer Services and Housing Agency (Agency) and HCD are committed to maximizing opportunities for all Californians to have a stable, affordable place to call home.

If you have any additional questions for my team at Agency or HCD, please contact us at your convenience.

Sincerely,

Lourdes Castro Ramírez, M.A.
Secretary

500 Capitol Mall, Suite 1850, Sacramento, California 95814 (916) 653-4090 www.bcsh.ca.gov

* California State Auditor's comments appear on page 41.

STATE OF CALIFORNIA - BUSINESS, CONSUMER SERVICES AND HOUSING AGENCY GAVIN NEWSOM, Governor
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OFFICE OF THE DIRECTOR
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March 4, 2022

Michael S. Tilden
Acting California State Auditor
621 Capitol Mall, Suite 1200
Sacramento, CA 95814

RE: Regional Housing Needs Assessment

Dear Mr. Tilden:

This is the California Department of Housing and Community Development's (HCD) response to the Regional Housing Needs Assessment (RHNA) audit conducted by the California State Auditor. HCD is pleased to see the audit found no significant problems with the methodology or instances of double counting. The auditor also identified that statutory changes that allow HCD to provide adjustments to the existing and projected regional housing needs have resulted in larger determinations. ①

Still, the audit found opportunities for process improvements and HCD is committed to implementing those recommendations. HCD has already added more staff to the RHNA team and, in partnership with our internal audit team, continues to improve the quality of our determination process. HCD remains confident in its approach to the 6th Cycle RHNA Determination both from a legal and methodological perspective. HCD is also confident that, in particular following the auditor's review, process and quality control improvements will be beneficial moving forward.

The audit recommendations and HCD's responses are below.

Recommendation 1 (Quality Control/Quality Assurance): To ensure that its needs assessments are accurate and do not contain unnecessary errors, by June 2022 HCD should institute a process to ensure its staff perform multiple reviews of data included in its assessments, including data that staff input and councils of governments (COGs) submit.

- Response: HCD agrees with the first recommendation (page 25 of 38) and will complete documenting the process by the proposed deadline. HCD has started to create additional process documents to aid in implementing this recommendation. HCD is committed to more accurately determining the housing need moving forward and values the improved process suggestions.

Recommendation 2 (Jobs Housing Factor and Units Lost): To demonstrate that its needs assessments are complete and address all relevant factors, by September 2022

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HCD should establish a formal process to document its consideration of all factors required by state law in its needs assessments.

- Response: HCD is committed to continuous process improvement and providing public documentation of the processes we implement. While HCD does consider all factors described in statute, HCD agrees with the second recommendation (page 26 of 38) and has already initiated the creation of additional process documents to aid in implementing this recommendation.[1] HCD will complete the documentation process by the proposed deadline. (2)

Recommendation 3 (Vacancy Rate): To ensure that it adequately supports the vacancy rate adjustments it makes to needs assessments, by February 2023 HCD should perform a formal analysis of healthy vacancy rates and historical trends to inform those adjustments.

- Response: As the auditor's report states, the Legislature did not specify what vacancy rate to use for ownership housing. Given that housing units can fluctuate between renter and home ownership, and acceptable rental vacancies could be higher than 5 percent, HCD's 5 percent target rate for total housing stock vacancy is a reasonable application of the statute. However, HCD agrees with the third recommendation (page 26 of 38) and will complete a formal analysis of trends and compile updated research on this topic by the proposed deadline. (3)

Recommendation 4 (Comparable Region Analysis): To ensure that it does not reduce its needs assessments based on inappropriate information provided by councils of governments, by June 2022 HCD should develop a formal process to review the appropriateness of councils of governments' proposed comparable regions, including identifying the criteria it will consider when reviewing councils of governments' proposals. HCD should use this formal process and criteria to consistently evaluate the appropriateness of the proposals to ensure that they identify regions with healthy housing markets.

- Response: HCD agrees with the fourth recommendation (page 26 of 38) and, by the proposed deadline, will formalize a technical assistance document outlining the comparable regions process, as well as a list of criteria HCD will use when

[1] At the time of this drafting, under confidentiality provisions related to litigation and mediation, HCD is unable to publicly share the details of how it intends to establish a more formal process to document its consideration of all factors in its needs assessments. These confidentiality provisions are anticipated to be lifted contemporaneously with the current publication date of this audit. Should the Auditor require, though HCD does not believe it to be necessary, HCD will supplement this response with the additional information it currently is unable to disclose.

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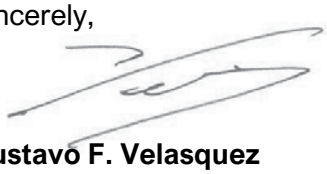
reviewing comparable region proposals. Though HCD can accept or reject data provided by COGs, HCD also recognizes the inherent challenge of COGs identifying regions that meet both the undefined concept of comparable and having a healthy housing market given the extent California's housing crisis.

Sincerely,



Gustavo F. Velasquez
Director

COMMENTS

CALIFORNIA STATE AUDITOR'S COMMENTS ON THE RESPONSE FROM THE BUSINESS, CONSUMER SERVICES AND HOUSING AGENCY

To provide clarity and perspective, we are commenting on the response to the audit from the Business, Consumer Services and Housing Agency (agency) and HCD. The numbers below correspond to the numbers we have placed in the margin of the response.

The agency and HCD mischaracterize our conclusions. Our report does not state that HCD follows a sound methodology when developing needs assessments. Rather, we identified several problems with HCD's methodology, such as its limited review of staff members' data entries and a lack of adequate consideration of factors required by state law. ①

As we state on page 14, HCD could not demonstrate it adequately considered two factors required by state law in the needs assessments we reviewed. Specifically, for the jobs/housing balance in the region, it relied on outdated information during its consideration and did not follow up with regions as it intended. For housing lost in emergencies, HCD did not consistently consider this factor across different regions. As a result, HCD understated housing needs in the Santa Barbara Association's needs assessment and potentially reduced the overall reliability of the assessment. ②

HCD asserts that the 5 percent target rate for total housing stock vacancy is a reasonable application of state law. However, as we note on page 19, HCD did not adequately analyze healthy vacancy rates when it began to use this healthy vacancy rate assumption in 2018. We are concerned that HCD has not completed a formal analysis to support its claim that using the same healthy vacancy rate for both rental and owned housing was appropriate. ③

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DEPARTMENT OF FINANCE
Gavin Newsom ▪ Governor
1021 O Street, Suite 3110 ▪ Sacramento CA 95814 ▪ www.dof.ca.gov

March 4, 2022

Michael Tilden*
California State Auditor (Acting)
621 Capitol Mall, Suite 1200
Sacramento, California 95814

Re: Department of Finance Response to Draft Audit 2021-125

Dear Michael:

The California Department of Finance has received the California State Auditor's (CSA) draft findings concerning the Regional Housing Needs Assessment Process. The below response addresses CSA's findings and recommendations on Finance's household projections.

CSA first recommends that Finance review its population projections for counties after 2020 Census data are made available. As this is a standard practice for any demographer updating population projections after the release of a new decennial Census and the department intends to conduct this review as it always has, we agree with CSA's recommendation.

Finance's household projections rely on projecting trends in household formation from the 1990, 2000, and 2010 Censuses to 2030. They are intended to show what might happen if these trends continue into the future. There are various reasons why patterns of household formation may be different in the future, such as economic changes, the impact of new government policies, as well as imbalances between housing supply and demand. As these are not generally predictable, we periodically reevaluate trends and assumptions, particularly after the release of a new Census; thus, we agree with the Auditor's second recommendation that Finance review assumptions used in projecting household formation rates after the release of the necessary detailed Census 2020 data later this year.

CSA also recommends that Finance document this review. Each decennial Census is an opportunity to reevaluate and reexamine models and assumptions. Much of Finance's analysis and deliberation has traditionally been internal. Finance agrees with the Auditor's recommendation and will explore ways to more fully document existing processes.

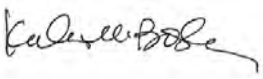
Finally, as the audit notes, Finance reasonably limits its reliance on Census 2010 data for its household projections because that census occurred during the unique—and temporary—economic conditions present in the wake of the Great Recession. In consultation with an advisory committee composed of demographers and other experts in academia, government, and the private sector, Finance's process also ①

* California State Auditor's comment appears on page 45.

reflects the long-run trend evident from the 1990 and 2000 Censuses by using the average of 2000 and 2010 Census headship rates as a reasonable proxy for this trend. Furthermore, Finance notes that the methods used for the current DOF household projections are informed by analysis of as much recent American Community Survey (ACS) data as possible to evaluable changes in household formation since the 2010 Census. Comparisons of Finance's earlier projected headship rates and ACS data indicates that the assumptions underlying the projections are reasonable; and that use of Census 2010 based rates exclusively would have resulted in household under-projection.

Thank you for the opportunity to review this draft report. If you have any questions, please contact Walter Schwarm, Chief Demographer.

Sincerely,



Keely Bosler
Director

COMMENT

CALIFORNIA STATE AUDITOR'S COMMENT ON THE RESPONSE FROM THE DEPARTMENT OF FINANCE

To provide clarity and perspective, we are commenting on Finance's response to our audit. The number below corresponds to the number we have placed in the margin of the department's response.

Finance overstates our report's conclusions. We did not make a determination that Finance's reduced reliance on 2010 Census data was reasonable. As we indicate on page 27, Finance explained that its household formation rate reflects an assumption that household formation patterns will increase over time to pre-2010 levels, and on page 28 we note that some experts Finance contacted expressed concern that 2010 Census data reflected recession conditions. We further note on that page that Finance asserted to us that its household formation rates are reasonable based on these and other considerations. However, Finance did not provide us a documented analysis to demonstrate that the household formation rates it used in its projections were reasonable. (1)

ATTACHMENT G

CALAM MONTEREY PENINSULA WATER SUPPLY PROJECT

Final Environmental Impact Report/ Environmental Impact Statement SCH# 2006101004

Prepared for
California Public Utilities Commission and
Monterey Bay National Marine Sanctuary

March 2018

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photo: Karen Grimmer, Marina State Beach

CHAPTER 2
Water Demand, Supplies, and Water Rights

As a result of comments received on the January 2017 Draft EIR/EIS, revisions have been made to this EIR/EIS section. Those changes include:

- *The existing Pebble Beach water entitlement of 325 acre-feet per year has been included in the Existing System Demand.*

2.1 Introduction

In its application to the California Public Utilities Commission (CPUC) for the Monterey Peninsula Water Supply Project (MPWSP, or proposed project), California American Water (CalAm) proposes either to build a desalination plant with the capacity to produce up to 9.6 million gallons per day (mgd) of desalinated product water, or to build a smaller project that would include the purchase of product water from the proposed Pure Water Monterey Groundwater Replenishment (GWR) project and construction of a 6.4 mgd desalination plant (CalAm, 2016a). This chapter provides background information on CalAm's existing water supply system; describes the water demand[1] and supply information and assumptions included in CalAm's application; provides supplemental information about water supply and demand, and factors affecting them in the area that would be served by the proposed project; and addresses the topic of water rights as it pertains to project feasibility.

CalAm initially filed its application for the MPWSP (Application A.12-04-019) with the CPUC in April 2012 (CalAm, 2012a). The application requests a Certificate of Public Convenience and

[1] Unless otherwise noted, "demand" as used in this chapter refers to *system demand* (sometimes known as production), which is the total amount of potable water produced from supply sources. Demand does not refer to the amount of water delivered and billed to customers, which is typically referred to as consumption or the amount of water consumed. System demand includes "unaccounted-for" or "non-revenue" water, such as water used for flushing water system pipes and fire fighting, and water lost to leaks within the delivery system.

Necessity[2] and approval to build, own, and operate the MPWSP. In January 2013, CalAm submitted supplemental testimony that updated and superseded the water demand and supply estimates that had been provided in the original April 2012 application; the January 2013 testimony proposed a 9.6 mgd desalination plant that would produce approximately 10,627 acre feet per year (afy) of desalinated product water to meet estimated service area demand of 15,296 afy and provide return water for the Salinas Valley Groundwater Basin (SVGB return water),[3] or a project variant consisting of a 6.4 mgd plant in conjunction with the purchase of GWR water (Svindland, 2013a). In March 2016, CalAm submitted an amended application and updated project description. The 2016 amended application and associated testimony confirmed the project sizing and overall demand assumptions described in the January 2013 supplemental testimony while updating estimates of the quantities of desalinated product water that would be delivered to CalAm's service area and returned to the SVGB. The demand and supply information presented below is based on data provided in CalAm's January 2013 supplemental testimony, as updated or revised by CalAm since then. The information below also includes relevant supply and demand data collected independently from other sources such as the Monterey Peninsula Water Management District (MPWMD).

CalAm is proposing this project to replace part of its existing water supplies, which have been constrained by legal decisions affecting CalAm's diversions from the Carmel River and pumping from the Seaside Groundwater Basin. State Water Resources Control Board (State Water Board) Order 95-10, State Water Board Order 2009-0060 and State Water Board Order 2016-0016 (also referred to as the 2009 and 2016 Cease and Desist Orders [CDOs], or 2009 and 2016 CDOs, respectively), and the Monterey County Superior Court's adjudication of the Seaside Groundwater Basin in 2006 substantially reduced CalAm's rights to use these two primary sources of supply. Section 2.2 provides background on CalAm's existing water system and historical sources of supply as well as information about the State Water Board and Superior Court decisions. Section 2.3 discusses the components of demand that CalAm proposes to meet with the proposed project in conjunction with CalAm's portfolio of other water supply sources, and Section 2.4 describes the water supply sources that would be used to meet those demands. Section 2.5 describes other factors that could affect future water supplies and demand in the Monterey District. Section 2.6 discusses the topic of water rights as it pertains to project feasibility.

2.2 Background

2.2.1 Existing Water System

The proposed project would develop supplemental water supplies to serve CalAm's Monterey District service area (Monterey District). CalAm's Monterey District encompasses most of the Monterey Peninsula, including the cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City, and Seaside; the Monterey Peninsula Airport District; and the unincorporated

[2] Public Utilities Code Section 1001 et seq. requires that investor-owned utilities seeking to build certain specified infrastructure obtain a Certificate of Public Convenience and Necessity from the CPUC demonstrating that the proposed infrastructure is necessary for the service, accommodation, convenience, or safety of the public.

[3] Refer to Section 2.5.1 and Section 2.6 for more information on SVGB return water.

areas of Carmel Highlands, Carmel Valley, Pebble Beach, and the Del Monte Forest. The Monterey District's main distribution system is located within these areas. The main system primarily relies on water supplies from the Carmel River and groundwater from the Coastal subarea of the Seaside Groundwater Basin. CalAm's Monterey District also includes five small satellite water systems along the Highway 68 corridor east of the City of Monterey: the Ryan Ranch, Bishop, Hidden Hills, Toro, and Ambler systems. Because the Toro and Ambler areas would not be served by the proposed project, these areas are not included in the proposed project's demand and supply assumptions.[4]

2.2.1.1 Existing Water Supply Facilities

Facility Overview

CalAm's existing Monterey District water supply infrastructure includes the following:

- extraction wells in the Carmel Valley Alluvial Aquifer
- groundwater production wells in the Seaside Groundwater Basin
- a surface water reservoir on the Carmel River[5]
- Aquifer Storage and Recovery (ASR) facilities
- various water treatment facilities
- a conveyance and distribution system consisting of over 500 miles of pipelines and water mains ranging in size from 2 to 36 inches in diameter
- a portion of the supply produced by Sand City's 300 afy Coastal Desalination Plant

The majority of the Monterey District water supply comes from 21 extraction wells screened[6] in the upper alluvial deposits of the Carmel River in Carmel Valley known as the Carmel Valley Alluvial Aquifer. CalAm's supply also includes groundwater production wells in the Seaside Groundwater Basin. Monterey District water supplies are generally treated to remove iron, manganese, and hydrogen sulfide, to control corrosion, and to adjust pH. Sodium hypochlorite is used for primary and secondary disinfection at each treatment facility that provides water to the distribution system.

Distribution and Conveyance

The CalAm Monterey District's distribution and conveyance system is an assemblage of smaller systems that have merged over time, starting with the Carmel Valley and Monterey Peninsula areas and eventually expanding to include the Seaside, Del Rey Oaks, and Sand City areas. The system encompasses several distinct urban areas and water pressure zones and is divided into four distinct districts:

4 There is an existing emergency interconnection between the Toro and Hidden Hills systems; the project would not change the use of this emergency interconnection.

5 Until recently CalAm operated two reservoirs on the Carmel River, the San Clemente and the Los Padres Reservoirs. Section 2.2.2 provides additional information on these reservoirs.

6 A well screen is a filtering device that serves as the intake portion of wells constructed in unconsolidated or semi-consolidated aquifers. The screen permits water to enter the well from the saturated aquifer, prevents sediment from entering the well, and serves structurally to support the aquifer material.

- Upper Carmel Valley
- Lower Carmel Valley and Monterey Peninsula
- Seaside
- Upper Lift Zones

Water produced from wells along the upper and lower reaches of the Carmel River in the Carmel Valley is conveyed in two directions: westward and clockwise around the Monterey Peninsula to the city of Monterey; and northward over the hills via the Segunda Reservoir, Segunda Pipeline, Segunda Pump Station, and Crest Tank facilities to the city of Seaside.

2.2.2 Historical Sources of Supply

2.2.2.1 Carmel River

San Clemente Dam was built on the upper Carmel River in 1921 to form the San Clemente Reservoir. Surface water diverted at San Clemente Dam was the sole water supply for the Monterey Peninsula until the 1940s. Starting in the 1940s and continuing into the early 1990s, multiple production wells were installed in the Carmel Valley Alluvial Aquifer along the lower reach of the Carmel River. In 1949, Los Padres Dam, which forms Los Padres Reservoir, was built about 6 miles upstream of San Clemente Dam to control the inflow of water into San Clemente Reservoir. CalAm has owned and operated both reservoirs since 1966. Over the years, sediment that accumulated behind San Clemente and Los Padres Dams significantly reduced the usable storage in both reservoirs. As a result, by 1995 CalAm relied primarily on the multiple wells in the alluvial aquifer along the lower Carmel River for its Carmel River supplies and more recently CalAm has relied entirely on these wells for its Carmel River supply. The San Clemente Dam was removed in 2015, after two years of construction work to reroute the river and prepare the site for dam removal, and the Carmel River currently flows around the former dam site (California Coastal Conservancy, National Marine Fisheries Service, CalAm, et al., 2016). Summer releases from the Los Padres Reservoir continue to recharge a portion of the Carmel Valley Alluvial Aquifer and maintain fish habitat between the Los Padres Dam and San Clemente Dam site. MPWMD and CalAm are currently studying options for use or removal of the Los Padres Reservoir (MPWMD, 2015a; CalAm et al., 2016a).[7]

2.2.2.2 Seaside Groundwater Basin

In addition to Carmel River supplies, CalAm operates several production wells for its main system in the Coastal subarea of the Seaside Groundwater Basin. The Seaside Groundwater Basin, which encompasses 24 square miles and consists of several subareas, is generally bounded by the Pacific Ocean to the west, the Salinas Valley to the north, the Toro Park area to the east, and Highways 68 and 218 to the south.

[7] The CPUC's General Rate Case for 2015-2017 authorized CalAm to co-fund studies with the MPWMD to develop a long term management plan for the Los Padres Dam and Reservoir, and in April 2016 the MPWMD approved a contract for preparation of the first such study, a Los Padres Dam fish passage study (MPWMD, 2016a). In January 2017, the MPWMD approved a contract for preparation of an alternatives study for Los Padres Dam and sediment management in the reservoir (MPWMD, 2017).

East of the main system along the Highway 68 corridor, in the Laguna Seca subarea of the Seaside Groundwater Basin, CalAm operates wells that supply the Ryan Ranch, Bishop, and Hidden Hills satellite systems (WSC, 2012). CalAm also provides Carmel River water to the Ryan Ranch system during fires and emergencies via an emergency interconnection between the Crest Tank and Ryan Ranch. In addition, in June 2015 MPWMD approved CalAm's application for an interconnection between the Bishop and Ryan Ranch systems that would allow water to be conveyed from the Bishop system to Ryan Ranch for emergency use only (i.e., when Ryan Ranch supplies were insufficient to meet demand) (MPWMD, 2015b). As a result of the adjudication of the Seaside Groundwater Basin (see Section 2.2.4), these satellite systems will lose all of their allocated Seaside Groundwater Basin supplies by 2018. Therefore, the demand assumptions presented below in Section 2.3 include demand for the Ryan Ranch, Hidden Hills, and Bishop systems. (See Section 3.2.3.9 and Figures 3-2 and 3-10a and 3-10b in Chapter 3, Project Description, regarding interconnections proposed as part of the MPWSP to enable water delivery to these small systems when CalAm no longer has rights to pump from the Laguna Seca subarea.)

CalAm's Toro and Ambler satellite systems lie east of the Laguna Seca subarea, on the south side of Highway 68. There are no existing or proposed direct infrastructure interconnections between CalAm's main system and the Toro and Ambler systems, which rely on groundwater supplies from the Corral de Tierra Subbasin of the SVGB. There is an existing emergency interconnection between the Hidden Hills and Toro systems.

2.2.2.3 Allocation Program

The MPWMD augments, manages, and regulates surface and groundwater resources in the Carmel Valley and the greater Monterey Peninsula. MPWMD's jurisdiction includes the area served by CalAm's Monterey District (shown in **Figure 3-1** in Chapter 3, Description of the Proposed Project) and CalAm's sources of supply (the Seaside Groundwater Basin and Carmel Valley Alluvial Aquifer), which MPWMD defines as the Monterey Peninsula Water Resource System (MPWMD, 2015b). The Monterey Peninsula Water Resource System includes supplies for non-CalAm pumpers in the Seaside Basin and Carmel Valley Alluvial Aquifer, as well. The MPWMD was established by state statute in 1978 to provide integrated management of all water resources for the Monterey Peninsula; among its functions is the allocation of water supply within its boundaries. MPWMD's initial, interim allocation, adopted in 1981, set CalAm's production limit (from the Carmel River system and the Coastal subarea of the Seaside Groundwater Basin) at 20,000 acre-feet (af), of which a net of 18,600 af was allocated among the jurisdictions in CalAm's service area. With the adoption of its current allocation program in 1990, MPWMD set CalAm's production limit at 16,744 afy. MPWMD has adjusted CalAm's production limit several times since then, most recently in 1997 when it set the production limit at 17,641 afy. Before the 2006 adjudication of the Seaside Groundwater Basin (described below in Section 2.2.4), the MPWMD assumed CalAm's yield from the Coastal subarea of the Seaside Groundwater Basin to be 4,000 afy (MPWMD, 2006a). In 2008, MPWMD expanded the regulated area it defines as the Monterey Peninsula Water Resource System to include the Laguna Seca subarea of the Seaside Groundwater Basin (through adoption of MPWMD Ordinance 135).

2.2.2.4 Carmel River Flow Agreements

In addition to MPWMD's allocation program and State Water Board Orders 95-10, 2009-0060, and 2016-0016 (discussed below in Section 2.2.3), CalAm's use of its Carmel Valley wells is also restricted by agreements with state and federal wildlife agencies.

California Department of Fish and Wildlife Annual Memorandum of Agreement

An annual Memorandum of Agreement (MOA) developed and entered into each year by CalAm, MPWMD, and the California Department of Fish and Wildlife provides an annual guideline to minimize localized drawdown from the use of wells located along certain reaches of the Carmel River, and limits surface water diversions from April to October. Before the San Clemente Dam was removed, the MOA specified minimum releases to the river from San Clemente Reservoir (CalAm, 2007). In 2015 the parties established minimum flow targets below the Los Padres Dam, which were expected to produce estimated minimum flows at the gaging station near the San Clemente Dam site (MPWMD, 2015c).

U.S. Fish and Wildlife Service and National Marine Fisheries Service (NMFS) Agreements

Two species listed as threatened under the Endangered Species Act, the California red-legged frog and the South-Central California Coast distinct population segment of steelhead (S-CCC steelhead), inhabit the Carmel River.[8]

- The California red-legged frog was listed as threatened under the Federal Endangered Species Act (ESA) in 1996. In 1997, the U.S. Fish and Wildlife Service (USFWS) issued an ESA-4(d) rule that allowed it to prosecute for "take"[9] of the frog.
- The S-CCC steelhead was listed as threatened under the ESA in 1997, reaffirming that status in 2006 and 2014. In 2000 NMFS issued an ESA-4(d) rule allowing it to prosecute for take of steelhead, and revised it in 2005.

USFWS and NMFS have taken the position that any entity that pumps water from the Carmel Valley Aquifer may be liable for a take because the pumping may alter the habitat, affect the steelhead's ability to migrate in the river, and affect the frog's ability to grow to maturity. In 1997, CalAm entered into an agreement with USFWS to further regulate its well production activities in an attempt to avoid or mitigate impacts on the frog and has renewed that agreement several times. In 2001, CalAm negotiated a Conservation Agreement with NMFS that included various changes in operations, with the long-term goal of procuring an alternative water supply source to reduce withdrawals from the Carmel River Alluvial Aquifer. In 2009, Cal-Am entered into a Settlement Agreement with NOAA that updated the expired 2001 Conservation Agreement. In 2017, CalAm entered into a Memorandum of Agreement with NMFS that incorporates provisions of the 2009 Settlement Agreement and requires additional measures to conserve S-CCC steelhead.

[8] Refer to Section 4.6, Terrestrial Biological Resources in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, for more information on biological resources in the project area.

[9] As defined in the ESA, to "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

If CalAm fails to satisfy USFWS and NMFS concerns regarding ESA, those agencies could bring enforcement actions against CalAm and its customers. The consequences could include further reduction of the water supply obtained from the Carmel Valley Alluvial Aquifer, and fines that could be in the millions of dollars.

2.2.3 State Water Board Order 95-10 and Cease and Desist Orders 2009-0060 and 2016-0016

State Water Board Order 95-10, issued in July 1995, substantially limited the supplies available to CalAm from the Carmel River. In the order, the State Water Board established that CalAm has a legal right to 3,376 afy (equivalent to about 3 mgd) from the Carmel River system, including surface water diversions from the river and subsurface flow pumped from the Carmel Valley Alluvial Aquifer. Prior to Order 95-10, CalAm's average annual use during non-drought years was approximately 14,106 afy (12.6 mgd).[10] The order found that CalAm was diverting approximately 10,730 afy of surface and/or subsurface flow from the Carmel River without a valid basis of right and directed CalAm to diligently undertake the following actions to terminate its unlawful diversions: obtain appropriative rights to the Carmel River water that was being unlawfully diverted; obtain water from other sources and make one-for-one reductions of the unlawful diversions; and/or contract with other agencies that had appropriative rights to divert and use water from the Carmel River. Order 95-10 directed CalAm, during its pursuit of an alternative supply, to implement conservation measures to offset 20 percent of demand[11] and restricted CalAm to an annual diversion of 11,285 afy (10.1 mgd) from Carmel River sources. This amount represented a 20 percent reduction from CalAm's average usage at the time of 14,106 afy. The order also prohibited CalAm from diverting water from San Clemente Dam when streamflows reach a predetermined low flow. The order directed CalAm to maximize use of the Seaside Groundwater Basin for the purpose of serving existing connections, honoring existing commitments (allocations), and to reduce diversions from the Carmel River to the greatest practicable extent (State Water Board, 1995).[12]

In October 2009, the State Water Board adopted Cease and Desist Order 2009-0060, based on the State Water Board's conclusion that Order 95-10 did not authorize CalAm to divert water from the Carmel River in excess of its water rights and that CalAm was illegally diverting water from the Carmel River in violation of Order 95-10 and Water Code Section 1052. The CDO requires that CalAm "diligently implement actions to terminate its unlawful diversions from the Carmel River and … terminate all unlawful diversions from the river no later than December 31, 2016." The CDO prohibits CalAm from diverting water from the Carmel River for new service connections or intensified water use at existing connections, and required CalAm to reduce diversions by 5 percent, or 549 afy, starting in October 2009, with further annual reductions

10 14,106 afy was CalAm's average use of Carmel River water from 1979 to 1988, according to Order 95-10 (citing information provided by CalAm).

11 Order 95-10 required a conservation reduction, in combination with conservation measures required by the MPWMD, of 15 percent in the 1996 water year and a reduction of 20 percent in each subsequent year.

12 Water supply projects that were considered by CalAm and the CPUC in response to Order 95-10 prior to the currently proposed project are described in Chapter 5, Alternatives Screening and Analysis.

starting in October 2011 and "continu[ing] until all unlawful CalAm diversions from the river have been terminated" (State Water Board, 2009).

In July 2016 the State Water Board adopted Order WR 2016-0016, which amends Orders 95-10 and 2009-0060. Order 2016-0016 extends the date by which CalAm must terminate all unlawful diversions from the Carmel River from December 31, 2016, to December 31, 2021. The Revised CDO set an initial diversion limit of 8,310 afy for Water Year 2015-2016 (October 1, 2015-September 30, 2016) and establishes annual milestones that CalAm must meet in order to maintain the 8,310 afy diversion limit through 2021. The milestones would demonstrate tangible progress in developing alternative water supply that would enable CalAm to reduce and terminate its unlawful diversions. If CalAm fails to meet a milestone, the Revised CDO specifies that the annual diversion limit will be reduced by 1,000 afy. The Revised CDO also provides that "[i]f the State Water Board determines that the cause [for failing to achieve a milestone] is beyond Applicants' control, it may suspend any corresponding reductions under [the specified CDO condition] until such time as the Applicants can reasonably control progress towards the Milestone."[13] Section 5.4.2, No Project Alternative, provides further discussion on the CDO and the milestones.

2.2.4 Seaside Groundwater Basin Adjudication

Another purpose of the proposed project is to reduce CalAm's reliance on the Seaside Groundwater Basin, which is currently CalAm's other principal source of supply for the Monterey District. In March 2006, the Monterey County Superior Court issued a decision in *California American Water v. City of Seaside,* (Super. Ct. Monterey County, 2006, No. M66343), setting forth the adjudicated water rights of the various parties who produce groundwater from the Seaside Basin. The court amended that decision in February 2007.

In August 2003, CalAm sued a number of parties who held, or potentially held, water rights in the Seaside Groundwater Basin, and asked the court to adjudicate those rights. CalAm also asked the court to establish a plan for the coordination of groundwater management within the Seaside Groundwater Basin. Most of the defendants then cross-claimed against CalAm, and the Monterey Peninsula Water Management District and the Monterey County Water Resources Agency both intervened.

By adjudicating the water rights for all users of the basin, the court intended to protect the basin from long-term damage associated with potential seawater intrusion, subsidence, and other adverse effects that commonly result from overpumping. The Decision identified the "natural safe yield"[14] for the basin as a whole, and individually for the Coastal and Laguna Seca subareas, and found that production in each of the preceding 5 years had exceeded the natural safe yield throughout the basin and in each of its subareas. The Decision also found (and noted that all parties agreed) that continued production in excess of the natural safe yield would result in seawater intrusion and deleterious effects on the basin.

13 Order WR 2016-0016 Schedule and Condition 3(b)(viii).

14 The Decision defines "natural safe yield" as the quantity of groundwater in the Seaside Basin that occurs solely as a result of natural replenishment. The estimate of natural safe yield assumes no action is taken to capture subsurface flow exiting the northern boundary of the basin.

TABLE 2-1
SEASIDE GROUNDWATER BASIN ADJUDICATED OPERATING AND NATURAL SAFE YIELDS WITH CALAM'S PRE-ADJUDICATION PRODUCTION

Basin Management Element	Quantity
Initial operating safe yield – entire basin	5,600 af[a]
Total initial (2007) operating safe yield – Coastal subarea (CalAm and other producers)	4,611 af[a]
CalAm's initial (2007) standard production allocation of operating safe yield – Coastal subarea	3,504 af[b]
CalAm's current (water year 2016) operating yield allocation – Coastal subarea	2,254 af
Total initial (2007) operating safe yield – Laguna Seca subarea	989 af[a]
CalAm's initial (2007) standard production allocation – Laguna Seca subarea	345 af[b]
CalAm's current (water year 2016) operating yield allocation – Laguna Seca subarea	48 af
Natural safe yield – entire basin	2,581 – 2,913 afy
Natural safe yield – Coastal subarea	1,973 – 2,305 afy
Natural safe yield – Laguna Seca subarea	608 afy
Natural safe yield – CalAm's eventual allocation – entire basin	1,474 afy[c]
MPWMD allocation for CalAm for the Coastal subarea prior to the adjudication[d]	4,000 afy
CalAm Seaside Basin production when Order 95-10 was issued	2,700 afy
CalAm average annual production, water years 1996–2006, Coastal subarea	3,695 afy
CalAm average annual production, water years 1996–2006, Laguna Seca subarea	432 afy

NOTES: af = acre feet; afy = acre feet per year.

[a] The initial operating safe yield was established for the first three water years (changed from administrative years in the 2007 Amended Decision); at the beginning of the fourth water year and triennially thereafter, it is to be decreased by 10 percent until it is equivalent to the natural safe yield. The adjudication provides for possible revisions of the established operating safe yield based on the findings of the Seaside Groundwater Basin Watermaster.

[b] CalAm's initial standard production allocations are based on the table, "Seaside Basin Groundwater Account Per Amended Decision, Dated February 9, 2007," prepared by the Seaside Groundwater Basin Watermaster.

[c] This Seaside Groundwater Basin Watermaster estimate (Watermaster, 2009) revises the MPWMD's 2006 estimate that CalAm's eventual allocation would be 1,494 afy from the Coastal subarea and zero from the Laguna Seca subarea. Because other Laguna Seca subarea producers have water rights that are superior to those of CalAm, the entire natural safe yield of the Laguna Seca subarea will be allocated to other producers (Svindland, 2013a, pp. 16–17); therefore, CalAm's adjudicated right to 1,474 afy at natural safe yield would be drawn from the Coastal subarea.

[d] At the time, MPWMD's definition of the Monterey Peninsula Water Resource System did not include the Laguna Seca subarea; therefore, a corresponding allocation was not provided for that subarea.

SOURCES: Monterey County Superior Court, 2007; MPWMD, 2006a; Watermaster, 2007, 2009, 2015; State Water Board, 1995; Svindland, 2013a.

2.3 CalAm Service Area Demand

Based on State Water Board Orders 95-10, 2009-0060, and 2016-0016 and the Seaside Groundwater Basin adjudication, CalAm must develop a replacement water supply to meet existing demand in its Monterey District service area. CalAm's existing demand includes existing water service required by existing customers as well as demand associated with existing Pebble Beach water entitlements in the Del Monte Forest area, as described below. In addition, CalAm proposes to provide sufficient supply to meet demand associated with the development of existing legal lots of record and tourism demand under improved economic conditions within its service area.

2.3.1 Existing System Demand

2.3.1.1 Annual Demand

Annual demand for CalAm's Monterey District main system plus the Bishop, Ryan Ranch, and Hidden Hills satellite systems between 2006 and 2015 is shown in **Table 2-2**. Average annual demand over this period was 12,351 afy. This estimate of average annual demand is about 940 afy lower than the estimated service area demand CalAm provided in its 2013 testimony (13,291 afy) based on years 2007 through 2011.

TABLE 2-2
EXISTING DEMAND[a] 2006–2015 (acre-feet)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Annual[b] Demand	14,176	14,596	14,439	13,198	12,270	12,129	11,549	11,356	10,250	9,545
10-Year Average (2006-2015): 12,351										

NOTES:

[a] Demand values are for the Monterey District main system plus the Ryan Ranch, Hidden Hills, and Bishop satellite water systems.
[b] Demand shown is for the calendar year.

SOURCE: California American Water, 2016b

CalAm anticipates that by the time the desalination plant is operational, the average 10-year and maximum year demand will be lower than the current 10-year average, most notably due to the continuing decline in per capita water use. As discussed below in Section 2.3.1.2, CalAm has concluded that demand in 2010, 12,270 afy, represents an appropriate estimate of annual demand for CalAm to use in assessing the adequacy of its water supplies to meet peak demands and regulatory supply capacity requirements.

2.3.1.2 Peak Demands

While annual water demand characterizes the overall system demand expected to occur within a service area, actual water use fluctuates over the course of a day, month, season, and year. For example, people use less water in the middle of the night and more around dinnertime; they use more during the warmer and drier months and seasons than in the cooler and wetter ones; and they typically use more in dry years than in average or wet years – at least until conservation measures kick in. The California Department of Public Health's California Waterworks Standards[18] require that public water system's water sources have the capacity to meet the system's maximum day demand and (for systems with 1,000 or more service connections) peak hour demand, and specify that maximum day demand and peak hour demand are to be determined based on the most recent ten years of operation. CPUC General Order 103-A also requires that water utilities within its jurisdiction meet these standards. CalAm considers peak month demand a more critical consideration for its operations than peak day demand because the Monterey District's portfolio of supplies provides sufficient flexibility to meet such short term peak

[18] California Code of Regulations Title 22, Division 4, Chapter 16, Section 64554.

demand. By contrast, peak month demand represents more sustained elevated demand, over multiple days, which needs to be considered as a factor in plant sizing (Svindland, 2013b). CalAm hopes to bring the desalination plant on line in 2020. By that time, the 10-year demand record would cover the period from 2010 through 2019, and the 2007, 2008 and 2009 demands will have dropped off the 10-year historical record period. CalAm assumes that demand in years 2016 through 2019 will not exceed demand in 2010 and that 2010 would, therefore, represent the maximum-demand year for this period (Svindland, 2016). CalAm also assumed that peak month demand in 2010 (July 2010), which was the highest month demand of the years 2010 through 2015, adequately represents peak month demand for planning purposes.

2.3.1.3 Pebble Beach Water Entitlements

In 1989, the MPWMD granted water entitlements totaling 380 afy to the Pebble Beach Company and two other fiscal sponsors for underwriting the development of a wastewater reclamation project that is estimated to save substantially greater amount of potable water. The wastewater reclamation project was jointly undertaken by the Carmel Area Wastewater District, the Pebble Beach Community Services District, and the MPWMD to provide recycled water in lieu of potable water to golf courses in the Del Monte Forest, which includes Pebble Beach. The MPWMD subsequently authorized the Pebble Beach Company to sell a portion of the remaining water entitlements to other Del Monte Forest property owners as a means of financing part of the project. The project now provides 100 percent of the irrigation water for all of the golf courses and some open space areas in the Del Monte Forest. The MPWMD estimates that the project saves approximately 1,000 afy of potable water (Stoldt, 2011).

Recognizing that the wastewater project reduced demand on the Carmel River by more than the amount of the water entitlements, SWRCB has stated that the 380 afy represented by the water entitlements is available to serve the Del Monte Forest properties when they are developed and that increased diversions from the Carmel River by CalAm to satisfy the Pebble Beach entitlements would not be counted as part of CalAm's diversion limit but instead added to the adjusted base against which CalAm's compliance was measured. Likewise, the properties developed using these entitlements would not be subject to the prohibition on new service connections contained in the SWRCB CDOs (Anton, 1998; SWRCB, 2009; SWRCB, 2016). As stated in Order 2016-0016, CalAm must terminate all illegal diversions from the Carmel River by December 31, 2021 and thus may not serve the Del Monte Forest properties using illegal diversions from the river after that time. However, the water entitlements constitute an existing commitment by MPWMD and obligation to serve by CalAm when the properties are developed, and are therefore considered part of CalAm's existing demand.

Of the 380 afy, entitlements totaling about 325 afy had not been used (i.e., had not been exchanged for water permits allowing actual water system connections) at the time CalAm revised its estimate of system demands in 2013; the remaining unused entitlements represented water demand that was not reflected in the existing demand figures shown in Table 2-3.

As of the end of 2012, MPWMD reported it had issued water permits totaling 58.419 afy and that remaining Pebble Beach water entitlements totaled 321.581 afy (MPWMD, 2013a). Testimony by

the MPWMD during the CPUC proceedings on the proposed MPWSP in February 2013 confirmed these figures and noted that a portion of the 58.419 afy of issued permits had probably not yet been connected to the CalAm system. The MPWMD testimony concluded that the estimated 325 afy of demand associated with the Pebble Beach water entitlements was reasonable (Stoldt, 2013). Since 2013, MPWMD has issued additional water permits associated with the Pebble Beach water entitlements and, as of May 2016, the remaining entitlement for all Pebble Beach entitlement holders stood at 303.768 afy (MPWMD, 2016b). Because the recently issued permits may not immediately translate to water connections and water use, the estimate of 325 afy should remain a reasonable estimate of the portion of the Pebble Beach entitlements not reflected in existing system demands.

2.3.2 Other Service Area Demand Assumptions

In addition to meeting existing annual demand and demand associated with the Pebble Beach water entitlements, CalAm proposes that the MPWSP be sized to provide, in conjunction with other supply sources, sufficient supplies to also meet the water demands associated with the anticipated economic recovery (or "rebound") of the local hospitality industry, resulting in increased water demand by existing businesses compared to current levels, and demand associated with the development of existing legal lots of record in jurisdictions served by the project (Svindland, 2013a). **Table 2-3** shows existing system demands together with demands associated with economic recovery and lots of record, which total approximately 1,680 afy; these demand components are discussed further below.

TABLE 2-3
OTHER DEMAND ASSUMPTIONS

Demand Component	Annual Demand (acre-feet)
Existing Annual Service Area Demand	12,270
Pebble Beach Water Entitlements	325
Hospitality Industry Rebound Economic Recovery	500
Legal Lots of Record	1,180
Total to Service Area	**14,275**

SOURCE: RBF Consulting, 2013; Svindland, 2016.

2.3.2.1 Hospitality Industry Rebound

The hospitality industry, which includes hotels, restaurants, and other visitor-serving businesses, experienced reductions in occupancy and visitation rates during the economic recession that began in late 2007. Since then, the industry has been recovering slowly: industry representatives expect that occupancy and visitation rates will soon rebound to pre-recession levels. So they feared that CalAm's previous demand estimate, which was based on recession-era numbers, would not accurately reflect demand in a healthy economy. In response to this concern, CalAm's January 2013 revised demand estimate allocated an additional 500 afy to meet demand associated with the future rebound of the local hospitality industry (Svindland, 2013a). CalAm based its

estimate on discussions with hospitality industry representatives in the region (RBF, 2013) without providing additional documentation. As discussed below, MPWMD conducted its own assessment of CalAm's estimate using available data (MPWMD, 2013b). The MPWMD compared occupancy and water-use levels for several periods over the last 15 years, finding that the average occupancy level in 2011 was just below 68 percent (compared to 75 percent for the period of 1998 through 2001, when the economy was robust). The analysis noted that if the economy improved, occupancy rates would go up, and the demand for water would rise. So the proposed project should be sized to accommodate an increase in water use. The MPWMD's comparison of commercial-sector water use found that:

- Average annual demand in 2000 was about 440 afy greater than the average annual demand for 2009 through 2011;
- Average annual demand for 2006 through 2008 was 236 afy greater than the average annual demand for 2009 through 2011; and
- A 7 percent increase in the average annual demand in 2009 through 2011 (based on the 7 percent difference in occupancy rates between the 1998–2001 period and 2011) would increase water demand by 194 afy.

The MPWMD's direct testimony to the CPUC in February 2013 concluded that CalAm's estimate of demand related to tourism rebound was reasonable (Stoldt, 2013).[19]

CalAm's 2016 amended application and the testimony supporting it updated the existing service area demand estimate, providing information on average 10-year demand over the period 2006 through 2015, and using demand in 2010 as the basis for its analysis of system operations and the adequacy of anticipated supplies under the project. As in 2013, CalAm's current estimate of system demand includes 500 afy to meet future demand of the existing hospitality industry under recovered conditions. While the current estimate is based on consideration of a longer time frame, and while the region has recovered to some degree from the economic recession, the 10-year period CalAm considered for its demand estimate includes the past four years of drought, during which water use has dropped significantly. Therefore, even if the region's economy has largely recovered, water demand of existing businesses reflected in recent demand data may be lower than would be expected under normal weather conditions. As discussed in more detail in Section 6.3, Growth Inducement, this EIR/EIS assumes that some of the economic recovery for which this 500 afy CalAm estimate is intended has already occurred, and that some of this supply would be available for other uses.

2.3.2.2 Lots of Record

CalAm has repeatedly testified that the proposed project would also provide an estimated 1,181 afy of water to meet demand resulting from the development of vacant legal lots of record in the service area (Svindland, 2012; 2013a; 2016). CalAm had previously included this demand estimate in its

[19] For additional review of CalAm's estimate of this component of demand refer to Section 6.3, Growth Inducement. Refer to Section 2.6 of this chapter regarding assumptions about the allocation of water supply provided by the MPWSP.

2006 *Urban Water Management Plan* (Management Plan). The 2006 Management Plan cited a 2001 analysis by MPWMD staff as the source for the estimate of 1,181 afy (CalAm, 2006).

In February 2013, the MPWMD reviewed its analyses of water demand related to legal lots of record and found no documentation to support the 1,181 afy estimate. The summary of the results of the documentation review, prepared for the MPWMD Board of Directors (MPWMD, 2013c), defines a legal lot of record as "a lot resulting from a subdivision of property in which the final map has been recorded in cities and towns, or in which the parcel map has been recorded in Parcels or Maps or Record of Surveys. Not all legal lots are buildable."[20] The summary states that "[t]he District does not certify that the estimate of 1,181 afy [for demand associated with vacant lots of record] is a valid value" and does not recommend its continued use.

The summary identifies two reports on the topic of lots-of-record water demand that were prepared for the MPWMD in 2000 and 2002, and notes that the 2001 estimate cited in CalAm's 2006 Management Plan was from an interim period between these two reports. The 2000 report, which had identified demand of 1,166.3 afy for vacant lots and remodels, was not adopted by the MPWMD Board because it did not include estimates for the city of Monterey or the unincorporated county; the revised 2002 report, which identified demand of 1,211 afy, included estimates for the city of Monterey but not for the unincorporated county (MPWMD, 2013c). The MPWMD's direct testimony to the CPUC in February 2013 reiterated these observations, stating that the MPWMD does not consider the 1,181 afy estimate a valid value and that the higher 2002 estimate did not account for vacant lots on improved parcels in the unincorporated areas (Stoldt, 2013). While MPWMD testified that CalAm's estimate may therefore underestimate the actual demand for lots of record (Stoldt, 2013), MPWMD observed in 2017 that development of lots of record has occurred since the estimates were prepared in the early 2000s and that some vacant lots on improved parcels that were included in MPWMD's vacant lot study may never be split from the main property and developed (MPWMD, 2017). Whether development of lots of record since the early 2000s has offset, or more than offset, the number of uncounted lots that should have been included in the 2002 study, and by how much, cannot be determined from available data.

Another factor affecting the estimate of demand associated with lots of record is water use rates. Comment on the 2015 MPWSP Draft EIR suggested that water demand per lot has likely decreased in years since those reports were prepared. It may be the case that per-lot water demand is somewhat lower than 15 years ago, considering the general trend in lower per capita demand in the service area and throughout the state; however, the extent of such reductions may not be quantifiable based on available data. (Refer to Section 6.3, Growth Inducement, for additional discussion of this demand component.)

[20] An exhibit filed in conjunction with MPWMD testimony in December 2013 states that "[i]t is generally considered that [legal lots of record] are considered buildable by, and have the approval of, the local land use jurisdiction.…" (MPWMD, 2013d).

2.3.3 2010 Urban Water Management Plan Demand Estimates

Under the Urban Water Management Planning Act,[21] CalAm is required to provide information on existing and projected future demand in the Monterey District. The information presented in CalAm's 2010 Management Plan, which was completed in September 2012 (WSC, 2012), is summarized here for informational purposes. The Urban Water Management Planning Act requires all urban water suppliers to prepare a Management Plan (and update it every 5 years) for the purpose of "actively pursu[ing] the efficient use of available supplies." As part of their long-range planning, urban water suppliers must make every effort to meet their customers' needs during normal, dry, and multiple dry water years. So although CalAm did not cite the 2010 Management Plan as the basis for the proposed project's demand estimates, the evaluation of service area demands presented in the Management Plan provides insight into CalAm's expectations regarding population growth and water demand in the Monterey District using a different projection methodology from that used for the proposed MPWSP (summarized above in Sections 2.3.1 through 2.3.3).

2.3.3.1 Urban Water Management Plan Service Area Population

Senate Bill 7, enacted in November 2009,[22] requires all water suppliers in the state to increase water use efficiency. In particular, urban water suppliers must achieve a 20 percent reduction in urban per-capita water use by 2020, and must include in their 2010 Management Plans their baseline per-capita water use; their 2020 per-capita water use target; and an interim (2015) per-capita water use target. Consequently, CalAm performed an assessment of its service area population to calculate per-capita water use and project future service area demands for its 2010 Management Plan.

To determine the population of the Monterey District, which includes portions of unincorporated Monterey County, CalAm took geographic information system (GIS) shapefiles containing 2010 population data by census block obtained from the U.S. Census Bureau, compared those data with their service area boundaries, and determined how much of the service area was within each census block. Based primarily on the area of the Monterey District within each census block,[23] the 2010 Management Plan analysis estimated the population of each of the Monterey District's distribution systems and the District as a whole. The Management Plan indicates that the population of CalAm's entire Monterey District was 99,396 in 2010 and that the combined population of the main system and the Bishop, Hidden Hills, and Ryan Ranch satellite distribution systems, which would also be served by the proposed project, was 95,972. The Management Plan estimated future population growth for each distribution system based on the Association of Monterey Bay Area Governments' 2008 forecast, which the Management Plan analysis adjusted to incorporate 2010 census data (WSC, 2012).

21 California Water Code Section 10610 et seq.
22 Codified at California Water Code Sections 10608 and 10800–10853.
23 The UWMP population analysis found that, for the most part, population distribution was generally uniform within each census block; where population was not uniformly distributed, the distribution was adjusted based on visual inspection of recent aerial photographs.

2.3.3.2 Urban Water Management Plan Demand Estimates

According to the CalAm 2010 Management Plan, total water use – that is, water delivered to customers and non-revenue water[24] – in the Monterey District in 2010 was 12,809 af. Total water use in the main system and the Bishop, Hidden Hills, and Ryan Ranch satellite systems in 2010 was 12,270 af. The Management Plan presents CalAm's calculation of baseline, interim (2015) target, and 2020 target per-capita water use rates for the Monterey District as required by Senate Bill 7: the baseline, 2015, and 2020 per-capita use rates are 144, 131, and 118 gallons per-capita per day (gpcd), respectively. But the Monterey District's actual 2010 per-capita water use was 115 gpcd, which was less than its 2020 reduction target, and the Management Plan projections of future water demand between now and 2030 assumed the 115 gpcd rate.

The 2010 Management Plan estimates of non-revenue water are based on information CalAm submitted to the CPUC. The Management Plan indicates that non-revenue water for the Monterey main system decreased from 2,332 afy in 2005 to 1,389 afy in 2010 and was projected to decrease to 1,251 afy in 2030. Non-revenue water data for the satellite systems are not provided for 2005. In 2010, non-revenue water for the main system plus the Bishop, Hidden Hills, and Ryan Ranch satellite systems was 1,445 afy and was projected to decrease to 1,290 afy in 2030. (Refer to Section 2.5.3.3, below, for additional discussion of non-revenue water.)

The 2010 Management Plan projects total water demand in the Monterey District in 2030 to be 13,936 afy, and projects total demand in the main system and the Bishop, Hidden Hills, and Ryan Ranch satellite systems to be 13,544 afy (WSC, 2012). This amount is less than CalAm's current demand estimate for the proposed project service area (14,275 afy) and the supply that would be provided with implementation of the proposed project in conjunction with Carmel River, Seaside Groundwater Basin, and other assumed supplies (discussed in Section 2.4). Demand assumed for the MPWSP differs from that of the Management Plan because CalAm determined that an additional supply and demand analysis was needed to address the repayment of the Seaside Groundwater Basin, the potential for tourism in the area to recover, the Pebble Beach water entitlements, and water for lots of record. These factors are included in CalAm's current assumptions regarding service area demand, as described in Section 2.3.3.

2.4 Available Supplies

Table 2-4 shows the individual supply sources, both with and without the GWR project.[25] These supply sources are described below. As the table shows, available supplies range from 16,211 afy to 16,994 afy, depending on whether the proposed 6.4 mgd or 9.6 mgd plant is built and whether Seaside Groundwater Basin replenishment is in progress or completed. The "Supply Available for Other Uses" in Table 2-4 is the difference between Total Supplies and Service Area Demand. It

[24] Non-revenue or unaccounted-for water refers to the difference between the total water produced in a system and the total water billed to customers (i.e., water consumed). Non-revenue water includes water lost to leaks in the distribution system, water use that is not billed or tracked in the system, such as water used for firefighting and system flushing, and unauthorized uses.

[25] The GWR project would convey advanced treated water from the Monterey Regional Water Pollution Control Agency to the Seaside Groundwater Basin, where it could be injected for storage and subsequent recovery by CalAm. MRWPCA, the Lead Agency for the GWR EIR certified the Final EIR and approved the GWR project in October 2015.

represents water from the MPWSP that could be available for other uses, such as returning water to the Salinas Valley Groundwater Basin, or supporting growth. Both uses are discussed in Section 6.3, Growth Inducing Impacts.

TABLE 2-4
CALAM MONTEREY DISTRICT WATER SUPPLIES WITH PROPOSED MPWSP
(acre-feet per year)

	During Replenishment of the Seaside Groundwater Basin		After Replenishment of the Seaside Groundwater Basin	
Supply Source	**Without GWR (9.6 mgd[a] Desalination Plant)**	**With GWR (6.4 mgd[b] Desalination Plant)**	**Without GWR (9.6 mgd[a] Desalination Plant)**	**With GWR (6.4 mgd[b] Desalination Plant)**
Carmel River[c]	3,376	3,376	3,376	3,376
Seaside Groundwater Basin[d]	774	774	1,474	1,474
Aquifer Storage and Recovery (ASR)[e]	1,300	1,300	1,300	1,300
Sand City Coastal Desalination Plant[f]	94	94	94	94
Groundwater Replenishment Project (GWR)[g]	0	3,500	0	3,500
MPWSP Desalination Plant Production[h]	10,750	7,167	10,750	7,167
Total Supplies	**16,294**	**16,211**	**16,994**	**16,911**
Service Area Demand (from Table 2-3)	14,275	14,275	14,275	14,275
Supply Available for Other Use (Total Supplies Minus Service Area Demand)	**2,019**	**1,936**	**2,719**	**2,636**

NOTE: mgd = million gallons per day

[a] 9.6 mgd is the rated capacity of the desalination plant CalAm proposes to build for the MPWSP, and is typically used to characterize the size of the plant; operating at full capacity a 9.6 mgd plant would produce 10,750 acre feet of desalinated water per year. (That is, the conversion factor is 893 gallons per day per acre-foot per year, or about 1,120 acre-feet per year per 1 million gallons per day.)

[b] 6.4 mgd is the rated capacity of the desalination plant CalAm proposes to build if the GWR project is successfully implemented. The 6.4 mgd rated capacity is typically used to characterize the size of the smaller plant proposed in conjunction with the GWR water purchase. Operating at full capacity a 6.4 mgd plant would produce 7,167 acre feet per year.

[c] CalAm's recognized right to Carmel River water established in Order 95-10.

[d] CalAm's adjudicated water right in the Seaside Groundwater Basin is 1,474 afy; in-lieu recharge of 700 afy would occur during 25-year Seaside Groundwater Basin replenishment period.

[e] Assumed average annual yield with completion of Phase II of the ASR; Phase I of the ASR is currently in operation, and Phase II is nearing completion.

[f] Quantity shown is CalAm's long-term share of plant production pursuant to agreements between CalAm and the city of Sand City.

[g] The Final EIR for the GWR project was certified and the GWR project approved by the Monterey Regional Water Pollution Control Agency, the lead agency, in October 2015.

[h] Assumes 9.6 mgd and 6.4 mgd desalination plants operating at full capacity.

SOURCE: CalAm, 2016b; Svindland, 2016.

2.4.1 Carmel River System

As described above in Section 2.2.3, State Water Board Order 95-10 established that CalAm has a legal right to divert a total of 3,376 afy from the Carmel River system, including surface water diversions from the Carmel River and water pumped from the Carmel Valley Alluvial Aquifer.

2.4.2 Seaside Groundwater Basin Supplies

As described in Section 2.2.2.2, CalAm's adjudicated right to Seaside Groundwater Basin groundwater at the natural safe yield of the basin is 1,474 afy. CalAm and the Seaside Groundwater Basin Watermaster have agreed to a 25-year replenishment schedule for CalAm to pay back the volume of groundwater CalAm has withdrawn in excess of its adjudicated right. CalAm will start to pay back the basin once it has new water supplies. While repayment could occur as either in-lieu or artificial replenishment, CalAm's supply assumption for the sizing of its MPWSP Desalination Plant is that repayment over the 25-year period will occur as in-lieu replenishment at the rate of 700 afy, based on a 5-year running average. Therefore, supply assumed to be available from the Seaside Basin over this period would be limited to 774 afy, again, based on a 5-year running average.

2.4.3 Aquifer Storage and Recovery

The MPWMD and CalAm have implemented Phase I and Phase II of the Seaside Groundwater Basin Aquifer Storage and Recovery (ASR) project. The ASR project entails diverting and conveying Carmel River water during periods of high flow that occur between December and May of each year to the Seaside Groundwater Basin, where it is injected into the aquifer for storage and subsequently recovered for delivery to customers. The Phase I project, which was completed in 2007, includes two ASR injection/extraction wells (the ASR-1 and ASR-2 Wells, also known as Santa Margarita Wells #1 and #2) and a chemical/electrical building that includes a disinfection system for treating extracted water. The ASR-1 and ASR-2 wells are located at the former Fort Ord military base, on the east side of General Jim Moore Boulevard near Eucalyptus Road. ASR water supplies that are extracted from the Seaside Groundwater Basin are disinfected onsite before being conveyed via an existing 16-inch diameter pipeline beneath General Jim More Boulevard to the CalAm distribution system (MPWMD, 2005). In water year 2011, which was wetter than average, 1,117 af of Carmel River water was injected into the groundwater basin. In water year 2012, 132 af was injected; in 2013, 295 af was injected, in 2014, no Carmel River water was injected, and in 2015, 215 af was injected. The estimated average annual yield from the Phase I injection/extraction wells is 920 afy.

The Phase II ASR project has been built and will start running when treatment facilities are completed at the Phase I site. Phase II includes two additional injection/extraction wells (ASR-3 and ASR-4 Wells) at Seaside Middle School, located on the west side of General Jim Moore Boulevard. Together, the ASR-3 and ASR-4 Wells provide the capacity to yield an additional 1,000 afy from the ASR system, resulting in a total capacity of 1,920 afy for Phases I and II combined (Denise Duffy & Associates, 2012). The Phase I and Phase II ASR projects correspond to MPWMD and CalAm's existing State Water Board Permits 20808A and 20808C, which authorize the diversion of up to 2,426 afy for ASR Phase I, and up to 2,900 afy for ASR Phase II (State Water Board, 2007, 2011). Permit conditions establish limits on diversions to the ASR system, including a requirement that minimum mean daily instream flows in the Carmel River be maintained for the protection of fisheries, wildlife, and other instream uses. Because diversions for the ASR system are contingent on maintaining minimum daily instream flows, and precipitation and streamflow can vary substantially from year to year, for the purposes of

CalAm's water supply assumptions, the estimated combined long-term average annual yield from ASR is 1,300 afy for the Phase I and Phase II projects (RBF, 2013). In addition to the injection/extraction wells and treatment facilities, the Phase I and Phase II ASR facilities include two pump stations, a backflush percolation basin,[26] and conveyance pipelines.

As part of the MPWSP, CalAm proposes two additional injection/extraction wells, ASR-5 and ASR-6 Wells. The purpose of the proposed ASR-5 and ASR-6 Wells is to increase the injection/extraction capacity for both desalinated product water and Carmel River supplies and to improve system reliability. The proposed ASR-5 and ASR-6 Wells would not increase CalAm's yield from injected Carmel River supplies; consequently, the average annual yield from Carmel River supplies that are diverted to underground storage would remain at 1,300 afy. The proposed MPWSP ASR facilities are described in Chapter 3, Description of the Proposed Project, and evaluated throughout this EIR/EIS.

2.4.4 Sand City Coastal Desalination Plant

The Sand City Coastal Desalination Plant, which began operations in April 2010, is owned by the City of Sand City and operated by CalAm. The plant's total capacity is 300 afy, of which CalAm's long-term share is 94 afy. The balance of the plant's capacity is reserved by Sand City to support its future growth. Sand City is served by CalAm's distribution system, consistent with the MPWMD's allocation program.

2.4.5 Groundwater Replenishment Project

As described in more detail in Chapter 5, Alternatives, CalAm's MPWSP Application includes a variant of the MPWSP that would combine a reduced-capacity desalination plant (6.4 mgd compared to 9.6 mgd under the MPWSP) with the purchase of 3,500 afy of product water from the GWR project, a joint project proposed by Monterey Regional Water Pollution Control Agency (MRWPCA) and MPWMD. The MRWPCA would inject up to 3,500 afy of purified water from a new advanced water treatment plant into the Seaside Groundwater Basin. Under a purchase agreement with the MPWMD, CalAm would later extract the 3,500 afy for delivery to customers.

If CalAm is able to purchase water from the GWR project, the size of its MPWSP Desalination Plant could be reduced. MRWPCA certified the Final EIR for the GWR and approved the project in October 2015. Because of uncertainties pertaining to project timing and cost at the time CalAm submitted its application for the MPWSP, CalAm's project application proposes a 9.6 mgd plant, but also seeks authorization to reduce the size of the proposed plant to provide 6.4 mgd, and to enter into a water purchase agreement if the cost of the GWR water is reasonable. CalAm would then supplement its supplies with water purchased from the GWR project.

[26] The backwash percolation basin receives discharges produced during routine backflushing and operation of the ASR injection/extraction wells.

On September 15, 2016, the CPUC issued a Decision (D. 16-09-021) authorizing CalAm to enter into a Water Purchase Agreement with the MRWPCA and the MPWMD for the purchase of 3,500 afy. The CPUC Decision also authorizes CalAm to build the new Monterey Pipeline and Monterey Pump Station (CPUC, 2016).[27]

2.4.6 Other supplies

2.4.6.1 Table 13 Water

In 1993, CalAm applied to the State Water Board (Application No. 30215A) for a permit authorizing CalAm to divert from the Carmel River water above its existing rights under Order 95-10 and the ASR permits. This additional water is known as Table 13 water. In October 2013, the State Water Board issued water-right Permit 21330 in response to this application. The permit conveys to CalAm the right to divert a maximum of 1,488 af annually from December 1 of each year to May 31 of the succeeding year, subject to prior rights, the adequacy of daily instream flow, and other provisions and requirements.

In MPWSP testimony submitted to the CPUC in February 2013, before the Table 13 permit was issued, CalAm stated that the Table 13 water would be subject to flow criteria similar to criteria that applied to water diversions for the ASR, and that the Table 13 diversions would, therefore, be constrained by the limited timeframe in which they could occur and by the existing production capacity of the wells and treatment plant on the Carmel River. CalAm also noted that, unlike the ASR diversions, Table 13 water could only be used within the Carmel River watershed. Based on its analysis of customer water use in the watershed at times of year when Table 13 water would be available, CalAm estimated that, during wet years, a maximum of 600 afy of Table 13 water could be used. Because Table 13 water would not be available during dry years, CalAm did not assume the availability of Table 13 water for purposes of sizing the proposed plant (Svindland, 2013c). CalAm reiterated this perspective in testimony provided in 2016.

According to quarterly reports posted at CalAm's website under the State Water Board's Cease and Desist Order, CalAm began reporting diversions of Table 13 water with its reporting of monthly water diverted to ASR storage under Permits 20808A and 20808C in October 2015 (reported in Table 2 of the quarterly reports). According to the October 2015 report, CalAm diverted 42.2 af of Table 13 water for use in water year 2015 and diverted a total of 214.7 af to its four ASR injection wells in Seaside under its ASR permits 20808A and 20808C (CalAm, 2015). According to its April 2016 quarterly report, CalAm diverted 164.2 af of Table 13 water in the first half of water year 2016 (through March 2016), and diverted 647 af of water to storage under its ASR permits (CalAm, 2016c).

[27] On October 30, 2017, the Board of Directors of the MRWPCA adopted an Addendum to the GWR Final EIR to allow for an increase in the peak output of purified recycled water from 4 mgd to 5 mgd. This expansion of the GWR Project would be achieved by utilizing redundancies built into the approved 4 mgd GWR Project and would enable the delivery of 600 afy of purified recycled water to Marina Coast Water District (MCWD) for MCWD customers to use for urban landscape irrigation. The expansion, however, would not result in any potential additional yield for use by CalAm, and it would not impact CalAm's purchase price for water.

2.4.6.2 Malpaso Water Company LLC

In 2015, the State Water Board issued Water Right License 13868A (License 13868A) to Malpaso Water Company, LLC. License 13868A authorizes Malpaso to divert up to 85.6 afy from the Carmel River and to have this water conveyed by CalAm through its water distribution system to property owners that have entered into subscription agreements with Malpaso, for beneficial uses on their properties.[28] License 13868A authorizes use of the diverted water in CalAm's service area in the Carmel River watershed or in the City of Carmel-by-the-Sea. In its decision issuing License 13868A, the State Water Board determined that diversions of water from the Carmel River under the new license for the benefit of Malpaso Water Company Water Use Permit subscribers (Malpaso subscribers) would not be classified as water diverted by CalAm for new service connections or for increased use of water at existing service connections that are prohibited under terms of the CDO.

Malpaso has since contracted with CalAm for the conveyance of water diverted under License 13868A to Malpaso subscribers through CalAm's distribution system, and for the temporary use of the portions of License 13868A that are not used each year by Malpaso subscribers to supply water to CalAm.[29] Excess water not used by Malpaso and diverted for CalAm's use pursuant to this agreement offsets CalAm's Carmel River diversions (CalAm, 2017).

In August 2015, MPWMD adopted Ordinance 165, which gives Malpaso a water entitlement of 80 afy through the CalAm distribution system. The size of the entitlement reflects anticipated production and conveyance losses compared to 85.6 afy diversion permitted by License 13868A. MPWMD will only issue a water permit to a property owner after the person has purchased the water and received plan approval (Locke, 2016).

License 13868A thus increases supplies available to the CalAm Service area from 16,294 afy to 16,380 afy (during the Seaside Basin replenishment period, assuming a 9.6 mgd desalination plant, and from 16,994 afy to 17,090 afy after the replenishment period).

2.4.6.3 Rancho Canada Golf Course Retirement

In April 2016, a coalition of conservation organizations[30] announced plans to acquire 140 acres of the Rancho Canada Golf Club, whose lease expired in April 2017. Under the plan, a large portion of the land, which is located along the Carmel River near Palo Corona Regional Park, would ultimately be turned over to the Monterey Peninsula Regional Park District. The Trust for Public Land would acquire and hold the property until summer of 2017, while raising funds that would enable the Trust to convey the property to the park district. The parties expect to finance the deal through a variety of sources, including state grants, private donations, and support from CalAm (Monterey County Herald, 2016). As part of the plan, CalAm and the Trust executed a water diversion forbearance agreement in April 2016 to reduce pumping from the Carmel River and retire irrigation of two golf courses at the golf club. That irrigation now uses about 381 afy of

[28] MPWMD Ordinance 165.
[29] MPWMD Ordinance 165.
[30] The organizations include the Trust for Public Land, the Monterey Peninsula Regional Park District, the Santa Lucia Conservancy, and Trout Unlimited.

Carmel River water. CalAm has agreed to pay the Trust for its forbearance of diversion during the CDO extension period, which will help CalAm offset its unauthorized diversions and help the Trust acquire the property. Because the acquisition plan anticipates converting much of the acquired land to riparian habitat, a substantial portion of water previously used to irrigate the golf courses should remain in the river permanently (CalAm et al., 2016a).

Because the forbearance agreement between CalAm and the Trust is temporary, and future water use at the site is uncertain, this analysis does not assume that this project would necessarily make the offset supply, formerly used for irrigation, available for other future use.

2.5 Other Supply and Demand Considerations

To meet projected system demand along with the other supply sources discussed above, CalAm proposes to build a 9.6 mgd desalination plant. The plant would include six 1.6 mgd reverse osmosis modules and one 1.6 mgd standby module. As noted above in Section 2.3.2, water demand fluctuates over the day, season, and year. Similarly, the availability of some water supplies that would be used along with the proposed desalination plant also varies over the course of the year. For example, while CalAm has a right to an annual quantity of Carmel River water, the river produces more water in the winter and less in the summer. So to provide adequate service, any water system must be sized to ensure it can meet anticipated peak demands, and it is standard engineering practice to do so. Therefore, anticipated monthly operations were analyzed as part of the development of the proposed project (RBF Consulting, 2013). In addition to CalAm service area water demand, plant operations include CalAm's SVGB return water obligation: the volume of water that would be returned to the SVGB based on the percentage of SVGB groundwater that was produced as source water by the subsurface slant wells. SVGB return water is discussed below in Section 2.5.1 and in Section 2.6, Water Rights.

This section also describes other factors that could affect future water demand and supplies in CalAm's Monterey District.

2.5.1 Salinas Valley Groundwater Basin Return Water

MPWSP source water would include some brackish groundwater from the SVGB. As part of the proposed project, CalAm would return to the SVGB a volume of desalinated product water equal to the amount of SVGB groundwater included in the source water. While CalAm's SVGB return water obligation will be based on the amount of fresh water in the source water, in order to consider the effect of the return water for this EIR/EIS, groundwater modeling simulated scenarios with return water obligations representing 0, 3, 6, and 12 percent of the source water (see Section 4.4, Groundwater Resources). The amount of SVGB groundwater included in the source water is expected to decrease over time (CalAm et al., 2016b).

In June 2016, several parties involved in the current proceeding asked the CPUC to approve their proposed "Settlement Agreement on MPWSP Desalination Plant Return Water" (CalAm et al., 2016b). The settlement describes how CalAm would fulfill its annual SVGB return water obligation. As the settlement explains:

- Delivering return water by injecting desalinated water from the proposed project into the SVGB is considered less desirable than delivering return water for beneficial use in the SVGB.
- The Castroville Seawater Intrusion Project (CSIP) may not have sufficient capacity to accommodate all of the MPWSP SVGB return water under some conditions.
- The Castroville Community Services District (CCSD), which provides municipal and domestic water service to the Town of Castroville, currently relies on about 780 afy of SVGB groundwater to meet Castroville's water demands, and increasingly has experienced water supply challenges because the water is getting saltier.
- The CCSD wants to take delivery of a SVGB return water supply to replace all or part of CCSD's current reliance on groundwater from the SVGB.

To fulfill its SVGB return water obligation, CalAm would make return water available for other water suppliers to use instead of pumping groundwater from the SVGB. The return water settlement requires CalAm either to make 800 afy of return water available for delivery to CCSD, assuming they build the 9.6 mgd plant, or to make 690 afy available if they build the 6.4 mgd plant. CCSD's avoided cost – that is, what they would have had to pay to produce enough groundwater to meet demand – will determine the price that CCSD would pay for the return water. If there is any return water left after CCSD takes its share, CalAm would deliver it to the CSIP. The pipeline that would need to be built to convey return water to Castroville is described in Chapter 3, Description of the Proposed Project, and its potential impacts are evaluated in subsequent chapters of this EIR/EIS. See Section 2.6, below, for more on this topic.

2.5.2 Potential Future Changes in Supply

2.5.2.1 Los Padres Reservoir

State Water Board Order 95-10 reduced CalAm's right to divert surface water to storage at Los Padres Reservoir from 3,030 afy to 2,179 afy, because the legal right to divert water to storage is limited by the physical ability to store the water. In a 2006 study, the MPWMD noted that the State Water Board could revisit Order 95-10 and, by applying the same logic, further reduce CalAm's right to divert water to storage based on additional losses in reservoir capacity due to ongoing sedimentation (MPWMD, 2006a). A 2008 bathymetric study by the Watershed Institute at California State University at Monterey Bay determined that the usable storage capacity of the reservoir in 2008 was 1,669 af. Based on the 2008 study, MPWMD estimated that the long-term sedimentation rate of the reservoir was 21 afy and that more than 510 af of replacement supply would likely be needed to offset the lost capacity (MPWMD, 2015b). A 2016 resurvey conducted for MPWMD determined that although the reservoir can hold up to 1,810 af at the spillway level, the safe usable storage was less than 1,400 af due to concerns about releasing anoxic water or water with hydrogen sulfide in the lowest portion of the reservoir (MPWMD, 2017). MPWMD currently estimates that sedimentations rates could range from 11 to 19 afy. Based on the 2016 resurvey and changes in reservoir operation, MPWMD currently believes that the previous estimate of needed replacement supply may be low. However, because the need for this replacement supply is long-term, MPWMD believes that water supply available from the Seaside

Groundwater Basin at the end of CalAm's in-lieu replenishment period (discussed in Section 2.2.4) may be adequate to offset losses in supply from the Los Padres Dam and Reservoir (MPWMD, 2017).[31] As noted in Section 2.2.2, MPWMD and CalAm are currently studying the long term options for the Los Padres Dam and Reservoir.

2.5.2.2 Conclusion of Seaside Groundwater Basin Replenishment Period

As discussed in Section 2.2.4, the proposed project assumes the availability of 747 afy of water supply from the Seaside Groundwater Basin. At the conclusion of the 25-year replenishment period, CalAm would have access to its total adjudicated right of 1,474 afy, thus augmenting available supply by 700 afy.

2.5.3 Potential Future Changes in Demand

Several recent and planned projects and actions could serve to reduce or offset demand assumed by CalAm during the planning and sizing of the proposed MPWSP Desalination Plant. Conversely, growth within the Monterey District service area that is consistent with adopted general plans could increase demand beyond that assumed for the proposed project. This section describes other projects and actions that were not explicitly accounted for in CalAm's demand estimates but that could affect future service area demand.

As the price of water changes, customers' behavior may change as well. When water is less expensive, people typically use more of it; when water is more expensive, people typically conserve more. But no one knows how much water will cost in the future, or how the CPUC will structure CalAm's water rates. Also, people in CalAm's Monterey District have a long history of water conservation, and already use very little water compared to the rest of the state. But if the MPWSP comes on line, that would make CalAm's water supply more reliable, and would probably lift the constraints imposed by Order 95-10 and the CDO, which might induce people to use more water, even if that water is also becoming more expensive. Given the number of variables involved, speculating about what effect future water prices might have on behavior is futile.

2.5.3.1 Pacific Grove Local Water Project

The City of Pacific Grove wants to create a new supply of non-potable water. In the first phase of the Pacific Grove Local Water Project, the city will build and operate a 0.25 mgd satellite recycled water treatment plant that would provide up to 125 afy of recycled water primarily to the Pacific Grove Municipal Golf Links and the El Carmelo Cemetery.[32] The recycled water would replace potable supply currently used for these facilities. Pacific Grove certified an EIR on the project in November 2014. In October 2015, the city certified a supplemental EIR on a modified project, and

[31] The estimate of safe useable reservoir capacity based on the 2016 resurvey is 779 af less than the capacity identified in Order 95-10 (2,179 af), and an additional 700 afy will be available to CalAm at the end of the Seaside Groundwater Basin in-lieu replenishment period.

[32] Subsequent phases of the PGLWP could provide up to 600 afy of recycled water to sites within the cities of Pacific Grove and Monterey and unincorporated areas of Pebble Beach (City of Pacific Grove, 2014).

approved the project as modified. The modified project includes a water entitlement for the city from MPWMD for up to 90 afy of the potable water saved by the PGLWP, to be used to serve a portion of Pacific Grove's anticipated buildout water demand (City of Pacific Grove, 2015).

The State Water Board approved Clean Water State Revolving Fund financing for the project in November 2015. The approval includes a condition that prohibits the allocation of potable water saved by the project for new uses until the State Water Board gives consent to use the water for new connections. In January 2016, MPWMD adopted Ordinance No. 168, which establishes an entitlement for Pacific Grove of 66 afy for consumption from CalAm's distribution system; permanently suspends from use 13 afy, for the benefit of the Carmel River system; and reserves 9 afy for the MPWMD for its exclusive use for allocation to other jurisdictions. MPWMD established the entitlement so that it would be available to Pacific Grove when the State Water Board authorizes use of the saved water for new connections (MPWMD, 2016c; State Water Board 2015). The project is expected to be operational and delivering up to 125 afy by the end of 2017 (MPWMD, 2016c; 2017). Although the MPWMD has issued the City of Pacific Grove a permit to receive potable supply from CalAm's system, when available, and MPWMD has reserved for itself, for future allocation, an entitlement for a portion of the saved water, the combined permits for Pacific Grove and MPWMD associated with this project are less than the amount of potable water currently used for irrigation that the project would offset. So the project should reduce demand when it is operational.

In 2013, CalAm and several other parties asked the CPUC to approve a settlement agreement on plant sizing and operations. The Settling Parties agreed that the Pacific Grove project would be a valuable part of a comprehensive solution to water issues in CalAm's Monterey District when integrated with the MPWSP, the GWR Project, and ASR (CalAm et al., 2013a).

2.5.3.2 Pebble Beach Recycled Water Project Phase II

The Carmel Area Wastewater District-Pebble Beach Community Services District reclamation project provides recycled water to irrigate Del Monte Forest golf courses and other open space areas. Phase I of the project, completed in 1994, offset demand for about 70 percent, or 700 af, of the potable water previously used for this purpose (Sweigert, 2008). Phase II of the project, which was completed in 2009, eliminated the need to mix any potable water with the recycled water; the project now supplies 100 percent of the water used at the area golf courses and is estimated to save approximately 1,000 afy of potable water (Stoldt, 2011). In planning for the MPWSP, CalAm based its current estimate of service area demand on the 10-year average of years 2006 through 2015. Assuming Phase II of the reclamation project became operational midway through 2009, the additional 300 afy demand reduction it achieved would be reflected in demand data for more than half that baseline period; therefore, although additional reductions in service area demand may occur as a result of this project it is expected such reductions would be minor.

2.5.3.3 Non-revenue Water Reduction

The Final EIR for the Coastal Water Project and the Regional Project[33] noted that improvements in CalAm's distribution system could reduce demand by reducing non-revenue water. Non-revenue water, also known as unaccounted-for water, is the difference between a water system's metered production and metered consumption.

In its 2009 CDO, the State Water Board observed that the industry standard for non-revenue water was 10 percent; that CalAm's non-revenue water was about 12 percent of production; and that the MPWMD had required CalAm to reduce non-revenue water to 7 percent (State Water Board, 2009). The State Water Board concluded that CalAm should be required to reduce its system losses by about 549 afy and should immediately start to reduce the losses. Similarly, in 2009, the CPUC addressed CalAm's acute need to reduce non-revenue water in the Monterey District. The CPUC ordered CalAm to develop and implement a program for reducing unaccounted-for water in its Monterey main system and associated subsystems and, to provide a financial incentive, the CPUC created a penalty/reward program to be calculated based on a 9 percent non-revenue water target (CPUC, 2012). A June 2012 CPUC rate case decision (D.12-06-016) also found that non-revenue water in the Monterey District needed to be reduced.

CalAm has often described the company's efforts to reduce non-revenue water in its Monterey District (Sabolsice, 2012; CalAm et al., 2016a). These efforts include:

- investigating and analyzing main breaks and service leak data and evaluating pressure-control methodologies
- replacing older water mains and service lines in areas shown to be more prone to leaks
- replacing meters
- deploying acoustic leak-detection devices throughout the system
- implementing operational fixes such as pressure reduction

CalAm submits quarterly compliance reports to the State Water Board under the CDO (CalAm, 2011, 2012b, 2013, 2014, 2015). Those reports show that between the 2011 and 2015 water years, CalAm reduced system losses by an average of 506 afy compared to the base year system losses in water year 2009, and that by the end of this period the reductions in water losses exceeded the reduction target of 549 afy that had been established in the 2009 CDO: the reduction in system losses ranged from 752 af in water year 2013 to 919 af in water year 2015. System losses (i.e., the amount of non-revenue or unaccounted-for water), as opposed to the *reduction* in losses, for the period October 2014 through September 2015 (water year 2015) totaled to 357 af and system losses for the period January through December 2015 (calendar year 2015) totaled to 247 af (CalAm, 2016d). Since then, through March 2017, system losses were less than 200 afy in all

[33] As described in Chapter 1 (Section 1.4), CalAm previously proposed the Coastal Water Project to replace existing Carmel River supplies to which CalAm no longer has a recognized legal right pursuant to Order 95-10 (discussed in Section 2.2.3 above). The Regional Project emerged as an alternative to the Coastal Water Project during the environmental evaluation of the Coastal Water Project. The CPUC certified the EIR in 2009 and approved the Regional Project, which would have been jointly implemented, in two phases, by CalAm and the Marina Coast Water District, in 2010. CalAm eventually withdrew its support for the Regional Project due to the inability to resolve issues that arose related to its implementation, and in 2012 proposed the MPWSP as an alternative.

12-month periods except one (April 2016 to March 2017), when non-revenue water totaled 271 af. CalAm notes that the actual components of unaccounted-for water are difficult to identify because unaccounted-for water represents a combination of system leaks and unmetered water use. Savings from system repairs and line replacements and the like through 2015 are reflected in CalAm's system demands data discussed in Section 2.3.1.

CalAm's program to address system losses will continue under the CDO and the CPUC's decisions. While additional reductions in demand can be expected from continuing efforts to address system losses, data are not available to quantify potential additional future savings from such efforts. Over time, the size of additional reductions in system losses will inevitably decrease as CalAm replaces the oldest and most leak-prone lines and implements other efforts to reduce losses.

2.5.3.4 General Plan Buildout

CalAm is not proposing that the MPWSP meet future demands associated with general plan buildout, although the proposed project does include water for some future development (e.g., development of vacant lots of record). Phase 2 of the Regional Project[34] included water to meet projected future service area demands; the MPWMD prepared that estimate of future water needs in 2006 based on information obtained from the service area jurisdictions (MPWMD, 2006b). Each jurisdiction provided estimates of the number of residential units and nonresidential square footage that would be developed under buildout of the currently adopted general plan as well as anticipated residential remodels. Because not all jurisdiction submitted estimates for lots of record as a distinct category, that aspect of general plan buildout in the 2006 estimate does not compare to CalAm's current estimate for lots of record. The MPWMD estimated that 4,545 afy would be needed to meet future water demands (MPWMD, 2006b).

Since the 2006 estimate was prepared, the future water needs of four jurisdictions have been revised, reducing the total:[35]

- Monterey County adopted a new general plan that revised their water demand estimates (Monterey County, 2010);
- The City of Pacific Grove testified on the MPWSP in 2013, revising its estimate of water needed to accommodate general plan buildout (Hardgrave, 2013);
- The City of Seaside commented on the April 2015 MPWSP Draft EIR, updating its future water needs, and noting that full buildout of the West Broadway Urban Village Specific Plan would require a net increase of 80 afy of water (City of Seaside, 2015).

34 Refer to Chapter 1 for more information on the Regional Project.

35 The EIR prepared for the *Monterey County General Plan* provides two estimates of future water demand for the Greater Monterey Peninsula: one for the general plan planning horizon, which extends to 2030, and one for complete buildout under the general plan, which the EIR projected would occur in 2092. The estimate assumed in this analysis (1,005 afy) is for the 2030 planning horizon. Total buildout demand under the general plan is much higher (4,439 afy, not including unincorporated Carmel and Del Monte Forest, for which buildout estimates are not provided). Because the general plan EIR estimate of demand used a substantially higher per-capita water use rate than is currently assumed, and projected a higher population level than is currently assumed by the Association of Monterey Bay Area Governments, there is reason to believe that the 2092 buildout projection overstates both future population and water demand; therefore, the shorter term planning horizon was considered a more reasonable estimate for this analysis.

As discussed in Section 2.3, the proposed MPWSP would provide water supply to meet a projected total service area demand of about 14,275 afy, which is 1,680 afy more than CalAm's estimate of current annual demand (12,270 afy) and existing Pebble Beach water entitlements (325 afy). Part of this 1,680 afy is intended to serve existing service area customers in the hospitality industry under improved economic conditions and part is intended to serve future development of lots of record. Analysis presented in Section 6.3 indicates CalAm might have overestimated the amount needed to serve existing hospitality industry customers under improved economic conditions (500 afy) by about 250 afy and that the other 250 afy designated for hospitality industry recovery may therefore be available to serve future growth. Assuming that revised estimate for the hospitality industry, about 1,430 afy of the 14,275 afy would be available to serve additional development in the CalAm service area. Although the project proposes to meet a narrower range of future development than was assumed for Phase 2 of the Regional Project, the amount of water provided by the proposed project to serve additional development represents about half of the revised estimate of future service area demands. As the revised estimate in Table 2-5 indicates, the proposed project would provide 2,096 afy less than would be needed to meet water demand associated with general plan buildout (3,526 afy) and the other future water demand considered in the 2006 analysis.[36]

The MPWMD, the Monterey Peninsula Regional Water Authority, Monterey County, and CalAm plan to determine an accurate estimate of the added capacity needed to meet the General Plan buildout projections for communities served by CalAm. The findings from this process, which will be undertaken separately from the current A. 12-04-019 proceeding, will be reported to the CPUC either within a subsequent rate design phase of A. 12-04-019 or as part of the general rate case process (CalAm et al., 2013b).

2.5.4 Assumptions about the Allocation of MPWSP Water

As discussed in Section 2.3, CalAm proposes to size the MPWSP Desalination Plant to provide, along with other sources, sufficient supply to meet service area demand of 14,275 afy. This amount is 1,680 afy more than the 12,270 afy annual demand of existing customers and existing Pebble Beach water entitlements (325 afy) (shown in Table 2-3), and without Seaside Basin replenishment, it would be 2,380 afy more than existing annual demand and entitlements. In addition to meeting existing service area demands, CalAm proposes sizing the plant to meet demand associated with the development of vacant legal lots of record and, if the economy improves, demand from increased water use at existing hospitality businesses. While such increases in water demand can reasonably be expected, estimating future water demand necessarily entails the use of assumptions about demand factors that cannot be predicted with absolute certainty. (As discussed in Section 2.3.3,

[36] The estimated difference could be less considering ongoing conservation programs that MPWMD and CalAm have been implementing in response to SWRCB Order 95-10 (in 1995) and the more recent CDOs. The California Water Conservation Act of 2009 (adopted after the general plan estimates were prepared in 2006) requires a 20 percent reduction in per capita water use statewide by the year 2020 (Water Code Section 10608). Assuming the conservation programs implemented in CalAm's Monterey District – in response to SWRCB orders as well as this 2009 law – reduced water use and projected demand by 20 percent, the corresponding future general plan buildout demand would be about 2,870 afy, and the difference between the MPWSP supply and this future demand would be about 1,400 afy. MPWMD states that the appropriate estimate of future water needs is 3,526 afy (shown in Table 2-5), not further reduced by 20 percent, because MPWMD's 2006 estimate assumed efficient plumbing fixtures that meet or exceed the requirements of Water Code Section 10608 (MPWMD, 2017).

MPWMD's review of the factors included in CalAm's estimate produced somewhat different results. For example, MPWMD's review indicated that supply needed for future development of vacant lots of record may be underestimated and the supply needed for economic recovery of the hospitality industry may be overestimated.) Moreover, under past and current allocation programs, once a given supply has been allocated to a jurisdiction, whether or not the jurisdiction reserves its allocation for specific uses and at specific levels that CalAm assumed for project sizing would be up to the jurisdiction. It is the jurisdiction's responsibility to determine, subject to applicable plans, policies, laws, and regulations, whether or not to approve a new or intensified water use within its boundaries. In addition, with other supply sources the MPWSP would provide total supply of 16,294 afy during the Seaside Basin replenishment and 16,994 afy after the replenishment period, as shown in Table 2-4. Available supply after 14,275 afy of anticipated demand was met may need to be returned to the Salinas Valley Groundwater Basin, or may be available for growth within service area jurisdictions, depending on the return water obligation.

One of the MPWMD's key functions is to allocate water supply within its boundaries. The water supply that the proposed project would provide, along with other existing and planned supplies, would continue to be subject to MPWMD's allocation program. Although MPWMD has not yet begun to address allocation of the proposed MPWSP supply, this analysis assumes that the same considerations that informed the past and current allocations will be relevant to the allocation of the MPWSP supply. This EIR/EIS assumes for purposes of the impact analyses presented in Chapters 4 through 6 that water provided by the proposed project will be used to meet existing demand and that any water left over would be allocated in general proportion to projected growth in the CalAm service area jurisdictions. MPWMD recently confirmed that the future allocation process has not been defined and that MPWMD will update its 1990 Allocation Program EIR only when it is clear that CalAm will complete construction of a project to provide replacement supplies [for the reductions that resulted from SWRCB Order 95-10 and related CDOs and the Seaside Basin adjudication] (MPWMD, 2017). MPWMD states that it may not allocate all the water, choosing instead to retain some for future allocation to jurisdictions, "as general plans change over time," or to "retain a reserve for public benefit projects, maintain a reserve to offset Pebble Beach entitlements, maintain a buffer for fluctuating demand due to economic or climate issues, or retain allocable water to allow a lower plant capacity factor for operations" (MPWMD, 2017). In the absence of definitive commitments as to how water provided by the project would be allocated (or not), the assumption that water provided by the project not needed for existing demands or Salinas Valley return water would be used to meet demand associated with future growth, distributed in general proportion to projected planned growth in the CalAm service area, is a reasonable and appropriately conservative assumption for the impact analysis.

2.6 Water Rights

The topic of water rights is not one typically addressed in an EIR/EIS. It is a state legal matter that is rarely relevant to the question of whether a proposed project being evaluated under CEQA or NEPA will generate impacts on the environment. Additionally, consideration of these issues is not required for MBNMS's permit/authorization process and the federal government takes no opinion on these matters of state law. Here, however, the issue of water rights is addressed as one of project

Numerous court decisions have enunciated that an EIR prepared under CEQA for a large scale land use development project must analyze the reasonably foreseeable impacts of supplying water to the project.[38] Such an EIR should show a reasonable likelihood that water will be available from an identified source and must evaluate environmental impacts from likely future water sources to serve the proposed project. Those cases arise in a different context than the MPWSP. Those cases are concerned with whether there will be enough water to support construction of land use projects and to supply the operational needs of the project occupants for drinking, cooking, bathing, waste water, industrial processes, irrigation, etc. Quite conversely, the MPWSP is itself a water supply project, aimed primarily at creating the water supply to replace current water supplies to which CalAm is not legally entitled. From a physical perspective, it is more than reasonably foreseeable that sufficient water is available to supply feedwater for the MPWSP desalination plant. There is knowledge as to where the water will come from and certainty that a sufficient quantity of water will be available. The physical effects of MPWSP's withdrawal of water are fully analyzed in Section 4.4, Groundwater Resources, of this EIR/EIS.

The primary purpose in requiring an EIR to identify the water supply source for a project and to analyze the effects of supplying water to the project is to ensure that land use development projects that will use water are not built without consideration of water supply. Unlike with land use development projects, here, if CalAm did not possess legal rights to use the feedwater for the MPWSP desalination plant, then the desalination plant simply could not operate and the project would not go forward. That is why water rights factors in as a key project feasibility issue.

2.6.1 State Water Resources Control Board Report

Questions have been posed in the CPUC's proceeding as to whether CalAm could demonstrate water rights to the MPWSP supply water. Furthermore, as noted above, CalAm's right to the project feedwater is a basic feasibility issue for the project. The SWRCB is the state agency authorized to exercise advisory, expert, adjudicatory and regulatory functions in the areas of water rights, water quality and safe and reliable drinking water. By letter dated September 26, 2012, the CPUC asked that the SWRCB assist the CPUC and issue an opinion as to whether CalAm has a credible legal claim to the supply water for the MPWSP. The SWRCB carefully considered the then-available facts and evidence concerning the MPWSP, prepared a draft report on water rights, circulated that draft for public comments and ultimately issued its July 31, 2013, Final Review of California American Water Company's Monterey Peninsula Water Supply Project (Report). The Report is attached to this EIR as **Appendix B2**.

First off, the Report confirms that "Cal-Am needs no groundwater right or other water right to extract seawater from Monterey Bay." Report at 33. Thus, CalAm does not need a water right for the vast majority of the MPWSP supply water because most of the supply water for the 9.6 mgd desalination plant with supply wells at the proposed CEMEX location is projected to be seawater[39]

[38] These decisions include *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal. 4th 412, and *Cherry Valley Pass Acres and Neighbors v. City of Beaumont* (2010) 190 Cal.App.4th 316.

[39] The term "seawater" in this EIR/EIS means water that originated in the ocean, identified as containing 33,500 mg/L of TDS, which represents current salinity levels in Monterey Bay.

> water quality impacts; (4) how Cal-Am should return any fresh water it extracts to the Basin to prevent injury to others; and (5) how groundwater rights might be affected in the future if the proportion of fresh and seawater changes, both in the larger Basin area and the immediate area around Cal-Am's wells.

Report at 46. The Report concluded that further data were needed in order to apply the facts and evidence to the criteria set forth in the Report for determining CalAm's water rights. The Report noted that information was needed pertaining to the depth of the project supply slant wells, the hydrogeologic conditions of the site and the area, updated modeling to evaluate the impacts of the project, aquifer testing, and studies to help determine how extracted fresh water would be replaced. These studies and activities have been undertaken and the results are described and reflected in Section 4.4, Groundwater Resources. CalAm has supplied details about its proposed supply wells and return water proposal. Test borings have helped to characterize the hydrogeologic framework within which the project would operate. Groundwater modeling has been conducted. CalAm also obtained approval to construct a test well on the CEMEX site. That well is in place (and core samples taken during the drilling of the well confirmed the assumptions about hydrogeologic conditions) and test pumping is occurring. Information obtained through test slant well pumping and monitoring was used to refine the aquifer properties represented in the revised version of the groundwater model to test the model's reliability for simulating drawdown from slant well pumping. This preliminary analysis of water rights is based upon detailed and extensive groundwater aquifer characterization and groundwater modeling that has been undertaken by the EIR/EIS preparers to assess the effects of the project on Basin groundwater users.[42]

2.6.2 Project Water Rights

As noted above, CalAm extraction of seawater does not require water rights. However, CalAm extraction of Basin water does require appropriative water rights, as discussed above. The question presented is thus whether Basin water rights holders would be injured or harmed by virtue of withdrawal from the Basin of any amount of water that is not purely seawater. The extensive groundwater modeling conducted for this EIR/EIS and discussed in detail in the Groundwater Resources section and in **Appendix E2** is different from that conducted for the 2015 Draft EIR on the MPWSP. As explained in Chapter 4.4, Groundwater Resources, the modeling is specifically targeted to isolating the change in groundwater levels that would be generated by the MPWSP. This modeling, however, cannot project the amount of Basin water that is expected to be drawn into the supply wells. Due to decades of well-documented seawater intrusion in the area, the technical record shows that any Basin water extracted by the supply wells would be brackish water, which is a combination of ocean water and water that originated from the inland aquifers of the Basin. CalAm proposes as part of the MPWSP and to meet the applicable requirements of the Monterey County Resources Agency Act to return to the Basin (in the manner further described below) the

[42] The EIR/EIS preparers have also had the benefit of working closely with, and receiving input from, the Hydrogeologic Working Group (HWG) that was formed as a result of the proposed settlement in the CPUC proceeding on the MPWSP. The HWG is composed of experts representing myriad parties in the CPUC proceeding with diverse interests related to the Basin, including but not limited to the Monterey County Farm Bureau, the Salinas Valley Water Coalition and CalAm. The EIR/EIS preparers obtained feedback from the HWG as to the groundwater aquifer characterization and the groundwater modeling assumptions. In addition, the HWG has prepared a detailed report that evaluates the results of the test slant well operations and the expected small percentage of project source water that would be fresh water. Input from the HWG work is reflected in Section 4.4, Groundwater Resources.

2.6.3 Effect of Monterey County Water Resources Agency Act

In 1990, the State Legislature enacted the Monterey County Water Resources Agency Act (the Agency Act), creating the MCWRA as a flood control and water agency. The jurisdictional boundaries of the MCWRA are coterminous with County of Monterey boundaries. Per the Agency Act, MCWRA is charged with preventing the waste or diminution of the water supply in its territory by, among other things, controlling groundwater extractions and prohibiting groundwater exportation from the Salinas River Groundwater Basin. When it enacted the Agency Act, the California State Legislature expressly provided that: "no groundwater from that basin may be exported for any use outside the basin, except that use of water from the basin on any part of Fort Ord shall not be deemed such an export. If any export of water from the basin is attempted, [MCWRA] may obtain from the superior court, and the court shall grant, injunctive relief prohibiting that export of groundwater." Agency Act at Section 21. The Agency Act further empowers the MCWRA to prevent extraction of groundwater from particular areas of the Basin if needed to protect groundwater supplies. Accordingly, MCWRA adopted Ordinance 3709 (the "Ordinance") prohibiting well drilling and/or groundwater extraction within certain portions of the northern Salinas Valley between the depths of 0 mean sea level and -250 mean sea level.

This section evaluates the proposed project's consistency with the Agency Act (and the Ordinance) such that the application of the Agency Act or the Ordinance would not undermine the project's right to withdraw and supply water and thus, impair the feasibility of the project from water rights and legal feasibility perspectives.

First, the State Water Resources Control Board Report, discussed in detail above, raises the question as to whether the Agency Act would apply to all of the proposed project groundwater extractions given the location of some screens of the slant wells outside the jurisdictional boundaries of the County:

> The applicability of the Agency Act to the MPWSP is unclear. As currently proposed, the project would use slanted wells and have screened intervals located seaward of the beach. Although the project would serve areas within the territory of the MPWSP, the points of diversion for these proposed wells may be located outside the territory of MCWRA as defined by the Agency Act.

Report at 39. The Agency Act's effect on project feasibility may be minimized by virtue of its application only to water drawn through well screens located within County jurisdiction. Assuming, however, that the Agency Act would apply to the entire project, the Report (while acknowledging that the SWRCB is not the body charged with interpreting the Agency Act) opines that the project would appear consistent with the Agency Act given that the project would return to the Basin any quantity of fresh water withdrawn from the Basin. The Report states:

> Based on the State Water Board's analysis, as reflected in the Report, the Project as proposed would return any incidentally extracted usable groundwater to the Basin. The only water that would be available for export is a new supply, or developed water. Accordingly, it does not appear that the Agency Act or the Ordinance operate to prohibit the Project. The State Water Board is not the agency responsible for interpreting the Agency Act or MRWCA's ordinances. It should be recognized, however, that to the extent the language of the Agency

> Act and ordinance permit, they should be interpreted consistent with policy of article X, section 2 of the California Constitution [declaring that the waters of the state shall be put to maximum beneficial use], including the physical solution doctrine . . .

Report at 40. As to Ordinance 3709 specifically, since the CEMEX parcel within which the proposed slant wells would be located is not within the boundaries of Ordinance 3709, the Ordinance would not apply. Therefore, it appears reasonable to conclude that the project would be consistent with the Agency Act and the Ordinance such that those laws would not impair project feasibility.

2.6.4 Effect of Annexation Agreement

In 1996, the MCWRA, the MCWD, the City of Marina, the owners of Armstrong Ranch and then owners of the CEMEX property (RMC Lonestar) entered into an *Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands* ("Annexation Agreement").[46] The agreement established a framework for management of groundwater from the Basin and included terms and conditions for the annexation of lands (including the Armstrong Ranch and CEMEX properties) to MCWRA's benefit assessment zones as a financing mechanism to fund groundwater resource protection and reduction of seawater intrusion (MCWD, et al. 1996).

Under the Annexation Agreement, MCWD's authority to withdraw potable groundwater from the Basin would be limited to 3,020 afy year until such time as a plan for development of a long-term potable water supply capable of mitigating seawater intrusion was developed and implemented. If and when the Armstrong Ranch property were annexed to MCWD's benefit assessment zones, non-agricultural use of Basin groundwater withdrawn from that property would be capped at 920 afy. If and when the CEMEX property was annexed to MCWD's benefit assessment zones, withdrawal of groundwater from that property would be capped at 500 afy.

The Armstrong Ranch property is not included as part of the proposed MPWSP. However, at the CEMEX property (where CEMEX currently conducts sand mining operations), CalAm proposes construction of subsurface slant wells extending offshore under Monterey Bay and other infrastructure to support the MPWSP Seawater Intake System. Consequently, this section addresses the Annexation Agreement to assess its effect on MPWSP feasibility. Specifically, this section examines: (1) whether annexation of the CEMEX property has occurred, triggering the 500 afy groundwater withdrawal limitation; and (2) whether that withdrawal limitation (if effective) would apply to water withdrawn by the MPWSP slant wells and affect CalAm's right to pump water for the project.

Section 7.3 of the Annexation Agreement provides that "Lonestar Property annexation to the Zones will not take effect until the Lonestar Property has been approved for prior or concurrent annexation into MCWD" (MCWD, et al. 1996). Annexation of the property, now owned by CEMEX, requires compliance with CEQA and discretionary approval by the Monterey County Local Agency Formation Commission (LAFCO). At its June 12, 2012 regular board meeting, the MCWD Board adopted a resolution (No. 2012-42) to initiate CEQA studies and submit to

[46] The MRWPCA was not a party to the Annexation Agreement. However, an Addendum attached as Exhibit G to the Annexation Agreement provides that MRWPCA could later elect to become a party to that Agreement.

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California American Water (CalAm), 2013. Letter report to Barbara Evoy, Division Chief, Division of Water Rights, State Water Resources Control Board, Re: SWRCB Order WR 2009-0060, 4th Quarterly Report for the 2012-2013 Water Year Addressing Operations for the Period of July 1, 2013 to September 30, 2013 (Table 5, 12 Month Running Average of Unaccounted For Water), October 17, 2013. Available: https://amwater.com/caaw/customer-service-billing/billing-payment-info/water-rates/monterey-district.

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ATTACHMENT H

Order on Four Complaints Filed Against The California-American Water Company

Carmel River
Monterey County

Order No. WR 95-10

JULY 6, 1995

STATE WATER RESOURCES CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

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CITING THE RECORD

When citing evidence in the hearing record, the following conventions have been adopted:

Information derived from the hearing transcript:

T,II,12:1 - 15:17

- T — identifying abbreviation of the information source
- II — hearing transcript volume number
- 12:1 — beginning page and line number
- 15:17 — ending page and line number (may be omitted if single line reference is cited)

Information derived from an exhibit:

SWRCB:5,4

- SWRCB — identifying abbreviation of information source
- 5 — exhibit number
- 4 — page number, volume, table, graph, or figure number; or application number if a file is cited

Abbreviations of information sources:

AC	Archeological Consulting
ACOE	U.S. Army Corps of Engineers
CAL-AM	California American Water Company
CRSA	Carmel River Steelhead Association
CSPA	California Sportfishing Protection Alliance
DISTRICT or MPWMD	Monterey Peninsula Water Management District
DFG	California Department of Fish and Game
ESSELEN TRIBE	Esselen Tribe of Monterey County
ESSELEN NATION	Esselen Nation of United Families of the Central Coast of CA
EVANS	Willis Evans
PARK	Monterey Peninsula Regional Park District
PHBr	Post-Hearing Brief
SWRCB	State Water Resources Control Board
SIERRA CLUB	Ventana Chapter of the Sierra Club
T	Hearing Transcript

Other commonly used abbreviations:

af	Acre-feet
afa	Acre-feet annually
cfs	Cubic feet per second
CEQA	California Environmental Quality Act
gpm	Gallons per minute
RM	River mile, measured from river mouth
USGS	United States Geologic Survey

ORDER FINDING AGAINST RESPONDENT, IN PART, AND DIRECTING CORRECTIVE ACTIONS

SYNOPSIS

The California-American Water Company (Cal-Am) currently diverts water from the Carmel River and supplies the water, primarily, for use outside of the watershed to users on the Monterey Peninsula. Four complaints were filed with the State Water Resources Control Board (SWRCB) against Cal-Am for its diversion of water from the Carmel River. The complaints generally allege that Cal-Am: (a) does not have the legal right to divert water from the river and (b) diversions are adversely affecting public trust resources within the river. The SWRCB concludes that Cal-Am: (a) does not have legal right for about 10,730 acre-feet annually which is currently diverted from the river (about 69 percent of the water currently supplied to Cal-Am users) and (b) diversions are having an adverse affect on the public trust resources of the river. This order directs Cal-Am to: (a) diligently proceed in accord with a time schedule to obtain rights to cover its existing diversion and use of water and (b) implement measures to minimize harm to public trust resources. Measures to minimize harm to public trust resources require Cal-Am to reduce the quantity of water which is currently being pumped from the river. Because water is not available for appropriation by direct diversion in the river during summer months, Cal-Am must either obtain the right to additional water supplies from: (a) sources other than the river, (b) a storage project similar to the New Los Padres (NLP) project proposed by the Monterey Peninsula Water Management District (District), or (c) contract with the District for supply from the proposed NLP project.

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of Complaints Against Diversion and Use of Water by the		
CALIFORNIA-AMERICAN WATER COMPANY,	ORDER:	WR 95-10
Respondent,	SOURCE:	Carmel River Tributary to Pacific Ocean
CARMEL RIVER STEELHEAD ASSOCIATION, RESIDENTS WATER COMMITTEE, SIERRA CLUB, CALIFORNIA DEPARTMENT OF PARKS AND RECREATION,	COUNTY:	Monterey
Complainants.		

ORDER FINDING AGAINST RESPONDENT, IN PART, AND DIRECTING CORRECTIVE ACTIONS

BY THE BOARD:

Complaints having been filed against Cal-Am for its diversion and use of water from the Carmel River by Carmel River Steelhead Association, Residents Water Committee, Sierra Club, and Department of Parks and Recreation; a hearing having been held on August 24, 25, 26, 31, September 1, 8, and 9, October 19 and 21, and November 7, 8, and 22, 1994; the complainants, Cal-Am, and other interested persons having been provided opportunity to present evidence; closing briefs having been filed; the evidence and briefs having been duly considered; the Board finds as follows:

1.0 CAL-AM, CAL-AM FACILITIES AND CAL-AM OPERATIONS

Cal-Am is an investor-owned public utility subject to the jurisdiction of the California Public Utilities Commission. (T,Sept. 9, 1992, 95:1-95:7; T,I,49:14-49:22.) Cal-Am currently diverts about 14,106 afa of water from the Carmel River and

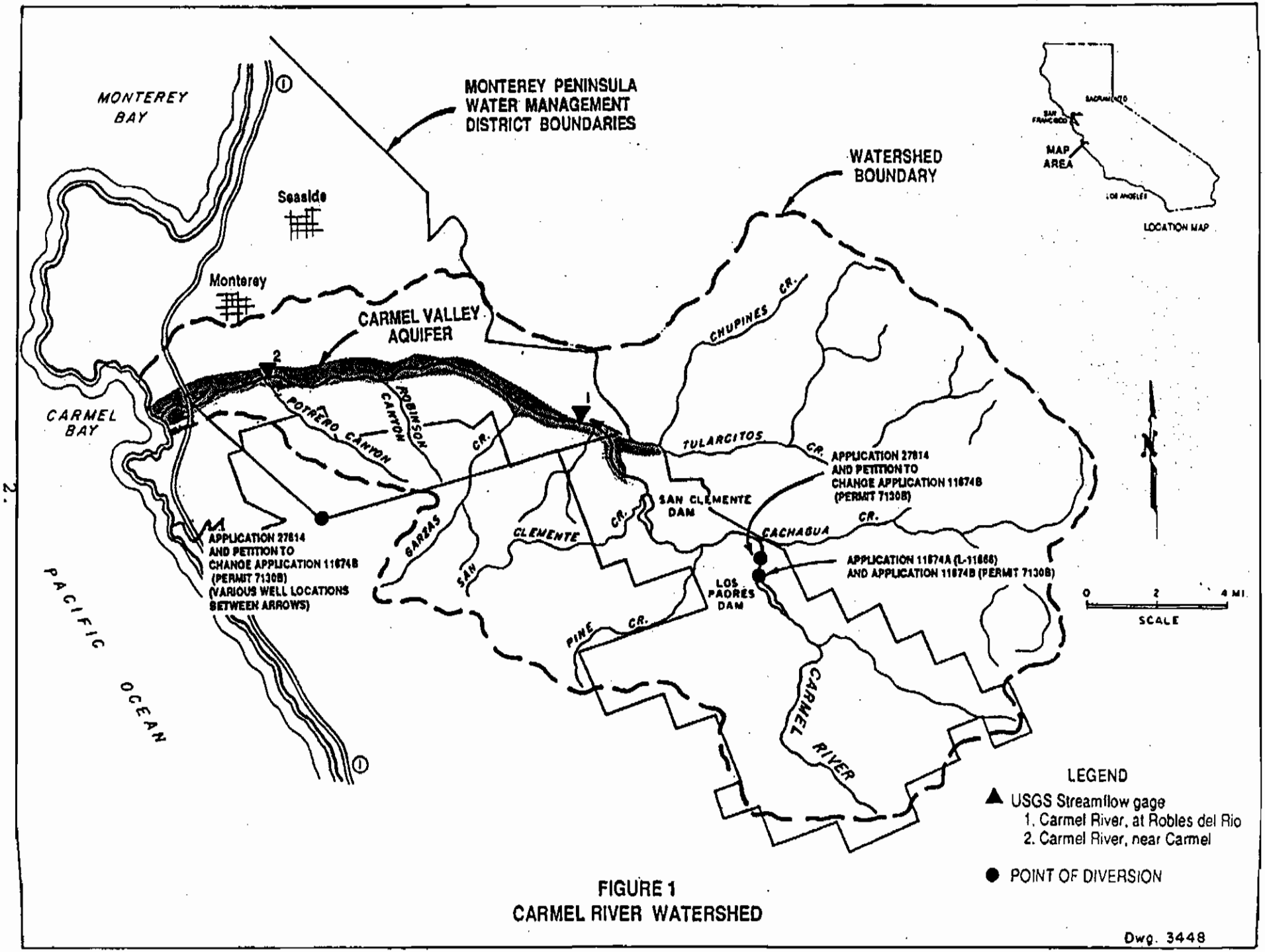


FIGURE 1
CARMEL RIVER WATERSHED

Dwg. 3448

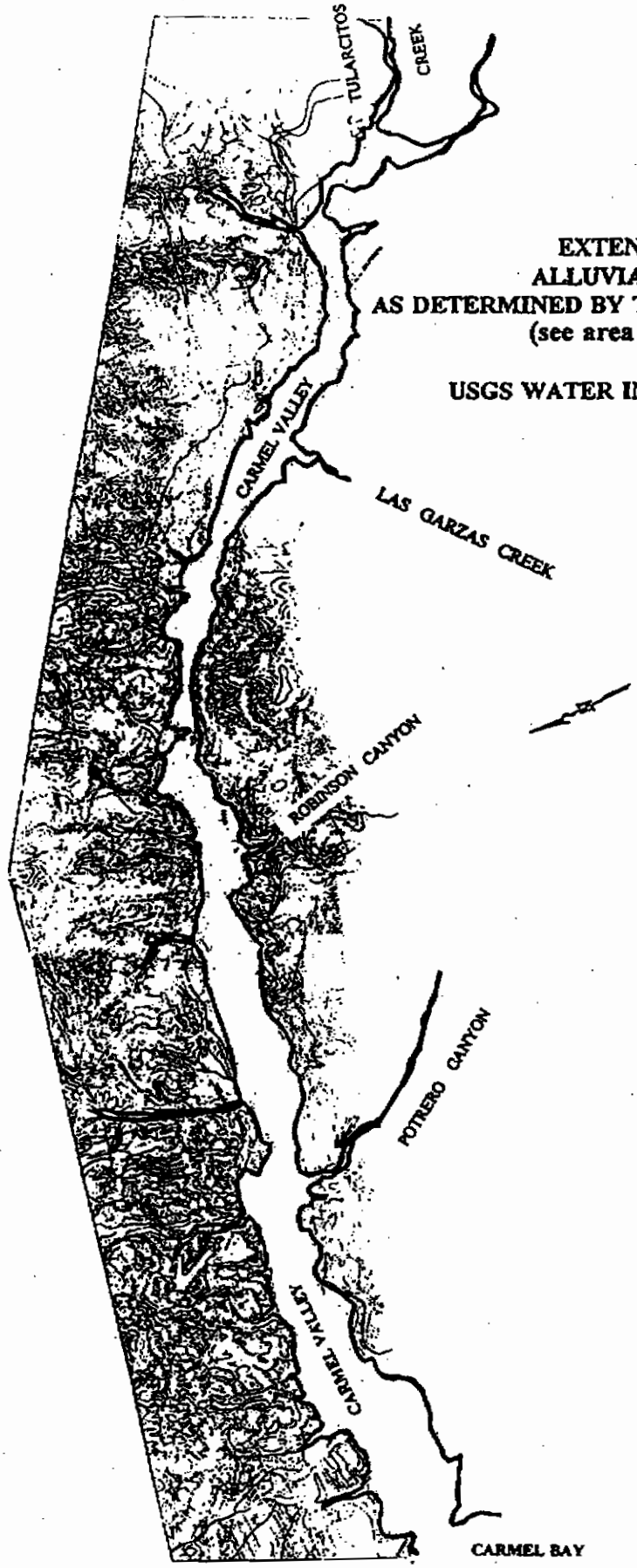


FIGURE 2

EXTENT OF CARMEL VALLEY ALLUVIAL GROUNDWATER BASIN AS DETERMINED BY THE U.S. GEOLOGICAL SURVEY (USGS) (see area defined by the bold lines)

USGS WATER INVESTIGATIONS REPORT 83-4280 JUNE 1984

THE CARMEL RIVER (NOT SHOWN) FLOWS THROUGH CARMEL VALLEY

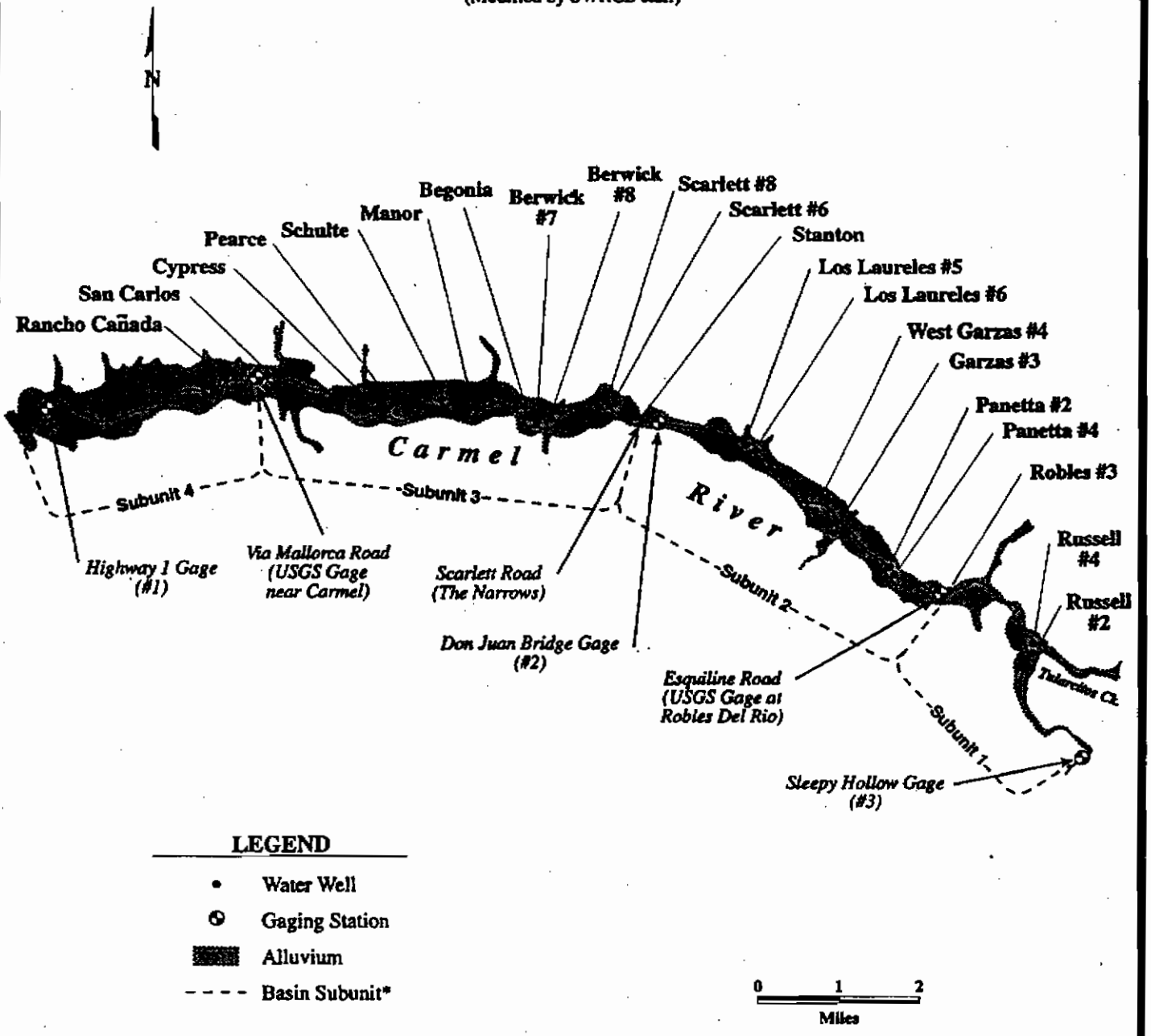
1 2 Miles

Scale

FIGURE 3

ALLUVIAL GROUNDWATER BASIN SHOWING THE LOCATION OF THE CALIFORNIA-AMERICAN WATER COMPANY WELLS

Information obtained from MPWMD Exhibit 287 - Figure 7-2
(Modified by SWRCB staff)

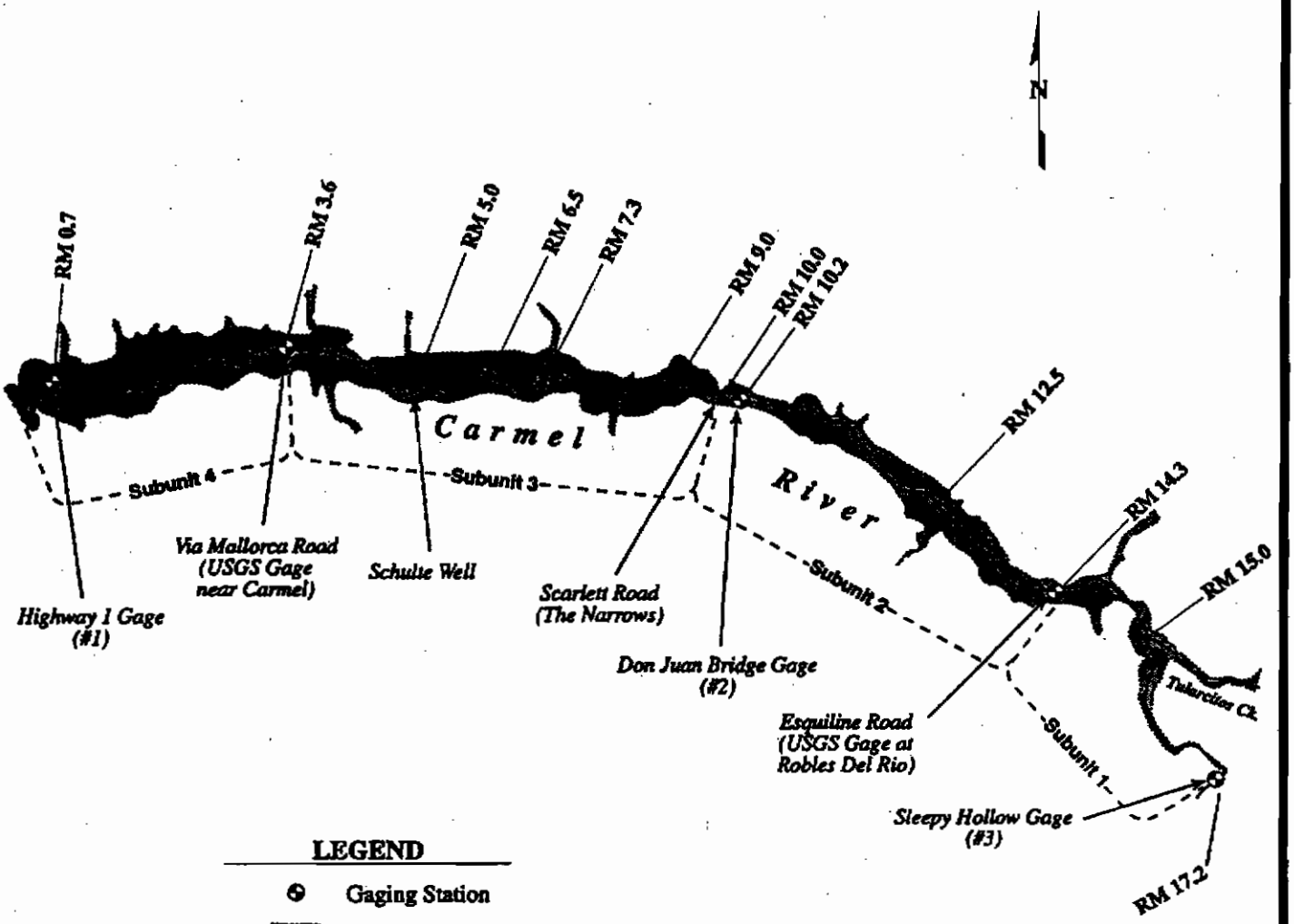


* Subunits 1-4 form the Carmel Valley Groundwater Basin. The subunit boundaries are: 1. Via Mallorca Road (USGS Gage Near Carmel), 2. Scarlett Road (The Narrows), 3. Esquiline Road (USGS Gage at Robles Del Rio), 4. Sleepy Hollow Gage.

Streamgaging will occur at the Highway 1 Gage (#1), Don Juan Bridge Gage (#2), and Sleepy Hollow Gage (#3).

FIGURE 4

ALLUVIAL GROUNDWATER BASIN
IDENTIFYING RIVER MILES (RM)



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Streamgaging will occur at the Highway 1 Gage (#1), Don Juan Bridge Gage (#2), and Sleepy Hollow Gage (#3).

supplies the water, primarily, for use outside of the watershed to users on the Monterey Peninsula.[1] About 105,000 persons are provided service by Cal-Am, most are supplied water from the Carmel River. (T,I,48:1-48:18.)

The primary source of water supply for Cal-Am customers is 21 wells situated on the lower Carmel River. (CAL-AM:91.) These wells supply about 69 percent of the water needs of Cal-Am customers. The balance of the water delivered to Cal-Am customers is supplied from: (1) San Clemente and Los Padres reservoirs in the upper reaches of the Carmel River and (2) pumped ground water in the City of Seaside.[2] (T,I,131:1-19.)

San Clemente Dam has a storage capacity of approximately 2,140 af. Water is stored in this facility under claim of pre-1914 appropriative right.[3] (Statement of Water Diversion and Use No. 8538.) Los Padres Dam is operated pursuant to License 11866 (Application 11674) and authorizes maximum annual withdrawal of 2,950 af. Stored water is released from Los Padres to the river and it is rediverted for use at San Clemente Dam. (T,I,130:16-24.) Sedimentation has reduced the combined usable storage at the

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[1] *Cal-Am supplies about 17,000 af during a normal year . This estimate is obtained by adding the 2,700 af which is supplied from the wells in Seaside (T,I,131:1-19) to the 14,106 af which is obtained from the Carmel River. (CAL-AM:90.) The 14,106 af represents the recent average, non-drought use (average use from 1979 through 1988, based upon Cal-Am Exhibit 90). (14,106 + 2,700 = 16,806 af, or approximately 17,000 afa.)*

[2] *In addition to supplies from the Carmel River and pumped ground water in the area of Seaside, reclaimed wastewater is available to some Cal-Am users from the Carmel Area Wastewater District/Pebble Beach Community Services District Wastewater Reclamation Project. The Project will provide 800 acre-feet of reclaimed water for the irrigation of golf courses and open space in the Del Monte Forest. In return for financial guarantees, the Pebble Beach Company and other sponsors, received a 380 af potable water entitlement from the District, based upon issuance of an appropriative right permit to the District, for development within Del Monte Forest. As of the end of fiscal 1993-1994, the District had not allocated the remaining 420 af of project yield. (MPWMD,337,25.)*

[3] *Diversion at San Clemente Dam was the sole supply for the Monterey Peninsula until the 1940s when wells at the upper end of the Carmel Valley began producing water to meet summer demand (SWRCB:1, A-27614, Folder 6A).*

reservoirs to about 2,600 af, about one-half of their combined original capacity. The reservoirs supply about 15 percent of Cal-Am's estimated normal year customer demand. (MPWMD:106,7.) Finally about 2,700 afa is produced from wells in Seaside, California.

2.0 COMPLAINTS

Between 1987 and 1991, the SWRCB received four complaints regarding Cal-Am's operations in the Carmel River watershed. The complaints are summarized below:

2.1 Carmel River Steelhead Association (CRSA)

On July 27, 1987 CRSA filed a complaint alleging that Cal-Am diversions from the underflow of the Carmel River are unauthorized and are destroying the public trust resources of the river, including steelhead. As a possible solution, the CRSA recommended rescue and rearing in ponds of fish stranded by the unauthorized diversions, irrigation of riparian vegetation affected by the unauthorized diversions, and release of more water from San Clemente Dam for rediversion through wells downstream. (SWRCB,1,a, Complaint File, Monterey Co., 27-01; CSRA:10,35-28.)

2.2 Resident's Water Committee (RWC)

On August 9, 1989 RWC filed a complaint with the Public Utilities Commission alleging that the supply of water needed to serve Cal-Am's customers exceeded available supply.[4] RWC also alleges that Cal-Am diversions from the Carmel River will reduce steelhead in the Carmel River to remnant levels. RWC recommends that Cal-Am be prohibited from serving new customers until an additional supply of water is obtained. (SWRCB:1, A-27614, Folder G.)

2.3 Ventana Chapter of the Sierra Club (Sierra Club)

On March 5, 1991, the Sierra Club filed a complaint alleging: (1) Cal-Am's pumping from the subsurface flow of the Carmel River

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[4] *A copy of the complaint was received by the SWRCB around the same time.*

is unauthorized and (2) Cal-Am's diversion from San Clemente Reservoir during low-flow periods is an unreasonable method of diversion. The Sierra Club's proposed solution includes the following: (1) Cal-Am should be enjoined from diverting water during periods of low flow, (2) Cal-Am and Water West should apply for appropriative water rights from the SWRCB, (3) Cal-Am and Water West should be required to pay for development and implementation of a program to restore public trust resources affected by their diversions,[5] and (4) Cal-Am should be required to release all diversions at San Clemente Reservoir down the Carmel River for collection at downstream wells, instead of diverting water at San Clemente. (SWRCB:1,A-27614, Folder J.)

2.4 California Department of Parks and Recreation (DPR)

On March 8, 1991, DPR filed a complaint alleging that Cal-Am's diversion of water from the underflow of the Carmel River is: (1) unauthorized, (2) results in mortality to mature riparian forests along a 4,000-foot length of river within the Carmel River State Beach, and (3) interferes with DPR's riparian right to divert water from the Carmel River for irrigation purposes. DPR's proposed solution is for Cal-Am to apply for an appropriative water right with the SWRCB and be subject to conditions to protect riparian, wetland, and aquatic resources in the lower Carmel River, and lagoon and riparian rights along the lower Carmel River. (SWRCB:1, A-27614, Folder J.)

2.5 Monterey Peninsula Water Management District

On May 5, 1992, the District petitioned to intervene in the complaints against Cal-Am because of its interest in assuring an appropriate balance between competing demands for the use of the limited water supply. (SWRCB:1, A-27614, Folder K.)

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[5] *Water West is a water company owned by Cal-Am. Water West has rights to divert and use water at about one-half mile below San Clemente Dam. The complaint was directed at only Cal-Am's diversions. Although Water West is not a party to this proceeding, its diversions are analyzed as diversions under the control of Cal-Am.*

2.6 Interested Persons

In addition to the complainants and the District, other persons participated in the hearing. Participation was directed at the effect Cal-Am diversions were having on the instream resources of the Carmel River and measures which might be taken to mitigate such effects. Such participants included the DFG, Willis Evans, John Williams, Charity Crane and others appearing on their own behalf.

3.0 DESCRIPTION OF THE WATERSHED

The Carmel River drains a 255-square mile watershed tributary to the Pacific Ocean. Its headwaters originate in the Santa Lucia Mountains at 4,500 to 5,000-foot elevations, descend and merge with seven major stream tributaries along a 36-mile river course, and discharge into Carmel Bay about 5 miles south of the City of Monterey. Above the confluence of Tularcitos Creek, the Carmel River constitutes about 65 percent of the watershed. Downstream from RM 15, the river has a 40 feet per mile gradient where the river flows to the bay are over and within an alluvium-filled Carmel Valley floor.

Carmel River flow is in a well-defined channel. The channel in the lower 15 river miles ranges from 20 to 150 feet wide. (SWRCB:19.) The channel changes progressively from cobble to gravel between RM 15 and RM 7, from gravel to sand between RM 7 and RM 2.5 and consists entirely of sand from RM 2.5 to Carmel Bay. (DFG:4,2.)

Downstream from RM 15, alluvial deposits comprise a ground water basin which underlies the river flow in the Carmel Valley portion of the watershed. The legal classification of the ground water basin is discussed in Section 3.2 *infra*. Local ground water levels within the aquifer are influenced by pumping or production at supply wells, evapotranspiration by riparian vegetation, seasonal river flow infiltration and subsurface inflow and outflow.

During the dry season, pumping of wells has caused significant declines in the ground water levels. The Carmel River surface flow

decreases due to pump-induced infiltration which recharges the seasonally-depleted ground water basin. During normal water years, surface flow in the lower Carmel Valley is known to become discontinuous or non-existent. Downstream from RM 3.2, there was no river runoff between April 1987 and March 1991. (MPWMD:287, 2-8.)

3.1 Geologic Setting

The principal hydrogeologic units (from oldest to youngest) along the Carmel River alluvial basin that are significant include: (1) pre-tertiary metamorphic and igneous rocks, (2) tertiary sedimentary rocks comprised primarily of sandstone beds (Paleocene and Miocene age) and Monterey shale (Miocene age), (3) older alluvium (Pleistocene age), and (4) younger alluvium (Holocene age). (SWRCB:19.)

Metamorphic (mainly schist and gneiss) and igneous (granitic) rocks form the basement complex which is extensively exposed along or near the river upstream from RM 10 at the downstream extremity of the river narrows. Tertiary sandstone units, which overlie the basement rocks, are exposed primarily along the southern flank of the alluvial valley from about RM 1.5 to 3 and 5.5 to 12.5. The Monterey Shale formation overlies the sandstone. It is exposed extensively along the north side of the Carmel Valley alluvium from approximately RM 2 to 12 and surficially borders the southern side of the valley from about RM 3 to 5.5 (in the vicinity of Potrero Canyon) and RM 14.5 to 15.5 (in the community of Carmel Valley). The older alluvium, consisting mainly of gravel and sand, form remnant terraces which directly overlie the Monterey shale and/or basement complex rocks. These terraces are laterally discontinuous patches along the north side of the valley alluvium from RM 1 to 16 and along both sides from about RM 16.5 to 18. The basement complex and the shale formation are considered to be non-water bearing. The sandstone has no subsurface hydrologic significance and the older alluvium is found on terraces above the level of ground water. (SWRCB:19.)

The younger alluvium, which formed the valley floor, consists principally of boulders, cobbles, gravel, and sand (which contains silt and clay layers of limited horizontal and vertical extent downstream from the river narrows). This alluvium was deposited by river flows (along the lowermost 18 miles of the drainage basin) within a canyon that was incised (by earlier flows) into the shale formation, sandstone units, and basement complex rocks. Its thickness varies from less than a foot at RM 18 to approximately 200 feet in the vicinity of the river mouth. These deposits comprise the most important aquifer in Carmel Valley (MPWMD:105,3) because of their ability to transmit significant amounts of subsurface water to wells.

3.2 Physical (Hydrologic) Characteristics of the Carmel Valley Aquifer

Carmel River surface flow is generally within the well-defined 20- to 150-foot wide channel over the alluvial deposits that form the valley floor. These deposits are the younger alluvium that comprise the Carmel Valley aquifer.

On behalf of the District, Thomas M. Stetson reviewed District Exhibit 108 and SWRCB Exhibits 19, 24, 27, and 29 in connection with his evaluation of the physical aspects of the subsurface water in Carmel Valley. Mr. Stetson also reviewed hydrographs of Carmel Valley aquifer water levels obtained at numerous wells. (MPWMD:107.) In addition, he reviewed Carmel River streamflow hydrographs for the USGS Robles Del Rio and Carmel gaging stations. By superimposing surface and subsurface water level hydrographs, Mr. Stetson established that there is a direct relationship between recovery of seasonally-lowered subsurface water levels at wells and recurrent river flow increases during ensuing wet periods. On this basis, Mr. Stetson concluded that surface flow recharges river underflow and, consequently, causes a rise in Carmel Valley aquifer water levels. (MPWMD,107,4.)

Mr. Stetson provided written testimony that such underflow is only through the younger alluvium within a known and definite channel

along the entire length of Carmel Valley. (MPWMD:107,4.) Mr. Stetson supported his testimony utilizing the following information: (1) essentially nonwater-bearing rocks (described in Section 3.1) border and underlie the younger alluvium or Carmel Valley aquifer and (2) the average hydraulic conductivity of the younger alluvium is about 60 feet per day (ft/day), as compared to the hydraulic conductivity of the rocks which is in the order of 0.1 to 0.0001 ft/day or less. (MPWMD:107,6.) Mr. Stetson concluded that the hydraulic conductivity difference is substantial and renders the aquifer a "pipeline" for subsurface flow. (MPWMD:107,6.)

Mr. Stetson's testimony is consistent with the findings of SWRCB staff. Ms. Laudon submitted testimony and evidence that the relatively impermeable granitic and sedimentary rocks form the bed and banks of a known and definite channel which restricts the flow of subsurface water to the alluvium. (SWRCB:7&8.) This information is further supported by evidence regarding the subsurface occurrence of granitic or sedimentary rocks beneath the Carmel Valley aquifer at all well installations throughout the valley.

Except where water levels have been influenced by drawdown due to pumping, the general down valley or westerly subsurface flow direction within the aquifer is the same as that of the Carmel River flow. The subsurface flow has a pattern which demonstrates that it is within a known and definite channel rather than that of a diffused body of percolating ground water. (MPWMD:107,6.)

Cal-Am and other parties did not contest the testimony and evidence which describes the subsurface flow of the Carmel River as a subterranean stream flowing through a known and definite channel. Nor did Cal-Am or other parties offer evidence that the ground water in the alluvial basin should be classified as percolating ground water not within the SWRCB's permitting jurisdiction. Accordingly, we find that downstream of RM 15 the aquifer underlying and closely paralleling the surface water course of the

Carmel River is water flowing in a subterranean stream and subject to the jurisdiction of the SWRCB.

3.3 Location of Cal-Am Wells

The locations of Cal-Am's wells are described in the following table:

CAL-AM CARMEL RIVER WELLS (CAL-AM EXHIBIT 91)			
Well Name	*Well Location*	*Depth To Water Static/ Pumping*	*Date Drilled*
Los Laureles #5	NE¼ of SE¼ of Sect.29,T16S,R2E	18 feet/44 feet	1947
Los Laureles #6	SE¼ of SE¼ of Sect.29,T16S,R2E	16 feet/43 feet	1977
Robles #3	NE¼ of NE¼ of Sect.10,T17S,R2E	12 feet/30 feet	1989
Russell #4	SW¼ of SE¼ of Sect.11,T17S,R2E	16 feet/35 feet	1947
Russell #2	SE¼ of SE¼ of Sect.11,T17S,R2E	16 feet/35 feet	1947
Scarlett #6	SW¼ of SW¼ of Sect.19,T16S,R2E	20 feet/26 feet	1963
Scarlett #8	SW¼ of SW¼ of Sect.19,T16S,R2E	20 feet/35 feet	1989
Manor #2	NE¼ of SW¼ of Sect.23,T16S,R1E	30 feet/65 feet	1989
Schulte	SW¼ of NW¼ of Sect.23,T16S,R1E	15 feet/58 feet	1967
Stanton	NW¼ of NE¼ of Sect.30,T16S,R2E	3 feet/35 feet	1977
Begonia #2	NW¼ of SW¼ of Sect.24,T16S,R1E	not listed	1990
Berwick #7	SW¼ of SW¼ of Sect.24,T16S,R1E	23 feet/63 feet	1981
Berwick #8	SE¼ of SW¼ of Sect.24,T16S,R1E	20 feet/50 feet	1986
Rancho Cañada (aka Cañada)	NE¼ of SW¼ of Sect.17,T16S,R1E	15 feet/49 feet	1981
San Carlos	NE¼ of SE¼ of Sect.17,T16S,R1E	16 feet/55 feet	1982
Pearce	SE¼ of NW¼ of Sect.22,T16S,R1E	16 feet/50 feet	1981
Cypress	SW¼ of NW¼ of Sect.22,T16S,R1E	15 feet/48 feet	1981
Continued to next page			

CAL-AM CARMEL RIVER WELLS (CAL-AM EXHIBIT 91)			
Well Name	*Well Location*	*Depth To Water Static/ Pumping*	*Date Drilled*
Continued from previous page			
Panetta #1	NW¼ of NW¼ of Sect.03,T17S,R2E	13 feet/16 feet	1989
Panetta #2	NW¼ of NW¼ of Sect.03,T17S,R2E	16 feet/22 feet	1989
Garzas #3	SW¼ of SE¼ of Sect.33,T16S,R2E	13 feet/16 feet	1989
Garzas #4	NE¼ of SW¼ of Sect.33,T16S,R2E	12 feet/16 feet	1989

In addition, the location of these wells in relation to the Carmel River and the aquifer associated with the river is shown by Figure 3. The depth to water for each well is identified in the above table. Figure 3 and the table demonstrate that Cal-Am's wells are extracting water from the subterranean stream associated with the Carmel River.

4.0 ANALYSIS OF CAL-AM'S WATER RIGHTS

Among the issues noticed for hearing is the following:

> "Does [Cal-Am] have a legal right to divert water from wells located adjacent to the Carmel River?" (SWRCB 1, June 1992 Hearing Notice.)

Cal-Am extracts, on average, 14,106 afa via 21 wells from the alluvial aquifer along the Carmel River. Cal-Am claims the right to divert and use this water under pre-1914 appropriative, riparian, prescriptive, and rights acquired under License 11866. (CAL-AM:92,1,10-27; October 1, 1992 letter to SWRCB from Cal-Am transmitting supplemental exhibits.) During the hearing, Cal-Am's representatives presented testimony and numerous exhibits in support of its claimed rights to divert water from the river. The following sections analyze Cal-Am's rights to divert and use water from the Carmel River.

4.1 Applicable Water Law

The following sections set forth the law applicable to the water rights claimed by Cal-Am.

4.1.1 *Pre-1914 Appropriative Rights*

Prior to 1914, an appropriative right for the diversion and use of water could be obtained two ways.[6] First, one could acquire a nonstatutory (common law) appropriative right by simply diverting water and putting it to beneficial use. (Haight v. Costanich (1920) 194 P. 26, 184 Cal. 426.) Second, after 1872, a statutory appropriative right could be acquired by complying with Civil Code Sections 1410 et seq. (*Id.*) Under the Civil Code, a person wishing to appropriate water was required to post a written notice at the point of intended diversion and record a copy of the notice with the County Recorders Office which stated the following: the amount of water appropriated, the purpose for which the appropriated water would be used, the place of use, and the means by which the water would be diverted. (Cal. Civil Code Sections 1410-1422, now partially repealed and partially reenacted in the Water Code; Wells A. Hutchins, The California Law of Water Rights (1956) at 89.)

Generally, the measure of an appropriative right is the amount of water that is put to reasonable beneficial use, plus an allowance for reasonable conveyance loss. (Felsenthal v. Warring (1919) 40 Cal.App. 119, 133, 180 P. 67.) The quantity of water to which an appropriator is entitled, however, is not necessarily limited to the amount actually used at the time of the original diversion. Rather, under the doctrine of "progressive use and development", pre-1914 appropriations may be enlarged beyond the original appropriation. (Haight, 194 P. 26 at 28-29; Hutchins at 118; 62 Cal.Jur. at 370.)

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[6] *After 1914, an appropriative right could only be obtained by complying with the provisions of the California Water Code for the appropriation and use of water. (Water Code Section 1225; Stats. 1913, C. 586, p. 1012, Section 1(c).)*

Under the progressive use and development doctrine, the quantity of water to which an appropriator is entitled is a fact-specific inquiry. According to Haight, "this right to take an additional amount of water reasonably necessary to meet increasing needs is not unrestricted; the new use must have been within the scope of the original intent, and additional water must be taken and put to a beneficial use in keeping with the original intent, within a reasonable time by the use of reasonable diligence...." (194 P. at 29.) Thus, the progressive use and development doctrine allows an appropriator to increase the amount of water diverted under a pre-1914 right, provided: (a) the increased diversion is in accordance with a plan of development and (b) the plan is carried out within a reasonable time by the use of reasonable diligence. (Senior v. Anderson (1896) 115 Cal. 496, 503-504, 47 P. 454; Trimble v. Heller (1913) 23 Cal.App. 436, 443-444, 138 P. 376.)

4.1.2 *Riparian Rights*

The riparian doctrine confers on the owner of land abutting a watercourse the right to the reasonable and beneficial use of water on the land. California riparian rights have the following general characteristics. The riparian right is part and parcel of land which abuts a river, stream, lake, or pond. The riparian right may be used only for direct diversion of naturally occurring flow. Unless adjudicated, the riparian right is unquantified and extends to the use of as much water as can reasonably and beneficially be used on riparian lands. A riparian right is a shared right and, therefore, a riparian has a right to the use of the watercourse in common with the equal and correlative rights of other riparians. Finally, the riparian right generally is paramount to all other rights, and must be satisfied before appropriative rights are exercised. (CEB Manual, Water Rights, Water Supply, & Water Related Law (1987) at 7.)

4.1.3 *Prescriptive Rights*

Generally, "prescription" means the taking of another person's property by adverse use. With regard to water, prescription can only be accomplished by the adverse diversion and use of water that

other private persons are entitled to use under the law. Subsequent to 1914, prescription will not lie against the State for the unappropriated waters of the State. (Water Code Sections 102 and 1225; Stats. 1913, C. 586, p. 1012, Section 1(c); Crane v. Stevinson (1936) 5 Cal.2d 387; People v. Shirokow (1980) 26 Cal.3d 301.)

As to private persons, prescription can be accomplished only by adverse possession that is actual, open and notorious, continuous and uninterrupted, exclusive, hostile and adverse, and under claim of right or color of title for a period of not less than five years. (Locke v. Yorba Irr. Co. (1950) 35 Cal.2d 205; City of Pasadena v. City of Alhambra (1949) 33 Cal.2d 908.) Even though some private rights may be prescripted, the unappropriated waters of the State and post-1914 appropriative water rights cannot be prescripted unless they are supported by a permit. (Shirokow.)

4.1.4 *Licenses*

Under the California permit system, once a permittee has completed construction of a diversion structure and applied the water to beneficial use, the SWRCB investigates to confirm completion and compliance. The SWRCB will issue a license confirming the amount of water found to have been perfected by reasonable beneficial use subject to the terms and conditions included in the permit and required by statute and California case law. (Water Code Sections 1600, et seq.)

4.2 Analysis of Cal-Am's Water Right Claims

Sections 4.2.1 though 4.2.4, *infra*, analyze the evidence introduced in support of Cal-Am's claimed water rights. For purposes of this order when evaluating Cal-Am's claims, the evidence in the hearing record is considered in the light most favorable to Cal-Am due to the difficulty, at this date, of obtaining evidence that specific pre-1914 appropriative claims of right were actually perfected and have been preserved by continuous use.

4.2.1 *Analysis of Pre-1914 Appropriative Rights*

The lower Carmel River Valley, Monterey Peninsula, and surrounding areas were settled and developing before 1800. Many of Cal-Am's predecessors in interest developed or acquired appropriative water rights to divert water from the Carmel River and its subsurface waters prior to 1914. (CAL-AM:93, Attachment 1.) Cal-Am's predecessors in interest included: C.P. Huntington, Pacific Improvement Company, Monterey County Water Works, the Monterey County Water Works, Del Monte Properties Co., and California Water and Telephone Company. (*Id.*) Some of these appropriative rights were initiated and probably acquired in accordance with Civil Code Sections 1410, et seq. Other appropriative rights were acquired by the nonstatutory method of simply taking the water and putting it to reasonable beneficial use. (See 4.1.1, *supra*.)

Cal-Am submitted over 100 documents, including deeds and notices of appropriations by Cal-Am's predecessors, "which represent virtually all title documents bearing upon Cal-Am's water rights and chain of title." (CAL-AM, PHBr at 14:15-18.) Cal-Am Exhibit 93 (Attachment 1) summarizes the deeds and notices of appropriation pertaining to Cal-Am's appropriative rights. Nevertheless, Cal-Am did not present nor does the record contain any evidence which would enable the SWRCB to determine for each claimed pre-1914 appropriative right:[7] (1) whether diversion works were actually constructed, (2) whether water was ever diverted and used under any claimed right prior to 1914 or pursuant to a notice given in accordance with Civil Code Section 1410, or (3) the quantity of water which was put to reasonable beneficial use and maintained by continuous use by Cal-Am's predecessors.

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[7] *Despite the fact that Issue #2 was clearly noticed for hearing, Cal-Am asserted throughout the proceedings that the complaint proceedings were not the proper forum to evaluate Cal-Am's appropriative rights. (October 1, 1992 letter to Messrs. Stubchaer and Samaniego from Leonard G. Weiss transmitting supplemental exhibits at 1, n.1; CAL-AM Post-Hearing Brief, 13:14-18.) Nonetheless, Cal-Am submitted extensive evidence of its water rights based on deeds, notices of appropriation, and other documents.*

Cal-Am submitted two categories of documents to establish the total quantity of water used under all of its pre-1914 appropriative rights. These are:

> "(1) Direct evidence of actual usage in 1913 and earlier; and (2) Material dating back to the 1880s which demonstrate ... the existence of the water company's physical plant, dollar volumes of sales, and the like, prior to 1914." (CAL-AM, PHBr at 15:6-11; October 1, 1992 letter to SWRCB from Cal-Am transmitting supplemental exhibits.)

Several parties objected to the admissibility of the above exhibits on the ground that they are hearsay. (E.g., Carmel Valley Water Users, Closing Brief, 5-8.)

Title 23, California Code of Regulations, Section 761(d) provides, in part, that in a hearing before the SWRCB:

> "The hearing need not be conducted according to technical rules relating to evidence and witnesses. Any relevant, non-repetitive evidence shall be admitted *if it is the sort of evidence on which responsible persons are accustomed to rely in the conduct of serious affairs.* Hearsay evidence may be used for the purpose of supplementing or explaining any direct evidence but shall not be sufficient by itself to support a finding *unless it would be admissible over objection in civil actions* ...." (Emphasis added.)

Cal-Am exhibits are admissible under Section 761(d) because: (a) it is the sort of evidence on which responsible persons are accustomed to rely and (b) the exhibits would likely be admissible over objection in a civil action.[8] Moreover, these exhibits

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[8] *The SWRCB is of the opinion that those exhibits pertaining to proceedings of the California Railroad Commission would be admissible over objection in a civil trial. It is difficult to find a clear statement in the California Evidence Code or cases specifically addressing this evidentiary issue. However, there are multiple theories, including: the official notice doctrine, the official records exception to the hearsay rule, and other "residual" exceptions to the hearsay rule that support this conclusion.*

Official notice may be taken of the existence of any specific record of the California Railroad Commission. While official notice generally may not be taken of the truth of the Railroad Commission's factual findings (see Sosinsky v. Grant (1992) 8 Cal.Rptr.2d 552, 558-59), the factual statements within such exhibits are admissible under the official records exception to

(continued...)

likely are the best, if not the only, evidence available for events which occurred over eighty years ago. Thus, the SWRCB will allow Cal-Am's exhibits as evidence for the purpose of evaluating its pre-1914 appropriative claims.

These documents, however, do not show the amount of water that was actually used beneficially or maintained by continuous beneficial use by Cal-Am's predecessors under any specific pre-1914 appropriative rights. Thus, Cal-Am has not demonstrated that the

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[8](...continued)
the hearsay rule. Section 1280 of the Evidence Code provides:

> *"Evidence of a writing made as a record of an act, condition, or event is not made inadmissible by the hearsay rule when offered to prove the act, condition, or event if:*
>
> *(a) The writing was made by and within the scope of duty of the public employee;*
>
> *(b) The writing was made at or near the time of the act, condition, or event; and*
>
> *(c) The sources of information and method and time of preparation were such as to indicate its trustworthiness."*

In this case, those exhibits pertaining to proceedings of the California Railroad Commission generally satisfy the requirements of Section 1280. However, some courts have held that the public employee must have had personal knowledge of the act, condition, or event, or received the information recorded from someone in the agency who had personal knowledge in order for the official records exception to apply. (See People v. Parker (1992) 8 Cal.App.4th 114.) Because it is unclear whether any public official had personal knowledge of the quantity of water allegedly being used by Cal-Am's predecessor, it is possible that a court may find such information inadmissible under the official records exception. Nonetheless, the SWRCB concludes that these exhibits should be admitted under the official records exception because "the sources of information and method of time of preparation were such as to indicate [the exhibits'] trustworthiness." (See Cal. Evidence Code Section 1280(c).)

Alternatively, these exhibits would likely be admissible under one of the "residual" exceptions to the hearsay rule that allow California courts to recognize hearsay exceptions "in addition to those exceptions expressed in the statutes." (In re Malinda S, 51 Cal.3d 368, 376 (1990).) For example, evidence of a statement contained in a writing more than 30 years old is admissible if "the statement has been since generally acted upon as true by persons having an interest in the matter." (Cal. Evidence Code Section 1331.)

The deeds are admissible for the purpose of demonstrating chain of title. (Cal. Evidence Code Sections 1330 and 1600.) Finally, Exhibit 93 (Schematic of Chain of Title) is also admissible, but only to the extent the information therein is confirmed by the underlying documents which it purports to summarize.

notices of appropriation were ever perfected into appropriative rights.[9]

The best evidence regarding the amount of water actually put to reasonable beneficial use prior to 1914 by Cal-Am's predecessors is found in Cal-Am Exhibits 126, 131 and 133. The following sections briefly describe these exhibits:

(a) Exhibit 126 is a copy of a "Petition of the Monterey County Water Works For an Increase of its Water Rates," (MCWW) Application No. 950, filed before the California Railroad Commission on or about January 14, 1914. Exhibit "C" of this petition shows that in 1913 the MCWW sold a total of 314,879,755 gallons (966 afa) of water to its customers.

(b) Exhibit 131 is an MCWW brief to the Railroad Commission dated June 29, 1914, supporting its position for increased water rates. Page 6 of this brief discusses various estimates of water use and presents a likely total annual water use of 370,515,000 gallons (1,137 afa).

(c) Exhibit 133 is a January 27, 1915, engineer's report to the MCWW about the impact of the Railroad Commission's Decision regarding the MCWW's petition for a rate increase. Table 1A of this exhibit presents the MCWW's annual use of water in 1913-1914 as 43,444,600 cubic feet (997 afa).[10]

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[9] *Cal-Am's claimed pre-1914 appropriative rights could not possibly have been perfected and maintained for the face value of the rights being claimed. Assuming that the appropriative rights conveyed to Cal-Am were all perfected and maintained by continuous reasonable beneficial use, the maximum quantity which could be diverted from the Carmel River would be 751,608 afa, an amount which vastly exceeds the amount of water available in the river during even the wettest years of record. (MPWMD:199, Attachment 1 (showing maximum unimpaired Carmel River flow of approximately 325,000 afa).)*

[10] *The record contains other contradictory evidence as to the amount of water used prior to 1914. For example, less than 507 afa is reported as having been used in 1916. (CAL-AM:90.)*

These exhibits shed some light on the amount of water used by Cal-Am's predecessor in interest around 1914. These exhibits are inconclusive as to the actual amount of water used by the MCWW around 1914 due to the different water use figures. For purposes of this analysis and order, the 1,137 afa figure is used because: (1) the range between the high and low values is only fifteen percent and (2) it is reasonable to use the maximum annual water use estimate of 1,137 afa to establish the baseline quantity of water being used under pre-1914 appropriative claims.

In addition to the actual quantity of water used by Cal-Am's predecessors prior to 1914, Cal-Am might have been entitled to an additional quantity of water under the progressive use and development doctrine. However, Cal-Am neither asserted such a claim nor presented evidence which might support findings that it is entitled to additional water under the doctrine.[11] In addition, the diversion of a large amount of the water currently taken from the river or its underflow was not initiated until rapid growth occurred on the Monterey Peninsula, which commenced after 1960. (T,I,48:1-9; T,I,38:12-18; CAL-AM,90.) Cal-Am drilled 18 of its 21 wells after 1960. (CAL-AM:91.) Thus, Cal-Am is not entitled to additional water under the progressive use and development doctrine. Cal-Am's pre-1914 rights, therefore, should be limited to the estimated actual use by Cal-Am's predecessors in 1913, an amount which does not exceed 1,137 afa.[12]

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[11] *Indeed, Cal-Am requested that the Board "decline to attempt to quantify Cal-Am's rights until it hears Cal-Am's pending applications for permits." (CAL-AM's Post Hearing Brief at 21:9-11.) This request is rejected because this issue was noticed for this proceeding and Cal-Am had an opportunity to present evidence on the issue.*

[12] *Pre-1914 appropriative claims for San Clemente Dam. Persons diverting water under pre-1914 claims or right are required to file Statements of Diversion and Use with the SWRCB. (Water Code Sections 5100, et seq.) Cal-Am filed its first statements for San Clemente Dam in 1975. Cal-Am contends that this right was established under four Notices filed under the Civil Code. (CAL-AM, Exhibit A, pp.3 and 4; CAL-AM exhibits 4, 5, 6 and 8.)*

The first statements included water diverted for years 1972 through 1975. The statements indicate that Cal-Am was able to divert 1,529 af to storage at San Clemente Reservoir and that Cal-Am was claiming the right to divert up to 20 cfs by direct diversion. Over succeeding years, Cal-Am has

(continued...)

4.2.2 *Analysis of Riparian Rights*

Cal-Am's riparian claims are limited to the use of water on only those parcels which adjoin the surface water course of the river or which overlie water flowing in the subterranean channel.[13] Clearly, Cal-Am wells extract water flowing in the subterranean channel. Cal-Am also presented testimony indicating that 60 afa were used to irrigate riparian habitat along the river. (T,I,54:3-10.) Nevertheless, Cal-Am did not identify any specific parcels for which riparian claims were asserted. In summary, although Cal-Am did not submit testimony or exhibits in support of any specific riparian claim, it appears that Cal-Am has riparian rights and it is not unlikely that such rights are being exercised to divert 60 af to irrigate riparian vegetation along the Carmel River.[14]

4.2.3 *Analysis of Prescriptive Rights*

Cal-Am bases its claim to prescriptive water rights on the alleged fact that the claimed combined diversions of two of Cal-Am's predecessors depleted the flow in the Carmel River (CAL-AM: October 1, 1992 letter to SWRCB from Cal-Am transmitting supplemental exhibits, pp. 7 and 8; CAL-AM:136,2) during some years and the fact that the Carmel River often has no surface flow. (CAL-AM:132,14.) Assuming the truth of these facts, Cal-Am's post-1914 claims of prescriptive rights are, nevertheless, not supported

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[12] *(...continued)*
stated that it has approximately diverted between 1,200 to 8,000 af per year under this claim. (SWRCB, Files, Statements of Diversion and Use, Statement 8538.) More recent information indicates the dam can only store between 320 and 800 af. (MPWMD:287,4-49.) Amounts which are currently directly diverted are taken at the Carmel Valley Filter Plant about one-half mile below the San Clemente Dam.

San Clemente Dam was constructed in 1921, seven years after the modern Water Code respecting appropriation became effective. No evidence was presented: (1) as to which, if any, Notice is the basis for the pre-1914 claim of right, (2) that work was commenced on facilities to divert water prior to 1914, or (3) that water was diverted and used prior to 1914 or within a reasonable time thereafter under any Civil Code Notice.

[13] *Cal-Am does not claim that water being diverted from the subterranean channel associated with the Carmel River can be served to persons on the Monterey Peninsula under riparian rights claims. (T,I,91:13-92:8.)*

[14] *Cal-Am does not claim that water served outside the valley can be diverted from the river under riparian right claims. (T,I,91:13-92:8.)*

by the record because Cal-Am failed to introduce other essential evidence necessary to support prescriptive claims. Cal-Am did not: (1) demonstrate that the basic elements of prescription were met and (2) identify any specific persons, lands, or types of water rights that were allegedly prescripted. Thus, there is no basis for finding that Cal-Am is entitled to divert any water from the river under the doctrine of prescription.

4.2.4 *Analysis of Rights Under License 11866 (Application 11674A)*

On February 14, 1986, Cal-Am was issued License 11866 (Application 11674A) to divert 3,030 afa to storage from October 1 to May 31 from the Carmel River for municipal, domestic, industrial, and recreational uses. (SWRCB:1,b.) The maximum annual withdrawal under this right, however, is 2,950 afa. The above analysis of appropriative, riparian, and prescriptive rights does not affect the rights exercised under License 11866.

4.3 Conclusions Regarding Cal-Am's Claimed Water Rights

In summary, Cal-Am has valid pre-1914 appropriative rights to divert no more than 1,137 afa, based upon the amount of water actually used by Cal-Am's predecessors prior to 1914. Cal-Am is not entitled to additional water under the progressive use and development doctrine because Cal-Am did not present evidence of a plan of development carried out within a reasonable time.

Cal-Am has riparian rights for use within the Carmel River Valley on only those parcels which adjoin the surface watercourse of the river or which overlie water flowing in the subterranean channel. It is not unlikely that such rights are being exercised to irrigate the riparian vegetation along the Carmel River. Such rights do not extend to water that is served outside the valley or water served to non-riparian parcels located within the valley.

Cal-Am is not entitled to any prescriptive water rights because Cal-Am did not identify the persons, lands, or types of water rights that are allegedly prescripted. Cal-Am has an appropriative

right to divert 3,030[15] afa of water to storage in Los Padres Reservoir from October 1 to May 31 pursuant to the conditions imposed by License 11866. Thus the total quantity of water which Cal-Am is presently using under legal rights is 3,376 afa.[16]

Because the amount of water to which Cal-Am is legally entitled under the appropriation and riparian doctrines, pre-1914 storage rights, and License 11866 is much less than the amount Cal-Am presently is diverting, Cal-Am is diverting about 10,730[17] afa from the Carmel River or its underflow without a valid basis of right. Accordingly, Cal-Am should be required to diligently develop and implement a plan for obtaining water from the Carmel River or other sources consistent with California water law.

5.0 EFFECT OF CAL-AM DIVERSION ON INSTREAM BENEFICIAL USES

The following sections will discuss the effects of Cal-Am's diversions on the instream beneficial uses of the Carmel River. Such effects include the loss of riparian habitat in the lower river and the near extinction of the Carmel River steelhead run. Cal-Am diversions, standing alone, are not the sole cause of current conditions in the Carmel River. Other causes include the diversion and use of water by other persons and, significantly, a series of dry and critically dry years during the late 1980s and early 1990s. Nevertheless, Cal-Am's combined diversions from the Carmel River constitute the largest single impact to the instream beneficial uses of the river.

5.1 Vegetative Resources

Three vegetation communities are found within the Carmel River watershed: coastal wetlands within the Carmel River Lagoon,

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[15] *The actual diversion is limited to 2,179 af due to siltation.*

[16] *1,137 afa, pre-1914 appropriative + 60 afa, riparian + 2,179 afa, license 11866 = 3,376.*

[17] *10,730 afa represents Cal-Am's total diversions from the Carmel River minus that amount which appears to be legally diverted. (14,106 - 3,376 = 10,730.)*

riparian communities along the river itself, and upland vegetation on the upper alluvial terraces and hills surrounding the valley. Mature multistoried riparian vegetation supports a wide diversity of plant and animal species, including a number of which are protected pursuant to federal and state endangered species acts.

Historically, riparian vegetation was more extensive than at present, particularly in the lower nine river miles. Prior to 1956, losses were primarily attributable to agricultural development. Since that time, the decline has coincided with the increasing export of ground water to meet growing urban demand on the Monterey Peninsula. (SWRCB:17; SWRCB:42,III-28.) Were it not for the extensive riparian corridor irrigation efforts of the District and Cal-Am, it is estimated that current ground water pumping would severely stress approximately 59 percent of the existing riparian vegetation in the upper portion of Aquifer Subunit 3 (see Figure 2) in normal water years, and nearly all vegetation during critically dry years. (MPWMD:289,9G-1.)

The Carmel River Lagoon contains a mixture of freshwater and salt marsh vegetation. Coastal salt marsh is considered one of the most fragile and rapidly disappearing habitats in California. The Carmel River coastal wetland represents some of the last remaining habitat of this type on the Central Coast. (SWRCB:42,III-32.)

Upland vegetation within the watershed is composed of a mixture of coastal scrub, hardwood forest, coastal dune, chaparral, and closed-cone coniferous forest. Cal-Am's diversions have no direct effect on such resources.

5.2 Wildlife Resources

Carmel River riparian and wetland communities support a diverse group of resident and migratory wildlife. A number of amphibian and reptile species occur within the riparian and wetland zones as well, including the red-legged frog and the western pond turtle. These are, respectively, a proposed and candidate species for listing under the Federal Endangered Species Act. A more detailed

description of these resources is found in the District's EIR/EIS. (MPWMD:287-290.)

5.3 Fishery Resources

The Carmel River supports populations of at least ten resident freshwater and anadromous fish species. Of these fishes, the steelhead (*Onchrhynchus mykiss*) has been considered the most important, and extensive studies have been performed to define its ecology in the river. (SWRCB:42,III-41.)

Adult steelhead live in the ocean and migrate into the upper reaches of the Carmel River to spawn. Migration may begin in the fall after the Lagoon sandbar is breached by artificial means or by the first major storm and when sufficient flow is established in the lower river to allow upstream passage.

Typically, in early January the adults spawn and migrate back to the ocean. After approximately three to eight weeks of incubation, depending on water temperature, the eggs hatch and fry soon emerge from the gravel. These fry continue development in the river until fall. By fall, fry will have developed into juveniles and begin moving downstream. They remain in the lower reaches of the river and the lagoon adapting to brackish water until late spring. In late spring, as high river flows are receding, they migrate out into the Pacific Ocean. Some juveniles and adults remain in the river for one or two additional years before migrating to the ocean, hence these life stages may be found in the river throughout the entire year. (SWRCB:42,III-42.)

5.4 Extent of the Steelhead Resource

When first seen by Spanish explorers in 1603, the Carmel River supported a spectacular steelhead run, believed to have been well in excess of 12,000 fish annually. (CSRA:5,2.) Heavy fishing in the 1850s through the 1870s diminished the fishery. Fish planting began in 1910 and continued through the 1940s. (MPWMD:289,8-8.)

When San Clemente Dam was constructed in 1921 (RM 18.5), a fish ladder was also built. (MPWMD:289,8-8.) Access to a major portion of the steelhead spawning and rearing habitat was effectively eliminated in 1949 with the construction of Los Padres Dam at RM 23.5. (CSRA:5,2.) Although a fish trap was installed downstream of the dam and captured adults transported into the reservoir, the facility proved ineffective at maintaining steelhead populations. (MPWMD:289,8-8.)

Annual counts of steelhead passing through the San Clemente fishway began in 1961. The critical dry years of 1976-77 and 1987-92, drought, and diversion by Cal-Am from its wells have combined to reduce water available to steelhead and have also reduced the steelhead population to remnant levels. Only one fish was recorded in 1991 and 15 fish in 1992. (MPWMD:337,49.) Past reviews of Carmel River environmental problems have identified flow reduction and habitat alteration as major factors associated with steelhead decline. (SWRCB:42,III-44.)

Paralleling the declining steelhead population during this period was the rising urban demand for water. Originally, the Monterey Peninsula water supply was diverted entirely from the two reservoirs and from surface flow. When demand exceeded the developed surface resources, wells drilled in the Carmel Valley alluvium aquifer were added to supplement supply. In recent times, dry season surface flows below the Narrows at RM 10 have been depleted in most years as a result of heavy ground water pumping. This results in the stranding and death of many juvenile fish as surface flow recedes. (DFG:4,32.)

5.5 The Effect of Cal-Am Diversions Should be Mitigated

To summarize, Cal-Am diversions have historically had an adverse effect on: (1) the riparian corridor along the river below RM 18.5, (2) wildlife which depend on riparian habitat, and (3) steelhead and other fish which inhabit the river. Measures should be adopted requiring Cal-Am to mitigate the effect of its diversions on the environment until such time as it is able to

obtain water from the Carmel River or other sources consistent with California water law.

6.0 MITIGATING EFFECTS OF CAL-AM DIVERSIONS

The following sections identify the measures which are in effect to mitigate the effect of Cal-Am's diversions in the instream beneficial uses of the Carmel River. Many significant measures to protect the instream beneficial uses of the river have been initiated and are being carried out by the Monterey Peninsula Water Management District. In order to avoid confusion, an explanation of the District's role is necessary.

The District was created by special act of the Legislature in 1977. (Water Code Appendix Section 118-2.) The District is responsible for managing available surface and ground water sources to supply water within the District and to protect the environmental quality of the area's water resources, including the protection of fish and wildlife resources. (*Id.*; MPWMD:16,1-2.) Much of the watershed of the Carmel River is within the District's boundaries (Figure 1) and the District has broad powers over the use and distribution of water within its boundaries, including the operations of Cal-Am. (Water Code Appendix Sections 118-2, 118-102.)

6.1 Interim Relief Program

In 1988, as a result of the complaint filed by the CRSA (Section 2.1), the District formed an Environmental Advisory Committee. The committee was composed of citizen groups and public agency representatives, including representatives from Cal-Am and DFG. (MPWMD:53;3&4.) Their efforts resulted in an Emergency Relief Program and an Interim Relief Program, both designed to address chronic environmental degradation in the lower Carmel River. (MPWMD:53.)

The focus of the Interim Relief Program was on rescuing stranded steelhead during critically dry years, preserving the riparian corridor, and enhancing aquatic habitat by increasing streamflow. Specifically, the District undertook to: (1) limit surface

diversion at San Clemente Dam to 29 percent of total Cal-Am production, (2) hire fishery professionals to assess habitat and coordinate steelhead rescue efforts, and (3) monitor the health of riparian vegetation and install, operate, and maintain drip irrigation systems along the lower Carmel River. The provisions of the program expired in November 1993, but are carried forward as elements of the Water Allocation EIR mitigation program of the District. (MPWMD:53; SWRCB:42.)

6.2 Water Allocation Mitigation Program

In 1981, the District established an annual Water Allocation Program to apportion water to each of its member jurisdictions. In 1990, a Water Allocation Program EIR was completed and certified by the District. (SWRCB:42; MPWMD:16.) The EIR analyzed the environmental and socioeconomic impacts of varying levels of water production from the Monterey Peninsula Water Resource System, including the Carmel River. The document found that the amount of water which could be produced without significant environmental impact was less than previous estimates. As a result, the Cal-Am allocation was reduced from 18,600 to 16,744 afa.[18] Even at the reduced level, diversion of water from the Carmel River was found to have significant adverse environmental impacts on fisheries, riparian vegetation and wildlife, and the Lagoon. Therefore, the District also approved the Water Allocation Mitigation Program and committed itself to implement the mitigation program. The Program provides for the following mitigation measures:

Fisheries (MPWMD:16,55)

- Continue Interim Relief Program
- Expand program to capture emigrating smolts in spring
- Prevent stranding of early fall and winter migrants
- Rescue juveniles downstream of Robles Del Rio in summer

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[18] *The quantity of water which the District allocated to Cal-Am was not based on the amount of water diverted by Cal-Am and not on Cal-Am's legal right to divert water.*

- Modify spillway and transport juveniles around Los Padres Dam

Riparian Vegetation and Wildlife (MPWMD:16,64)

- Continue Interim Relief Program
- Conservation and water distribution management to retain water in the Carmel River
- Prepare and oversee a Riparian Corridor Management Plan (MPWMD:69)
- Implement the Riparian Corridor Management Plan
- Expand monitoring programs for soil moisture and vegetative stress

Lagoon Vegetation and Wildlife (MPWMD:16,72)

- Continue Interim Relief Program
- Assist with Lagoon Enhancement Plan investigations
- Expand long-term monitoring program
- Identify feasible alternatives to maintain adequate Lagoon volume

The program was adopted and funded by the District for an initial five-year period, due to expire in late 1995, after which allocations are to be reassessed based on results of monitoring studies. Annual progress reports have been prepared by the District and submitted to the SWRCB. (SWRCB:43; MPWMD:307-308.) Funded primarily by user fees and taxes, the program costs will slightly exceed $6.5 million over five years. (MPWMD:309.)

The effectiveness of this mitigation program and the degree to which the District has implemented the mitigation program was the subject of considerable testimony during the SWRCB hearing. Both the CSRA and the DFG expressed dissatisfaction with the implementation of the program. (CRSA:94-1,3; T,X,100:2.) Further, DFG stated that it was the Department's position that fish rescue is inappropriate as a long-term mitigation measure and that provision of adequate instream flow is the preferable alternative. (T,IX,8:2.)

6.3 Other District Actions

In addition to the above programs, the District has engaged in a number of other activities to lessen the impact of water extraction on the Carmel River system. These measures include:

- Limitation on total system production
- Mandatory rationing and moratoriums
- Conservation and community education programs
- Development of Seaside aquifer
- Wastewater reclamation

Although these programs have been effective in reducing demand on the Carmel River, their combined effect is inadequate to reverse severe environmental degradation. It is the position of the District and DFG wildlife experts that river flow is the critical element in reversing this degradation. The District has also concluded that a firm municipal supply and water for environmental restoration cannot be provided without additional water storage upstream of Cal-Am's existing well field. (MPWMD:287,2-8.)

6.4 Conditions On the Operation of Los Padres and San Clemente Dams

In 1948 the SWRCB adopted Decision 582 approving an appropriative right for the Los Padres Dam. The Decision and Permit 7130 require, in general, that Cal-Am maintain a flow of not less than 5 cfs in the channel of the Carmel River directly below the outlet structure of the Los Padres Dam at all times during which water is being stored under this permit.

Diverting under a claim of pre-1914 appropriative right, San Clemente Dam has no bypass requirement and, until the early 1980s, the entire summer streamflow was diverted into the filter plant downstream of San Clemente Dam. (DFG:4,8.) During the 1980s, DFG and Cal-Am began negotiating year-to-year agreements for the release of some water at San Clemente Dam to benefit fish in the river. Bypass flows have generally been in the range of 3.5 to 5 cfs. Under more normal hydrologic conditions, the bypass

maintains flow in the stream to the Narrows at RM 10. This habitat below San Clemente Dam is considered significant steelhead habitat.

6.5 Interim Measures to Mitigating Effects of Cal-Am Diversions Should Continue to be Implemented

As previously stated, Cal-Am's diversions have an adverse effect on the instream beneficial use of the river. Although the interim measures discussed herein are beneficial, they are by no means sufficient to offset the total effect of Cal-Am's diversions. Thus, these measures should be continued until such time as Cal-Am is able to obtain water from the Carmel River or other sources consistent with California water law.

That most interim measures have been undertaken by the District and not Cal-Am is a matter of concern. There is no assurance that the District will indefinitely continue to mitigate the effects of Cal-Am's diversions. Furthermore, there is no basis for the SWRCB to order the District to continue implementing the interim measures on behalf of Cal-Am. Thus, a condition should be adopted requiring Cal-Am to implement these interim measures in the event the District fails to continue with its programs.

7.0 OTHER PROPOSALS FOR MITIGATING THE EFFECTS OF CAL-AM DIVERSIONS FROM THE CARMEL RIVER

In addition to the interim mitigation measures being implemented by the District, the Complainants, DFG, and Mr. Evans contend that additional mitigation measures should be implemented by Cal-Am. Some of these measures are discussed in the following sections.

7.1 Maximize Production in Seaside Aquifer, Minimize Production from Carmel River

Several parties advanced the concept that production from the Seaside aquifer should be increased and diversions from the Carmel River should be reduced. Cal-Am produces about 2,700 afa from the Seaside ground water basin from wells in Seaside, California. The Seaside northern and southern coastal ground water subbasins have a usable storage capacity of 4,700 af. (MPWMD:101,6,144.) The long-term yield of the Seaside ground water subbasin, however, is

estimated to be 3,300 afa, using the practical rate of withdrawal method. (SWRCB:1, "Hydrology Update, Seaside Coastal Ground Water Basins, Monterey County, California", Staal, Gardner & Dunne, Inc., 1990, p.22.) A new well became available to Cal-Am and its customers during 1994, the Peralta Well, which is located in the Seaside aquifer. The well is capable of producing approximately 1,000 afa. The District has allocated the potential production from the Peralta Well for purposes which include water for community benefit and among eight jurisdictions for new connections, remodeling, and additions. (MPWMD,291,4:1-17; MPMD,3378,28,Figure 10.) By more fully utilizing water available in the Seaside aquifer, Cal-Am can reduce its diversions from the Carmel River and the effects of such diversions on public trust values. Thus, we find that Cal-Am should be required to maximize production from the Seaside aquifer and reduce diversions from the river to the greatest practicable extent.

7.2 Maximize Production from the Most Downstream Wells

Several parties advanced the proposal that by maximizing production from the most downstream wells that surface water in the Carmel River could be extended farther downstream.[19] The benefit of operating the wells in this manner would be to provide more habitat for fish during some years and seasons. (T,IV,248:24-251:3.) Testifying for DFG, Keith Anderson indicated that Cal-Am was already operating in this manner pursuant to an agreement with DFG. (T,IX,17:2-10.) Testimony did indicate, however, that too much pumping of wells nearer to the Lagoon might result in water quality degradation and adversely affect supply of water to other wells. Thus, we find that Cal-Am should be required to satisfy the water demands of its customers outside of the Carmel River watershed by extracting water from its most downstream wells to the maximum practicable extent.

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[19] *Some parties advocated drilling more wells farther down the river as near to the Lagoon as possible. The feasibility of this proposal was not demonstrated. Testimony and exhibits indicated that such wells and pumping could result in: (a) poorer water quality for Cal-Am customers, (b) dewatered wells used by other persons in the area, and (c) seawater intrusion into the lower aquifer. (T,IV,251:4-254:4; 258:5-269:4; 272:14-284:2.)*

7.3 Supply Water to the Carmel Village Filter Plant from Wells

The Carmel Village is supplied water from a filter plant located downstream of the San Clemente Dam. The filter plant is supplied water from the dam via a pipeline. Several parties advanced the proposal that more surface flow could remain in the river if the filter plant was supplied water from wells instead of the dam. The water diverted to storage at the dam could then be released to the river for fish and to recharge the subterranean stream from which the downstream wells extract water. No evidence was presented to demonstrate the feasibility of the proposal. Indeed the evidence indicates that it is not feasible to supply water to the filter plant from the most downstream wells. No evidence was introduced which would indicate whether the filter plant could be supplied from more nearby wells and thus keep more water at the surface of the stream for some additional distance. We find that Cal-Am should be required to conduct a reconnaissance level study of the feasibility, benefits, and costs of this proposal.[20]

7.4 Bypass Early Storm Runoff at the Dams

On behalf of DFG, Keith Anderson suggested that runoff from early storms be passed by the Los Padres and San Clemente Dams. (T,IX,21:4-22:6.) This proposal can result in recharging the subterranean stream and restoring surface water flows in the river at an earlier date. An earlier reestablishment of surface flows would increase the likelihood that steelhead could successfully migrate up and down the stream to complete their life cycle. The record does not include any evidence which demonstrates the feasibility of this suggestion; however, the storage capacity of the dams is so small that it appears likely that this suggestion could be implemented in even the driest water years and the

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[20] *The SWRCB recognizes that the wells nearest the filter plant are not the most downstream wells. The feasibility of supplying the filter plant may depend upon supplying the plant via the nearest wells. Supplying the filter plant from nearby wells would, implicitly, conflict with the principle that water be supplied to Cal-Am customers via the most downstream wells to the maximum practicable extent. Nevertheless, we find that the feasibility, benefits, and costs of this proposal should be evaluated.*

reservoirs could still be refilled. We find that Cal-Am should be required to study the feasibility of this proposal.

7.5 Modify Critical Stream Reaches to Facilitate Fish Passage

In the context of this section, a critical stream reach means any portion of the river which, due to low flow, acts as a barrier to migrating steelhead. Such barriers interfere with the ability of steelhead to successfully complete all life stages and to reproduce in the river. Testifying for DFG, Keith Anderson expressed the opinion that modifying critical stream reaches was an action which could be taken to mitigate the effect of Cal-Am's diversions from the river. (T,IX,20:24-21:3.) Thus, we find that Cal-Am should be required to conduct a study of the feasibility, benefits, and cost of this proposal.

7.6 Remove Boulder Below Los Padres Dam

A large boulder or rock outcrop is situated below the spillway of Los Padres Dam. A significant percentage of steelhead juvenile fail to survive downstream migration during low water conditions over the spillway because they fall upon the rock. Removal of the rock could improve the survival rate of steelhead juvenile moving downstream from Los Padres Dam. Accordingly, Cal-Am should be required to remove the rock or implement some other reliable measure to assure safe passage for fish over or around the rock.

8.0 ENFORCEMENT OPTIONS

Three enforcement options are available to the SWRCB for the unlawful diversion and use of water. First, Water Code Section 1052 declares that the unauthorized diversion of water is a trespass. Such diversions may be referred to the Attorney General for injunctive relief. (Section 1052(c).) Persons committing a trespass may be liable for up to $500 for each day in which a trespass occurs. (Section 1052(d).)

Second, Water Code Sections 1055 and 1052 authorizes the SWRCB to impose administrative civil liability for the unlawful diversion and use of water. Persons committing a trespass may be liable for

up to $500 for each day in which a trespass occurs. (Section 1052(b).) Persons committing a trespass may be liable for up to $500 for each day in which a trespass occurs.

Finally, Sections 1825, et seq. authorizes the SWRCB to adopt cease and desist orders for violation of conditions in permits and licenses. Cease and desist orders may require compliance forthwith or in accordance with a time schedule. (Section 1831.) Diversion of water in excess of the quantity authorized by permit or license can be treated as a violation subject to enforcement under Section 1831. Persons failing to comply with a cease and desist order are liable for $1,000 for each day in which violation occurs.

This proceeding was not noticed under any of the enforcement provisions and the SWRCB cannot, at this time, proceed directly to an order under Sections 1055 or 1830. The SWRCB, however, can request the Attorney General to take action under Section 1052. Alternatively, the SWRCB can suspend such a referral provided that Cal-Am takes appropriate actions to: (a) mitigate the effect of its diversions on the environment and (b) develop and diligently pursue a plan for obtaining water from the Carmel River or other sources consistent with California water law.[21]

8.1 Considerations Mitigating Against the Use of Punitive Enforcement Options

In the short term, Cal-Am cannot significantly reduce its extraction from the wells along the Carmel River. As previously stated, most of Cal-Am's supply is obtained from the Carmel River and most of that supply is provided by the wells along the river. The people and businesses on the Monterey Peninsula must continue to be served water from the Carmel River in order to protect public health and safety.

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[21] *Cal-Am could satisfy this requirement by contracting with MPWMD for the supply from its proposed project or by proposing to develop water under applications to appropriate water from the Carmel River by storage or from other sources.*

Cal-Am introduced exhibits during the hearing which show that during 1980 and 1981, on the basis of available information, the SWRCB was not of the opinion that the water pumped by the wells would require a permit from the SWRCB. (CAL-AM, F and G.) Further, Cal-Am does not contend that the wells are not extracting water from a subterranean stream. (CAL-AM, Closing Brief, 20.) Indeed, Cal-Am has filed an application to appropriate water with the SWRCB. (Application 30215.)[22]

Cal-Am also supports the New Los Padres Project proposed by the District as one means for providing a reliable and legal water supply for its customers. (CAL-AM, Closing Brief, 2:4-12.) Finally, Cal-Am has cooperated with the District, DFG, and others to develop and implement measures to mitigate the effect of its diversions on the instream resources of the river. (MPWMD:287,2-15.)

Under circumstances such as these, the imposition of monetary penalties make little sense. Rather, the SWRCB's primary concern should be the adoption of an order which, until a legal supply of water can be developed or obtained, will require that Cal-Am: (1) minimize its diversions from the Carmel River, (2) mitigate the environmental effects of its diversions, and (3) prepare a plan setting forth: (a) specific actions to develop or obtain a legal supply of water and (b) the dates specific actions will have occurred so that progress on the plan can be objectively monitored.

9.0 SUMMARY AND CONCLUSIONS

To summarize the foregoing, we find that:

1. Downstream of RM 15 of the Carmel River, the aquifer underlying and closely paralleling the surface water course of the Carmel River is water flowing in a subterranean stream and subject to

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[22] *Administrative notice is taken that on May 29, 1992, Cal-Am submitted Application 30215 to the SWRCB. The application is for the direct diversion of 42 cfs from its wells along the river.*

the jurisdiction of the SWRCB. Cal-Am's wells are drawing water from the subterranean stream associated with the Carmel River.

2. Cal-Am is diverting about 10,730 afa from the Carmel River or its underflow without a valid basis of right. In addition, Cal-Am does not have a pre-1914 right to divert and use water at San Clemente Dam. Cal-Am should be required to diligently develop and implement a plan for obtaining water from the Carmel River or other sources consistent with California water law.

3. Cal-Am diversions are having an adverse effect on: the riparian corridor along the river below San Clemente Dam at RM 18.5, wildlife which depend on instream flows and riparian habitat, and steelhead which spawn in the river. Interim measures mitigating the effects of Cal-Am diversions undertaken by the District should continue to be implemented. Cal-Am should be required to implement interim measures in the event the District fails to continue with its program. In addition, Cal-Am should be required to implement other mitigation measures. Cal-Am should be required to mitigate the effect of its diversions until such time as it is able to obtain water from the Carmel River or other sources consistent with California water law.

4. The SWRCB can request the Attorney General to take action under Section 1052. Alternatively, the SWRCB can suspend such a referral provided that Cal-Am takes appropriate actions to: mitigate the effect of its diversions on the environment and develop and diligently pursue a plan for obtaining water from the Carmel River or other source consistent with California water law. The SWRCB's primary concern should be the adoption of an order requiring Cal-Am to: (1) prepare a plan setting forth (a) specific actions which will be taken to develop or obtain a legal supply of water and (b) the dates specific actions will have occurred so that progress on the plan can be

objectively monitored, (2) minimize its diversions for the Carmel River, and (3) mitigate the environmental effects of its diversions.

ORDER

NOW THEREFORE, IT IS HEREBY ORDERED that Cal-Am shall comply with the following conditions:

1. Cal-Am shall forthwith cease and desist from diverting any water in excess of 14,106 afa from the Carmel River, until unlawful diversions from the Carmel River are ended.

2. Cal-Am shall diligently implement one or more of the following actions to terminate its unlawful diversions from the Carmel River: (1) obtain appropriative permits for water being unlawfully diverted from the Carmel River, (2) obtain water from other sources of supply and make one-for-one reductions in unlawful diversions from the Carmel River, provided that water pumped from the Seaside aquifer shall be governed by condition 4 of this Order not this condition, and/or (3) contract with another agency having appropriative rights to divert and use water from the Carmel River.

3. (a) Cal-Am shall develop and implement an urban water conservation plan. In addition, Cal-Am shall develop and implement a water conservation plan based upon best irrigation practices for all parcels with turf and crops of more than one-half acre receiving Carmel River water deliveries from Cal-Am. Documentation that best irrigation practices and urban water conservation have already been implemented may be substituted for plans where applicable.

   (b) Urban and irrigation conservation measures shall remain in effect until Cal-Am ceases unlawful diversions from the Carmel River. Conservation measures required by this Order in combination with conservation measures required

by the District shall have the goal of achieving 15 percent conservation in the 1996 water year and 20 percent conservation in each subsequent year.[23] To the extent that this requirement conflicts with prior commitments (allocations) by the District, the Chief, Divison of Water Rights shall have the authority to modify the conservation requirement. The base for measuring conservation savings shall be 14,106[24] afa. Water conservation measures required by this order shall not supersede any more stringent water conservation requirements imposed by other agencies.

4. Cal-Am shall maximize production from the Seaside aquifer for the purpose of serving existing connections, honoring existing commitments (allocations), and to reduce diversions from the Carmel River to the greatest practicable extent. The long-term yield of the basin shall be maintained by using the practical rate of withdrawal method.

5. Cal-Am shall satisfy the water demands of its customers by extracting water from its most downstream wells to the maximum practicable extent, without degrading water quality or significantly affecting the operation of other wells.

6. Cal-Am shall conduct a reconnaissance level study of the feasibility, benefits, and costs of supplying water to the Carmel Valley Village Filter Plant from its more nearby wells downstream of the plant. The objective of supplying water from the wells is to maintain surface flow in the stream as far downstream as possible by releasing water from San Clemente Dam for maintenance of fish habitat. The results

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[23] *Each water year runs from October 1 to September 30 of the following year.*

[24] *14,106 afa represents Cal-Am's total diversions from the Carmel River.*

of the study and recommendations shall be provided to the District and DFG for comment.

7. Cal-Am shall evaluate the feasibility of bypassing early storm runoff at Los Padres and San Clemente Dams to recharge the subterranean stream below San Clemente Dam in order to restore surface water flows in the river at an earlier date. The results of the study and recommendations shall be provided to the District and DFG for comment.

8. Cal-Am shall conduct a study of the feasibility, benefits, and costs of modifying critical stream reaches to facilitate the passage of fish. The study shall be designed and carried out in consultation with DFG and the District. The results of the study and recommendations shall be provided to the District and DFG for comment.

9. The studies required by conditions 6, 7, and 8 shall be carried out by persons with appropriate professional qualifications. The studies required by condition 7 shall be completed and submitted to the Chief, Division of Water Rights, within 5 months from the date of this order. The Chief, Divison of Water Rights may extend the time for performing the study required by condition 8 upon making a finding that adequate flows were not available to perform the study. The studies required by conditions 6 and 8 shall be completed and submitted to the Chief, Division of Water Rights, within 12 months from the date of this order. The Chief, Division of Water Rights may extend the time for performing the study required by condition 8 upon making a finding that adequate flows were not available to perform the study. The report (or reports) transmitting the results of the study (or studies) shall describe the action (or actions) which Cal-Am will undertake to correct the problems addressed by the studies. Cal-Am shall provide a written response to any comments received on the study. If no action (or actions) will be taken to correct the underlying problem (or problems),

Cal-Am's report shall provide written justification why corrective action is not appropriate. Based upon the results of the studies, recommendations, comments by the District and DFG, and Cal-Am responses, the Chief, Division of Water Rights, shall determine what actions shall be taken by Cal-Am consistent with this Order and establish reasonable times for implementation.

10. Cal-Am shall remove the large rock immediately below the spillway of the Los Padres Dam which results in substantial loss of juvenile steelhead or implement some other reliable measure (or measures) to assure safe passage for fish over or around the rock. Prior to removing the rock Cal-Am shall consult with DFG and obtain any streambed alteration permit required by Fish and Game Code Section 1601. If Cal-Am leaves the rock in place, it shall consult with DFG when evaluating what other measures can be used to assure safe fish passage. Cal-Am shall comply with this measure within 4 months.

11. Cal-Am shall be responsible for implementing all measures in the "Mitigation Program for the District's Water Allocation Program Environmental Impact Report" not implemented by the District after June 30, 1996.[25] Not later than August 30, 1996, Cal-Am shall submit a report to the Chief, Division of Water Rights, identifying mitigation measures which the District does not continue to implement after June 30, 1996. At the same time, Cal-Am shall submit a plan for the approval of the Chief, Division of Water Rights, detailing how it will implement mitigation measures not implemented by the District. The Chief, Division of Water Rights, may excuse Cal-Am from implementing specific mitigation measures only upon making a finding that Cal-Am has demonstrated that it does not have

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[25] *On November 5, 1990 the District adopted a mitigation program to be carried out for five years. The plan is summarized in Section 6.2, infra. There is no assurance the District will continue with any or all of the elements of its mitigation program after November of 1995. (MPWMD:289, Vol. III, Appendix 2-D.)*

adequate legal authority to implement the ability to finance such measures or demonstrates that such measures are demonstrably ineffective.

12. Within 90 days of the date of this order, Cal-Am shall submit for the approval of the Chief, Division of Water Rights:

    (a) A compliance plan detailing the specific actions which will be taken to comply with condition 2 and the dates by which those actions will be accomplished;

    (b) An urban water conservation plan; and

    (c) An irrigation management plan.

13. Starting with the first full month following adoption of this order, Cal-Am shall file quarterly with the Chief, Division of Water Rights:

    (a) Reports of the monthly total amounts being: (1) pumped from wells; and (2) diverted from the Carmel River,

    (b) Reports of the progress being made in complying with the schedule submitted to comply with condition 11, and

    (c) Reports of the progress being made in complying with conditions 6, 7, 8, and 9.

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14. The Chief, Division of Water Rights, is authorized to refer any violation of these conditions to the Attorney General for action under Section 1052 or to initiate such other enforcement action as may be appropriate under the Water Code.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on July 6, 1995.

AYE: John P. Caffrey
Mary Jane Forster
Marc Del Piero
James M. Stubchaer
John W. Brown

NO: None

ABSENT: None

ABSTAIN: None

Maureen Marché

Maureen Marché
Administrative Assistant to the Board

ATTACHMENT I

STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

ORDER WR 2016-0016

In the Matter Of Application of

California American Water Company

To Amend State Water Board Order 2009-0060

SOURCE: Carmel River

COUNTY: Monterey County

ORDER AMENDING IN PART REQUIREMENTS OF STATE WATER BOARD ORDER WR 2009-0060

BY THE BOARD:

1.0 OVERVIEW

For decades, California-American Water Company (Cal-Am) has been unlawfully diverting water from the Carmel River to provide municipal water to a large area of the Monterey Peninsula. State Water Resources Control Board (State Water Board) Order WR 2009-0060 (hereafter, WR 2009-0060) is a cease and desist order that, among other requirements, established a compliance timeline for cessation of Cal-Am's unlawful diversions from the Carmel River by December 31, 2016. This timeline was based on evidence gathered at hearing that indicated that a regional desalination plant would be built, enabling the area's municipal water needs to be met by new water supplies. It is now clear that no desalination plant will be in operation by the end of this year. In light of this recognition, Cal-Am has proposed modifying the compliance schedule to accommodate the anticipated pace for approval and implementation of several proposed projects (1) a different desalination plant, the Monterey Peninsula Water Supply Project; (2) a water recycling project, entitled Pure Water Monterey; and (3) the expansion of the facilities for an existing groundwater storage project entitled Aquifer Storage and Recovery (ASR). These projects are undergoing review by permitting agencies.

Since the adoption of WR 2009-0060 in 2009, Cal-Am's diversions from the Carmel River have consistently been well below the annual diversion levels set by WR 2009-0060, but still remain thousands of acre-feet per annum above the amount available under Cal-Am's lawful water rights.(See Table 1, p. 2.) The reductions in Carmel River diversions have resulted from a number of factors, including conservation and efficiency measures and implementation of local supply projects, combined with a moratorium on increased water use within Cal-Am's service area. To address the impacts of its diversions, Cal-Am has also applied significant resources to fishery conservation and habitat improvement programs.

Seven years after adoption of WR 2009-0060, the State Water Board is again placed in a position of deciding whether to adopt a compliance schedule that may allow for obtaining lawful supplies with less disruption to existing communities than meeting the required legal pumping limit by December 31, 2016. For the reasons described herein, this order adopts a new compliance schedule that essentially maintains an ongoing diversion level as long as specified progress towards alternative supplies is met, but sharply drops allowable diversions should the progress towards these supplies slip. In taking this action, the State Water Board is facilitating local cooperation in development of alternate water supplies and at the same time requiring that unauthorized diversions end by December 31, 2021, regardless of whether the envisioned projects are timely built.

2.0 BACKGROUND

WR 2009-0060 and State Water Board Order WR 95-10 (hereinafter WR 95-10) detail specific information regarding Cal-Am's lawful and unlawful diversions from the Carmel River, which does not require repetition here.

Since the adoption of WR 2009-0060, Cal-Am has lowered its diversions from the Carmel River more rapidly than the minimum compliance terms in the CDO required, and has not missed the CDO diversion reduction requirements in any year.

Table 1

Water Year (Oct. 1 – Sept. 30)	Carmel River Pumping (to nearest acre-foot)	Pumping Limit under Order 2009-0060
2009-2010	9,786	10,209
2010-2011	8,559	9,994
2011-2012	7,646	9,883
2012-2013	8,008	9,772
2013-2014	7,744	9,661
2014-2015	7,228	9,550

The pumping limit under Order 2009-0060 for Water Year (hereinafter also WY) 2015-2016 is 9,318, and there is no indication from current reporting or based on recent historical use, to think that Cal-Am will not fall well under this mark.

The reductions in pumping are the result of demand reductions as well as new supplies, both of which were required under WR 2009-0060. In terms of demand reduction, Cal-Am and the Monterey Peninsula Water Management District (District) have adopted programs encouraging conservation by business and residential customers, including turf replacement programs, water efficiency requirements, and tiered conservation rates. Cal-Am has also implemented new technologies to identify and address leaks. Additionally, Cal-Am has proposed revisions to its water rationing program pending at the California Public Utilities Commission (CPUC). The CPUC anticipates making a decision on the proposed changes in October 2016.

Three new non-Carmel River supplies have either already come online, expanded or have received regulatory approval since 2009. Sand City's desalination plant provides to Cal-Am, in the form of offset deliveries, a minimum of 94 acre-feet per annum (afa), and the balance of its

capacity which is not needed for expanded use in Sand City. Pebble Beach's water recycling facility has expanded its capacity and technology, and increased its offset of Cal-Am's unlawful pumping to an average of 970 afa. Its average offset prior to the technology changes completed in 2008 was 450 afa. This increase far out-measures the modest increase in usage entitlements, which now measure 65 afa, and are expected to reach on the order of 140 afa[1] by the end of the proposed compliance period. As of June 2016, the City of Pacific Grove was scheduled to have begun construction of a recycled water plant that will offset 100 to 125 afa of current Cal-Am deliveries for golf course and cemetery irrigation.

Additionally, Cal-Am has pursued lawful water rights in the Carmel River. Cal-Am has obtained water right Permit 21330, allowing lawful diversion in the high flow season, under certain bypass flow conditions, at a rate of 4.1 cubic feet per second with an limit of 1,488 afa. This water may only be used within the Carmel River watershed, rather than throughout the Cal-Am service area. In WY 2014-2015, Cal-Am diverted approximately 42 acre-feet under this water right.

Joint owners Cal-Am and the District have lawful water rights under Permit 20808A and Permit 20808C to develop and use up to 5,326 afa (2,426 afa and 2,900 afa, respectively) of pumping from the Carmel River under certain bypass flow conditions for operation of the ASR project. The ASR project has expanded its capacity since the adoption of WR 2009-0060, although increased water has not been available for diversion during the recent drought. The ASR project diverted just over 1,110 afa of water in WY 2009-2010 and WY 2010-2011, and between 0 and 210 afa in the drier water years from WY 2011-2012 through WY 2014-2015. The ASR water is pumped to the Seaside Groundwater Basin and WR 2009-0060 requires Cal-Am to recover the ASR water during the months most beneficial to the fishery. By June 1 of each year, Cal-Am, National Marine Fisheries Service (NMFS) and the California Department of Fish and Wildlife (CDFW) agree on a schedule for using the ASR water by reducing Carmel River pumping for fishery benefits. Cal-Am's diversions from the Carmel River are reduced on a one-to-one basis with the scheduled recovery. NMFS and CDFW can and have agreed to allow some ASR water to be carried over in Seaside Groundwater storage for the next water year's use, as allowed under WR 2009-0060. Cal-Am carried over 215 acre-feet of ASR water, and WY 2015-2016 storms allowed for an additional 699 acre-feet of ASR diversions such that Cal-Am had 914 acre-feet of available ASR water stored in the Seaside Groundwater Basin by June 1, 2016. NMFS and DFW agreed that Cal-Am would recover the ASR water from June through September of 2016, and carry over approximately 315 acre-feet for WY 2016-2017.

Water previously pumped from the Carmel River for the Odello Ranch under License 13868A, is being provided to offset Cal-Am's unlawful diversions on an interim basis. The water will not be available on a long-term basis. The project provided 85 acre-feet of water to offset Cal-Am's unlawful diversions in 2015, and will provide a minimum of 50 acre-feet in 2016 and 25 acre-feet in 2017. Cal-Am and the Eastwood Trust have reached an agreement for Cal-Am to divert up to 85 afa on an interim basis, to the extent that the water is not being sold by the Malpaso Water Company to other users.

[1] Pebble Beach estimates that deliveries of water under new entitlements through the end of December 2020 will be 140 afa. While the application now requests an extension of the compliance deadline for an additional year, there is no reason to think that this number will be significantly different by 2021, given the prior rate of growth in the area and the necessarily imprecise nature of such estimates.

Since adoption of WR 2009-0060, Cal-Am has also funded or otherwise implemented significant measures to improve fish habitat and survival. WR 2009-0060 required some of these measures, while others were implemented as part of an agreement with the NMFS and the CDFW.

After the failure of efforts to build the Coastal Water Project and the Regional Desalination Project[2], it became clear that there would not be a lawful alternative supply of water for the Cal-Am service area prior to the end of 2016, when WR 2009-0060 requires Cal-Am to end all unlawful diversions from the Carmel River.

In 2014, Cal-Am approached State Water Board staff regarding the possibility of reaching an agreement on a proposal to amend the CDO's compliance schedule which State Water Board staff would recommend to the State Water Board for consideration. Staff met with Cal-Am and other stakeholders over a period of two years in an effort to craft a proposal that staff, Cal-Am, and a range of stakeholders could endorse. At points over the two year period, the discussion included representatives from Cal-Am, the District, the Monterey Peninsula Regional Water Authority, the Sierra Club, the Planning and Conservation League, the Pebble Beach Company, and NMFS.[3] The group was able to reach an agreement on a framework for a proposal to amend the Cal-Am CDO's compliance schedule until the end of December 2020, even as some of the specifics remained contested. The broad area of agreement was maintaining a diversion limit significantly lower than that required for WY 2015-2016 in the current CDO as long as milestones based on securing alternative water supplies are met. Failure to meet the milestones would result in significant reductions of the diversion limits under the compliance schedule, such that Cal-Am's diversions from the Carmel River would be limited to lawful diversion limits prior to the end of the compliance period.

Cal-Am, in conjunction with the District, Monterey Peninsula Regional Water Authority, the City of Pacific Grove and the Pebble Beach Company, submitted an application to amend the Cal-Am CDO on November 20, 2015. On April 28, 2016, Cal-Am submitted a revised application to amend the CDO, in light of significant delays in the CPUC's schedule for consideration of a proposed desalination facility, the Monterey Peninsula Water Supply Project (MPWSP) Desalination Project. These delays resulted from the CPUC's desire to prepare a joint environmental impact statement and environmental impact report in conjunction with a federal partner, the Monterey Bay National Marine Sanctuary. In addition, the CPUC needed to evaluate a potential conflict of interest issue involving one of the contractors evaluating the project under the California Environmental Quality Act. There have also been repeated interruptions in operations of the test wells used to evaluate the impacts and viability of the proposed facility's slant well technology.

3.0 CAL-AM'S PROPOSAL

Cal-Am's April 28, 2016 revised application to amend WR 2009-0060 was submitted pursuant to Water Code section 1832, which allows the State Water Board to "modify, revoke or stay" cease and desist orders.

[2] The CPUC approved an alternative to the Coastal Water Project – the Regional Desalination Project.
[3] Cal-Am and other stakeholders indicated that a broader group met in preparation for meetings with staff, including participation by the Carmel River Steelhead Association, Quail Lodge, Bernardus Lodge, and Carmel Valley Ranch.

The primary change Cal-Am proposes is maintaining an "effective diversion limit" (or EDL) of 8,310 afa from the Carmel River from the start of WY 2015-2016 until December 31, 2021, as long as alternate water supply projects meet defined approval and construction milestones. Cal-Am proposes a milestone for each water year from 2017-2018 until the end of December 2021. If Cal-Am fails to achieve a milestone by the last day of the water year, then the effective diversion limit would be reduced by 1,000 afa for the following water year.[4] For example, if construction on the Pure Water Monterey project fails to begin and the CPUC fails to issue a certificate of public convenience and necessity for the proposed MPWSP Desalination Project by September 30, 2018, then the proposed effective diversion limit for WY 2018-2019 would be 7,310 acre-feet. Thus, if Cal-Am fails to meet each milestone, the effective diversion limit would fall by 1,000 afa each water year from WY 2018-2019 on. The limit for WY 2021-2022 would be 4,310 acre-feet until the end of December 2021. As discussed above, WR 2009-0060 requires all unlawful diversions from the Carmel River to end by December 31, 2016. This EDL would replace the "base level" that formed the foundation for diversion limits under WR 2009-0060.

Cal-Am also proposes several changes to the manner of calculating the diversion limit, or of assessing compliance with that limit.

One significant change in determining compliance with a diversion limit is Cal-Am's proposal that it be allowed to accrue "credits" in years in which its diversions are lower than the EDL for a particular water year, starting in WY 2015-2016. Cal-Am could then apply any such "credits" to be able to pump more than the EDL in future years, without penalty. WR 2009-0060 had no such credit system. Cal-Am's proposal includes a Cap on Carryover Credits that would need to be calculated to confirm that the sum of non-ASR diversions from the Carmel River plus the amount of ASR water recovered that year cannot exceed the EDL plus 750 afa.

Another substantial calculation change that Cal-Am proposes is to amend the accounting for winter pumping under the ASR.

Under WR 2009-0060, any ASR diversions are counted towards the annual limit on Carmel River diversions: Here, Cal-Am proposes to count only the first 600 afa towards the diversion limit. Thus, as proposed, diversions to storage under the ASR program above 600 afa could occur without impacting Cal-Am's subsequent diversions from the Carmel River in a particular water year. For example, Cal-Am reported diversion of 699 afa to ASR storage in WY 2015-2016, so 99 afa would not be considered in measuring compliance with the EDL.

A third significant change to calculating the diversion limits would be the manner in which the limit is changed by the addition of lawful supplies. Under WR 2009-0060, production from new sources of water generally lowered the Carmel River diversion limit acre-foot by acre-foot. Under Cal-Am's proposed application, the EDL would be lowered for water delivered under the Pure Water Monterey water recycling project in this same manner, and the reductions for Sand City desalination project and for accounting for Pebble Beach entitlements would continue unchanged (except that the provision on unlawful diversions to serve Pebble Beach entitlements would be extended until December 31, 2021). However, Cal-Am proposes that fifty percent of

[4] The deadline for measuring achievement of a milestone for the 2021-2022 water year is December 31, 2021. Because this is the end of the compliance period, failure to meet this milestone would not result in a reduction of the effective diversion limit, as the limit to Carmel River diversions after that time is the limit of Cal-Am's lawful water rights.

any water Cal-Am may acquire from other willing water right holders on the Carmel River be added to the EDL, with the other fifty percent being added to instream use. Additionally, Cal-Am proposes that water rights purchased from the Malpaso Water Company LLC to Cal-Am be added to the EDL. Finally, Cal-Am proposes that the EDL not apply to excess pumping that any of the petitioners establish was necessary to meet reductions required by mitigation measures imposed by the Seaside Basin watermaster or the court to address seawater intrusion within the Seaside Groundwater Basin.

Cal-Am's application also includes new reporting requirements. The first new reporting requirement is an annual report to the State Water Board regarding progress towards each milestone due 120 days prior to its deadline. In the event that the annual milestones report anticipates a delay in achieving a milestone, Cal-Am proposes that the State Water Board determine whether the delay is beyond the control of the applicants, and, if so, that the State Water Board determine whether or not to lower the EDL by 1,000 afa after a missed milestone. The second proposed reporting requirement is Cal-Am's funding of an annual report on the status of the Carmel River steelhead population that may include adaptive management recommendations.

Cal-Am's application also notes Cal-Am's substantial completion of downstream fish passage facilities at Los Padres Dam, and states that the company will endeavor to remove the Old Carmel River Dam and Sleepy Hollow Ford prior to September 30, 2017.

4.0 NOTICE AND COMMENTS RECIEVED

The State Water Board noticed Cal-Am's application on May 6, 2016. The State Water Board received 16 comments prior to June 1, 2016, the deadline for consideration of comments by staff prior to releasing a preliminary staff recommendation. Staff released a preliminary staff recommendation, along with a rationale document explaining the reasoning behind the proposed adoption of the broad framework of the extension, and for the recommended changes from certain terms in the submitted application. The document further set notice of a comment deadline of July 13, 2016 for written comments. The State Water Board received an additional 77 comments prior to the written comment deadline of July 13, 2016. All comments received were posted on the State Water Board, Division of Water Rights page for the Cal-Am CDO Change Application: http://www.waterboards.ca.gov/waterrights/water_issues/projects/california_american_water_company/index.shtml.

5.0 ANALYSIS

5.1 Adoption of Proposed Approach to Extension of CDO

Seven years after adoption of Order 2009-0060, the State Water Board finds itself in a situation that is in some respects analogous to the situation before it at the Cal-Am CDO hearings. A project that was presented to the State Water Board as a solution to end unlawful diversions has failed to come to fruition: then, the Los Padres Dam, here the Coastal Water Project.

Cal-Am's service area continues to depend on thousands of acre-feet of unlawful diversions from the Carmel River each year. Cal-Am has plans to develop a substitute supply that could resolve reliance on unlawful diversions, and proposes a CDO compliance schedule that would allow continued diversions at recent historic levels during the foreseeable timeframe for construction. The plans are supported by a number of stakeholders, but there is also substantial opposition. Permitting is incomplete and construction not yet begun.

In other ways, however, the situation is different than that in 2009. Cal-Am has complied with the compliance schedule in WR 2009-0060, including making significant reductions in diversions from the Carmel River despite the ultimate failure of the Coastal Water Project and the Regional Desalination Project. WR 2009-0060 required Cal-Am to reduce diversions from the Carmel River as much as possible and set minimum reductions. Cal-Am reduced diversions at a faster rate than the minimum required under the order. (See Table 1, p. 2.) The pumping limit Cal-Am is currently requesting is approximately 2,000 afa less than the first limit for diversions imposed under WR 2009-0060, and the actual reductions top 3,000 af of reduction in some years. These amounts constitute a reduction of approximately one third to almost half of the average annual unlawful diversions found in 2009.

Additionally, Cal-Am has undertaken or funded a number of fishery restoration actions since 2009. As required under an agreement with NMFS and CDFW, Cal-Am has funded a number of significant habitat improvement and fishery recovery projects as mitigation for unlawful diversions. Cal-Am helped fund removal of the San Clemente Dam, with benefits for not only the steelhead fishery, but also public safety. Under an agreement with NMFS, Cal-Am has contributed funding towards a series of steelhead recovery projects identified by the State Coastal Conservancy in consultation with NMFS, CDFW and Carmel River stakeholders. These include ongoing projects to facilitate fish passage by removing barriers, including removal of Old Carmel River Dam and Sleepy Hollow Ford anticipated by the end of September 2017,[5] to restore habitat upstream of San Clemente Dam and in the Carmel Lagoon and to augment water availability for fisheries purposes in the Carmel Lagoon and during the summer. Cal-Am and other stakeholders have also constructed downstream fish passage facilities at Los Padres Dam and the company is helping fund a planning effort to address long-term disposition of Los Padres Dam. These actions are in addition to ongoing habitat restoration and steelhead rescue operations on the lower Carmel River. NMFS has commented that the habitat has improved since 2009, and that an additional four years of diversion at levels similar to recent years would be unlikely to cause jeopardy.

Further significant habitat restoration actions have also been set in motion, indicating that habitat improvement will continue over the next few years even absent an immediate cessation of Cal-Am's unlawful diversions.

Cal-Am has also funded a forbearance agreement with Rancho Cañada to add approximately 300 afa to the Carmel River for the next three years. This agreement is part of a larger effort to convert much of the property to riparian habitat, with additional potential ecological benefits. Cal-Am is also a purchaser of water from Malpaso Water Company, to offset unlawful

[5] This order adds reopener provisions if these anticipated efforts to undertake major habitat expansion efforts do not continue to develop according to the schedule set forth. That schedule would enable realization of the project benefits for almost the entire duration of the extension of the compliance schedule.

diversions, and with the funds from the purchase to facilitate the transfer of the Eastwood/Odello Ranch for wetland restoration near the Carmel Lagoon.

Thus, the current situation on the Carmel River has improved in that the Cal-Am service area has meaningfully reduced its dependence on unlawful diversions, fish habitat has undergone improvement and expansion, plans are underway to undertake additional large fishery habitat improvements, robust fish rescue and habitat restoration efforts have been ongoing for years and will continue throughout the requested extension period, and additional instream flows have been secured. These factors all indicate that the impact of extending the compliance period will not be as great as the impacts found in 2009. The broad terms of the proposed revisions to the compliance plan also provide a framework that encourages success in constructing new water supplies, and that allow for planned reductions to lawful levels of diversions regardless of the success of supply projects.

Cal-Am is proposing a more diversified approach to water supply on the Monterey Peninsula than the efforts in 2009, so that the water supply does not depend so heavily on the success of any one project. In 2009, the State Water Board required Cal-Am to diligently pursue small projects, including requiring implementation of small projects that would result in at least 500 afa of additional water supply, and also required annual reductions in Carmel River diversions of between 121 and 242 afa. The central element of the effort to reduce diversions to sustainable levels, however, required construction of the Coastal Water Project. Development of a water supply project large enough to address the region's water needs has proven a challenge, given the failure of several major proposed water supply projects: the New Los Padres Dam, the Carmel River Dam and Reservoir Project, the Coastal Desalination Project, and the Regional Water Supply Project. Here, Cal-Am has proposed three potential projects to substitute for unlawful Carmel River diversions: a 6,250 to 9,752 afa desalination facility currently undergoing environmental review and permitting at the CPUC; a 3,500 afa water recycling project with completed environmental review that is currently undergoing expedited permitting review at the CPUC, with a decision expected in August 2016; and a proposed expansion of facilities to complete the ASR groundwater storage project, which is permitted to produce up to 5,326 afa, albeit subject to water availability. Each of these projects has the potential to provide a significant amount of new lawful water supplies to the Cal-Am Service area, and to greatly reduce Cal-Am's remaining unlawful diversions of approximately 3,500-4,500 afa.

The application changes the incentive for conservation and for adopting smaller-scale projects. WR 2009-0060 required yearly reductions in diversion amounts and did not specify whether these reductions stem from conservation measures or small water supply projects. As described above, conservation and small projects have resulted in a combined reduction of approximately 2,000 to 3,000 afa of demand from the Carmel River. As these projects were the first to be implemented, they likely represent some of the lowest-hanging fruit in terms of demand reduction. Rather than imposing additional reductions, the application proposes adopting a "credit" system that incentivizes conservation and small projects. Should the larger projects fail to proceed on their expected timelines, Cal-Am can draw on these credits to offset the majority of the required reduction in diversions. Thus, Cal-Am and other stakeholders can anticipate whether the milestones will be met, and undertake efforts to build credits in anticipation of failures to meet milestones, but are otherwise not required to expend additional resources on conservation and small projects. Stakeholders can thus focus efforts on working to make implementation of the larger supply projects go more smoothly.

The Board implements the overall concept of credits in this order, but imposes more limits on the accrual and use of credits so as to avoid overwhelming other incentives and results of the extended compliance schedule. (see explanation below)

The milestones approach proposed is similarly broadly acceptable, as it accomplishes two important goals. First of all, it provides structural encouragement to timely develop lawful water supplies for the Cal-Am service area. Implementing a large municipal water supply project is a long-term decision that affects a wide range of stakeholders and involves impacts to costs of service to existing users, to the environment, and to the cost of and potential for municipal growth. The potential for sharp reductions in water availability provides an incentive to multiple stakeholders to make diligent progress, and to shift the baseline of a discussion regarding the area's water needs away from a status quo that relies on cheap unlawful diversions. If the alternative to implementation of a project is severely limited access to water there is an incentive to implement change from the status quo.[6] It is the Board's hope that the focus on annual deadlines with large but achievable reductions of up to 1,000 afa for failure to meet them will be an effective incentive. The fact that Cal-Am did meet the more incremental annual reductions each year under WR 2009-0060 provides reason to believe that the incremental approach may be an effective inducement to alternate water supply development. Secondly, in the event that one or more of the proposed projects fails to move forward as envisioned, the step-wise reduction of diversions ensures a staggered approach to ending reliance on unlawful Carmel River diversions through continued conservation, efficiency and smaller supply development. This step-wise reduction approach allows for greater planning for reductions and implementation of alternative projects. As discussed below, this order does make changes to the milestones proposal to better serve the goals described above.

This more diversified approach, in combination with diversion reductions for failure to achieve milestones allows for Cal-Am to reduce its diversions to lawful levels by the end of December 2021, regardless of whether any one of the proposed projects – or any of them at all - are built. Implementation of one or more of these projects in combination with diversion limits for any failure to reach particular milestones provides sufficient assurance that the State Water Board will not again find itself in the same position of again extending the compliance deadlines in the CDO at the end of December 2021.

The proposed annual reporting on milestone progress will give the State Water Board the opportunity to track compliance. This order adopts the annual reporting requirement with minor timeline modifications that better accommodate State Water Board processes. The report gives time for a formal warning should progress towards a milestone be lacking, which will allow Cal-Am and other stakeholders to prepare for step-wise reductions through development of additional supplies, to generate additional credits, or to implement additional conservation

[6] Numerous commenters have asserted that the milestone approach inappropriately burdens ratepayers and water users for Cal-Am's unlawful diversions, and that therefore the CDO should impose monetary fines in-lieu-of requiring diversion reductions. The remedies of issuing a CDO and imposing penalties for unlawful diversions are not mutually exclusive, however, and payment of a penalty does not authorize continuing violations. The penalty addresses past violations; the law still requires elimination of future violations. Moreover, the argument that the State Water Board should impose penalties *in-lieu*-of requiring elimination of unlawful diversions fails to recognize the connection between Cal-Am's diversions and the ratepayers – Cal-Am diverts water only for the purpose of serving it to ratepayers, whose costs have been artificially lowered and expectations of supply have been artificially raised because of diversions in excess of the available lawful supply. California law prohibits both the diversion and the use of water without a lawful right. The State Water Board's concern is not forcing one party or another to bear a burden, but is rather to encourage compliance, and both Cal-Am and its customers have a role in achieving that outcome.

measures. It also provides for the opportunity for the State Water Board to re-assess whether to impose EDL cuts where the anticipated failure to meet a milestone is not reasonably within the control of the Applicants.

The annual report on the state of the fishery gives the State Water Board additional assurance that an extension of the compliance period will not cause undue harm to the fishery. If the restoration measures planned are not undertaken or fail to achieve the improvements that this order relies on in part, then the report will recommend adaptive management measures.

The foreseeable consequences if State Water Board were not to extend the compliance schedule also provide reasons to extend the schedule.

Without amendment of WR 2009-0060's deadline, Cal-Am would need to cease its unlawful diversions from the Carmel River by the end of December 2016. This would mean that Cal-Am's diversions from the Carmel River would be limited to 3,376 afa, plus whatever lawful diversions are available in the diversion seasons under Permit 21330, and Permits 20808A and 20808C for the ASR project, plus any water available under transfers from other rights holders on the Carmel River. Because the Cal-Am service area continues to rely on thousands of acre-feet per year of unlawful diversions, a reduction to lawful levels would require immediate and substantial curtailment of use, and the purchase and importation of additional supplies at costs previously believed to be untenable. Since 2009, the average total reported diversions in the Carmel River basin under other confirmed or claimed rights are approximately 2,000 afa. But, there is no indication that users are willing or able to transfer that amount of water for use in the Cal-Am service area. State Water Board staff have calculated that the annual average residential per-capita usage in the Cal-Am service area from June 2014 through May 2016 was 55 to 57 gallons per person per day, based on reporting required under emergency conservation regulations. This level is in the lowest 12% of urban water users in the state. During this period, such residential use accounted for between 40 and 70% of total usage. Numerous commenters have suggested that additional measures would cause economic harm, and could potentially affect health and safety.

With respect to the claims of potential health and safety impacts, there is no established level of per capita water use required for health and safety in the U.S. or California. The State Water Board has used 50 gallons per person per day as a benchmark for drought evaluation of diversions – just slightly under the amount typically considered for indoor use. Some Coastal California communities have achieved averages of approximately 40 gallons per person per day during the ongoing drought emergency. The standards adopted by the United Nations General Assembly in 2010 to implement a basic human right to water require 50-100 liters per person per day (13-26 gallons).

The State Water Board recognizes that requiring major reductions in water use rates over a relatively short period could cause substantial adverse economic impacts, and even greater inconvenience. Rapid curtailments in water use and implementation of rationing may be necessary, however, to end unlawful diversions on the Carmel River if the area continues to fail to develop alternative supplies. Economic impacts are a consideration in establishing a schedule of compliance, but cannot justify a decision not to require compliance. This order allows for cuts to occur on a predictable schedule, should the planned projects not meet development milestones, and also sets forth a clear method to address health and safety

concerns as the reductions of 1,000 afa for each milestone missed occur. The plans also allow time for and provide incentive for additional innovation in water supply planning should the processes underway fail.

To the extent that additional demand reduction and immediate supply acquisition efforts fail, Cal-Am would face significant fines. Each day of violation of a CDO accrues a potential administrative penalty of $10,000 in certain drought years, or of $1,000 in wetter years. (See Wat. Code, § 1845, subd. (b)(1).)

This administrative penalty is in addition to the potential administrative civil liability penalties for unlawful diversion of water under Water Code section 1052, which may be imposed for all unlawful diversions, not just those which are in excess of the levels set in the CDO. Such penalties are up to $1,000 per day and $2,500 per acre-foot of unlawfully diverted water in certain drought years, and up to $500 per day in wetter years. (See Wat. Code, § 1052, subd. (c).) Thus, in wetter years, Cal-Am would face approximately $550,000 for each year of violation of the CDO. In certain drought years, such as those the state is currently experiencing, Cal-Am could face over $4 million per year of violation in per-diem penalties, in addition to up to $2.5 million in penalties for every 1,000 acre-feet that the company diverts unlawfully. These penalties would be deposited in the Water Rights Fund for the state, rather than being used directly to fund a more stable water supply for the Monterey Peninsula. To the extent that Cal-Am or others dispute the imposition of fines, the process could result in additional expenditures of time and resources on issues related to the peninsula's lack of water supply, but that do not have the potential to provide a long-term solution. The CPUC would determine the question of whether these penalties would ultimately be borne by Cal-Am as a corporation or by the area's ratepayers, or whether the burden of these penalties would be shared. (See Cal. Const., Art XII, 6; Pub. Util. Code, §§ 427, 727.5.)

The result of an immediate reduction in pumping such that Cal-Am is taking only lawful supplies by the end of December 2016 is likely to divert time and resources from building a permanent, lawful supply, and to cause significant hardship to the residents of the Monterey Peninsula and to have broad economic impacts.

An immediate end to unlawful diversions would provide significantly more water for the fishery, and NMFS continues to have serious concerns regarding the impact of diversions on the fishery. However, NMFS supports extension of the CDO for the 6 years requested, under the conditions outlined for fishery protection, habitat restoration and rescue efforts, so long as sufficient monitoring of the fishery occurs.[7] Environmental organizations with longstanding and immediate experience in the area similarly support the limited extension of the compliance period, as conditioned.

[7] Some comments have proposed specific additional measures during the compliance period in order to mitigate impacts to the Carmel River fisheries. The State Water Board does not have before it sufficient information regarding the potential efficacy, need for, and cost of these measures, and is reluctant to re-balance the suite of priorities that NMFS has expressed without this information. This order provides for an annual fisheries report that includes the opportunity for recommendations for any adaptive management measures, including those suggested by commenters.

Amending the existing compliance schedule in WR 2009-0060 is appropriate in light of the fishery agency's support, the substantial mitigation measures that are completed, ongoing and planned for the immediate future, and the substantial hardships in immediately cutting off unlawful diversions where there is no clear alternative supply.

For the reasons discussed above, the Board will extend the CDO in a manner following the application's broad approach. This order does, however, make modifications to the application's proposal, as discussed below.

5.2 Adoption of Initial Effective Diversion Limit

Cal-Am's application proposes a starting Carmel River diversion limit of 8,310 acre-feet per annum, which is approximately 1,000 acre-feet less than the requirement of WR 2009-060 for WY 2015-16, and approximately the five-year average of pumping from WY 2009-2010 until WY 2012-2013. Staff's Preliminary Recommendation had suggested reducing this limit to 7,990, which is the most recent six-year average of diversions with adjustments to reflect modifications to ASR accounting.[8]

A table comparing the various average diversion levels over the past few years is below:

Requested Limit	8,310 af
Unadjusted Averages	
WY 2009/10 to 2013/14	8,348 af
WY 2009/10 to 2014/15	8,162 af
WY 2010/11 to 2014/15	7,836 af
Averages Adjusted - New ASR Accounting	
WY 2009/10 to 2013/14	8,143 af
WY 2009/10 to 2014/15	7,990 af
WY 2010/11 to 2014/15	7,733 af

Applicants submitted a letter in response to the preliminary recommendation requesting again that the State Water Board set the EDL at 8,310.[9] The submittal included additional information on the proposed EDL, demand levels during the historic drought, and the scheduled decreases in pumping from the Seaside Basin[10] under the management plan ordered under the Seaside Groundwater Basin Adjudication, *California American Water v. City of Seaside* (Monterey County Superior Court, Case Number M66343). This information indicates that, because of a scheduled reduction in allowable pumping from the Seaside Groundwater Basin of approximately 400 afa starting in WY 2017-2018, setting the diversion limit at 7,990 afa would require improvement on conservation levels from those achieved during the historic drought.

[8] As described above, the application proposes counting only the first 600 acre-feet of ASR pumping in any water year towards the EDL.

[9] A number of additional commenters also wrote in support of setting the diversion level at 8,310, either independently or in explicit support of the Applicants' letter.

[10] Cal-Am's major alternative supply to Carmel River water is groundwater extracted from the Seaside Groundwater Basin, an adjudicated basin regulated by a watermaster. Due to a continued negative gradient for seawater intrusion, there is a ten percent reduction every three years in to the production allocations to the Basin users, including Cal-Am. According to the Watermaster Report for WY 2014-15, the watermaster has implemented another ten percent reduction. Cal-Am exceeded its allotments from the Basin in 2014-2015.

Thus, setting the EDL at 7,990 would therefore require immediate efforts to lower demand or cultivate alternate sources, rather than only requiring such efforts if milestones are missed. This would potentially undermine one of the benefits of the milestone structure – namely, allowing parties to focus on development of the primary water supply projects already underway.

The only comments submitted in support of lowering the proposed EDL were submitted by Planning and Conservation League and the Sierra Club, prior to the submittal of Cal-Am's revised application. The two environmental organizations have submitted a new joint letter explaining that they now support the EDL level of 8,310 for two primary reasons: (1) Cal-Am has entered into a forbearance agreement with Rancho Cañada which will increase flows in the river by 300 afa, reducing the fisheries impact of a slightly higher pumping level than that used over the past three years; and (2) the agreements to accelerate the Pure Water Monterey project indicate that it will provide water by 2018, resulting in an EDL after that date of 4,810.

For the reasons discussed above, this order adopts an initial EDL of 8,310, despite the fact that diversions at this level would constitute an actual increase in Carmel River diversions over those in recent years, and would likely result in Cal-Am accruing a significant number of credits prior to implementation of further restrictions on Seaside Groundwater Basin diversions.[11]

5.3 Modifications to Cal-Am's Application

5.3.1 Changes to Proposed Credit Framework

As discussed above, allowing Cal-Am to generate "credits" for reducing unlawful diversions from the Carmel River below the EDL is a worthwhile tool to encourage continued efficiency and conservation measures, as well as to encourage investment by various parties in development of water supply and re-use projects. Any additional reductions in diversions are likely to assist the fishery. However, allowing too generous accrual and use of credits threatens to undermine the basic principle of having a substantial drop in diversions for failure to meet a milestone and of ensuring that the diversion limits are ratcheted down such that unlawful diversions end by December 31, 2021 regardless of whether Cal-Am meets the milestones.

Therefore, this order adopts the concept of credits, but makes a minor adjustment to the proposed method of their accrual and use.

The order sets a clear limit to the number of credits that can be used in any year to 750 acre-feet. This 750 acre-foot limit prevents the entire reduction from a missed milestone (and its associated incentive to meet deadlines) from being cancelled out by significant accrual of credits.

Cal-Am also proposes limiting the quantity of credits available for use in any one year, but using a different calculation for this limit. The application proposes limiting carryover credits once the non-ASR total production from the Carmel River plus the amount of ASR water recovered that year exceeds the sum of EDL + 750 acre-feet. Because Cal-Am's pumping from Carmel River to ASR storage typically often exceeds the amount of ASR recovered that year (due to allowable ASR carryover), the value of non-ASR water plus ASR recovery is less than the Carmel River production counted under the EDL in most years. Thus, under the calculation method in the application, Cal-Am could use credit to pump up to 1,350 acre-feet above the

[11] Since the adjusted average for usage in the last six years is 7,990 afa, using an EDL for 8,310 afa is likely to result in accrual of approximately 400 afa of credits in 2015-2016 and in 2016-2017, prior to enactment of the next reductions in Seaside Groundwater Basin pumping.

otherwise-applicable limit, if it had diverted 600 or more acre-feet to storage in that year and had not recovered that amount from storage. In simpler terms, there would potentially be no reduction in diversions for missing a milestone during a year when there is water banking under the ASR, which could undermine the incentives for compliance, and the step-down structure towards ending unlawful diversions by the end of December 2021.

Additionally, it is easier to understand, comply with, and enforce the order when it treats ASR water in the same manner, rather than counting it in different ways for different purposes.

5.3.2 Changes to Proposed EDL Following Late Achievement of Milestones

This order adjusts Cal-Am's proposed accounting system by modifying the requested elimination of step-wise reductions when compliance with a milestone is achieved late. Under the application, Cal-Am proposes that the 1,000 afa reduction in the EDL be eliminated in the water year following late achievement of a milestone. This proposal reduces too greatly the incentive to meet a milestone. Additionally, it does not provide meaningful incentives for stakeholders to adhere as closely as possible to proposed timelines, even in the event of a delay. The order requires that for milestones achieved within the month following the deadline, the continuing reduction shall be 250 afa. For those achieved between one and six months after the deadline, the continuing reduction shall be 500 afa. For milestones achieved between six and nine months after the deadline, the continuing reduction shall be 750 afa. The 1,000 afa reduction to the EDL shall remain for milestones achieved more than nine months after the deadline. This structure provides meaningful incentives for adhering as closely as possible to the timelines proposed. Additionally, as discussed below in the Changes to EDL Accounting section, this order permits the accrual of credits for up to 50 percent of instream flow agreements, upon approval of the Deputy Director for the Division of Water Rights.

5.3.3 Changes to Milestones

5.3.3.1 New Milestones

This order adds two milestones to those proposed. These additions are necessary to track progress towards completion of the Pure Water Monterey recycled water project, even in the face of delays for the review of the desalination project. The first added milestone, for WY 2015-2016, is for CPUC approval of the Water Purchase Agreement for Cal-Am's purchase of water from the Pure Water Monterey Project, and of construction of the Cal-Am components of the Pure Water Monterey facilities. On April 25, 2016, Administrative Law Judge Sandoval ruled that the Pure Water Monterey portions of Cal-Am's pending request for a certificate of public convenience and necessity should be expedited. The order set an accelerated schedule for hearings and a decision on Cal-Am's ability to purchase and convey water from the recycled water project, with a decision anticipated in August 2016. The joint Applicants' letter of June 29, 2016 informed the Board that the CPUC has subsequently issued a ruling, on June 10, 2016, that includes a newly-noticed workshop and public hearing that will address the Pure Water Monterey Project. Cal-Am has filed a motion to the CPUC to confirm whether a decision is still anticipated on August 18, 2016. Absent such confirmation, Applicants have requested that the deadline for meeting this milestone be set for the end of December 2016, rather than the September 30, 2016 date proposed in the preliminary staff recommendation. This order sets December 31, 2016 as the deadline for meeting the milestone, but notes that, should there be additional delay in the decision or a denial, the entire 1,000 afa reduction in use would occur for the 2016-2017 water year, despite the extension of the deadline.

The order also adds a second milestone for start of construction of the Cal-Am portion of Pure Water Monterey Project to track progress on this Pure Water Monterey Project, for WY 2016-2017.

The Applicants have affirmed in their April 2016 application, and in their letter of June 29, 2016, that they anticipate water deliveries to begin under the Pure Water Monterey project in 2018. This timeline is significantly accelerated compared to the timeline in the initial application, and is based on the CPUC's ruling expediting proceedings for this project. In the initial application, the start of construction of the Pure Water Monterey project facilities constituted part of a WY 2017-2018 milestone. However, in the April 2016 application, this milestone was pushed back to 2018-2019 in its entirety, including the Pure Water Monterey portions. This order returns the Pure Water Monterey construction milestone to WY 2017-2018, as there is no indication that such an extension is necessary—acceleration rather than delay of the project is anticipated.

5.3.1.2 New Limit to Milestone Reductions

This order additionally limits the cuts to the EDL for missing a milestone when the diversions from the Carmel River in a particular water year are reduced to lawful levels. This addition is necessary because the Pure Water Monterey Project is anticipated to begin providing 3,500 afa to the Cal-Am service area, with water deliveries beginning in 2018. While this amount of water is insufficient on its own to eliminate the threat of unlawful diversions, implementation of the project followed by a failure to meet milestones related to the desalination project could result in the EDL falling below lawful pumping levels. Implementation of Pure Water Monterey and use of significant ASR water in the same water year could allow Cal-Am to pump lawfully at a level above the EDL if milestones are missed. However, as ASR water is not always available, the CDO would not likely be lifted under this scenario: termination of the CDO requires that Cal-Am have a permanent supply available.

5.3.1.3 Requirement to Revisit Milestones Based On Alternative Supply Projects

In a final change to the proposed milestones, this order adds the requirement that Cal-Am submit revised milestones within 60 days of CPUC approval of any water purchase agreement with Cal-Am for a major water supply project not specified in the milestones receives CPUC approval.

Two competing desalination projects at Moss Landing are currently undergoing environmental review: the People's Moss Landing Water Desalination Project and the Deep Water Desal Project. Proponents of both projects project that they could be permitted and built to begin serving water by 2019. The People's Moss Landing Water Desalination Project is a proposed 13,400 afa project that could serve the North Monterey County and Monterey Peninsula communities. The Moss Landing Harbor District is the lead agency for environmental review. The facility would use existing open ocean intakes that operate under proven technologies, and would be built on a previously-used industrial site. The use of these facilities could significantly reduce the cost of the facilities, and therefore of the water produced.

The Deep Water Desal Project is a proposed 25,000 afa project that could serve from Santa Cruz to the Monterey Peninsula, and east to Salinas. The facility would use open ocean intakes that draw deep ocean water, with the goal of lessening impacts on ocean organisms. It would be run conjunctively with a computer data center, to reduce the energy demand of each

of the two facilities, as compared to separate operation. The District has identified the Deep Water Desal Project as a potential supply project for the service area, should Cal-Am's proposed desalination facility not be built.

Open ocean intakes can cause significant impacts to the ocean. The State Water Board's 2015 amendments to the Ocean Plan require that subsurface intakes be infeasible, including consideration of alternative siting and sizing of facilities, before issuance of a permit for a surface intake of ocean water. (State Water Board Resolution No. 2015-0033, approved by Office of Administrative Law on January 28, 2016.) The Coastal Commission would also need to permit construction of either of these facilities, and The Public Utilities Commission would need to issue a Certificate of Public Convenience and Necessity in order for the facilities to sell water in the Cal-Am Service Area.

Additionally, the Central Coast Regional Water Quality Control Board has suggested that there is significant untapped potential in recycling water from wastewater treatment plants owned by Cal-Am and others in the Salinas area. Discharges that are not currently recycled could be routed through the existing water recycling facilities operated by the Monterey Peninsula Reginal Water Pollution Control Agency.

Cal-Am's application does not include milestones for either of these larger desalination facilities, and neither of the project proponents have submitted usable potential amendments to the existing milestones.[12] Yet, the construction of either Moss Landing facility could provide sufficient water to end unlawful diversions from the Carmel River, were its water approved for sale within the Cal-Am Service Area. Other large projects, such as the wastewater recycling augmentations mentioned above, may emerge as review of the proposed projects continues. The State Water Board's interest is in ending unlawful diversions from the Carmel River, rather than in supporting a particular facility. The specification of the MPSWP desalination and water recycling facilities in the milestones in this order are based on

Cal-Am's application and on evidence suggesting that they have made regulatory progress and are capable of ending unlawful diversions by the end of 2021. Should either of the other large desalination projects, or any other major water supply project, emerge as an alternative to all or part of the MPWSP, the State Water Board should have the opportunity to consider amendment of the proposed milestones.

5.3.1.4 Changes to EDL Accounting

The order adopts some of the new water diversion accounting methods proposed, in order to encourage full development of new water supplies. But it also amends or rejects other proposed changes that undermine the principle that new supplies must offset current unlawful diversions. It also clarifies whether or not various sources of additional supply count towards the EDL, rather than raising the EDL for specific supplies, in order to reduce confusion about what the EDL actually is.

[12] Water Plus has suggested requiring Cal-Am to support the People's Water Supply Project, but as discussed above, the State Water Board supports a more diversified approach at this point, given the track record for large water supply projects in the area.

The order adopts a new method of accounting for lawful winter diversions from the Carmel River to aquifer storage for later recovery, under the ASR. These changes encourage Cal-Am to maximize diversion during the winter months when sufficient water is available to meet bypass flows, and encourage further development of facilities to capture flows when they are available. The ASR permits authorize diversion of 5,326 afa of winter high flows, but the pumping and transportation pipeline facilities have limited the diversions to a maximum of about 1,110 af. Because the fisheries impact of diversions during periods of higher flow in winter, and under specified bypass requirements, are significantly less than the impact of the same amount of diversion in the lower-flow summer months, it makes sense to implement a strong incentive signal in the pumping limits to encourage reliance on this pumping rather than on summer diversions. Because the pumping continues to have some impact on the fishery, the first 600 afa will continue to count towards determination of the EDL. Additional pumping will not be counted in the EDL.

The application recommends that water delivered on an interim basis by the Malpaso Water Company LLC to Cal-Am under State Water Board License 13868A be added to the EDL for the water year. License 13868A requires that all water diverted under the right and provided to Cal-Am for municipal purposes be for the purpose of reducing Cal-Am's unlawful diversions[13] in 2015, that 50 afa be used to reduce unlawful diversion in 2016, and that 25 afa be so used in 2017. Because these amounts are used to offset unlawful diversions rather than increase deliveries, they should not increase the EDL. The order does add clarification, provided in State Water Board Division of Water Rights Decision 2005-0001, regarding the extent to which Condition 2 of WR 2009-0060 applies to water that Cal-Am may wheel on behalf of Malpaso Water Company. Namely, where Cal-Am is the purchaser of the water, Condition 2 applies. Where Malpaso Water Company sells to a customer outside the current service area, however, Condition 2 does not apply. The order also establishes monthly reporting requirements to monitor implementation of this condition.

The application additionally requests that fifty percent of the water from other water supply projects and from forbearance agreements be used to increase the EDL, with the other fifty percent of the water being used for instream use. Increasing the EDL is contrary to the basic premise of the enforcement action that new water supplies must offset current unlawful diversions. However, in the event that a milestone is missed, small projects and instream flow agreements may prove to be the fastest and best way to obtain supplies and river protection in the short term. The credit system as proposed provides incentives for small water supply projects and conservation: it does not, however, provide incentives for instream flow projects, as increasing instream flows does not directly[14] affect water supplies or demand. Therefore, this order adds provisions to incentivize such projects.[15] This order provides that fifty percent of the flows provided through forbearance agreements or other instream water dedications may be accrued as carryover credits, provided that the Deputy Director reviews the agreements to ensure that the agreement provide increased flows in the river as envisioned.

[13] See Division of Water Rights Decision 2005-0001, Condition 2.
[14] In certain winters, increasing instream flows above the ASR points of diversion may have minor impacts on the number of days that ASR pumping can occur, by affecting whether bypass flows are achieved. However, these changes are likely to be minimal as the bypass flows are set to be triggered only when there are high flows. It is unlikely that flows would remain in the range where an instream flow dedication makes the difference in the ability to pump ASR supplies.
[15] This change did not appear in the preliminary staff recommendations distributed on June 17, 2016.

It is worth noting that the temporary non-diversion of water, and its use instream for fisheries and instream habitat improvement purposes may be considered a reasonable and beneficial use of water in some circumstances. Consistent with state policy and water rights law, the State Water Board encourages appropriately-documented forbearance agreements to improve fisheries flows. Short-term agreements and agreements regarding riparian rights may be structured in such a manner that the subject rights are not prejudiced. The substantive standards of Water Code section 1707, and various decisions approving such instream flow dedication, provide guidance as to the appropriate manner by which to construct forbearance agreements that provide real benefits to instream flow and which do not prejudice the water holder dedicating the flow or the rights of other lawful water users.

The application requests that the State Water Board provide assurances regarding a particular forbearance agreement with Rancho Cañada for a significant amount of water in calendar years 2016-2019. This agreement generates funding for a planned permanent land conservation and restoration project, and for the potential permanent retirement of associated water diversions. This proceeding is not the context to make definitive findings regarding the water rights at issue in the agreement: This is neither a noticed adjudicative proceeding regarding the rights at issue, nor a rulemaking regarding instream fishery needs. However, it is worth noting that a four-year cessation of diversion cannot be the basis for forfeiture, and that the State Water Board has recently approved a water right change petition to add instream beneficial use and use for wetland protection in the vicinity.

5.3.1.5 Changes as to Form

Attachment 1 to the Application recommends embedding the changes proposed in the ordering section of WR 2009-0060. Because WR 2009-0060 was issued after an evidentiary hearing, and is based on the evidence presented therein, the State Water Board has determined that it is clearer to issue a separate order based on the Water Code section 1832 application.

5.3.1.6 Modifications to Reporting

This order generally adopts the reporting provisions requested in the application, but modifies the timelines to better fit State Water Board needs and to give NMFS additional authority over the selection of a contractor to prepare the fisheries report, in the event that NMFS cannot itself prepare the report.

6.0 CONCLUSION

For the reasons discussed above, the State Water Board approves, with modifications, Cal-Am's application to modify the compliance schedule in WR 2009-0060.

ORDER

NOW, THEREFORE, IT IS ORDERED THAT as of the effective date of this Order, Cal-Am shall cease and desist from the unauthorized diversion of water from the Carmel River in accordance with the following schedule and conditions.

1. This Order shall supersede the requirements in State Water Board Orders WR 2009-0060, 95-10 and any other State Water Board orders affecting Cal-Am's diversions from the Carmel River, to the extent stated herein, or to the extent that there is an irreconcilable conflict between the requirements here and those orders. All other requirements in State Water Board orders affecting Cal-Am's diversions from the Carmel River remain in effect until terminated by operation of law or action of the Stat Water Board.

2. Cal-Am shall diligently implement actions to terminate its unlawful diversions from the Carmel River and shall terminate all unlawful diversions from the river no later than December 31, 2021. This date supersedes the December 31, 2016 date in State Water Board Order WR 2009-0060, ordering paragraph 1.

3. At a minimum, Cal-Am shall adjust its diversions from the Carmel River in accordance with the following terms and conditions. These terms and conditions supersede the annual reductions in State Water Board Order 2009-0060, ordering paragraph 3.a.(2), after the effective date of this Order:

a. **Effective Diversion Limit**: The limit set forth in this Condition 3.a., as may be further reduced or increased pursuant to the terms and conditions of this Order, is referred to as the "Effective Diversion Limit."

i. **Immediate Reduction**: Commencing on October 1, 2015 (Water Year 2015-2016) the Effective Diversion Limit shall be 8,310 acre-feet per annum (afa). This Effective Diversion Limit shall not be exceeded through December 31, 2021 except as provided in condition 3.b.ii or 3.c. of this Order. This limit supersedes the reduction limit required under Order 2009-0060 for Water Year 2015-2016.

b. Adjustments to the Effective Diversion Limit:

i. **Pure Water Monterey Groundwater Replenishment Project Offset**: In any year that Cal-Am delivers water stored in the Seaside Groundwater Basin as part of the Pure Water Monterey Groundwater Replenishment Project to its customers for use, the Effective Diversion Limit shall be reduced by one acre foot for every acre foot of Pure Water Monterey Groundwater Replenishment Project Water so delivered. If this reduction will result in the Effective Diversion Limit for that year being lower than Cal-Am's available lawful diversions from the Carmel River in that year, Cal-Am may apply to the Deputy Director for a limitation of this condition such that the provision will not limit lawful diversions.

ii. **Seaside Groundwater Basin Limitations**: The Board may adjust the Effective Diversion Limit if an unexpected reduction in Cal-Am's production allocation from the Seaside Groundwater Basin, or access to water pumped makes the supply unavailable. The Applicants[16] may request such relief whenever they can establish that access to water in the Seaside Groundwater Basin is limited due to unexpected mitigation measures imposed pursuant to the Seaside Basin Watermaster's Seawater Intrusion Response Plan, or by the court pursuant to the Seaside Groundwater Basin Judgment in response to a detection of seawater intrusion within the Seaside Groundwater Basin.

iii. **Carryover**: After October 1, 2015 if Cal-Am's diversions from the Carmel River during a given water year are less than the Effective Diversion Limit for that water year, Cal-Am will accumulate credit for the difference between the Effective Diversion Limit and Cal-Am's actual diversions. Additionally, Cal-Am may generate credits through instream flow agreements, as described in 3.b.xii, below. Any such credit may be carried over to offset an exceedance of the Effective Diversion Limit prior to December 31, 2021, subject to the restriction in Paragraph 3.b.iv below, and subject to the overall cap on diversions in Paragraph 3.a.i., above.

iv. **Cap on Carryover**: The amount of carryover water accumulated under Paragraph 3.b.iii that may be credited in any one water year shall not exceed 750 afa.

v. **Milestones:** For purposes of calculating a reduction to the Effective Diversion Limit, the following Milestones and Deadlines will apply:

Water Year	Milestone[17]	Deadline
2015-2016	CPUC approval of (1) the Water Purchase Agreement for Cal-Am's purchase of Pure Water Monterey water, and of (2) construction of the Cal-Am components of the Pure Water Monterey conveyance facilities,[18] including the Monterey Pipeline and pump station.	December 31, 2016*
2016-2017	Start of construction of the Cal-Am components of the Pure Water Monterey project, meaning commencement of physical work after issuance of required regulatory permits and authorizations to begin work.	September 30, 2017

[16] "Applicants" refers to the joint applicants for the request to modify State Water Board Order WR 2009-0060: Cal-Am, the Monterey Peninsula Regional Water Authority, the Monterey Peninsula Water Management District, the Pebble Beach Company, and the City of Pacific Grove.

[17] If at any point prior to completion of the facilities listed in these Milestones the CPUC authorizes Cal-Am to acquire more than 1,000 afa of water from an alternative source, then the following shall occur. Cal-Am shall submit to the Executive Director within 60 days a revised set of milestones taking this water supply source into account. If the proponents of the alternative project are unable to reach concurrence with Cal-Am on revised milestones to propose, the proponents may also submit revised milestones within that time period. The Executive Director shall determine whether to bring forward a recommendation to the State Water Board regarding amendment of the milestones.

[18] "Cal-Am components" of the Pure Water Monterey Project refers to the pump station and pipeline within or leading to Cal-Am's Service Area needed to transmit water to Cal-Am's service area.

Water Year	Milestone[17]	Deadline
2017-2018	Issuance of a Certificate of Public Convenience and Necessity to Construct the Monterey Peninsula Water Supply Project Desalination Plant ("MPWSP Desalination Plant") by the California Public Utilities Commission.	September 30, 2018
2018-2019	Start of construction for any of the Cal-Am Components of the MSWSP Desalination Plant[19], meaning commencement of physical work after issuance of required regulatory permits and authorizations to begin work.[20]	September 30, 2019
2019-2020	(1) Drilling activity for at least one MPWSP Desalination Plant source water production well[21] complete; (2) foundation and structural framing complete for MPWSP Desalination Plant pretreatment seawater reverse osmosis, and administration buildings at desalination plant; (3) excavation complete for MPWSP Desalination Plant brine and backwash storage basins; and (4) 25% of MPWSP Desalination Plant transmission pipelines installed based on total length, including 100% installation of the "Monterey Pipeline and other ASR related improvements".	September 30, 2020
2020-2021	For MPWSP Desalination Plant: (1) 50% of drilling activity complete for source water production wells based on total number of wells required; (2) mechanical systems for brine and backwash storage basins complete; (3) construction of filtered water tanks and finished water tanks complete; (4) 50% of transmission pipelines installed based on total length.	September 30, 2021
2021-2022 and beyond	Substantial completion of the Cal-Am Components of the MPWSP Desalination Plant, meaning the Cal-Am Components are sufficiently complete and appropriately permitted to allow delivery of MPWSP Desalination Plant produced potable water to Cal-Am's Monterey Main system, eliminating further Cal-Am diversions of Carmel River water without valid basis of right	December 31, 2021

* It is anticipated that this milestone will be achieved during Water Year 2015-2016. The deadline provides a three-month extension in the event that it occurs soon after the end of the water year.

vi. **Reductions to the Effective Diversion Limit Based on Missed Milestones**: The following reductions to the Effective Diversion Limit shall apply if an applicable Milestone Deadline is not met:

[19] For purposes of this proposal the Cal-Am Components of the MPWSP Desalination Plant include: source water production wells; desalination plant; brine disposal system; and transmission pipelines

[20] Such work may include, among other things, any of the following: desalination plant site grading and preparation; electric utility installation; yard piping; subsurface excavation for structural foundations; and transmission pipeline installation.

[21] Not including construction of the MPWSP Desalination Plant Test Well completed in 2015.

Water Year	Milestone Missed	Reduction in Effective Diversion Limit	Date Reduction Assessed
2016- 2017	1	1,000 AFA	Dec. 31, 2016*
2017- 2018	2	1,000 AFA	Oct. 1, 2017
2018- 2019	3	1,000 AFA	Oct. 1, 2018
2019- 2020	4	1,000 AFA	Oct. 1, 2019
2020-2021	5	1,000 AFA	Oct. 1, 2020
Oct. 1, 2021 – Dec 31, 2021	6	1,000 AFA	Oct. 1, 2021

* The entire 1,000 AFA reduction for failure to meet this milestone must occur in the 9 remaining months of WY 2016-2017.

If a Milestone is not achieved by its Deadline but is subsequently achieved, the 1,000 afa reduction to the Effective Diversion Limit shall be amended on the first day of the water year following achievement of the Milestone, as follows. For Milestones achieved within the first month following the deadline, the reduction shall be 250 afa. For Milestones achieved between one and six months after the deadline, the reduction shall be 500 afa. For Milestones achieved between six and nine months after the deadline, the reduction shall be 750 afa. The 1,000 afa reduction to the Effective Diversion Limit shall remain for milestones achieved 9 months after the deadline or later.

If the reductions required under this subparagraph will result in the Effective Diversion Limit for that year being lower than Cal-Am's available lawful diversions from the Carmel River in that year, Cal-Am may apply to the Deputy Director for Water Rights for a limitation of this section such that the provision will not limit lawful diversions.

vii. **Illustration:** The following table illustrates the effect of the reduction in the Effective Diversion Limit over the term of this Order, and assumes no Deadlines have been met and no carryover credits have been applied under Paragraph 3.b.iii, and no additional water rights have been obtained or other adjustments made to the Effective Diversion Limit. The result is an elimination of unauthorized diversions from the Carmel River on October 31, 2020 if no Deadlines are met.

Water Year	**EDL if All Milestones Missed, No Other EDL Adjustments**
2015-2016	8,310 AFA
2016- 2017	7,310 AFA
2017- 2018	6,310 AFA
2018-2019	5,310 AFA
2019-2020	4,310 AFA

Water Year	EDL if All Milestones Missed, No Other EDL Adjustments
2020–2021	Legal limit
Thereafter	Legal limit

viii. **Joint Annual Report**: Commencing in water year 2016-2017, at least 120 days prior to each Milestone Deadline described in Condition 3.b.v, Cal-Am, in coordination with Applicants, shall submit a joint report to the Deputy Director for Water Rights, describing progress towards that Milestone, whether Applicants expect the Milestone to be achieved by its Deadline and, if not, whether the Milestone will be missed for reasons beyond Applicants' control. Sufficient evidence supporting the reasons that missing a milestone is beyond the control of Applicants shall be included for any further action related to such a claim.

If requested, Cal-Am, in coordination with Applicants, shall present written and/or oral comments on the progress towards Milestones at a regularly scheduled State Water Board meeting that falls at least 60 days after submission of the report. If the report indicates that a Milestone is likely to be missed for reasons beyond Applicants' control, the State Water Board may make a determination during that meeting or at a subsequent meeting whether the cause for delay is beyond Applicants' control. If the State Water Board determines that the cause is beyond Applicants' control, it may suspend any corresponding reductions under Condition 3.b.vi until such time as the Applicants can reasonably control progress towards the Milestone.

ix. **ASR Project**: Commencing for water year 2015-2016, only the first 600 afa of the amount of any water diverted to underground storage under State Water Board Permits 20808A and 20808C as of May 31 of each water year shall be included in determining compliance with the Effective Diversion Limit: Diversions greater than 600 afa in a single water year shall not count as annual production of Carmel River water for the Effective Diversion Limit calculation. This section supersedes State Water Board Order WR 2009-0060, ordering paragraph 3.a.(3).

x. **Sand City Desalination Plant**: Any volume of water that is produced by the Sand City Desalination Plant and not served to persons residing within the City of Sand City shall be subtracted from the Effective Diversion Limit for the water year in which it is produced.

xi. **Pebble Beach**: Pebble Beach Company (PBC) shall continue to annually submit, on September 30, a report to the Deputy Director for Water Rights accounting for any additional water that is diverted from the Carmel River as the result of an increased use of its remaining District water entitlement. Any diversions from the river by Cal-Am to satisfy PBC remaining entitlements from District shall not be considered in calculating compliance with the Effective Diversion Limit. After December 31, 2021, Cal-Am shall not illegally divert water from the river to supply the holders of PBC entitlements. This order supersedes the last sentence of paragraph 3.a.(6) of State Water Board Order WR 2009-0060.

xii. **Supplemental Water Rights and Acquisitions**: Provided Cal-Am is able to identify suitable and willing transacting parties, Cal-Am will acquire supplemental Carmel River water rights, and/or will pursue other Carmel River water acquisitions and water right changes in order to increase flows in the Carmel River and decrease Cal-Am's unauthorized Carmel River diversions ("Carmel River Flow Enhancement Program"). Cal-Am will implement the Carmel River Flow Enhancement Program to the extent it can negotiate agreements with water right holders. Such acquisitions or water right changes may include forbearance agreements, leases and/or purchases of water rights along the Carmel River on a temporary or permanent basis, and may include water right change approvals or permits (permanent or temporary) from the State Water Board. The acquisitions may increase the proportion of Cal-Am's diversions that are made under lawful right, or increase Carmel River instream flows during periods of lower flow on the Carmel River. Instream flow agreements made with other parties can generate carryover credits described in 3.b.iii. at 50% of the amount that the Deputy Director confirms that the agreements have increased Carmel River flows without being diverted by other downstream users. To claim the credits, Cal-Am must first submit the agreement and a monitoring and reporting plan to the Deputy Director for concurrence. After concurrence in the plan, Cal-Am shall implement the monitoring and reporting, and shall annually submit the proposed credit amount for the water year within 2 months of the end of the instream flow agreement or of the water year, whichever comes first. The amount shall become available as credit in the amount approved by the Deputy Director.

xiii. **Malpaso Water Company**: Water provided by the Malpaso Water Company LLC to Cal-Am under water right License 13868A shall not be counted towards calculation of compliance with the Effective Diversion Limit for the water year in which the water is provided to Cal-Am to the extent that Cal-Am is merely transporting the water on behalf of Malpaso Water Company to serve Malpaso Water Company's contracts with water users. To the extent such water is used by Cal-Am to serve its customers, this water will be counted towards calculation of compliance with the EDL, and shall serve to increase the portion of such diversion that are made under lawful rights. Any use of the Malpaso Water Company's diversions shall be consistent with the terms of License 13868A and Division Decision 2015-0001.

c. Either Cal-Am or the District may petition the Deputy Director for Water Rights for relief from reductions imposed under this Order. No relief shall be granted unless all of the following conditions are met: (1) Cal-Am and the District continue the moratorium on new service connections; (2) the demand for potable water by Cal-Am customers meets all applicable conservation standards and requirements; and (3) a showing is made that public health and safety will be threatened if relief is not granted. Any relief granted shall remain in effect only as long as a prohibition on new service connections remains in effect, and compliance with applicable conservation standards and requirements remains in effect. This section supersedes ordering paragraph 3.b. of State Water Board Order WR 2009-0060.

4. Status of Steelhead Fishery Report. During the extension period Cal-Am will provide funding in an amount up to $175,000 per year for the preparation of an annual report that evaluates the status of the threatened South-Central California Coast Steelhead Distinct Population Segment ("SCCC Steelhead DPS") in the Carmel River ("Status of Steelhead Fishery Report"). If possible, the annual Status of the Steelhead Fishery Report will be

prepared by the National Marine Fisheries Science ("NMFS") Southwest Fisheries Science Center ("SWFSC"). If NMFS West Coast Region finds a significant change in the status of the SCCC Steelhead DPS since the previous report (or, in the case of the first report, since the effective date of this Order), NMFS West Coast Region may provide recommendations for additional adaptive management measures to be taken with respect to the SCCC Steelhead DPS in the Carmel River. If SWFSC cannot complete the Status of the Steelhead Fishery Report for any or all years during the extension period, Cal-Am will designate another individual or entity, in consultation with the other Applicants and other stakeholders, with requisite expertise to complete the report. If NMFS objects to the choice, Cal-Am shall designate a different individual or entity. If the NMFS West Coast Region cannot review the Status of the Steelhead Fishery report in any or all years, Applicants and other stakeholders may develop an alternative system for making adaptive management recommendations. Cal-Am will deliver the report in a cost effective and efficient manner, and will work with Applicants, stakeholders, and the preparer of the Status of the Steelhead Fishery Report to share resources, and to avoid duplication of effort to lower the cost of the report to the extent practicable. The Status of the Steelhead Fishery Report and any adaptive management recommendations shall be submitted to the State Water Board by Cal-Am each year with the corresponding joint annual report.

5. Additional Conservation Measures: Cal-Am has stated that it will implement an additional $2.5 million of projects to improve fish passage and habitat during the four years following adoption of this Order, as follows: improvements to the existing upstream fish passage ladder and trap at Los Padres Dam ($0.2 million); installation of a fish screen at the lower outlet pipe on Los Padres Dam ($0.8 million); a pit tagging program ($1.0 million); and a through-reservoir survival study for Los Padres Reservoir ($0.5 million). If the above projects are not implemented according to plans developed in coordination with the California Department of Fish and Wildlife and the National Oceanic and Atmospheric Administration, the State Water Board may revisit this Order to determine whether to make further adjustments to protect public trust resources in the Carmel River.

6. Carmel River Volitional Fish Passage: Cal-Am has substantially completed downstream fish passage facilities at Los Padres Dam. If Cal-Am fails to remove the Old Carmel River Dam and the Sleepy Hollow Ford before September 30, 2017, the State Water Board may reopen this order to determine whether to make further adjustments to improve fish passage in the Carmel River or otherwise restore public trust resources.

7. On June 1 of each year, Cal-Am shall submit an operating plan to the Deputy Director for Water Rights specifying the quantity of water it will supply from the ASR Project for its customers after May 31 of each year. This plan shall provide for use of the water between June 1 and September 30 of the water year the water was pumped from the Carmel River, unless otherwise authorized by the fishery agencies. Cal-Am shall reduce its illegal diversions from the Carmel River at the same rate ASR water is recovered from the groundwater basin. ASR diversions remain subject to State Water Board Order WR 2009-0060, ordering paragraph 3.c. This section supersedes ordering paragraph 4 of WRO 2009-0060.

8. In addition to the reporting required elsewhere in this order or required under WRO 2009-0060 ordering paragraph 6, except as specified, Cal-Am shall provide and post on its website the following information in quarterly reports:

a. Monthly summaries of the total quantity of water produced from the Carmel River, and other separate sources of water used by Cal-Am within the service area.
b. Monthly summaries of the total quantity of ASR project water diverted from the river under water right Permits 20808A and 20808C and stored in the Seaside Groundwater Basin, including the separate accounting of the amounts pumped in excess of 600 afa. The monthly reporting shall also state the quantity of ASR water recovered from aquifer storage and beneficially used, and the current balance of ASR water remaining in storage in the Seaside Groundwater basin. This paragraph supersedes WRO 2009-0060, ordering paragraph 6.(b).
c. Monthly summaries of the quantity of water being supplied by the Malpaso Water Company to Cal-Am and to Malpaso customers supplied using Cal-Am facilities. The reporting shall identify the amount of water used at Cal-Am's existing meter connections and within the Cal-Am service area, and the amounts used at new service connections served by Malpaso Water Company. The monthly reports shall specify the quantity of water used to reduce diversions from the river during the reporting period.
d. Monthly summaries of the quantity of water produced by the City of Pacific Grove, and the quantity of water used to reduce diversions from the river during the reporting period. Cal-Am shall not deliver water produced by the City of Pacific Grove unless such use is consistent with Resolution 2015-0070, paragraph 4.
e. For the final quarter of each water year, the report shall include the quantification and basis of any credits earned and of any amount being carried over for future years.
f. An accounting of the progress towards completion of the Water Supply Project MPWSP Desalination Plant and Pure Water Monterey Project that identifies all progressive steps completed during the previous 12 months and the upcoming 12 month's anticipated progress, and discussion of potential setbacks that may beyond the Applicant's control.

10. Each report submitted by Cal-Am shall be certified under penalty of perjury and shall include the following declaration: "I declare under penalty of perjury, under the laws of the State of California, that all statements contained in this report and any accompanying documents are true and correct, with full knowledge that all statements made in this report are subject to investigation and that any false or dishonest statement may be grounds for prosecution."

11. Cal-Am shall file quarterly reports of its diversions under Paragraph 5 (small project implementation) of State Water Board Order WR 2009-0060. This section corrects an error in State Water Board Order WR 2009-0060 ordering paragraph 7, which incorrectly identified the relevant paragraph as State Water Board Order WR 2009-0060 ordering paragraph 3.

12. The Deputy Director for Water Rights is authorized to modify the timing and the content of the reporting required by all of the provisions of this Order to more effectively carry out the intent of this Order.

13. Cal-Am shall comply with all requirements of State Water Board Order 95-10, except as provided in State Water Board Order WR 2009-0060, ordering paragraph 9, or except as inconsistent with this Order.

14. The Deputy Director for Water Rights is directed to closely monitor Cal-Am's compliance with State Water Board Order 95-10, State Water Board Order WR 2009-0060, and this Order. Appropriate action shall be taken to insure compliance with these Orders including the issuance of additional cease and desist orders under Water Code section 1831, the imposition of administrative civil liability under Water Code section 1055, and referral to the Attorney General under Water Code section 1845 for injunctive relief and for civil liability. If additional enforcement action becomes necessary, the Deputy Director is directed to consider including in such actions all Cal-Am's violations of Water Code section 1052 since the adoption of Order 95-10.

15. The conditions of this Order, State Water Board Order WR 2009-0060 and State Water Board Order 95-10 shall remain in effect until (a) Cal-Am certifies, with supporting documentation, that it has obtained a permanent supply of water that has been substituted for the water illegally diverted from the Carmel River and (b) the Deputy Director for Water Rights concurs, in writing, with the certification.

CERTIFICATION

The undersigned Clerk to the Board does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on July 19, 2016.

AYE:	Chair Felicia Marcus Vice Chair Frances Spivy-Weber Board Member Tam M. Doduc Board Member Steven Moore Board Member Dorene D'Adamo
NAY:	None
ABSENT:	None
ABSTAIN:	None

Jeanine Townsend
Clerk to the Board

ATTACHMENT J

Seaside Groundwater Basin Watermaster
P.O. Box 51502, Pacific Grove, CA 93950
watermasterseaside@sbcglobal.net
(831) 641-0113

August 12, 2020

Mr. John Ainsworth, Executive Director
California Coastal Commission
45 Fremont Street, Suite 2000
San Francisco, CA 94105

Re: Monterey Peninsula Water Supply Project – Support

Dear Mr. Ainsworth:

The Seaside Groundwater Basin Watermaster is tasked by the Court to administer the Seaside Basin. Our board is comprised of elected officials and others who each have a role in the protection and management of the basin.

Today I once again write to urge your approval of Coastal Development Permit (CDP) for California American Water Company's (CAW) Monterey Peninsula Water Supply Project (MPWSP). In October of 2019, our board approved a resolution in support of the MPWSP. That resolution was presented to the Coastal Commission at its prior hearing on the project.

As the Coastal Commission is well aware, the MPWSP is necessary to meet the long-term water demands of the Monterey Peninsula. No other project has been identified to reliably meet the communities' water needs sufficiently to get the community out from under the State Water Board's Cease and Desist Order. The MPWSP also will provide much needed protections to one of the Peninsula's other critical water supply sources, the Seaside Groundwater Basin.

- Without the quantities of supplemental supplies from the MPWSP, CAW and other Seaside Basin pumpers may not be able to meet the pumping reductions called for in the Seaside Basin Decision.
- The MPWSP supply is necessary to meet the replenishment obligations required in the Seaside Basin Decision, and to avoid the undesirable consequences of overdraft, and seawater intrusion.
- Without the quantity of supplemental supplies provided by the MPWSP, the Seaside Basin Watermaster cannot achieve the protective water levels (PWL) for the Basin that have been identified as necessary to avoid seawater intrusion and irreversible loss of Basin storage.
- If Seaside Basin storage is lost or reduced as a result of seawater intrusion, other existing water supplies - such as native groundwater, Aquifer Storage and Recovery, and Pure Water Monterey – are in serious jeopardy, as seawater intruded aquifers cannot be used for groundwater storage.
- The MPWSP is necessary to provide the Seaside Basin with the replenishment needed for reliable protection against seawater intrusion.

It is imperative that the Coastal Commission and other stakeholders understand what is truly at stake for the Seaside Basin and the water supplies that are dependent on the health and security of the Basin. The Seaside Basin is perhaps the most critical water supply resource for the Monterey Peninsula. The Basin provides more than 3,000-acre feet of native groundwater annually for

municipal uses in CAW's Monterey and Laguna Seca Districts and to the Cities of Seaside and Sand City, and also is used for other beneficial uses in the Basin. The Basin also provides critical groundwater storage for CAW's Aquifer Storage and Recovery (ASR) diversions from the Carmel River, and provides storage and treatment of recycled water for Monterey One Water's Pure Water Monterey (PWM) Project. The loss of Seaside Basin storage as a result of overdraft and seawater intrusion would have a catastrophic impact on these crucial existing water supplies, not only for CAW's customers on the Monterey Peninsula, but for the other municipal and irrigation users in Monterey County.

The Seaside Basin Decision, as amended in February 2007, allocates the yield of the Seaside Basin to municipal and overlying groundwater users according a formula and schedule set forth in the Decision. The Decision requires gradual reduction in total Basin production in order to reduce Basin pumping to Natural Safe Yield, which was determined to be approximately 2,900 acre-feet in 2007. Municipal pumpers that exceed their Natural Safe Yield allocations are required to replenish the Basin for such overproduction, even if that overproduction is authorized under the Decision. The Decision also obligates Watermaster to study and manage conditions in the Basin and, to the extent Watermaster finds that pumping may result in Material Injury to the Basin, and to request relief from the Court to avoid or mitigate Material Injury to the Basin and its users. The Decision defines Material Injury to include impacts such as seawater intrusion, water quality degradation and subsidence.

Under the Decision, CAW currently is obligated to replenish approximately 700-acre feet per year (afy) over a 25-year period in order to offset its overproduction. This replenishment will be accomplished by "in lieu recharge" of the Basin, i.e., CAW reducing its authorized pumping by 700 afy and allowing that unpumped groundwater to remain in groundwater storage. For planning purposes, Watermaster has assumed that the MPWSP will deliver approximately 700 afy to satisfy CAW's replenishment obligation, in-lieu of exercising its pumping rights. The Commission's evaluation of water supply and demand cannot merely assume CAW's yield allocation under the Decision (approximately 1,800 afy, reduced to 1,500 afy in 2021), but must also consider an additional 700 afy necessary to satisfy replenishment obligations under the Decision. Water supply and demand analyses that do not consider this replenishment obligation as a water demand (or as a reduction in the available Seaside Basin native groundwater supply) are ignoring potential Material Injury to the Seaside Basin.

In addition to administering the Natural Safe Yield of the Seaside Basin Decision, Watermaster has been carefully studying and evaluating seawater intrusion risks and potential management actions to avoid the disastrous consequences of seawater intrusion into the Seaside Basin. As described in the attached memorandum from Watermaster's Technical Program Manager, Robert Jaques, increasing groundwater elevations in the Seaside Basin aquifers across the coastal front has been identified by Watermaster's technical experts as a prudent and necessary action to prevent seawater intrusion into the Basin's aquifers. Based on our analysis of water elevations in several key coastal wells, Watermaster has found that higher groundwater elevations are needed in both the Paso Robles (shallow) and Santa Margarita (deep) aquifers to reduce the risk of seawater intrusion. To achieve these protective water levels (PWL), Watermaster has found that approximately 1,000 afy of additional replenishment is required over a 25-year period. The MPWSP is the only possible supplemental water project before us that is capable of supplying the additional water needed to allow Watermaster to sustain PWL in the Basin.

Sincerely,

Paul B. Bruno, Chairman

Seaside Basin Watermaster
P.O. Box 51502
Pacific Grove, CA 93950
(831) 641-0113

MEMORANDUM

TO: Chairman of the Board of Directors of the Seaside Groundwater Basin Watermaster

FROM: Robert Jaques, Technical Program Manager

DATE: August 11 , 2020

SUBJECT: Recharge Water Is Needed to Protect the Seaside Groundwater Basin Against Seawater Intrusion

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To our Technical Advisory Committee, I recently presented an analysis of groundwater modeling work and other reports pertaining to proposed projects that would supply water to help stabilize groundwater levels in the Basin. The Committee unanimously approved the analysis and recommended that it be presented to the Board of Directors.

Background & Discussion

The Seaside Groundwater Basin Adjudication Decision, which established the Watermaster in 2006, had as its primary purpose reducing pumping from the Basin in order to stabilize groundwater levels to prevent seawater intrusion. The Seaside Basin is a critical source of water supply for the Monterey Peninsula. The management actions in the Decision reflect the fact that the Basin had been over-pumped for many years prior to the issuance of the Decision, but does not contain express requirements for water levels to be raised. It only required that pumping be reduced to keep groundwater levels from continuing to fall. We now know that groundwater levels in the Basin have continued to fall in some areas despite implementation of the Decision-required pumping reductions, and that even if they stabilized at current levels they would be well below sea level in some parts of the Basin.

Protective Water Levels (PWLs) were developed for four wells located near the coast in the Coastal Subarea of the Basin. If the groundwater level is at or above the PWL at a given location, it means that seawater cannot intrude into that area because the groundwater level is sufficiently above sea level to prevent that from happening. Currently, groundwater levels at all of the wells in the deep (Santa Margarita) aquifer are below their respective PWLs, and only one of the groundwater levels is above its PWL in the shallow (Paso Robles) aquifer. Our hydrogeologic consultants have told us with

certainty that persistence of groundwater levels below PWLs will lead to seawater intrusion into the Basin. Loss of groundwater storage to seawater intrusion will be very difficult, if not impossible, to reverse. While it is not possible at this time to accurately predict when that could occur, groundwater levels need to rise above PWLs to ensure protection of the aquifers.

The only way to achieve PWLs is to inject more water into the Basin than is taken out, so that the Basin is permanently recharged and not just used as a temporary storage vessel (which is the case with the existing Pure Water Monterey Project and the proposed Pure Water Monterey Expansion Project).

Principle Conclusions from the Analysis

If the Desalination Plant is Not Constructed and There is No Expansion of the Pure Water Monterey Project (Under this scenario the only project constructed is the original 3,500 AFY PWM Project)

- There is negligible net change in groundwater levels because on average the amount of water that is replenished is quickly extracted and not left in the Basin.
- PWLs will not be achieved.
- The Basin will not be protected against seawater intrusion.

If the Desalination Plant is Not Constructed and the Pure Water Monterey Expansion Project is Constructed (Under this scenario both the original PWM Project and the PWM Expansion Project would be in operation)

- The groundwater modeling for the original PWM Project used the same Cal Am water demand figures that were used in the EIR/EIS for the MPWSP. The groundwater modeling performed for the PWM Expansion Project used water demand figures developed by MPWMD that are several thousand AFY lower than the demand figures that were used when the modeling was done for the original PWM Project.
- Even using the lower water demand figures mentioned above, PWLs will not be achieved and the Basin will not be protected against seawater intrusion with the Expanded Pure Water Monterey Project because additional replenishment water will not be available for the Seaside Basin.
- If the higher and more conservative original water demand values were used in the PWM Expansion Project modeling, that modeling would show an even greater threat of seawater intrusion because additional replenishment water will not be available for the Seaside Basin and pumping from the Basin would need to be greater to meet the higher demands.

Additional Replenishment Water Will be Needed to Achieve Protective Elevations

- Previous modeling indicates injecting on the order of 1,000 AFY of additional water into the Seaside Basin for 25 years, along with the existing Cal Am replenishment obligations and the original PWM Project and either the desalination plant or the PWM Expansion Project, may be necessary to achieve protective elevations at all Basin locations within 25 years.

- Groundwater modeling that incorporates the actual projects that are to be constructed, i.e. either the desalination plant or the PWM Expansion Project, would need to be performed to refine the amount of additional injection water that would be needed.
- In its initial years of operation the desalination plant will have unused capacity that could potentially provide some of this replenishment water.
- If the desalination plant is constructed, a smaller PWM Expansion Project could likely provide the additional water needed to achieve protective elevations.

ATTACHMENT K

ASR AVAILABILITY AND RELIABILITY ANALYSIS TECHNICAL MEMORANDUM

To: Ian Crooks
From: Paul Findley, Sarp Sekeroglu
Subject: ASR Reliability Analysis
Date: July 15, 2022

Background

The Aquifer Storage and Recovery (ASR) Program, operated jointly by California American Water (CAW) and the Monterey Peninsula Water Management District (MPWMD), allows for the storage of excess Carmel River water in the Seaside Groundwater Basin during wet winter and spring months for later extraction and beneficial use during dry summer and fall months. The diversion of Carmel River water for this purpose is regulated by the State Water Resources Control Board (SWRCB) such that it only can occur during a six-month (183-day) ASR injection season from December 1 to May 31, and only if minimum stream flow requirements are met.

The injection of excess Carmel River water in the ASR system is limited by two SWRCB permits. Permit 20808A provides for injection of up to 6.7 cubic feet per second (CFS) of excess Carmel River flows, which is 13.3 acre-feet per day (AFD). For higher Carmel River flows, Permit 20808C provides for the injection of an additional 8 CFS (15.9 AFD). The maximum injection allowed under these two permits is 14.7 CFS (29.2 AFD). However, it is not physically possible to inject this amount of water in the ASR wells due to capacity limitations of the system.

ASR System Limitations

The ASR system's relevant facilities, shown in **Figure 1**, are the Carmel Valley Wells, the Begonia Iron Removal Plant (BIRP), the Segunda and Crest Tanks, the Crest/ASR pipelines, and the ASR wells.

Figure 1- ASR System Facilities

A total of four ASR wells have been developed. Currently, only Santa Margarita Well Nos. 1 and 2 (also known as ASR Well Nos. 1 and 2) can be used for injection, with each one having an injection capacity of 3.3 CFS (6.6 AFD). Neither one of these wells can be used for extraction due to nearby injection of Pure Water Monterey Project water, and the resulting inadequate travel time in the aquifer. The other two ASR wells are at the Seaside Middle School site. However, Middle School Well No. 4 is currently out of service, and Middle School Well No. 3 is currently dedicated to year-round extraction. In 2025, when additional extraction wells are available, the Middle School Wells will be available for ASR injection and a total of four ASR wells could be available for injection. However, other ASR system limitations preclude the simultaneous use of all four wells for injection.

The only way that Carmel River water can be conveyed to the ASR wells is from pumps that lift water from the Segunda Tanks to the Crest Tank. From the Crest Tank, water flows by gravity to the ASR wells via the Crest Pipeline and the ASR Pipeline. The Crest Pipeline is a 16-inch diameter pipeline that is 45 years old. Considering the difference in elevation between the Crest Tank and the ASR wells, and the condition of this pipeline, the estimated maximum flow rate that can be achieved in the Crest Pipeline is approximately 9.6 CFS (19 AFD). However, approximately 1 CFS (2 AFD), is delivered to customers that are connected to the Crest Pipeline, so the maximum amount of water that can be delivered to the ASR wells is estimated at 8.6 CFS (17 AFD).

Water from the Carmel River is diverted using the Lower Carmel Valley Wells (always) and the Upper Carmel Valley Wells (sometimes). These wells serve approximately 2,000 AFY to customers in Carmel Valley and the Monterey Peninsula, and the excess is pumped to the Crest Tank from the Segunda Tank.

The capacities of the Lower Carmel Valley Wells, which supply the Begonia Iron Removal Plant (BIRP), are shown in **Table 1**. As shown, the combined maximum capacity of these wells is approximately 9.6 CFS (19 AFD) and the firm capacity (*the capacity of a system with the largest unit out of service)* is approximately 7.5 CFS (15 AFD). The BIRP receives all of its source water from the Lower Carmel Valley Wells.

Table 1 - Lower Carmel Valley Well Capacities[1]

Lower Carmel Valley Wells (To BIRP)	Capacity		
	GPM	CFS	AFD
Eastwood-Canada (Malpaso)	27	0.06	0.1
Rancho Canada #2	560	1.22	2.5
Cypress #2	907	2.03	4.0
Pearce	790	1.77	3.5
Schulte #2	258	0.57	1.1
Begonia #2	578	1.29	2.6
Berwick #8	721	1.61	3.2
Berwick #9	443	0.99	2.0
Total	**4,284**	**9.54**	**19**
Firm (largest out)	**3,377**	**7.51**	**15**

Note 1: From e-mail from Mike Magretto to Ian Crooks, May 7, 2021

Four wells in the Upper Carmel Valley also pump into the system, but only when certain minimum stream flow conditions are met from December 1 through May 31. The maximum and firm capacities of the Upper Carmel Valley wells are 2.7 CFS and 1.6 CFS, respectively. Also, during certain stream flow conditions, the Upper Valley wells may be diverting Table 13 water, which cannot be used for ASR injection and directly serves customers in Carmel Valley.

During an ASR diversion event, it is possible that the Upper Carmel Valley Wells are not operating and all of the ASR diversion is coming from the Lower Carmel Valley Wells. In this instance, the maximum amount of water that can be delivered to the ASR wells is as follows:

Maximum Capacity of Lower Carmel Valley Wells:	19.0	AFD
Less Carmel Valley/Monterey Peninsula Demand (est.):	3.0	AFD
Less Backwash and Pipeline Losses:	0.7	AFD
Equals Available at Segunda Tanks for Pumping to Crest Tank:	16.0	AFD
Less Deliveries to Customers from Crest Pipeline:	2.0	AFD
Equals Deliveries to ASR Injection Wells	13.3	AFD

When ASR diversions occur and both the Lower and Upper Carmel Valley wells are operating, the maximum amount of water that can be delivered to the ASR wells is as follows:

Maximum Capacity of Lower Carmel Valley Wells:	19.0	AFD
Plus Maximum Capacity of Upper Carmel Valley Wells:	5.3	AFD
Less Carmel Valley/Monterey Peninsula Demand (est.):	3.0	AFD
Less Backwash and Pipeline Losses:	0.7	AFD
Equals Available at Segunda Tanks for Pumping to Crest Tank:	20.6	AFD
Less Capacity Exceedance in Crest Pipeline:	1.6	AFD
Less Deliveries to Customers from Crest Pipeline:	2.0	AFD
Equals Deliveries to ASR Injection Wells	17.0	AFD

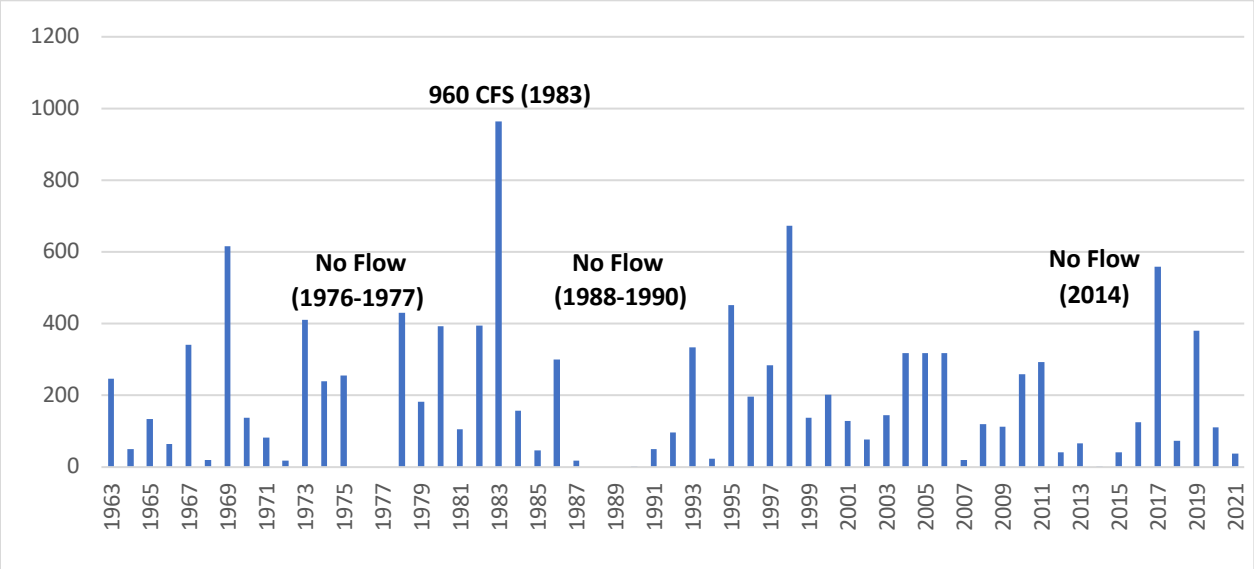
Permit Limitations on ASR Operations

Diversions are never allowed when Carmel River flows are less than 40 CFS, and when diversions are allowed, the diversion cannot cause the flow to drop below 40 CFS. For stream flows above 40 CFS, the minimum stream flow conditions for ASR diversions are determined according to a complicated set of rules in WRCB Permits 20808A and WRCB 20808C. Permit 20808A provides for diversion of up to 6.7 CFS. Under different and higher minimum stream flow conditions, SWRCB Permit 20808C provides for diversion of an additional 8.0 CFS. However, as previously described, delivery of water to the ASR wells is limited to approximately 8.6 CFS, so the increment of ASR injection flow that can be obtained under Permit 20808C is limited to 1.9 CFS. This increment is not always available because the minimum stream flow conditions in Permit 20808C are more restrictive than the minimums specified in Permit 20808A.

Historic Carmel River Flows

Carmel River flows during December through May for 59 water years (WY), starting in WY1963 (the first year when data was available), are summarized in **Figure 2**.

Figure 2-Average River Flow (CFS) During ASR Injection Season (December-May)



Carmel River flows during the injection season averaged approximately 197 CFS over the 59-year period. However, for fourteen years, the average Carmel River flow was less than 42 CFS, and for seven of these years (1968, 1972, 1976, 1977, 1987-1990, 1994, 2007, and 2014), Carmel River flows were essentially zero. Conversely, for seven years (1969, 1973, 1978, 1983, 1995, 1998, and 2017), average Carmel River flows exceeded 400 CFS.

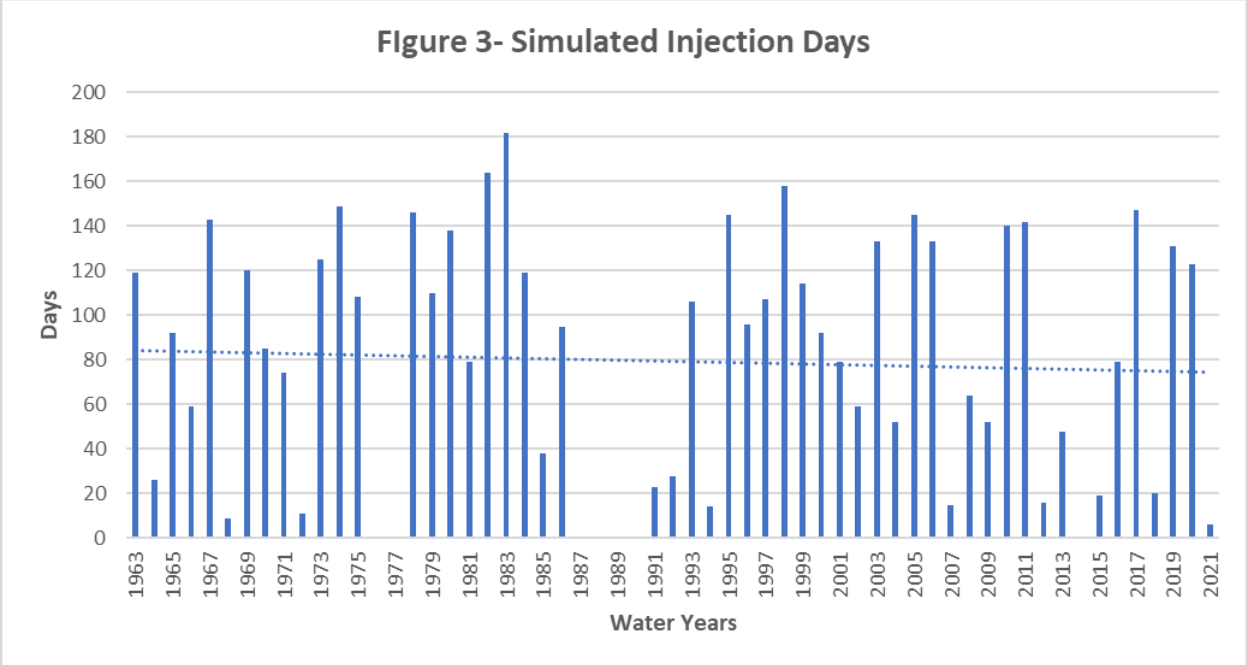
In the last thirty years, the average flows in the Carmel River have declined significantly, as shown in **Table 2.** It is possible that this is the beginning of a long-term downward trend in Carmel River flows as a result of climate change, but this is too short of a period to conclude that the trend will continue.

Table 2
Average Carmel River Flows for Selected Time Periods

Time Period	Average Carmel River Flow During Injection Season (CFS)
WY1963-WY1971	188
WY1972-WY1981	204
WY1982-WY1991	193
WY1992-WY2001	256
WY2002-WY2011	198
WY2012-WY2021	143

Simulation of ASR Injection

A day-by-day analysis of Carmel River flow records for 59 years from WY1963 to WY 2021 was conducted to determine the ASR diversions (injections) that hypothetically could have occurred while observing the previously described system limitations and permit limitations. The results of the simulation are shown in **Figures 3 and 4** and **Table 3.**



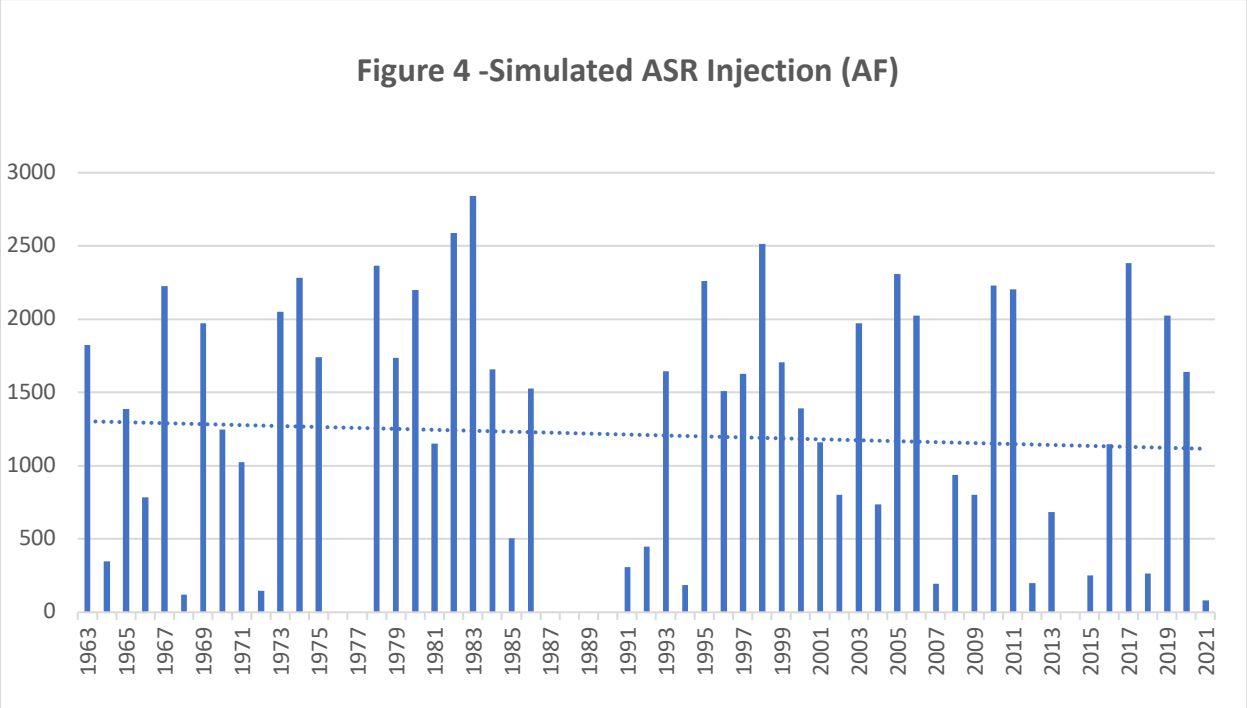


Table 3
Simulated ASR Injection for Water Years 1963 to 2021

Water Year	Dec-May Average River Flow (CFS)	ASR INJECTION IN ACRE-FEET				
		Permit 20808A		Permit 20808C		
		Injection Days	AF Injected at 13.3 AFD	Injection Days	Additional Injected at 3.7 AFD	Total ASR Injection (AF)
1963	247	119	1587	63	238	1825
1964	50	26	347	0	0	347
1965	133	92	1227	43	163	1389
1966	65	59	787	0	0	787
1967	341	143	1907	85	320	2227
1968	20	9	120	0	0	120
1969	617	120	1600	99	374	1974
1970	138	85	1127	43	120	1247
1971	83	74	987	66	38	1024
1972	19	11	147	0	0	147
1973	410	125	1667	102	386	2052
1974	239	149	1987	78	295	2282
1975	256	108	1440	80	302	1742
1976	0	0	0	0	0	0
1977	0	0	0	0	0	0
1978	430	146	1947	111	420	2366
1979	182	110	1467	71	268	1735
1980	394	138	1840	95	359	2199
1981	106	79	1041	29	110	1150
1982	394	164	2187	106	401	2587
1983	965	182	2419	112	423	2843
1984	157	119	1587	19	72	1658
1985	47	38	507	0	0	507
1986	300	95	1267	69	261	1528
1987	19	0	0	0	0	0
1988	0	0	0	0	0	0
1989	0	0	0	0	0	0
1990	1	0	0	0	0	0
1991	50	23	307	0	0	307
1992	96	28	373	20	76	449
1993	335	106	1413	74	230	1643
1994	23	14	187	0	0	187
1995	476	145	1933	87	329	2262
1996	197	96	1280	61	231	1511

Table 3 (Continued)

Water Year	Dec-May Average River Flow (CFS)	ASR INJECTION IN ACRE-FEET				
		Permit 20808A		Permit 20808C		
		Injection Days	AF Injected at 13.3 AFD	Injection Days	Additional Injected at 3.7 AFD	Total ASR Injection (AF)
1997	285	107	1427	53	200	1627
1998	674	158	2107	108	408	2515
1999	138	114	1520	49	185	1705
2000	202	92	1223	44	166	1390
2001	130	79	1053	28	106	1159
2002	77	59	761	11	42	803
2003	147	133	1773	53	200	1974
2004	318	52	693	11	42	735
2005	319	145	1929	101	382	2310
2006	318	133	1773	67	253	2027
2007	20	15	193	0	0	193
2008	119	64	845	24	91	936
2009	112	52	677	33	125	802
2010	260	140	1865	97	366	2232
2011	292	142	1860	91	344	2205
2012	41	16	201	0	0	201
2013	67	48	635	13	49	684
2014	1	0	0	0	0	0
2015	41	19	253	0	0	253
2016	124	79	1053	25	95	1148
2017	558	147	1960	112	423	2383
2018	73	20	265	0	0	265
2019	380	131	1747	74	280	2026
2020	111	123	1640	0	0	1640
2021	37	6	80	0	0	80
Average	**197**	**79**	**1054**	**42**	**155**	**1210**

Simulated ASR injection averaged 79 days per year and averaged 1,210 AFY over the 59-year period. However, as previously discussed, Carmel River flows are trending downwards, and this has a significant effect on simulated ASR injection, as shown by the downward long-term trendlines in Figures 3 and 4. This trend for 10-year averages in recent years is shown in **Table 4.** The 10-year average for simulated ASR injection declined 45 percent from a high of 1,624 AFY for the period of 1997-2006 to 868 AFY for the period of 2012-2021

Table 4
Recent 10-Year Averages

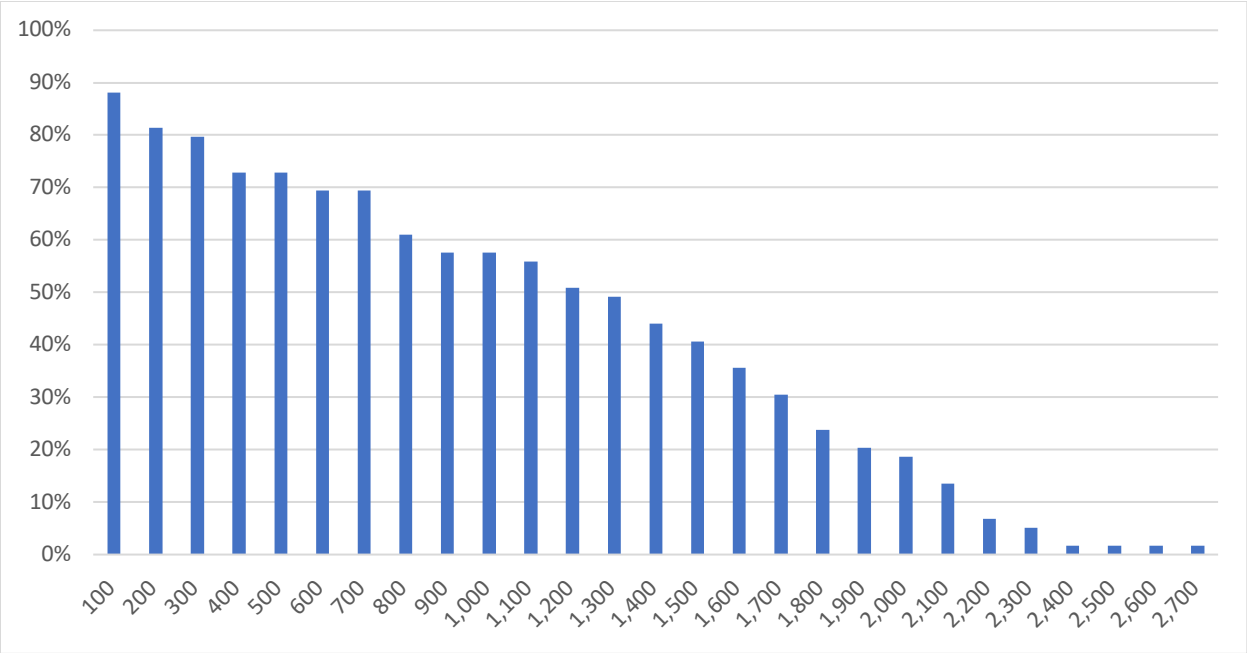
Period (Water Years)	Average Injection Days/Year	Average ASR Injected (AFY) (Simulated)
1992-2001	94	1445
1993-2002	97	1480
1994-2003	100	1513
1995-2004	104	1568
1996-2005	104	1573
1997-2006	107	1624
1998-2007	98	1481
1999-2008	89	1323
2000-2009	82	1233
2001-2010	87	1317
2002-2011	94	1422
2003-2012	89	1361
2004-2013	81	1232
2005-2014	76	1159
2006-2015	63	953
2007-2016	58	865
2008-2017	71	1084
2009-2018	66	1017
2010-2019	74	1140
2011-2020	73	1081
2012-2021	59	868

Figure 5 presents exceedance values for simulated ASR injection amounts over the 59-year period. For example, ASR injection exceeded 100 AFY less than 87 percent of the time in the simulation. Similarly, ASR injection exceeded 1,300 AFY less than 50 percent of the time in the simulation.

ASR Injection Probability Analysis

Figures 2, 3 and 4 demonstrate the highly variable nature of Carmel River flow and the resulting highly variable availability of excess Carmel River water for ASR injection from one year to the next. For example, the highest average flow for any injection season was 960 CFS in WY 1983, and simulated ASR injection would have been 2,840 AF (181 injection days). Four years later, in WY 1987, the Carmel River flows dropped to essentially zero for four consecutive years, and simulated ASR injection would have been zero for all four years.

Figure 5 - Historic Percent Exceedance of Simulated ASR Injection



Based on historical stream flows, the simulation results presented in Table 3 and Figures 3, 4, and 5, the probability that Carmel River flows and ASR injection will be zero is 12 percent (seven occurrences in 59 years) for any given year in the future. Similarly, the probability that ASR injection will be equal to or less than 200 AF is 20 percent (12 occurrences in 59 years) in any given year.

Similarly, probabilities can be developed for ASR injection over any given multiple-year period. For example, the 59-year record includes 55 consecutive five-year periods (1963-1967, 1964-1968, etc.). The simulated average injection days and simulated average injection amounts for each of the 55 five-year periods are presented in **Table 5.**

Table 5
Five-Year ASR Injection Averages (Simulated)

5- Year Period		Average Injection Days/Year	Average Injection (AFY)		5- Year Period		Average Injection Days/Year	Average Injection (AFY)
From	To				From	To		
1963	1967	88	1315		1991	1995	63	969
1964	1968	66	974		1992	1996	78	1210
1965	1969	85	1299		1993	1997	94	1446
1966	1970	83	1271		1994	1998	104	1620
1967	1971	86	1318		1995	1999	124	1924
1968	1972	60	902		1996	2000	113	1749
1969	1973	83	1289		1997	2001	110	1679
1970	1974	89	1350		1998	2002	100	1514
1971	1975	93	1449		1999	2003	95	1406
1972	1976	79	1245		2000	2004	83	1212
1973	1977	76	1215		2001	2005	94	1396
1974	1978	81	1278		2002	2006	104	1570
1975	1979	73	1169		2003	2007	96	1448
1976	1980	79	1260		2004	2008	82	1240
1977	1981	95	1490		2005	2009	82	1254
1978	1982	127	2008		2006	2010	81	1238
1979	1983	135	2103		2007	2011	83	1273
1980	1984	136	2088		2008	2012	83	1275
1981	1985	116	1749		2009	2013	80	1225
1982	1986	120	1825		2010	2014	69	1064
1983	1987	87	1307		2011	2015	45	668
1984	1988	50	739		2012	2016	32	457
1985	1989	27	407		2013	2017	59	894
1986	1990	19	306		2014	2018	53	810
1987	1991	5	61		2015	2019	79	1215
1988	1992	10	151		2016	2020	100	1493
1989	1993	31	480		2017	2021	85	1279
1990	1994	34	517					

ASR Reliability Assessment

The reliability of any supply element in a supply portfolio is measured by the amount of water that can be reliably secured from that supply element. For 7 of the last 59 water years, Carmel River flows during the December-May injection season were negligible, and diversions of excess Carmel River water for injection in the Seaside Groundwater Basin would have been negligible. This suggests a 12 percent probability that ASR injection could be negligible, and that CAW cannot reasonably rely on having ASR injection **for any given year.**

Using the results shown in Table 5, the following are the probabilities for any given **five-year period** in the future:

- The probability that the five-year ASR injection average will be less than 240 AFY is approximately five percent. In other words, with **95 percent reliability**, CAW can expect that the five-year ASR injection average will exceed **240 AFY**.
- The probability that the five-year ASR injection average will be less than 470 AFY is approximately ten percent. In other words, with **90 percent reliability**, CAW can expect that the five-year ASR injection average will exceed **470 AFY**.

All other supply elements in CAW's portfolio are fixed, whereas the ASR supply element is highly variable. If ASR supply in any given year is low, CAW does not have the ability to increase its other supplies to make up for the shortfall. Therefore, it is very important to know how much consistent ASR supply can be relied upon and whether that ASR supply provides enough water to meet customer demand.

CAW's maximum potential firm supply, excluding ASR, is approximately 10,000 AFY. The demand projections presented in the 2020 Urban Water Management Plan (UWMP) for years 2025, 2030, 2035 and 2040 are presented in **Table 6** along with 5-year average values for periods 2026-2030, 2031-2035 and 2036-2040.

Table 6
Demand Projections (From 2020 UWMP)

Planning Period	UWMP Demand for Last Year of Period (AFY)	Average UWMP Demand During Period (AFY)
2025	10,440	10,440
2026-2030	11,880	11,300
2031-2035	12,470	12,230
2036-2040	13,060	12,820

As shown in Table 6, the projected demand exceeds the firm supply, and the deficit would have to be covered by ASR. The deficit for each planning period is presented in **Table 7** along with the confidence levels that ASR can meet the deficits. As shown, there is only a 39 percent probability that ASR will be able to supply the approximately 1,300 AFY necessary to meet demand between 2026 and 2030. Further, there is virtually no chance that ASR can make up demand shortfalls beyond 2030.

Table 7
Demand Deficits and ASR Supply Confidence Levels

Planning Period	Average UWMP Demand During Period (AFY)	Firm Supply Excluding ASR (AFY)	Average Deficit (AFY)	Confidence Level that ASR Supply Will Meet Deficit
2026-2030	11,300	10,000	1,300	39%
2031-2035	12,230	10,000	2,230	0%
2036-2040	12,820	10,000	2,820	0%

Conclusions

1. Due to limitations on the maximum capacity of the Crest Pipeline and deliveries to customers from the Crest Pipeline, injection into the ASR wells is limited to approximately 8.6 CFS or approximately 17 AFD.

2. Diversions from the Carmel River for ASR injection are limited to those times when stream flows meet the minimum bypass requirements of SWRCB Permits 20808A and 20808C. Over the last 59 years, the number of days that would have qualified for injection averaged 79 days but ranged from zero (seven of the 59 years) to 181 days (once, in 1983). Simulated ASR injection averaged 1,210 AFY but ranged from zero (seven of the 59 years) to 2,840 AF (in 1983).

3. For 7 of the last 59 water years, Carmel River flows during the December-May injection season were negligible, and diversions of excess Carmel River water for injection in the Seaside Groundwater Basin would have been negligible. This suggests a 12 percent probability that ASR injection could be negligible, and that CAW cannot rely upon ASR injection for any given future year.

4. For any five-year period in the future, CAW can expect that the five-year ASR injection average will exceed 240 AFY with 95 percent reliability, and 470 AFY with 90 percent reliability.

5. CAW's maximum potential supply sources, without ASR, will not be able to reliably meet the projected future demands of the 2020 UWMP**.** The average deficit for the five-year period 2026-2030 is approximately 1,300 AFY and the probability that ASR can meet this deficit is 39 percent. The average deficit for the five-year period 2031-2035 is approximately 2,230 AFY and the average deficit for the five-year period 2036-2040 is approximately 2,820 AFY. There is virtually no chance that the five-year average ASR injection can meet either one of these deficits.

PAUL L. FINDLEY

Education

B.S. Interdisciplinary Engineering, Purdue University, 1973
M.S. Sanitary Engineering, University of California (Berkeley), 1974

Registrations

Professional Engineer, Civil, California

Experience Summary

Paul Findley has 48 years of experience in the planning, design, and construction of water, wastewater, and seawater desalination facilities with three consulting engineering firms (JMM/MWH, Malcolm Pirnie, and RBF/ Michael Baker). Career highlights include opening JMM's Seattle office, serving as JMM/MWH's Consultant Team Program Manager for the San Diego Clean Water Program, and serving as RBF's Project Manager for the (then) Coastal Water Project in Monterey, California.

During the last 6 years he has continued to provide consulting services for various clients through his own consulting practice.

ATTACHMENT L

STATE OF CALIFORNIA
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
STATE WATER RESOURCES CONTROL BOARD

DIVISION OF WATER RIGHTS

RIGHT TO DIVERT AND USE WATER

APPLICATION 30215A PERMIT 21330

Right Holder: California American Water
P.O. Box 951
Monterey, CA 93942-0951

The State Water Resources Control Board (State Water Board) authorizes the diversion and use of water by the right holder in accordance with the limitations and conditions herein SUBJECT TO PRIOR RIGHTS. As used in this document, right holder means the person(s) or entity authorized to divert water under this permit or license. The priority of this right dates from **January 26, 1993.** This right is issued in accordance with the State Water Board delegation of authority to the Deputy Director for Water Rights (Resolution 2012-0029) and the Deputy Director for Water Rights redelegation of authority dated July 6, 2012.

The Deputy Director for Water Rights finds that the State Water Board and/or the Applicant have met the following requirements for permit issuance: (a) demonstrated the availability of unappropriated water; (b) resolved protests in compliance with Water Code section 1330 et seq. and included appropriate permit conditions; (c) demonstrated that the water will be diverted and used without injury to any lawful user of water; (d) demonstrated that the intended use is beneficial; and (e) demonstrated that the requirements of the California Environmental Quality Act (CEQA) have been met or that the project is exempt from CEQA.

The State Water Board has complied with its independent obligation to consider the effect of the proposed project on public trust resources and to protect those resources where feasible. (*National Audubon Society v. Superior Court* (1983) 33 Cal.3d 419 [189 Cal.Rptr. 346, 658 P.2d 709].)

Right holder is hereby granted a right to divert and use water as follows:

1. Sources of water: **(1) Carmel River and (5-32) Carmel River Subterranean Stream**

   Tributary to: **(1), (5-32) Pacific Ocean**

   within the County of **Monterey.**

2. Location of points of diversion.

Points of Diversion (By California Coordinate System of 1983-Zone 4)	40-acre subdivision of public land survey or projection thereof	Section (Projected)	Township	Range	Base and Meridian
(1) San Clemente Dam: North 2,053,010 feet and East 5,765,040 feet	**NW¼ of SW¼**	**24**	**17S**	**2E**	**MD**
(5) Canada Well: North 2,092,010 feet and East 5,715,190 feet	**NE¼ of SW¼**	**17**	**16S**	**1E**	**MD**

(6) San Carlos Well: North 2,091,660 feet and East 5,717,990 feet	**NE¼ of SE¼**	**17**	**16S**	**1E**	**MD**
(7) Cypress Well: North 2,087,610 feet and East 5,724,640 feet	**SW¼ of NW¼**	**22**	**16S**	**1E**	**MD**
(8) Pearce Well: North 2,087,360 feet and East 5,726,140 feet	**SE¼ of NW¼**	**22**	**16S**	**1E**	**MD**
(9) Schulte Well: North 2,087,410 feet and East 5,729,240 feet	**SW¼ of NW¼**	**23**	**16S**	**1E**	**MD**
(10) Manor #2 Well: North 2,086,460 feet and East 5,731,340 feet	**NE¼ of SW¼**	**23**	**16S**	**1E**	**MD**
(11) Begonia #2 Well: North 2,085,510 feet and East 5,734,740 feet	**NW¼ of SW¼**	**24**	**16S**	**1E**	**MD**
(12) Berwick #7 Well: North 2,084,460 feet and East 5,735,290 feet	**SW¼ of SW¼**	**24**	**16S**	**1E**	**MD**
(13) Berwick #8 Well: North 2,084,510 feet and East 5,736,090 feet	**SE¼ of SW¼**	**24**	**16S**	**1E**	**MD**
(15) Scarlett #8 Well: North 2,084,510 feet and East 5,740,590 feet	**SW¼ of SW¼**	**19**	**16S**	**2E**	**MD**
(17) Los Laureles #5 Well: North 2,080,310 feet and East 5,748,590 feet	**NW¼ of SE¼**	**29**	**16S**	**2E**	**MD**
(18) Los Laureles #6 Well: North 2,079,510 feet and East 5,749,440 feet	**SE¼ of SE¼**	**29**	**16S**	**2E**	**MD**
(19) West Garzas #4 Well: North 2,075,260 feet and East 5,752,190 feet	**NE¼ of SW¼**	**33**	**16S**	**2E**	**MD**
(20) Garzas Creek #3: North 2,073,610 feet and East 5,753,040 feet	**SW¼ of SE¼**	**33**	**16S**	**2E**	**MD**
(21) Panetta #2 Well: North 2,072,110 feet and East 5,754,740 feet	**NW¼ of NW¼**	**3**	**17S**	**2E**	**MD**
(22) Panetta #1 Well: North 2,071,960 feet and East 5,754,640 feet	**NW¼ of NW¼**	**3**	**17S**	**2E**	**MD**
(17) Robles #3 Well: North 2,067,110 feet and East 5759,490 feet	**NE¼ of NE¼**	**10**	**17S**	**2E**	**MD**

(24) Russell #4 Well: North 2,061,810 feet and East 5,764,040 feet	**SW¼ of SE¼**	**14**	**17S**	**2E**	**MD**
(25) Russell #2 Well: North 2,061,410 feet and East 5,764,040 feet	**SE¼ of SE¼**	**14**	**17S**	**2E**	**MD**
(26) A Well: North 2,091,070 feet and East 5,706,020 feet	**SE ¼ of SE ¼**	**13**	**16S**	**1W**	**MD**
(27) B Well: North 2,091,970 feet and East 5,709,420 feet	**NE ¼ of SW ¼**	**18**	**16S**	**1E**	**MD**
(28) C Well: North 2,087,220 feet and East 5,724,470 feet	**SW ¼ of NW ¼**	**22**	**16S**	**1E**	**MD**
(29) D Well: North 2,087,370 feet and East 5,7729,270 feet	**SW ¼ of NW ¼**	**23**	**16S**	**1E**	**MD**
(30) E Well: North 2,084,920 feet and East 5,737,320 feet	**SW ¼ of SE ¼**	**24**	**16S**	**1E**	**MD**
(31) F Well: North 2,072,120 feet and East 5,754,670 feet	**NW ¼ of NW ¼**	**3**	**17S**	**2E**	**MD**
(32) G Well: North 2,070,270 feet and East 5,755,270 feet	**SW ¼ of NW ¼**	**3**	**17S**	**2E**	**MD**

3. Purpose of use	4. Place of use					
	40-acre subdivision of public land survey or projection thereof	Section (Projected)*	Township	Range	Base and Meridian	Acres
Municipal	**Within the California-American Water Company service area, Carmel River watershed area only.**					

The place of use is shown on map dated February 7, 2012 and filed with the State Water Board.

The following acronyms are used in this permit:

Monterey Peninsula Water Management District – MPWMD
National Marine Fisheries Service – NMFS
California Department of Fish and Wildlife – CDFW
California American Water – Cal-Am

5. The water appropriated shall be limited to the quantity which can be beneficially used and shall not exceed **4.1 cubic feet per second** from December 1 of each year to May 31 of the succeeding year. The maximum annual diversion shall not exceed **1,488 acre-feet** during the authorized diversion season.

(0000005H)

6. Complete application of the water to the authorized use shall be made by December 1, 2022.
(0000009)

7. This permit shall not be construed as conferring upon the permittee right of access to the points of diversion.
(0000022)

8. Cal-Am shall consult with the Division of Water Rights and, within one year from the date of this permit, shall submit to the State Water Board its Urban Water Management Plan as prepared and adopted in conformance with Section 10610, et seq. of the California Water Code, supplemented by any additional information that may be required by the Board.

   All cost-effective measures identified in the Urban Water Management Plan and any supplements thereto shall be implemented in accordance with the schedule for implementation found therein.
(0000029A)

9. If it is determined after permit issuance that the as-built conditions of the project are not correctly represented by the map(s) prepared to accompany the application, permittee shall, at its expense, have the subject map(s) updated or replaced with equivalent as-built maps(s). Said revision(s) or new map(s) shall be prepared by a civil engineer or land surveyor registered or licensed in the State of California and shall meet the requirements prescribed in section 715 and sections 717 through 723 of the California Code of Regulations, Title 23. Said revision(s) or map(s) shall be furnished upon request of the Deputy Director for Water Rights.
(0000030)

10. Permittee shall install devices to measure the instantaneous rate and cumulative quantity of water diverted from the Carmel River. All measuring devices shall be properly maintained.
(0060900) (0080900)

11. Permittee shall calibrate and maintain, a continuous flow measurement device, satisfactory to the State Water Board, at Carmel River at Highway 1 Bridge (River Mile 1.1). Permittee may rely on the existing devices maintained by the MPWMD. If the MPWMD elects to cease calibration and maintenance of such device(s), permittee shall cease all diversions pursuant to Application 30215A until permittee installs and calibrates new continuous flow measurement devices satisfactory to the State Water Board. Permittee shall thereafter calibrate and maintain the new devices.

    If the measuring device is rendered inoperative for any reason, all diversions under this water right shall cease until such time as the device is restored to service.
(0060062BP) (0000204)

12. Within six months of the issuance of this permit, the permittee shall submit a Compliance Plan for approval by the Deputy Director for Water Rights that will demonstrate compliance with the flow bypass terms specified in this permit. The Compliance Plan shall include the following:

    a. A description of the gages and monitoring devices that will be installed or have been installed to measure stream flow and diversion to underground storage.
    b. A time schedule for installation of these facilities.
    c. A description of the frequency of data collection and the methods for recording diversions, bypass flows and storage levels.
    d. An operation and maintenance plan that will be used to maintain gages and monitoring devices in good condition.

The permittee shall be responsible for all costs associated with developing the Compliance Plan, and installing and maintaining all monitoring facilities described in the Compliance Plan.

The monitoring data shall be maintained by the permittee for ten years from the date of collection and made available to the Deputy Director for Water Rights, upon request. Any non-compliance with the terms of the permit shall be reported by the permittee promptly to the Deputy Director for Water Rights.

(0000070)

13. Permittee shall implement, on all riparian land owned or controlled by permittee, any elements of the Riparian Corridor Management Program outlined in the MPWMD's November 1990 Water Allocation Mitigation Program not implemented by MPWMD until Application 30215A is licensed. Should right holder implement such measures, survey data and analysis of results shall be submitted annually with the electronic report of water diversion to the State Water Board.

    Permittee shall maintain in good working order all riparian irrigation systems, on all riparian land owned or controlled by permittee, for use as needed during dry and critically dry water years.

    (0490500)

14. For the protection of fisheries, wildlife, and other instream uses in the Carmel River, diversions under this permit shall be subject to maintenance of minimum mean daily instream flows as specified in Table A, Minimum Mean Daily Instream Flow Requirements. No water shall be diverted under this permit if the instream flows would be reduced by such diversion below the minimum mean daily flows specified in Table A. Permittee shall file a report with its annual electronic report of water use to the Division of Water Rights documenting compliance with this condition. The report shall also be filed with CDFW and NMFS and shall contain the following information:

    a. Dates during the previous period of December 1 to May 31 of the succeeding year when water was diverted under this permit; and

    b. Mean daily flows recorded at the Carmel River at Highway 1 Bridge gage.

TABLE A

MINIMUM MEAN DAILY INSTREAM FLOW REQUIREMENTS

December 1-April 15	**April 16-May 31**
Prior to Carmel River lagoon opening to the ocean [1]: May divert with minimum bypass of **40 cfs** at the Carmel River at Highway 1 Bridge gage. **Following Carmel River lagoon opening to the ocean:** May divert with minimum bypass of **120 cfs** at the Carmel River at Highway 1 Bridge gage.	May divert with minimum bypass of **80 cfs** at the Carmel River at Highway 1 Bridge gage.

[1] On December 1, if water in the lagoon is flowing to the ocean, the lagoon shall be deemed to be open to the ocean. If on December 1 water in the lagoon is not flowing to the ocean, the lagoon shall be deemed to be open to the ocean when the lagoon level drops rapidly from a stable elevation to a lower elevation as evidenced by the water surface elevation gage located at the Carmel Area Wastewater District effluent pipeline across the south arm of the lagoon. This elevation gage is operated by Monterey Peninsula Water Management District.

(0400500)

15. Permittee shall continue to negotiate with CDFW to maintain, insofar as possible, a minimum 5 cubic feet per second bypass flow below San Clemente Dam as measured at the Sleepy Hollow weir.

(0400500)

16. To prevent stranding of spring and fall steelhead juveniles and smolts during critically dry conditions, permittee shall continue to implement or fund implementation of Fisheries Mitigation Measure 3 as outlined in the MPWMD's November 1990 Water Allocation Mitigation Program ("Rescue juveniles downstream of Robles del Rio in summer"). This obligation shall be met during the diversion season only and shall be proportionate to the impact of diversion under this right to fisheries under this right.

(0400500)

17. In the event that further study of the effectiveness of fish rescue operations specified in the prior condition is needed, Permittee shall cooperate with MPWMD in the conduct of any such study. Permittee's cooperation shall include monetary and/or technical assistance, and Permittee's responsibility for assisting in the study shall be limited to the proportionate impact of diversion under this right to fisheries. The need for further study shall be determined as follows: (1) MPWMD may request further study of Cal Am, (2) any request for study shall include the stream reach for study, proposed dates of study, fishery metric to be studied, and cost estimate for the study. The Deputy Director for Water Rights shall make a timely determination regarding the need for further study and specify the timeline for completing the study. The study shall be conducted in accordance with the timeline, and submitted to the Deputy Director upon completion.

(0400500)

18. Permittee shall, in cooperation with MPWMD, implement the Lagoon Mitigation Program outlined in the MPWMD's November 1990 Water Allocation Mitigation Program. This obligation shall be met during the diversion season only and shall be proportionate to the impact of diversion under this right to lagoon maintenance.

(0400500)

19. Permittee shall curtail or cease diversions authorized by this permit when notified by the State Water Board that diversions under this permit are causing the cumulative maximum average daily diversion rate downstream of River Mile 17.6 to exceed 80 cubic feet per second (cfs), as stipulated in Table 9 of NMFS (2002) report. The State Water Board may issue such notification on its own motion, or upon being advised by CDFW, NMFS or MPWMD that the 80 cfs diversion limit has been, or is likely to be, met during a specific time period. Any evaluation of whether the 80 cfs diversion limit has been met shall be based upon the priority of Application 30215A, as compared to other diverters. Diversions may resume, up to the face value of the right, once such diversions no longer result in exceedance of the 80 cfs limit.

(0400500)

20. Cal-Am shall account for water diverted pursuant to Application 30215A in accordance with ordering paragraph 3.(a)(5) for the purposes of Order WR 2009-0060 until Order WR 2009-0060 terminates as provided therein.

(0400500)

21. Within 180 days of permit issuance, Permittee shall submit a compliance plan documenting the measures that it will take to ensure that surface water diversions are through a fish screen satisfactory to the Deputy Director for Water Rights. The compliance plan shall take into account the proposed removal/modification of San Clemente Dam and provide a time schedule for implementation. The fish screen shall be designed and maintained in accordance with the screening criteria of NMFS. Permittee shall provide evidence that demonstrates that the fish screen is in good condition with the annual report and whenever requested by the Division of Water Rights.

(0000213)

22. Any priority obtained for this permit by virtue of condition 10 of Decision 1632 shall be void if the permittee utilizes the water under this permit outside of the Carmel River watershed, as shown on map dated February 7, 2012. Permittee shall submit information with its annual electronic report of water diversion and use documenting that the quantities authorized by this permit were solely used within the mapped area.

(0000021)

23. Should any buried archeological materials be uncovered during project activities, such activities shall cease within 100 feet of the find. Prehistoric archeological indicators include: obsidian and chert flakes and chipped stone tools; bedrock outcrops and boulders with mortar cups; ground stone implements (grinding slabs, mortars and pestles) and locally darkened midden soils containing some of the previously listed items plus fragments of bone and fire affected stones. Historic period site indicators generally include: fragments of glass, ceramic and metal objects; milled and split lumber; and structure and feature remains such as building foundations, privy pits, wells and dumps; and old trails. The Deputy Director for Water Rights shall be notified of the discovery and a professional archeologist shall be retained by the Permittee to evaluate the find and recommend appropriate mitigation measures. Proposed mitigation measures shall be submitted to the Deputy Director for Water Rights for approval. Project-related activities shall not resume within 100 feet of the find until all approved mitigation measures have been completed to the satisfaction of the Deputy Director for Water Rights.

(0000215)

THIS RIGHT IS ALSO SUBJECT TO THE FOLLOWING TERMS AND CONDITIONS:

A. Right holder is on notice that: (1) failure to timely commence or complete construction work or beneficial use of water with due diligence, (2) cessation or partial cessation of beneficial use of water, or (3) failure to observe any of the terms or conditions of this right, may be cause for the State Water Board to consider revocation (including partial revocation) of this right. (Cal. Code Regs., tit. 23, § 850.)

(0000016)

B. Right holder is on notice that when the State Water Board determines that any person is violating, or threatening to violate, any term or condition of a right, the State Water Board may issue an order to that person to cease and desist from that violation. (Wat. Code, § 1831.)

(0000017)

C. Right holder is not authorized to make any modifications to the location of diversion facilities, place of use or purposes of use, or make other changes to the project that do not conform with the terms and conditions of this right, prior to submitting a change petition and obtaining approval of the State Water Board.

(0000018)

D. Once the time to develop beneficial use of water ends under this permit, right holder is not authorized to increase diversions prior to submitting a time extension petition and obtaining approval of the State Water Board.

(0000019)

E. Only the amount of water applied to beneficial use during the authorized diversion season, as determined by the State Water Board, shall be considered when issuing a license. (Wat. Code, § 1610.)

(0000006)

F. Right holder shall maintain records of the amount of water diverted and used under this right to enable the State Water Board to determine the amount of water that has been applied to beneficial use pursuant to Water Code section 1605.

(0000015)

G. Right holder shall promptly submit any reports, data, or other information that may reasonably be required by the State Water Board, including but not limited to documentation of water diversion and use under this right and documentation of compliance with the terms and conditions of this right.

(0000010)

H. No water shall be diverted under this right unless right holder is operating in accordance with a compliance plan, satisfactory to the Deputy Director for Water Rights. Said compliance plan shall specify how right holder will comply with the terms and conditions of this right. Right holder shall comply with all reporting requirements in accordance with the schedule contained in the compliance plan.

(0000070)

I. Right holder shall grant, or secure authorization through right holder's right of access to property owned by another party, the staff of the State Water Board, and any other authorized representatives of the State Water Board the following:

1. Entry upon property where water is being diverted, stored or used under a right issued by the State Water Board or where monitoring, samples and/or records must be collected under the conditions of this right;

2. Access to copy any records at reasonable times that are kept under the terms and conditions of a right or other order issued by State Water Board;

3. Access to inspect at reasonable times any project covered by a right issued by the State Water Board, equipment (including monitoring and control equipment), practices, or operations regulated by or required under this right; and,

4. Access to photograph, sample, measure, and monitor at reasonable times for the purpose of ensuring compliance with a right or other order issued by State Water Board, or as otherwise authorized by the Water Code.

(0000011)

J. This right shall not be construed as conferring right of access to any lands or facilities not owned by right holder.

(0000022)

K. All rights are issued subject to available flows. Inasmuch as the source contains treated wastewater, imported water from another stream system, or return flow from other projects, there is no guarantee that such supply will continue.

(0000025)

L. This right does not authorize diversion of water dedicated by other right holders under a senior right for purposes of preserving or enhancing wetlands, habitat, fish and wildlife resources, or recreation in, or on, the water. (Wat. Code, § 1707.) The Division of Water Rights maintains information about these dedications. It is right holders' responsibility to be aware of any dedications that may preclude diversion under this right.

(0000212)

M. No water shall be diverted or used under this right, and no construction related to such diversion shall commence, unless right holder has obtained and is in compliance with all necessary permits or other approvals required by other agencies. If an amended right is issued, no new facilities shall be utilized, nor shall the amount of water diverted or used increase beyond the maximum amount diverted or used during the previously authorized development schedule, unless right holder has obtained and is in compliance with all necessary requirements, including but not limited to the permits and approvals listed in this term.

Within 90 days of the issuance of this right or any subsequent amendment, right holder shall prepare and submit to the Division of Water Rights a list of, or provide information that shows proof of attempts to solicit information regarding the need for, permits or approvals that may be required for the project. At a minimum, right holder shall provide a list or other information pertaining to whether any of the following permits or approvals are required: (1) lake or streambed alteration agreement with the Department of Fish and Wildlife (Fish & G. Code, § 1600 et seq.); (2) Department of Water Resources, Division of Safety of Dams approval (Wat. Code, § 6002); (3) Regional Water Quality Control Board Waste Discharge Requirements (Wat. Code, § 13260 et seq.); (4) U.S. Army Corps of Engineers Clean Water Act section 404 permit (33 U.S.C. § 1344); and (5) local grading permits.

Right holder shall, within 30 days of issuance of any permits, approvals or waivers, transmit copies to the Division of Water Rights.

(0000203)

N. Urban water suppliers must comply with the Urban Water Management Planning Act (Wat. Code, § 10610 et seq.). An "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.

Agricultural water users and suppliers must comply with the Agricultural Water Management Planning Act (Act) (Water Code, § 10800 et seq.). Agricultural water users applying for a permit from the State Water Board are required to develop and implement water conservation plans in accordance with the Act. An "agricultural water supplier" means a supplier, either publicly or privately owned, supplying more than 50,000 acre-feet of water annually for agricultural purposes. An agricultural water supplier includes a supplier or contractor for water, regardless of the basis of right, which distributes or sells for ultimate resale to customers.

(0000029D)

O. Pursuant to Water Code sections 100 and 275 and the common law public trust doctrine, all rights and privileges under this right, including method of diversion, method of use, and quantity of water diverted, are subject to the continuing authority of the State Water Board in accordance with law and in the interest of the public welfare to protect public trust uses and to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.

The continuing authority of the State Water Board may be exercised by imposing specific requirements over and above those contained in this right with a view to eliminating waste of water and to meeting the reasonable water requirements of right holder without unreasonable draft on the source. Right holder may be required to implement a water conservation plan, features of which may include but not necessarily be limited to (1) reusing or reclaiming the water allocated; (2) using water reclaimed by another entity instead of all or part of the water allocated; (3) restricting diversions so as to eliminate agricultural tailwater or to reduce return flow; (4) suppressing evaporation losses from water surfaces; (5) controlling phreatophytic growth; and (6) installing, maintaining, and operating efficient water measuring devices to assure compliance with the quantity limitations of this right and to determine accurately water use as against reasonable water requirements for the authorized project. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such specific requirements are physically and financially feasible and are appropriate to the particular situation.

The continuing authority of the State Water Board also may be exercised by imposing further limitations on the diversion and use of water by right holder in order to protect public trust uses. No action will be taken pursuant to this paragraph unless the State Water Board determines, after notice to affected parties and opportunity for hearing, that such action is consistent with California Constitution, article X, section 2; is consistent with the public interest; and is necessary to preserve or restore the uses protected by the public trust.

(0000012)

P. The quantity of water diverted under this right is subject to modification by the State Water Board if, after notice to right holder and an opportunity for hearing, the State Water Board finds that such modification is necessary to meet water quality objectives in water quality control plans which have been or hereafter may be established or modified pursuant to Division 7 of the Water Code. No action will be taken pursuant to this paragraph unless the State Water Board finds that (1) adequate waste discharge requirements have been prescribed and are in effect with respect to all waste discharges which have any substantial effect upon water quality in the area involved,

and (2) the water quality objectives cannot be achieved solely through the control of waste discharges.

(0000013)

Q. This right does not authorize any act which results in the taking of a candidate, threatened or endangered species or any act which is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish & G. Code, § 2050 et seq.) or the federal Endangered Species Act (16 U.S.C. § 1531 et seq.). If a "take" will result from any act authorized under this right, right holder shall obtain any required authorization for an incidental take prior to construction or operation of the project. Right holder shall be responsible for meeting all requirements of the applicable Endangered Species Act for the project authorized under this right.

(0000014)

Section 1392. Every permittee, if he accepts a permit, does so under the conditions precedent that no value whatsoever in excess of the actual amount paid to the State therefor shall at any time be assigned to or claimed for any permit granted or issued under the provisions of this division (of the Water Code), or for any rights granted or acquired under the provisions of this division (of the Water Code), in respect to the regulation by any competent public authority of the services or the price of the services to be rendered by any permittee or by the holder of any rights granted or acquired under the provisions of this division (of the Water Code) or in respect to any valuation for purposes of sale to or purchase, whether through condemnation proceedings or otherwise, by the State or any city, city and county, municipal water district, irrigation district, lighting district, or any political subdivision of the State, of the rights and property of any permittee, or the possessor of any rights granted, issued, or acquired under the provisions of this division (of the Water Code).

STATE WATER RESOURCES CONTROL BOARD

ORIGINAL SIGNED BY:
JAMES W. KASSEL FOR

Barbara Evoy, Deputy Director
Division of Water Rights

Dated: OCT 04 2013

ATTACHMENT M

FINAL

Supplemental Environmental Impact Report

for the

Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project

April 2020

Lead Agency:

Monterey One Water
Providing Cooperative Water Solutions

In Partnership with:

Monterey Peninsula Water Management District

FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT

for the

Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project

April 2020

(SCH#2013051094)

Prepared for:
MONTEREY ONE WATER
in partnership with:
MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Prepared by:
DENISE DUFFY & ASSOCIATES, INC.
947 Cass Street, Suite 5
Monterey, CA 93940

Letter B

MONTEREY COUNTY

WATER RESOURCES AGENCY

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BRENT BUCHE
GENERAL MANAGER

STREET ADDRESS
1441 SCHILLING PLACE, NORTH BUILDING
SALINAS, CA 93901

December 18, 2019

Sent via US Mail and Email

Chairperson Ron Stefani
Monterey One Water
Board of Directors
5 Harris Court, Bldg. D
Monterey, CA 93940
Chavito@my1water.org

Re: Time Extension to the Comment Period for Draft Supplemental Environmental Impact Report for the Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project

Dear Chairperson Stefani:

The Monterey County Water Resources Agency (MCWRA) has had a long collaborative relationship with Monterey One Water (M1W) (formerly Monterey Regional Water Pollution Control Agency). This collaboration began with the construction and operation of the Monterey County Water Recycling Projects (Castroville Seawater Intrusion Project (CSIP) and the Salinas Valley Reclamation Project (SVRP)) which have supplied and delivered irrigation water to growers in the Castroville area for over 20 years. The partnership continued with the construction of the Salinas River Diversion Facility (SRDF), which has been in operation since 2010. The capital costs as well as the operations and maintenance costs for all these projects are borne by the stakeholders of MCWRA. The commitment from M1W for the delivery of water to 12,000 acres of irrigated agriculture lands came with the funding and construction of these projects. B-1

Over the years MCWRA and M1W have entered into numerous agreements and amendments to identify each parties' roles and responsibilities. The latest version of those documents outlines the Pure Water Monterey (PWM) project as a collaboration of the two agencies with MCWRA holding the water rights for the Blanco Drain and Reclamation Ditch source water.

MCWRA is required to ensure that the commitments to and the assets of our stakeholders are retained. As MCWRA evaluates future water needs, there are necessary projects that will need to be completed. One such project includes expanding the existing CSIP boundaries that will increase the demand for recycled water and such a project has the potential to use all excess

water that is available. The Salinas Valley Basin Groundwater Sustainability Agency is very close to adopting the Groundwater Sustainability Plan for the 180/400-foot subbasin, and there are projects on its priority list intended to utilize recycled water for the improvement of the Salinas Valley Groundwater Basin.

MCWRA and M1W staff met multiple times prior to the release of the Draft Supplemental Environmental Impact Report (DSEIR) for the PWM Expansion Project to discuss the "New Water Sources". While those meetings were informative, MCWRA staff has not been able to verify the amount of new available water identified in the DSEIR in any substantive way and questions M1W's ownership of some of the sources. MCWRA believes that there are potential inaccuracies in the amount of water available as described in the DSEIR. Or worse yet, it is possible that M1W has no access to the water described. These issues need to be fully analyzed. Specifically, one fundamental disagreement is outlined in Section 2.6.1 of the DSEIR at page 2-12 entitled "Source Water under Proposed Modifications", which states that approximately 700 to 800 acre-feet/year (AFY) less of water would be available for agricultural irrigation with the expansion project. A second fundamental point of disagreement is described in Section 2.6.1.1 of the DSEIR at page 2-13 entitled "Amended and Restated Water Recycling Agreement" where M1W claims half of backwash flow water at around 2,200 AFY.

M1W has stated that this project is "just" a backup and will be put on the shelf and never built. In that light, MCWRA is puzzled by the pressure to keep the current deadline for comments of December 23, 2019. With the above discussed issues, there is simply not enough time for MCWRA to fully evaluate the claims made in the DSEIR to the extent necessary to fulfill our obligation to our stakeholders and to the ratepayers that built the Monterey County Water Recycling Projects. As such, MCWRA respectfully requests that the comment period be extended until January 31, 2020. Thank you for your consideration of this matter.

B-1 Cont.

B-2

B-3

B-4

Sincerely,

Brent Buche
General Manager

Comment Document B: Monterey County Water Resources Agency (12/18/2020)

B-1 The comments on partnership and collaboration are referred to decision-makers. This comment states: "The latest version of those documents outlines the Pure Water Monterey (PWM) Project as a collaboration of the two agencies with MCWRA holding the water rights for the Blanco Drain and Reclamation Ditch source water." M1W would like to clarify that the document referenced is the ARWRA and in that agreement as amended, M1W has the current right to use water diverted from the Blanco Drain and Reclamation Ditch. See response to comment H-4 regarding the Salinas Valley Groundwater Sustainability Plan for the 180/400-ft Subbasin and Master Response #3: Comments on Water Supply and Source Water Availability regarding amounts and availability of rights to the various source waters.

B-2 M1W possesses rights to use various source waters as described in California Water Code Section 1210, M1W's agreement with MCWD, the ARWRA, and the City/M1W Agreement (see Appendices B, C and I of the Draft SEIR). The reduction of yield for CSIP is not related to the M1W use of "new source waters" (as defined in the ARWRA) that would otherwise be used to augment CSIP yields. This reduction of yield for CSIP compared to the ARWRA-assumed CSIP yield of 4,381 AFY is due to the following factors:

- Blanco Drain and Reclamation Ditch water rights permitting conditions triggered by Settlement Agreements with California Department of Fish and Wildlife and the National Marine Fisheries Service, which were signed by the MCWRA in 2016;
- reductions in wastewater flows to the RTP compared to historic flows; and
- use of legal rights to municipal wastewater by MCWD for the RUWAP[1] Phase 1 irrigation demands (see Appendix B to the Draft SEIR).

If conditions precedent in Section 16.15 of the ARWRA are not completed and the new source waters are fully funded by M1W and its state and federal funding partners, M1W will retain rights to use Blanco Drain and Reclamation Ditch source waters for its recycled water customers as needed to meet demands. M1W may choose to use the new source waters to the extent needed and may limit that use to those entities from which it can recover treatment, operations and maintenance costs of the water diversions.

This information has now been included in the Final SEIR as shown in **Chapter 5, Changes to the Draft SEIR** (see changes to pages 2-11 and 2-12 and 4.18-13). See also Master Response #3: Comments on Water Supply and Source Water Availability. In addition, see **Appendix M** of this Final SEIR for a Technical Memorandum titled "Approved Pure Water Monterey Project and Proposed Modifications to Expand the PWM Project Source Water Operational Plan (April 2020)" ("M1W Source Water Technical Memorandum") that responds to concerns that the Proposed Modifications do not have adequate source water in all year types. The analysis in the M1W Source Water Technical Memorandum assumes that the MCWRA has not provided funding

[1] See Addendum No. 3 to the PWM/GWR Final EIR for a complete description of MCWD's RUWAP and the use of municipal wastewater rights for its urban irrigation demands.

for the new source waters described in the ARWRA and thus, MCWRA would have rights to use City of Salinas Agricultural Wash Water and M1W would retain rights to use the Reclamation Ditch and Blanco Drain surface waters.

B-3 The comment refers to Salinas Valley Reclamation Plant (SVRP) and Salinas River Diversion Facility (SRDF) backwash waters. This wastewater enters the M1W-owned RTP headworks when the two facilities are operating. These flows have been discharged into RTP the since the two projects began operating (1998 for SVRP and 2010 for SVRP) and they add quantifiable flows to member entity municipal wastewater and must be treated through the primary and secondary treatment processes. The treatment of these flows adds to the power (pumping), solids processing, and equipment maintenance requirements, including reduced longevity of the primary and secondary treatment equipment. One-half of this wastewater is considered assigned to MCWRA through the ARWRA §4.01(2). As an example, in 2018, a typical or average year type, the total annual volume of SVRP backwash water treated by M1W at the RTP was 1,928 AF, so the amount that would be available to each M1W and MCWRA is 964 AF per year (See Attachment 1, Appendix M of this Final SEIR for the distribution by month). In 2015, a very dry year, the total annual volume of SVRP backwash water was 1,709 AF, or approximately 855 AFY for each. Similarly, the approved PWM/GWR Project with Proposed Modifications would result in additional backwash flows that would also be sent to the RTP headworks. The total annual volume for the expanded AWPF would be 882 AF, or 441 AF for each M1W and MCWRA, less in a drought year when the approved (base) PWM/GWR Project will produce 1,000 AF less assuming the drought reserve is available for MCWRA to use.

B-4 Although the Proposed Modifications are considered to be a backup to the MPWSP desalination project, M1W does not agree that the Proposed Modifications "will be put on the shelf and never built." Many factors will be considered by the M1W Board in deciding whether and when to implement the Proposed Modifications. Currently, M1W does not have adequate funding for the next steps of project implementation (design, permitting, and construction); however, it is possible that the desalination project may not be implemented in time to meet the Cease and Desist Order milestone of December 31, 2021 for operation and that a source of funding may be available to M1W if this occurs. See also Master Response #1: Comments on Public Review Period Extension Requests. For more information on the conditions under which M1W would implement the Proposed Modifications, see Master Response #4: Comments on Adequacy of Scope and Range of Cumulative Impacts Disclosed and Master Response #5: Comments on Adequacy of Scope and Range of Alternatives.

Letter C

Monterey Bay Air Resources District
Serving Monterey, San Benito, and Santa Cruz Counties

24580 Silver Cloud Court
Monterey, CA 93940
PHONE: (831) 647-9411 • FAX: (831) 647-8501

December 27, 2019

Rachel Gaudoin
Monterey One Water
5 Harris Ct., Bldg. D
Monterey, CA 93940
Email: purewatermontereyinfo@my1water.org

SUBJECT: Draft Supplemental EIR for the Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project

Dear Ms. Gaudoin,

Thank you for providing the Monterey Bay Air Resources District (Air District) with the opportunity to comment on the Draft Supplemental EIR for the Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project. The Air District has reviewed the DSEIR and has the following comments:

Air Quality:

- Construction Dust:
  The Air District appreciates that the Construction Fugitive Dust Control Plan applies to all proposed modifications. C-1
- Construction Equipment:
  The Air District recommends using cleaner than required construction and tree remover equipment that conforms to ARB's Tier 3 or Tier 4 emission standards. We further recommend that whenever feasible, construction equipment use alternative fuels such as compressed natural gas (CNG), propane, electricity or biodiesel. This would have the added benefit of reducing diesel exhaust emissions. C-2

Permits Required:

- Portable Equipment:
  The Air District permits to operate, or statewide portable equipment registration, may be required for portable equipment such as engine generator sets and compressors. *Chapter 2: Drilling, Logging, and Installation*, mentions using a temporary diesel pump (up to 500-hp) at the various well sites. Please make sure all project equipment has applicable permits. Contact the Air District's Engineering Division at (831) 647-9411 for Portable Registration questions. C-3

Seaside Basin Watermaster
P.O. Box 51502
Pacific Grove, CA 93950
(831) 641-0113

January 8, 2020

Monterey One Water
Attention: Rachel Gaudoin
5 Harris Court, Building D
Monterey, CA 93940

Subject: Draft Supplemental Environmental Impact Report for the Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project (Draft Supplemental EIR)

Dear Ms. Gaudoin:

The Watermaster is the Court-appointed body responsible for ensuring that the Seaside Groundwater Basin is managed in accordance with the requirements set forth in the Seaside Basin Adjudication Order (Superior Court of the State of California in and for the County of Monterey, Case No. M66343).

The Watermaster previously submitted comments regarding the Notice of Preparation for the Expanded Pure Water Monterey Groundwater Replenishment Project on June 5, 2019. The following are our additional comments on this project.

The Seaside Basin has been utilized to help meet the demands of California American Water Company's (CAWC's) customers throughout its entire service area. To help alleviate and/or reduce damage being caused to the Carmel River Basin, as required by the SWRCB's Cease and Desist Order No. 95-10, the Seaside Basin has been pumped beyond its natural safe yield. To address this problem, CAWC developed the Monterey Peninsula Water Supply Project (MPWSP) as part of a water supply portfolio to reduce pumping from the Seaside Basin. E-1

The Proposed Modified Pure Water Monterey Groundwater Replenishment Project (the Expansion Project) clearly has direct ties to the Seaside Basin. As discussed below, there is the strong potential for negative impacts to the Seaside Basin to occur if the Expansion Project were to be implemented in place of the desalination plant that is being pursued by (CAWC). The desalination plant is a key component of CAWC's MPWSP.

An agreement was executed between the Watermaster and CAWC in December 2008, and amended in June 2014, to utilize water from the MPWSP to payback to the Seaside Basin CAWC's cumulative volume of overproduction since the date of issuance of the Seaside Basin Adjudication Order. This payback is to be accomplished by in-lieu recharge of 700 acre-feet per year for 25 or more years. This in-lieu recharge is to occur by CAWC pumping 700 acre-feet per year less than it would otherwise be entitled to pump under the Seaside Basin Adjudication Order. Depending on when all components of the MPWSP become operational, the payback amount is currently estimated to be in excess of 18,000 acre-feet. E-2

If the Expansion Project were to be implemented in place of CAWC's desalination plant, CAWC would still need to have sufficient in-lieu replenishment water to fulfill its payback obligations. If the desalination plant is not constructed, the payback water would have to come from the Expansion Project. It does not appear that this is being addressed in the sizing of the capacity of the Expansion Project. If the Expansion Project cannot provide this in-lieu replenishment water, the DEIR should address the detrimental impacts on the Basin that will occur if the Expansion Project is utilized as an alternative to the desalination plant. Those impacts would include:

- Continued falling groundwater levels in the Seaside Basin
- An increased risk of seawater intrusion into the Seaside Basin

E-3

CAWC's payback program will greatly benefit the Seaside Basin by helping to raise groundwater levels. However, since the Seaside Basin was overpumped for many years prior to the issuance of the Adjudication Order, even with CAWC's payback program portions of the Seaside Basin will still have groundwater levels below sea level. Thus, the threat of seawater intrusion will still exist. The only solution to that problem will be to inject additional water that would be left in the Seaside Basin and not pumped out, until such time as groundwater levels reach elevations that would prevent seawater intrusion from occurring (these are referred to as "protective elevations"). Modeling studies conducted for the Watermaster indicate that on the order of 25,000 acre-feet of additional water would need to be injected and left in the Seaside Basin over a period of years in order to achieve protective elevations along the coastline.

E-4

This highlights the need for additional water beyond that needed just to serve customer demands and carry out CAWC's payback program. The need for this additional water should also be addressed in the DEIR for the Expansion Project.

If you have any questions regarding these comments, please contact our Technical Program Manager, Mr. Robert Jaques, at (831) 375-0517 or by his email at bobj83@comcast.net.

Sincerely,

Robert S. Jaques

Robert S. Jaques
Technical Program Manager

Comment Document E: Seaside Basin Watermaster

E-1 The Proposed Modifications to the PWM/GWR Project are not intended to be implemented in place of the MPWSP desalination project. The modifications are intended as a back-up supply in case the MPWSP desalination is not implemented in time to meet the Cease and Desist Order referenced in this comment. The Proposed Modifications would not reduce the availability of water to the Seaside Groundwater Basin nor increase extractions from the Basin in exceedance of the amounts injected, but instead would provide for a new source of water to be injected into and extracted from the basin in the event that the MPWSP desalination project does not meet the CDO milestone for delivery of new water by December 31, 2021. See also response to E-2 and Master Response #3: Comments on Water Supply and Source Water Availability, and Master Response #5: Comments on Adequacy of Scope and Range of Alternatives.

E-2 The analysis prepared for the Proposed Modifications assumed that their implementation would constitute a new water supply that would meet the Cease and Desist Order and thus would trigger the requirement for CalAm to commence their in-lieu recharge of 700 acre-feet per year for 25 or more years. The Draft SEIR acknowledges and assumes that CalAm would have a reduction of 700 AF of native groundwater available from the Seaside Basin upon implementation of the Proposed Modifications. This assumption is relevant for the growth inducement analysis in **Chapter 5** of the Draft SEIR. Accordingly, page 5-5 of the Draft SEIR shows that native groundwater supplies are assumed to be only 774 AFY, compared to 1,474 AFY that can be pumped under CalAm's adjudicated rights. This same assumption is also included in the groundwater modeling as described in the Draft SEIR **Appendix D**, page 16, Final SEIR **Appendix O** MPWMD Supply and Demand Report, page 2, and the Expanded PWM/GWR Project SEIR: Groundwater Modeling Analysis (Montgomery & Associates November 1, 2019).

E-3 See response to E-2 and the Master Response #3: Comments on Water Supply and Source Water Availability. By assuming that only 774 AFY of native groundwater is pumped from the Seaside Basin, the MPWMD Water Supply and Demand Analysis (MPWMD, March 2020) demonstrates that the Proposed Modifications would provide sufficient water to enable Cal-Am to fulfill its payback obligations. Further, the Proposed Modifications are a backup supply; the Proposed Modifications do not preclude future implementation of the MPWSP desalination project.

E-4 Neither the Proposed Modifications nor the MPWSP desalination project were sized to provide 25,000 acre-feet of additional water to the Seaside Basin, for the purpose of raising groundwater levels. This amount of new water supply yield would be in excess of CalAm's needs for meeting the CDO, Seaside Basin adjudication, and customer demands. It is possible that, in the future, excess source waters could be treated and conveyed by the Proposed Modifications for this purpose; however, such a project has not been proposed or evaluated, and it is beyond the scope of this SEIR for the Proposed Modifications.

City of Salinas
OFFICE OF THE MAYOR • 200 Lincoln Avenue • Salinas, California 93901 • (831) 758-7201 • Fax (831) 758-7368

January 29, 2020

Via U.S. Mail and Electronic Mail

Rachel Guadoin, Public Outreach Coordinator
Monterey One Water
5 Harris Court, Building D
Monterey, CA 93940
purewatermontereyinfo@my1water.org

Re: Use of Agriculture Produce Wash Water for the Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project, Draft Supplemental Environmental Impact Report (Draft SEIR)

Dear Ms. Guadoin:

The City of Salinas provides the following comments on the Draft Supplemental Environmental Impact Report ("Draft SEIR") for the Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project ("Expansion Project"). In particular, the City is providing clarifications as to Monterey One Water's (formerly the Monterey Regional Water Pollution Control Agency) ("M1W") permissible use of agriculture produce wash water pursuant to its existing agreements with the City.

The City of Salinas is known as the "Salad Bowl of the World" and is surrounded by agriculture on all sides. The City remains committed to preserving agriculture as its major industry, which is important for maintaining our community's quality of life. Water is a critical component of the agriculture industry, and agriculture methods and technologies continue to evolve not only to make water use more efficient, but to find ways to treat and reuse water in agriculture processes to avoid wasting limited water resources. Accordingly, any potential use of agriculture produce wash water generated in the City without the City's consent is a critical issue for our residents and businesses. F-1

Agriculture produce wash water is an important component of the source water for the Expansion Project, which is projected in the Draft SEIR to be an annual average of 3,732 acre-feet per year ("AFY"). (Draft SEIR, App. I, p. 3.) While the Draft SEIR appears to rely on the availability of this water in order to produce the 2,250 AFY of additional potable water that the Expansion Project proposes to produce, M1W does not have sufficient agreements in place with the City to permit M1W to use the City's agriculture produce wash water for the Expansion Project. In fact, and as discussed in detail below, existing agreements limit M1W's use of the City's agriculture produce wash water to the previously approved 3,500 AFY Pure Water Monterey Replenishment Project ("GWR Project"). In the absence of further agreements from the City, the City intends to use available agricultural wash water for its own purposes, including to support farmers, ranchers and

the City's agriculture industry. Accordingly, M1W's ability to produce an additional 2,250 AFY of potable water through the Expansion Project is uncertain.

F-1 Cont.

Section 4.18.3.3 of the Draft SEIR and Draft SEIR Appendix B (the Revised Source Water Rights Memorandum) confirms that the City has exclusive right to its treated wastewater, absent agreements with M1W. (Draft SEIR Appx B, p. 6.) While the City has entered into certain agreements with M1W to permit M1W to use the City's agricultural wash water for specified purposes, the Draft SEIR (see Draft SEIR p. 4.18-6) overlooks the limited scope of M1W's rights under the Amended and Restated Water Recycling Agreement ("ARWRA") (**Exhibit A**) and does not consider the limitations in the October 27, 2015 Agreement for Conveyance and Treatment of Agricultural Produce Wash Water by and between the City of Salinas and M1W ("2015 Conveyance and Treatment Agreement") (**Exhibit B**).

The 2015 Conveyance and Treatment Agreement allows agricultural produce wash water to be used for the approved GWR Project, but does not permit that water to be used for the proposed 2,250 AFY Expansion Project. The 2015 Conveyance and Treatment Agreement has two permitted uses of the agricultural produce wash water: 1) to serve the GWR Project, and 2) augment the existing Castroville Seawater Intrusion Project's ("CSIP") crop irrigation supply. (Agreement, §1.a-b.) Sections 1.a and 1.b provide that agricultural wash water is conveyed for the "uses described in Recital B." Recital B states "The MRWPCA [now M1W] has an existing need for source water for 1) to serve its Pure Water Monterey Groundwater Replenishment Project (the "GWR Project") and 2) to augment the existing Castroville Seawater Intrusion Project's ("CSIP") crop irrigation supply." Therefore, use of the agricultural wash water is limited to these express uses, which does not include the Expansion Project.

F-2

The 2015 Conveyance and Treatment Agreement does not allow for water use beyond the scope of the approved GWR Project as it was approved in 2015. Specifically, the "Agreement implements the Pure Water Monterey Groundwater Replenishment Project ('GWR') that the MRWPCA Board approved on October 8, 2015." (Agreement, p. 2 [Recital F].) Further, the 2015 Conveyance and Treatment Agreement was approved by the parties "based on the EIR as certified" for the GWR Project. (Agreement, p. 2 [Recital F].) This language therefore limits the use of agricultural wash water to the scope of the GWR Project as it was approved in 2015, which does not include the later proposed Expansion Project.

The ARWRA does not contemplate the use of agricultural produce wash water for the Expansion Project. The ARWRA "provides for new source waters from the Blanco Drain, Reclamation Ditch and the City of Salinas [] for CSIP and the Pure Water Monterey Project." (**Exhibit C, p. 1** [Monterey One Water Staff Report].) The ARWRA contains the same limiting language as the 2015 Conveyance and Treatment Agreement, stating that it "relates to and implements certain portions of the [GWR Project] that the MRWPCA Board approved on October 8, 2015." (ARWRA, pp. 6-7 [Recitals].) The ARWRA was also "approved based on the EIR as certified" in 2015. (ARWRA, pp. 6-7 [Recitals].)

F-3

For the same reasons discussed above, the ARWRA does not support the use of agricultural produce wash water for the Expansion Project, which was not a part of the GWR Project at the time it was approved in 2015. Moreover, although the ARWRA was amended in 2019, the parties did not amend it to include use of agricultural produce wash water for the Expansion Project. (**Exhibit D** [Amendment No. 1 to Amended and Restated Water Recycling Agreement between Monterey County Water Resources Agency and Monterey One Water.])

F-3
Cont.

The City of Salinas appreciates the opportunity to comment on the Draft SEIR. Should you have questions or wish clarification on the important issues the City has raised, please contact me.

Sincerely,

Joe Gunter
Mayor

Cc: City Council
City Manager
Public Works Director

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LATHAM & WATKINS LLP

January 30, 2020

VIA EMAIL & HAND DELIVERY

Rachel Gaudoin, Public Outreach Coordinator
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Monterey, CA 93940
purewatermontereyinfo@my1water.org

Re: Comments on the Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project, Draft Supplemental Environmental Impact Report (Draft SEIR)

Dear Ms. Gaudoin:

On behalf of California-American Water Company ("Cal-Am"), we appreciate the opportunity to provide written comments on the Draft SEIR for the Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project ("PWM Expansion Project") prepared by Monterey One Water ("M1W"). As you know, Cal-Am has developed and is in the permitting process for the Monterey Peninsula Water Supply Project ("MPWSP"), and M1W and its Board of Directors previously have described the PWM Expansion Project as a "back-up" to the MPWSP. (See, e.g., Draft SEIR, p. S-1.) As such, the PWM Expansion Project is of particular interest to Cal-Am, given its potential implications for water supply issues affecting the Monterey Peninsula and Cal-Am's customers. VV-1

Unfortunately, the Draft SEIR released for public review on November 7, 2019, appears to be inadequate in several material respects and fails to cover thoroughly all the issues that M1W must consider and analyze under the California Environmental Quality Act. The Draft SEIR is missing crucial data and analysis for the impacts that may occur if the PWM Expansion Project and the MPWSP go forward together, as cumulative projects. The Draft SEIR also fails to analyze the PWM Expansion Project as an actual alternative to the MPWSP, as has been suggested by certain resource agencies and MPWSP project opponents, as well as by the General Manager of the Monterey Peninsula Water Management District ("MPWMD"), a partner agency with M1W on the PWM Expansion Project. Cal-Am is submitting the attached comments in an effort to resolve these significant gaps, along with other issues we have identified in the attachment.

Further, the Draft SEIR relies on "updated water demand estimates" prepared by Dave Stoldt, General Manager of the MPWMD ("Stoldt Memo"), which are based on inaccurate VV-2

assumptions about water supplies and demands. As described in the attached peer review of the Stoldt Memo conducted by Hazen and Sawyer, the Stoldt Memo fails to provide evidentiary support for its supply and demand conclusions and is flawed for several reasons.

- MPWMD staff's methodology does not meet Health and Safety Code requirements for water supply reliability or Code of Regulations requirements for estimating water demand based on the highest 10-year maximum daily demand.
- MPWMD staff identifies a projected 2020 demand based on a 5-year average, rather than the required 10-year maximum daily demand, thereby underestimating demand.
- MPWMD staff assume continued implementation of tiered water rates, conservation restrictions, and water use reductions to justify lower demand projections. These measures, if continued, could harm the regional economy and quality of life on the Monterey Peninsula.
- MPWMD staff's supply projection assumes that each water supply source included in its analysis is available at all times at maximum capacity. Staff does not account for potential shortfall that would occur if one or more sources are reduced or off-line for extended periods of time.

VV-2 Cont.

The Draft SEIR's reliance on Mr. Stoldt's flawed memorandum cannot constitute substantial evidence in support of the Draft SEIR's conclusions. Thus, the Draft SEIR must be revised and recirculated so that it does not rely on the flawed Stoldt Memo and its analysis of water supply and demand on the Peninsula.

Cal-Am appreciates M1W's careful consideration of this comment letter and the issues we have raised. Water supply is one of the most critical issues facing the Monterey Peninsula, and it is therefore essential that M1W thoroughly analyze all potential environmental issues that are implicated by the PWM Expansion Project so that a safe, reliable and drought-proof water supply can be developed for the Peninsula. We would be pleased to respond to questions and engage further with M1W staff regarding the PWM Expansion Project.

Very truly yours,

Duncan Joseph Moore
of LATHAM & WATKINS LLP

Attachments

cc: Rich Svindland, California-American Water Company
Ian Crooks, California-American Water Company
Kathryn Horning, Esq., California-American Water Company
Tony Lombardo, Esq., Lombardo & Associates

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CALIFORNIA-AMERICAN WATER COMPANY
COMMENTS ON THE DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT REPORT FOR THE PWM EXPANSION PROJECT

I. FAILURE TO ANALYZE THE MPWSP AS A CUMULATIVE PROJECT OR ALTERNATIVE

The Draft Supplemental Environmental Impact Report ("SEIR") repeatedly describes the Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project ("PWM Expansion Project") as "a backup to California American Water (CalAm's) Monterey Peninsula Water Supply Project (MPWSP)." (See, e.g., Draft SEIR, pp. S-1, 2-1.) However, the SEIR does not consider the cumulative impacts of both the PWM Expansion Project and the MPWSP being implemented either concurrently or in short succession. In contrast, if it is not Monterey One Water's ("M1W") intent to develop the PWM Expansion Project as an additional back-up supply to the MPWSP, then the SEIR should analyze the MPWSP as an alternative to the PWM Expansion Project, which it does not currently do. Therefore, and in order to provide a conservative analysis of all potential environmental implications of the PWM Expansion Project, the MPWSP should be analyzed as both a cumulative project and as an alternative throughout the SEIR.

VV-3

The CEQA Guidelines define cumulative impacts as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." (Cal. Code Regs., tit. 14 ("CEQA Guidelines"), § 15355.) Cumulative impacts may result from individually minor but collectively significant projects taking place over a period of time. (*Id*., § 15355, subd. (b).) An EIR's evaluation of cumulative impacts may be based on a list of past, present, and probable future projects producing related impacts. (*Id*., § 15130, subd. (b)(1)(A).)

Here, the Draft SEIR acknowledges that Cal-Am is processing approvals for the MPWSP and intends to move forward with its construction and operation. Therefore, the MPWSP constitutes a probable future project that should be assessed in the Draft SEIR's cumulative impact analyses. This would be consistent with the approach utilized in the Consolidated Final Environmental Impact Report for the Pure Water Monterey Groundwater Replenishment Project ("PWM Project"), which analyzed the MPWSP as a cumulative project. (See Consolidated Final Environmental Impact Report for the Pure Water Monterey Groundwater Replenishment Project ("PWM Project Final EIR"), p. 4.1-10.) As written, the SEIR is inconsistent with the prior environmental analysis and must be updated to treat the MPWSP consistently as a cumulative project.

In addition, the Draft SEIR should have analyzed the MPWSP as an alternative to the PWM Expansion Project. As described in detail in the technical memorandum from Dudek ("Dudek Memo"), attached hereto as **Exhibit A**, despite statements in the Draft SEIR indicating that the PWM Expansion Project would be implemented only if the MPWSP "encounters obstacles that prevent its timely, feasible implementation to satisfy the requirements [State Water Resources Control Board ("SWRCB")] orders [sic] related to unauthorized diversions from the Carmel River system" (Draft SEIR, p. 1-3; see also M1W Board Resolution 2019-19), those statements are not consistent with the analytic approach taken in several areas of the Draft SEIR.

VV-4

Specifically, substantial evidence in the Draft SEIR reveals that the PWM Expansion Project's sponsors intend that it serve as an alternative to or a replacement of the MPWSP and not as a true back-up to the MPWSP in the event the MPWSP is delayed. For example, as noted in the Dudek Memo, Table 5-1 of the Draft SEIR compares available water supplies under ***either*** the PWM Expansion Project or the MPWSP, effectively treating the two projects as alternatives to each other. As such, the Draft SEIR should have analyzed the MPWSP as an alternative to achieve Peninsula water demands. (See CEQA Guidelines, § 15126.6, subd. (a) [EIR should describe a range of alternatives to meet basic project objectives]; see also *Habitat & Watershed Caretakers v. City of Santa Cruz* (2012) 211 Cal.App.4th 429, 451 [finding that EIR's omission of a project purpose from the statement of project objectives created an inadequate alternatives analysis].) In doing so, the Draft SEIR should have studied in detail both the PWM Expansion Project's and the MPWSP's ability to meet projected demand and satisfy the SWRCB's Cease and Desist Order ("CDO"). (See Section IV.B *infra*.) VV-4 Cont.

By taking an inconsistent approach in describing the relationship between the PWM Expansion Project and the MPWSP, the Draft SEIR has failed to provide a consistent project description, and thus has failed to provide the necessary environmental analysis throughout. Accordingly, the Draft SEIR fails as an information document under CEQA. (See, e.g., *Laurel Heights Improvement Ass'n v. Regents of Univ. of Cal.* (1988) 47 Cal.3d 376 [EIR failed to describe or analyze project accurately, resulting in inadequate impact analyses].)

II. PROJECT DESCRIPTION

A. Introduction

The Draft SEIR states that the PWM Expansion Project is intended to be a "stop-gap" to provide new water supplies in the event that the MPWSP becomes delayed. (Draft SEIR, p. 1-3.) But subsequent to the release of the Draft SEIR, M1W announced further delays in the completion and operation of the already approved PWM Project.[1] The Final SEIR should assess the impacts that those delays may have on the PWM Expansion Project, and evaluate how those delays affect the PWM Expansion Project's ability to meet stated Project Objectives. VV-5

In addition, the Draft SEIR states that certain components of the PWM Project, such as the brine mixing structure and modifications to the Salinas Valley Reclamation Plant to improve delivery of recycled water to agricultural users have not been funded to date. (Draft SEIR, p. 2-7.) The SEIR should be revised to explain how these components affect or are affected by the PWM Expansion Project, and whether they are necessary for successful Project implementation. In addition, the SEIR should assess the potential agricultural impacts that would occur if these components remain unfunded. VV-6

[1] See Monterey Herald, "Pure Water Monterey finishes key water tests, delivery date delayed again" (Jan. 10, 2020), available at https://www.montereyherald.com/2020/01/10/pure-water-monterey-finishes-key-water-tests-delivery-date-delayed-again/, attached hereto as **Exhibit G**.

B. Project Background

1. The Draft SEIR Improperly Relies on a Flawed Water Supply and Demand Memorandum

The SEIR states that the PWM Expansion Project is "designed to provide the replacement water CalAm needs to comply with the Cease and Desist Order and with the Seaside Groundwater Basin Adjudication." (Draft SEIR, p. 2-8.) In doing so, the SEIR relies on "updated water demand estimates" prepared by Dave Stoldt, General Manager of the Monterey Peninsula Water Management District ("MPWMD") ("Stoldt Memo"), which are based on inaccurate assumptions about water supplies and demands. (See **Exhibits B-D** [Letters from Cal-Am, Coalition of Peninsula Businesses, and Pebble Beach Company pointing out flaws in the Stoldt Memo].) VV-7

Relying on the Stoldt Memo is wholly insufficient and improper, and renders the Draft SEIR inadequate as an informational document. As described in detail in Exhibits B through D, and in the attached peer review of the Stoldt Memo conducted by Hazen and Sawyer ("Hazen Memo"), attached hereto as **Exhibit E**, the Stoldt Memo fails to provide any evidentiary support for its conclusions regarding supply and demand. Specifically:

- The Stoldt Memo uses water supply and demand estimates that have been rejected by the California Public Utilities Commission ("CPUC"), the regulatory agency with exclusive jurisdiction to determine such issues for regulated utilities like Cal-Am. (See Pub. Util. Code, §§ 761, 1001; see also *Citizens Utilities Co. of Cal. v. Super. Ct.* (1976) 56 Cal.App.3d 399, 409 ["Questions of public convenience and necessity, and matters directly relating thereto, in connection with the operation of public utility franchises, are the concern of the commission."].) The CPUC determined that the Monterey Peninsula's future water demand will be approximately 14,000 acre-feet per year ("afy"), that current projected water supplies without the MPWSP are inadequate to meet that demand, and that public convenience and necessity require the MPWSP.[2] VV-7a

- The Stoldt Memo's methodology does not meet California Health and Safety Code requirements for water supply reliability or California Code of Regulations requirements for estimating water demand based on the highest 10-year maximum daily demand (Cal. Code Regs., tit. 22, § 64554). In addition, the Stoldt Memo's demand estimates fail to comply with CPUC General Order 103-A, which mandate how a public water utility's system demand must be calculated. VV-7b

[2] CPUC Decision ("D.") 18-09-017, p. 171, available at: http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M229/K424/229424336.PDF.

- The projected 2020 demand identified in the Stoldt Memo is based on a 5-year average, rather than the required 10-year maximum daily demand. As a result, projected demand is underestimated. VV-7c

- The Stoldt Memo assumes continued implementation of tiered water rates, conservation restrictions, and water use reductions to justify lower demand projections. The Draft SEIR fails to identify this significant issue to the public and decisionmakers. This is a substantial omission, since continued water use restrictions on the Peninsula will keep area residents and businesses in water poverty, harming the regional economy and quality of life. VV-7d

- The Stoldt Memo's supply projection assumes that each water supply source included in its analysis is available at all times at maximum capacity. The Stoldt Memo does not account for potential shortfall that would occur if one or more sources are reduced or off-line for extended periods of time, which could create a significant supply deficit and result in the need for additional water diversions from the Carmel River. VV-7e

As a result, the Stoldt Memo is an unsubstantiated and unacceptable assessment of the demands of Cal-Am's Monterey District water system, and should be given no weight in the Draft SEIR. Instead, the Draft SEIR should have relied on the demand for Cal-Am's system as determined by the CPUC in Decision No. 18-09-017, which was based on evidence submitted under oath by multiple parties that was fully vetted by the CPUC in accordance with State law and CPUC policies.[3] As such, the Draft SEIR must be revised so that it does not rely on the flawed Stoldt Memo, particularly any analysis of supply and demand for water on the Monterey Peninsula that conflicts with the controlling CPUC-determined supply and demand. (*Citizens Utilities Company*, *supra*, 56 Cal.App.3d at p. 590 ["the jurisdiction to determine the adequacy of service actually being rendered by a public utility under its franchise is vested exclusively in the Commission when it has elected to determine whether the service is inadequate."]; see also VV-7f

[3] M1W participated in the CPUC's proceeding and was a Real Party in Interest in the Marina Coast Water District's and the City of Marina's petitions for writs of review to the California Supreme Court, both of which challenged the CPUC's supply and demand determinations. The California Supreme Court rejected the petitions for writ of review, and the CPUC's decision is now final. (See *PG&E Corp. v. Pub. Utilities Com.* (2004) 118 Cal.App.4th 1174, 1192 ["[A] denial of a petition for writ of review from a CPUC order acts as law of the case, precluding further litigation between the parties of the challenged CPUC order."]; *S. Cal. Edison Co. v. Pub. Utilities Com.* (2005) 128 Cal.App.4th 1, 7; *People v. W. Air Lines* (1954) 42 Cal.2d 621, 631.) As M1W participated in the CPUC proceedings and the writ proceedings before the California Supreme Court, it is now collaterally estopped from asserting arguments regarding supply and demand that were considered, and rejected, by both the CPUC and the California Supreme Court. (See *Pacific Lumber Co. v. State Water Resources Control Bd.* (2006) 37 Cal.4th 921, 944 ["We have recognized that '[c]ollateral estoppel may be applied to decisions made by administrative agencies.'"]; *Castillo v. City of Los Angeles* (2001) 92 Cal.App.4th 477, 481 ["Issue preclusion is not limited to barring relitigation of court findings. It also bars the relitigating of issues which were previously resolved in an administrative hearing by an agency acting in a judicial capacity."].)

City of Oakland v. Key System (1944) 64 Cal.App.2d 427, 435 [exclusive jurisdiction vested in CPUC to determine adequacy of service rendered by public utility].) VV-7f Cont.

Further, if the Draft SEIR continues to rely on the Stoldt Memo in any respect—which it should not—the SEIR must be revised to reflect that Mr. Stoldt has made substantive revisions subsequent to the release of the Draft SEIR to reflect additional water needed for regional growth and housing needs. (See December 17, 2019, MPWMD Water Demand Committee Agenda, attached hereto as **Exhibit F**.) As described in Exhibit E, Mr. Stoldt appears to have selectively utilized growth projections that are intended to achieve his desired outcome, and has ignored the higher growth and future water supply projections from individual cities in the MPWSP area. Further, the revisions to the Stoldt Memo's future demand projections underscore that Mr. Stoldt lacked evidentiary basis for his original "calculations," and instead relied on conjecture and speculation, which cannot constitute substantial evidence. (See CEQA Guidelines, § 15384, subd. (a) ["Argument, speculation, unsubstantiated opinion or narrative, evidence which is clearly erroneous or inaccurate . . . does not constitute substantial evidence."].) VV-7g

2. The Draft SEIR Does Not Fully Assess the PWM Expansion Project's Ability to Meet the Stated Project Objective of Satisfying the CDO

The Draft SEIR provides that a primary objective of the PWM Expansion Project is to "be capable of commencing operation, or of being substantially complete, by the end of 2021 or as necessary to meet CalAm's replacement water needs." (Draft SEIR, p. 2-9.) However, the Draft SEIR does not assess several issues that affect the PWM Expansion Project's ability to meet this stated objective. VV-8

First, as described in detail in Exhibit B and above, the CPUC, which is the State agency vested with the authority to make utility system sizing determinations (Pub. Util. Code, §§ 761, 1001), has determined that Cal-Am's replacement water needs are 14,000 acre-feet per year. (See D.18-09-017, p. 171.) The Draft SEIR does not assess the PWM Expansion Project's ability to meet this identified need. Accordingly, the SEIR should be revised to address the CPUC's evaluation of supply and demand. VV-8a

Second, delays in the implementation of the PWM Project call into question the ability of PWM Expansion Project to meet the CDO's deadlines. (See Ex. G.) The SEIR should be revised to address the recent delays of implementation of the PWM Project, and how those delays affect the ability of the PWM Expansion Project to meet projected demand and comply with the SWRCB's CDO. VV-8b

Third, the Draft SEIR discloses that some federal permits will be required for the PWM Expansion Project. (Draft SEIR, p. 2-33.) Issuance of these permits will require review under the National Environmental Policy Act. The timeline for federal permitting should be addressed in the SEIR's assessment of the PWM Expansion Project's ability to meet the CDO's deadlines.[4] VV-8c

[4] For example, the Draft SEIR does not fully assess the Proposed Modifications' potential impacts to the Fort Ord National Monument or whether any approvals would be required from the National Parks

C. The PWM Expansion Project

The Draft SEIR's description of the PWM Expansion Project is unclear in several respects. Specific areas where further detail and analysis are necessary are identified below.

Availability of Water for Agricultural Irrigation. The SEIR explains that, under the PWM Expansion Project, there would be 700 to 800 afy less water available for agricultural irrigation than under the approved PWM Project. (Draft SEIR, pp. 2-11 to 2-12.) The SEIR should be revised to address the potential impacts of this more than 16% reduction in available agricultural irrigation water. For example, would more dust be generated because less areas would be irrigated, or would be irrigated less frequently? Would fields lay fallow more frequently, or be taken out of agricultural use due to the reduction of available water? All potential impacts to agricultural resources should be assessed in light of these changed assumptions. As described in Exhibit A, at a minimum, the SEIR should analyze the reduction in agricultural water supplies and explain why reducing those supplies by more than 16% are not significant. VV-9

Reduction in Wastewater Discharge. The Draft SEIR explains that, under the PWM Expansion Project, less municipal wastewater would be discharged through the ocean outfall. (Draft SEIR, p. 2-11.) The SEIR should be updated to assess how this reduction in wastewater discharge would affect operations of the MPWSP in a cumulative project scenario, particularly in the context of ocean water quality. VV-10

Amended and Restated Water Recycling Agreement Conditions Precedent. The Draft SEIR assumes that certain conditions precedent in the Amended and Restated Water Recycling Agreement ("ARWRA") would be met prior to commencement of operation of the PWM Expansion Project. (Draft SEIR, p. 2-14.) One of the objectives of the Project is to "be capable of commencing operation, or of being substantially complete, by the end of 2021 or as necessary to meet CalAm's replacement water needs." (*Id*. at p. 2-9). However, as discussed in the Dudek Memo, there is no analysis of impacts related to the Project's ability to achieve this objective or the Project objective of complying with the CDO by December 31, 2021. (Ex. A, pp. 9-10.) This lack of analysis is particularly problematic because the PWM Expansion Project is being considered by government agencies as an alternative to the MPWSP. (*Ibid.*) There is a further concern that the conditions identified in the ARWRA, "some of which are outside of the control of the parties to the Agreement, may not be met in a timely fashion." (*Id*. at p. 9.) The Draft SEIR acknowledges that certain conditions must be met in order for full rights to the various water sources to be secured. (*Ibid.*) In light of this uncertainty, the Draft SEIR must consider project alternatives that can reasonably achieve the PWM Expansion Project's primary VV-11

Service. The Draft SEIR states that "the monument area is currently not open to the public for recreational use due to the presence of military munitions and clean-up activities occurring on an ongoing basis." (Draft SEIR, p. 4.2-10.) To the contrary, while a portion of the Monument is closed to the public, a large portion of the Monument is actually open and accessible to the public. (See Fort Ord National Monument Trail Map, available at https://www.blm.gov/documents/california/public-room/map/fort-ord-national-monument-trail-map.) The SEIR should be revised to fully assess potential impacts to the Fort Ord National Monument, including visual impacts, and to disclose any required federal approvals. VV-8c Cont.

objectives, including the MPWSP. (*Ibid.*) Accordingly, the Draft SEIR should assess the likely time period that would be required to meet the conditions precedent and evaluate the reliability the Project's source water if the conditions precedent are not met. (*Id*. at pp. 9-10.)

VV-11 Cont.

VV-12

III. ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

A. Air Quality and Greenhouse Gas

The Draft SEIR materially underestimates air quality emissions due to both flawed air modeling and mistaken assumptions. Further, the air quality analysis contains numerous internal discrepancies that undermine the Draft SEIR's determinations of less than significant impacts. Due to these flaws, the Draft SEIR does not adequately assess or disclose the PWM Expansion Project's potential air quality impacts for the public and decisionmakers. (See also Ex. A, pp. 11-13 [identifying deficiencies in the Draft SEIR's air quality analysis].)

VV-13

1. Failure to Use CalEEMod Conceals Analysis from Public

The Draft SEIR fails to utilize the California Emissions Estimator Model ("CalEEMod"). Instead, the Draft SEIR uses a "spreadsheet analysis" based on the flawed opinion of an air quality consultant (Illingworth and Rodkin) that use of CalEEMod "was inappropriate since the model does not predict fugitive emissions from trenching/pipeline construction and well drilling." (Draft SEIR, p. 4.3-4.) In contrast to the consultant's claims, use of CalEEMod is appropriate since CalEEMod inputs can be modified by the user to accommodate unique projects; moreover, emissions calculations for sources not covered by CalEEMod can be performed outside CalEEMod and later combined with CalEEMod outputs. Declining to utilize CalEEMod to perform the CEQA air quality analysis is a peculiar choice for a large development project, and it essentially precludes the public from cross-checking the analysis that is presented. The Draft SEIR's failure to utilize CalEEMod results in an opaque air quality analysis with the assumptions underlying the "spreadsheet analysis" hidden from both the public and decisionmakers.

VV-14

Use of CalEEMod to evaluate air quality impacts for a development like the PWM Expansion Project is critical given the Project's regional importance and the need for its impacts to be assessed by numerous government agencies and stakeholders. CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas ("GHG") emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from project construction and operation (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, the model identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user.

VV-15

CalEEMod was developed for the California Air Pollution Officers Association in collaboration with the California Air Districts. Default data (e.g., emission factors, trip lengths, meteorology, source inventory) have been provided by the various California Air Districts to

account for local requirements and conditions. The model is free of charge and is periodically updated when modifications are warranted. CalEEMod is a comprehensive tool for quantifying air quality impacts from land use projects located throughout California and expressly is intended for use in preparing CEQA documents.[5] Indeed, the Monterey Bay Air Resources District ("MBARD"), which has jurisdiction over the PWM Expansion Project, expressly recommends the use of CalEEMod for CEQA projects: "MBARD recommends using the CalEEMod software program to calculate project emissions."[6] Therefore, to correct the deficiency caused by use of a "spreadsheet analysis," the PWM Expansion Project's air pollution emissions must be recalculated and reported using the latest version of CalEEMod, as would be expected for such an infrastructure project with regional implications. VV-15 Cont. VV-16

2. Utilization of Outdated Emissions Model Underestimates Emissions

The Draft SEIR's air quality emissions estimates are based on the California Air Resources Board's Emission Factors Model ("EMFAC") 2014, which is an outdated on-road vehicle emissions model. The current version of the model, EMFAC2017, was officially released to the public on March 1, 2018, and approved by USEPA on August 15, 2019. Accordingly, EMFAC2017 was available during the development of both the air quality analysis in the Draft SEIR and Appendix F thereto (*Air Quality and Greenhouse Gas Emissions Impacts Technical Memorandum*, dated October 23, 2019). VV-17

The Draft SEIR's utilization of an outdated model is important because EMFAC2017 contains numerous updates over EMFAC2014, in particular for heavy-duty ("HD") vehicle emission rates and idling emission factors, that results in higher particulate matter ("PM") emissions as compared to EMFAC2014.[7] Even though the latest version of CalEEMod uses mobile emission factors from EMFAC2014, California Air Resources Board ("CARB") staff routinely recommends in CEQA comment letters that projects' mobile air pollutant emissions be estimated using the latest version of EMFAC—here, EMFAC2017.[8] Since EMFAC2017 shows higher air pollutant emissions from HD vehicles than EMFAC2014, the PWM Expansion Project's mobile source nitrogen oxides ("NOx") and diesel PM ("DPM") emissions are underestimated as currently presented in the Draft SEIR. Indeed, the utilization of EMFAC2017 could lead to 2 to 2.5 times increase in PM and DPM emissions, a known carcinogen, and up to a VV-18

[5] See generally California Air Pollution Control Officers Association, 2016. California Emissions Estimator Model (available at http://www.caleemod.com/).

[6] See https://www.mbard.org/ceqa (last visited Jan. 16, 2020).

[7] See California Air Resources Board, *EMFAC2017 – An Update to California On-Road Mobile Source Emission Inventory*, November 9, 2017 (available at https://ww3.arb.ca.gov/msei/downloads/emfac2017_workshop_11_09_2017_final.pdf).

[8] See Letter from CARB, Richard Boyd, Chief, Risk Reduction Branch, Transportation and Toxics Division to Carlos Rojas, Planner, Kern County Planning Department, dated December 20, 2019 (available at https://ww2.arb.ca.gov/resources/documents/california-environmental-quality-act-letters-freight-facilities).

70% increase in NOx emissions. The air pollution emissions disclosed in the Draft SEIR therefore must be recalculated and reported using EMFAC2017. VV-18 Cont.

3. Mistaken Assumptions Underestimate Emissions

The Draft SEIR contains mistaken assumptions about construction techniques, equipment, and vehicle usage that underestimate the PWM Expansion Project's emissions. The air pollution emissions disclosed in the Draft SEIR must be recalculated and reported using correct assumptions. VV-19

The Draft SEIR estimated fugitive dust, NOx, and DPM emissions (associated with equipment used to dig and refill trenches) on an assumed trench width of 6 feet. (Draft SEIR, p. 4.3-6.) However, the Draft SEIR elsewhere states that "trench widths may be up to 12 feet wide." (*Id*. at p. 2-21.) A 12-foot trench width must be used to provide worst-case daily emissions to properly assess the PWM Expansion Project against pertinent thresholds of significance, which are calibrated for worst-case scenarios. VV-20

Despite failing to use CalEEMod to calculate the PWM Expansion Project's emissions, the Draft SEIR nonetheless borrows default trip lengths from CalEEMod for all on-road vehicles. While CalEEMod's default trip lengths are intended to account for local requirements and conditions, they should not be used blindly and without verification. For example, the Draft SEIR uses the CalEEMod default 20-mile one-way trip distance for HD trucks. The trip distances in the Draft SEIR should be substantiated and the associated emissions should be recalculated. VV-21

4. Failure to Perform Health Risk Assessment Obscures Project Impacts on Public Health

The Draft SEIR failed to perform a Health Risk Assessment ("HRA") on the additions of extraction well ("EW") 1 and EW-2 to the PWM Expansion Project. Rather, the Draft SEIR improperly relies on the HRA previously completed by Cal-Am as part of the MPWSP Environmental Impact Report/Environmental Impact Statement ("EIR/EIS"). The Draft SEIR attempts to extrapolate the results of Cal-Am's HRA on EW-3 and EW-4 to EW-1 and EW-2, despite the latter pair's different location and proximity to sensitive receptors. (Draft SEIR, p. 4.3-13.) The Draft SEIR attempts to justify its conditional inference ("Therefore, those same conclusions from the CalAm Project could be applied to support the findings of a less-than-significant impact in terms of effects to sensitive receptors.") by asserting that EW-1 and EW-2 will be farther away from sensitive receptors than EW-3 and EW-4. (*Ibid.*) However, that assertion proves untrue upon closer inspection of the proposed locations of EW-1 and EW-2. VV-22

A HRA requires specific inputs in order to be a reliable estimate and disclosure of health impacts, such as: (1) accurate emissions estimates; (2) use of site-specific meteorological conditions to account for emissions dispersal that can differ substantially even over short distances (due to terrain, structures, etc.); and (3) precise locations of emissions sources and sensitive receptors. (See Ex. A, pp. 12-13 [discussing requirements for HRAs].) The air quality analysis in the Draft SEIR fails with regard to each of these inputs. VV-23

First, due to flaws in the Draft SEIR's emissions estimates detailed above, accurate emissions estimates do not yet exist for the PWM Expansion Project that could be used as inputs to a project-specific HRA. Notably, the flaws detailed above result in an underestimate of DPM, a known carcinogen, the impacts of which the Draft SEIR purports to find less-than-significant despite failing to conduct a HRA. (Draft SEIR, p. 4.3-13.) Second, the Draft SEIR makes an unsubstantiated assumption that the meteorological conditions in the vicinity of EW-1 and EW-2 will be identical to the meteorological conditions in the vicinity of EW-3 and EW-4. Third, and most importantly, the location of EW-1 and EW-2 are mischaracterized as being farther away from sensitive receptors than they actually would be. VV-24

Specifically, EW-1 and EW-2 would be located north of Seaside Middle School (a sensitive receptor). The Draft SEIR characterizes these new wells as "slightly over 500 feet from the nearest classrooms." (*Ibid.*) It continues by stating that "EW-1 and EW-2 would be much farther from Seaside Middle School receptors than EW-3 and EW-4 are from residential receptors where predictions of lifetime cancer risk were made." (*Ibid.*) However, EW-1 and EW-2 are immediately adjacent to Seaside Middle School's track and soccer field. The Draft SEIR's focus on distances to classrooms is disingenuous, especially considering the increased respiration of students when they use the track/soccer field. VV-25

As a result, a new HRA that is specific to the PWM Expansion Project and EW-1 and EW-2 must be conducted to inform the public and decisionmakers of potential health impacts. VV-26

5. Discrepancies Undermine Credibility of Air Quality Analysis

The Air Quality and Greenhouse Gas Section of the Draft SEIR is inconsistent with Appendix F (*Air Quality and Greenhouse Gas Emissions Impacts Technical Memorandum*, dated October 23, 2019), calling into question the reliability of the analysis. For example:

- The Section states that Max Daily PM10 emissions are 57.3 pounds per day. (Draft SEIR, p. 4.3-11.) The Technical Report states that Max Daily PM10 emissions are 64 pounds per day. (*Id*., Appx. F, p. 12.)
- The Section states that EW-3 and EW-4 would be 50 feet from residences. (Draft SEIR, p. 4.3-13.) The Technical Report states that EW-3 and EW-4 would be <100 feet from residences. (*Id*., Appx. F, p. 12, Table 4.) But the Technical Report also states in the main text that EW-3 and EW-4 "would be about 25 feet from residences…." (*Id*. at p. 12.)
- The Section states that the Cal-Am Conveyance Pipeline would be 100 feet from residences and 300 feet from schools. (Draft SEIR, p. 4.3-12, Table 4.3-7.) The Technical Report states that "CalAm Pipelines" are 50-100 feet from residences and schools. (*Id*., Appx. F, p. 12, Table 4.)

VV-27

The Draft SEIR's air quality analysis fails to provide an adequate level of detail and explanatory text necessary for the public and decisionmakers to understand the assumptions underlying the VV-28

analysis, the accuracy of the emissions estimates, and the real world health impacts of those emissions. For example:

- Table 4.3-5 depicts the "Maximum Daily Construction Emissions by Proposed Modification" and Table 4.3-6 depicts the "Daily PM10 Pollutant Emissions." It would be logical for the daily PM10 emissions (on which the significance determinations are based) to equal the sum of the PM10 values in Table 4.3-5. However, these figures are not equal. Accordingly, it is unclear how these two tables are related in the Draft SEIR.

- It appears that the values in Table 4.3-6 were based on the values from the "Daily Air Pollutant Emissions" on the last page of Attachment 1 to Appendix F. However, this last page seems to be mislabeled because the values appear to be cover fugitive dust only. If the values indeed are limited to fugitive dust, then Table 4.3-6 excludes PM exhaust and hence underestimates "Daily PM10 Pollutant Emissions." VV-28 Cont.

- It is unclear why a trip length of 0.10 miles was assumed for on-road vehicles for the worst-case daily analysis in the "Daily Air Pollutant Emissions" page of Attachment 1 of Appendix F. Appendix F states that 0.10 miles related to unpaved roads, but it is unknown whether the much greater distance of on-road vehicle travel on paved roads and additional dust re-entrainment was properly considered.

The discrepancies identified herein should be remedied, emissions calculations corrected as necessary, and determinations of significance altered as appropriate and warranted. In the absence of addressing these details, the Draft SEIR fails to adequately analyze and disclose the PWM Expansion Project's air quality impacts. VV-29

B. Biological Resources: Fisheries

1. The SEIR Fails to Assess Impacts Associated With Continued Carmel River Withdrawals

Impact BF-3 states that the PWM Expansion Project "will result in reduction of diversions of water from the Carmel River which would have a beneficial impact on river flows and fishery habitat." (Draft SEIR, p. 4.4-6.) However, this statement assumes that the PWM Expansion Project will provide sufficient supply to allow Cal-Am to cease Carmel River diversions. As noted in Section II.B, the SEIR improperly relies on "updated water demand estimates" prepared by MPWMD staff, which have been shown to be based on inaccurate assumptions about water supplies and demands and conflict with the CPUC's supply and demand estimates that were upheld by the California Supreme Court and are final and binding. VV-30

In fact, as explained in the Hazen Memo, ASR water is not sufficiently reliable to be considered a water supply source, and without ASR, the PWM Expansion Project cannot achieve the future water demand based on the Stoldt Memo's 10-year average, or even the 5-year average VV-31

when considering growth projections for the Monterey Peninsula. (See Ex. E, p. 8.) The Stoldt Memo presents a 10-year average annual water demand of 10,863 afy, and a 5-year average of 9,825 afy, neither of which appropriately account for projected growth in Cal-Am's Monterey District service area. (*Id*. at pp. 6-10.) Mr. Stoldt assumes that, with the PWM Expansion Project, these average demands can be satisfied, but Mr. Stoldt's assumptions depend upon the availability and reliability of ASR water. (See *id*. at p. 8.) Although the average yield of ASR water is 1,300 afy, the availability of ASR water is highly variable. ASR water availability is reduced to 63% in a single dry year, and even further reduced to 4% following three dry years. (See *id*. at pp. 6-7.) During drought conditions, ASR water is essentially unavailable, and thus, water supply shortfalls are reasonably foreseeable. (*Id*. at p. 8.) Thus, without ASR, the PWM Expansion Project would yield only 9,994 afy of reliable supplies—below both the Stoldt Memo's 10-year annual average and 5-year annual average (when growth is considered). VV-31 Cont. VV-32

Therefore, the SEIR should be revised to address the impacts associated with a reasonably foreseeable scenario where water demands exceed supply, and Carmel River withdrawals would be necessary for regional health and safety. VV-33

2. The SEIR Fails to Address Reductions in Irrigation Water and Increased Stormwater Capture Impacts on Fisheries

The Draft SEIR explains that the PWM Expansion Project would result in less water for irrigation and would increase stormwater capture. However, the Draft SEIR fails to address how a reduction in irrigation water and increase in stormwater capture could affect fish habitat or populations (e.g., through a reduction in runoff). The SEIR should address these potential impacts. VV-34

C. Biological Resources: Terrestrial

The Draft SEIR incorporates various mitigation measures to protect terrestrial biological resources. However, a number of the mitigation measures should be clarified or enhanced to ensure proper implementation and species protection. VV-35

Mitigation Measure ("MM") BT-1a: MM BT-1a provides: "The project proponents and/or their contractors shall coordinate with the City of Seaside on the location of well facilities within the Expanded Injection Well Area and the removal of sensitive biotic material." This statement is extremely vague – what coordination is required and what discretion is being granted to Seaside to move the location of well facilities? What sensitive biotic material is being removed? The SEIR should be revised to include these necessary details. VV-36

MM BT-1d: MM BT-1d provides for surveys, monitoring, salvage, and relocation of California legless lizard. However, the measure does not require any restoration of California legless lizard habitat. Restoration requirements should be added to a revised mitigation measure. VV-37

MM BT-1f: MM BT-1f requires pre-construction surveys, but does not specify how long before construction the surveys are required to occur. Additional detail about survey timing should be included in a revised mitigation measure. VV-38

MMs BT-1i, BT-1j, and BT-1k: MMs BT-1j, BT-1j, and BT-1k require pre-construction surveys for Monterey dusky-footed woodrat, American badger, and protected avian species, respectively. However, a comparison of MMs BT-1j, BT-1j, and BT-1k and the corresponding species-specific mitigation measures in the MPWSP Final EIR/EIS[9] (MMs 4.6-1k, 4.6-1j, and 4.6-1i) show that additional mitigation is feasible. Accordingly, these measures should be revised to be as stringent as the corresponding measures for the MPWSP. VV-39

D. Cultural and Paleontological Resources

1. The Draft SEIR Improperly Defers Mitigation of Cultural Resources Impacts

CEQA requires that mitigation measures provide specific performance standards if not implemented immediately, otherwise, the mitigation is improperly deferred mitigation. (See, e.g., *Rialto Citizens for Responsible Growth v. City of Rialto* (2012) 208 Cal.App.4th 899, 944 [holding that measures are required to "satisfy specific performance criteria articulated at the time of project approval"]; *Sundstrom v. Cty. of Mendocino* (1988) 202 Cal.App.3d 296, 306 [same].) The Draft SEIR's cultural resources mitigation measures fall short of this standard.

The Draft SEIR identifies three recorded cultural sites within the area of potential effect ("APE"). (Draft SEIR, p. 4.6-3.) This includes a reported prehistoric archaeological site, CA-MNT-280/P-27-00385. Mitigation Measure CR-2b states that "[i]f the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented, with the concurrence of the Lead Agency (M1W)." (*Id.*, p. 4.6-9.) This is unlawful deferred mitigation. Mitigation Measure CR-2b should set specific guidelines for M1W's actions should archaeological resources or human remains be unexpectedly discovered during construction. Indeed, Native American Heritage Commission's letter on the Notice of Preparation states that M1W should include "provisions for the identification and evaluation of inadvertently discovered archaeological resource . . . [and] the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans[.]" (See *id.*, Appx. A, p. 38.) Currently, Mitigation Measure CR-2b falls short of these requirements by providing only general guidance. VV-40

The measure must be revised to include more specificity. For example, the mitigation measure should require notifying a qualified archaeologist within 24 hours of discovery and set specific recommendations for mitigating impacts such as planning construction to avoid the resource; incorporating the resource within open space; capping and covering the resource; or deeding the site into a permanent conservation easement. In the event that avoidance is not feasible, the measure should recommend the preparation and implementation of an Archaeological Research Design and Treatment Plan ("ARDTP") and other appropriate actions such as sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portions of the VV-41

[9] The MPWSP Final EIR/EIS is available online at https://www.cpuc.ca.gov/Environment/info/esa/mpwsp/feir-eis_toc.html.

significant resource to be impacted by the PWM Expansion Project. The ARDTP should also include provisions for analysis of data in a regional context, reporting of results within a timely manner and be subject to review and comments by appropriate Native American representatives before finalization, among other specific performance standards. This is particularly important because the APE includes reported cultural sites, making discovery of unknown resources more probable. (Draft SEIR, p. 4.6-3 to 4.6-4.) VV-41 Cont.

E. Energy

1. The Draft SEIR's Statements About Fossil Fuel Consumption Is Not Based on Substantial Evidence

Page 4.7-6 of the Draft SEIR states that the PWM Expansion Project "would use additional fossil fuel; however, the additional amount of fossil fuel would be less than 10% more than the amount assumed for the approved PWM." The conclusion that the PWM Expansion Project would consume less than 10 percent of the fossil fuel assumed for the PWM Project is conclusory and unsupported by substantial evidence. The Draft SEIR must provide justification for this assumption and its conclusion that "the amount of transportation fuel and potential electricity use required for the Proposed Modifications is not considered an inefficient or wasteful use of energy." (Draft SEIR, p. 4.7-7.) VV-42

2. Mitigation Measure EN-1 Is Deferred Mitigation

MM EN-1, Construction Equipment Efficiency Plan, impermissibly defers analysis and mitigation of construction impacts to be prepared at a later time. MM EN-1 requires M1W or Cal-Am to "contract with a qualified professional (i.e., construction manager, planner or energy efficiency consultant) **to prepare** a Construction Equipment Efficiency Plan that identifies the specific measures that M1W or CalAm (and its construction contractors) **will implement** as part of project construction to increase the efficient use of construction equipment." (Draft SEIR p. 4.7-7 [emphasis added].) This constitutes improper deferred mitigation under CEQA. (See *Sundstrom v. Cty. of Mendocino* (1988) 202 Cal.App.3d 296, 306.) Because the Draft SEIR anticipates increased energy consumption due to project modifications, the mitigation measure should be revised to include specific performance standards that the PWM Expansion Project would be required to achieve to address any potential adverse impacts pertaining to energy use during construction. VV-43

F. Geology, Soils, and Seismicity

A properly prepared EIR serves the vital function of informing government officials and the public about the environmental consequences of approving a project. (See *Vineyard Area Citizens for Responsible Growth, Inc. v. City of Rancho Cordova* (2007) 40 Cal.4th 412, 449; see also *Sierra Club v. County of Fresno* (2018) 6 Cal.5th 502, 515–516 [an EIR must "enable those who did not participate in its preparation to understand and to consider meaningfully the issues raised by the proposed project"].) The geology, soils and seismicity chapter contains several information deficiencies that must be remedied before the SEIR may be considered adequate. VV-44

First, the figures and maps do not label any of the PWM Expansion Project's components other than the Advanced Water Purification Facility. (Draft SEIR, pp. 4.8-3 to 4.8-5, 4.8-7, Figures 4.8-1 to 4.8-4.) Instead, all features are portrayed as unlabeled blobs, indecipherable to persons not already familiar with the project. (*Ibid.*) To properly inform the public and decisionmakers the figures must be revised to depict all other expansion components, including but not limited to, the product water conveyance pipeline, injection well facilities, and the Cal-Am distribution system improvements. VV-45

Second, the Draft SEIR describes the Advanced Water Purification Facility and Injection Well Facilities, but lacks important information about the soil characteristics where they are sited. (Draft SEIR, p. 4.8-6.) Figure 4.8-4 shows that these components must be located within a moderate soil erosion hazard area. As written, the information may be interpreted as confusing and conflicting. The SEIR must be revised so that these component descriptions are consistent with Figure 4.8-4. VV-46

Third, the Draft SEIR acknowledges that PWM Expansion Project construction activities could result in temporary erosion impacts due to ground disturbance, including site preparation, grading, and/or trenching for installation of utilities. (Draft SEIR, p. 4.8-12.) However, the Draft SEIR states without any analysis or specific performance standards that these potential impacts will be reduced to less than significant by relying on construction Best Management Practices ("BMPs") and compliance with state and federal law, including requirements associated with a National Pollutant Discharge Elimination System ("NPDES") permit. (*Id.*, pp. 4.8-12 to 4.8-14.) VV-47 Although some of these requirements are incorporated into the Project for purposes of impact determination, the Draft SEIR must be revised to include specific descriptions of the BMPs and other state and federal laws as well as a mitigation measure or BMP project design feature to ensure that all laws and regulations are followed. If the Draft SEIR intends to rely on descriptions included in the PWM Project Final EIR, those pages should be specifically cited. (See, e.g., PWM Project Final EIR, pp. 4.11-31 to 4.11-35 [describing NPDES requirements including BMPs].) VV-48

G. Hazards, Hazardous Materials, and Wildlife

1. The Draft SEIR Fails to Fully Analyze the PWM Expansion Project's Impacts Related to Hazards and Hazardous Substances

The Draft SEIR's analysis of the PWM Expansion Project's potential impacts related to hazards and hazardous materials provides only a cursory analysis of certain Project impacts and must be revised to provide a complete analysis of these impacts. VV-49

First, CEQA Guidelines Appendix G suggests that an agency analyze a project's potential to impair emergency response access. The Draft SEIR concludes that this criteria is not applicable to PWM Expansion Project construction, but does so without any further analysis. (Draft SEIR, p. 4.9-11.) Instead, the Draft SEIR simply refers to the Monterey County Emergency Operations Plan and concludes that "Project construction would not interfere with the designated agency responsibilities and reporting in the event of an emergency . . ." (*Ibid.*) VV-50

The conclusion is not supported by substantial evidence. The SEIR should be revised to thoroughly analyze this potential impact. VV-50 Cont.

Second, the Draft SEIR acknowledges that construction activities related to the Product Water Conveyance Pipeline, Injection Well Facilities, or the Cal-Am Conveyance Pipelines have the potential to encounter unexploded ordinance within the Fort Ord Military Reservation. (Draft SEIR, p. 4.9-17.) However, the Draft SEIR states, without any additional analysis, that these potential impacts associated with unexploded ordinance will be addressed by compliance with federal and local regulations. (*Ibid.*) The SEIR should include a mitigation measure requiring compliance with these regulations, including monitoring and reporting related to discovery of unexploded ordinance during construction of these Project facilities, and requiring that M1W obtain the required permitting under City of Seaside Ordinance 924 (Seaside Municipal Code Chapter 15.34). VV-51

Third, the Draft SEIR states that the CEQA Guidelines were updated in 2018 to address potential wildfire hazards—as a result, the base PWM Project Final EIR "generally considered wildland fire hazards but did not devote a separate significant criterion to this topic." (Draft SEIR, p. 4.9-19.) As such, the Draft SEIR recognizes that wildfire impacts related to the entire PWM Project have never been adequately analyzed, but then goes on only to analyze wildfire impacts related to the PWM Expansion Project, concluding that wildlife impacts would be less than significant. (*Ibid.*) As a result, M1W has never conducted a complete review of the potential wildfire impacts related to the PWM Project as a whole. The change in applicable regulations is the type of new information recognized in CEQA Guidelines Section 15162 that should be addressed when a Supplemental EIR is prepared. The SEIR therefore should be revised to analyze wildfire-related impacts for the entire PWM Project, including both the approved PWM Project and the proposed PWM Expansion Project. This assessment should include an analysis of potential impacts to firefighting efforts on the Peninsula due to potential water shortages that could occur if the proposed MPWSP is not implemented. VV-52 VV-53

H. Hydrology and Water Quality: Groundwater

1. The Groundwater Sustainability Agency ("GSA") Description Is Inaccurate and Incomplete

In identifying the local regulatory framework governing the PWM Expansion Project, the Draft SEIR states that "the Marina Coast Water District and the City of Marina formed their own GSA within a portion of their service area." (Draft SEIR, p. 4.10-5.) This description oversimplifies and incorrectly identifies the GSAs that cover the Salinas Valley. VV-54

Two GSAs have been approved by the California Department of Water Resources ("DWR") and have exclusive coverage of groundwater basins within Monterey County. The Salinas Valley Basin GSA ("SVBGSA") covers the 180/400-Foot Aquifer Subbasin, and Marina

Coast Water District's GSA covers the Monterey Subbasin.[10] The City of Marina attempted to form a GSA that would partially overlap with the SVBGSA's boundaries at the CEMEX sand mining property along the coast in the City of Marina. (See map of proposed City of Marina GSA, attached hereto as **Exhibit H**.) However, by doing so, the City created a conflict in basin management. Because of this conflict, the County of Monterey recently approved its own GSA to cover the CEMEX site pursuant to its rights under Water Code section 10724.[11] (Proposed Monterey County Resolution approving the formation of a GSA pursuant to Water Code section 10724, attached hereto as **Exhibit I**; Letter from DWR, Sustainable Groundwater Management Office, to County of Monterey (Nov. 5, 2019), **Exhibit J**.) VV-54 Cont.

The SEIR should clarify and accurately describe the existing and proposed GSAs that provide the local regulatory framework for groundwater management in the PWM Expansion Project area. VV-55

2. The Draft SEIR Does Not Address Seawater Intrusion that Could Result if the MPWSP Is Not Developed

The Draft SEIR evaluates the PWM Expansion Project's impacts to groundwater resources without considering the impact the Project would have if the MPWSP is not built. The MPWSP would benefit the Salinas Valley Groundwater Basin ("SVGB") aquifers by reducing existing and preventing additional seawater intrusion. If the PWM Expansion Project is seen as a replacement for the MPWSP—and the MPWSP is not built—then the MPWSP's benefits to the SVGB will not occur and further seawater intrusion of the coastal aquifers can be expected. VV-56

As explained in the MPWSP Final EIR/EIS, which was upheld in full by the California Supreme Court in August 2019, groundwater extraction in the SVGB "has outpaced groundwater recharge of fresh water, resulting in overdraft and seawater intrusion conditions." (MPWSP Final EIR/EIS, p. 4.4-19.) The MPWSP would withdraw water that has been degraded by seawater intrusion and is unusable for potable water supply without treatment. (*Id.*, p. 4.4-70.) When desalinated water is returned to the SVGB as part of the MPWSP's return water component, groundwater conditions in the 400-Foot Aquifer would improve as water levels increase from in-lieu groundwater recharge. (*Ibid.*) "The return water component of the MPWSP would benefit each of the aquifers by either reducing the area of influence or by increasing groundwater levels in other areas. . . . If the [MPWSP] did not return any water, localized depressed groundwater levels would likely persist in the three affected aquifers." (*Ibid.*) Further, because the MPWSP involves the extraction of seawater-intruded groundwater from the coast, the MPWSP is "expected to retard future inland migration of the seawater VV-57

[10] See Salinas Valley Basin GSA – 180/400 Foot Aquifer, available at: https://sgma.water.ca.gov/portal/gsa/print/461; Marina Coast Water District GSA – Monterey, available at: https://sgma.water.ca.gov/portal/gsa/print/50.

[11] If two or more GSAs attempt to form over the same area of a groundwater basin, DWR may find that overlap exists and that such unresolved overlap creates an "unmanaged" area. Water Code section 10724 authorizes the county within which the unmanaged area lies to become the GSA for that area.

intrusion front. The [MPWSP] would facilitate the reduction of seawater intrusion in the long term." (*Id*., p. 4.4-92.)

Because the Draft SEIR actually attempts to analyze the PWM Expansion Project as a replacement in the event the MPWSP is never built, which runs counter to the many statements in the SEIR that the Project is a "back-up" to the MPWSP in the event the MPWSP is delayed, the Final SEIR should evaluate the reasonably foreseeable environmental impacts that would result from no MPWSP construction and operation—including the continuation of existing seawater intrusion into the SVGB's coastal aquifers. VV-57 Cont.

I. Hydrology and Water Quality: Surface Water

The Draft SEIR claims that implementation of the PWM Expansion Project would reduce the amount of water currently being diverted from the Carmel River. (Draft SEIR, p. 4.11-23.) As such, the Draft SEIR concludes that the PWM Expansion Project would have a beneficial impact on the environment. (*Ibid.*) However, this conclusion assumes that the PWM Expansion Project will generate sufficient supply to meet demand on the Monterey Peninsula. There are significant questions as to the accuracy of this conclusion. (See, e.g., Section I.B *supra*; Section III.N *infra*.) Indeed, as discussed in the Hazen Memo, the PWM Expansion alone, without the MPWSP, will be unable to meet the Peninsula's current annual water demand as determined by the CPUC. (Ex. E, pp. 10, 12.) In the expected event that the PWM Expansion Project fails to meet demand, any beneficial impact is illusory since significant diversions from the Carmel River will continue or possibly increase to meet the shortfall. The SEIR must be revised to evaluate that possibility. (See, e.g., *Vineyard Area Citizens for Responsible Growth*, *supra*, 40 Cal.4th at 430 [an EIR must evaluate "reasonably foreseeable impacts"]; *Cal. Unions for Reliable Energy v. Mojave Desert Air Quality Mgmt. Dist.* (2009) 178 Cal.App.4th 1225, 1231 [CEQA "requires public agencies to consider the reasonably foreseeable environmental effects of their actions."].) VV-58

J. Land Use, Agriculture, and Forest Resources

In accordance with Appendix G of the CEQA Guidelines, the PWM Expansion Project would have a significant land use impact if it would cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.| Due to the faulty water supply and demand analyses and water rights assessments underpinning the Draft SEIR, the PWM Expansion Project fails to demonstrate that it would meet future water demand projections necessary to serve residents and businesses on the Monterey Peninsula. As a result, the PWM Expansion Project would contravene basic jurisdictional planning objectives—particularly those intended to provide adequate water supply and support development—resulting in significant environmental impacts under CEQA. The Draft SEIR must disclose such impacts and offer feasible mitigation to reduce those impacts to a less than significant level. (CEQA Guidelines, §§ 15151, 15121, subd. (a), 15126.4, subd. (a); see also *In re Bay-Delta Programmatic Envt'l Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1175 [Sufficient information should be provided to allow decision-makers and the public to understand the environmental consequences of the project].) These issues are discussed in further detail below. VV-59 VV-60

The water supply and demand analyses contained in the Draft SEIR are based upon the findings of the Stoldt Memo. As described in the attached peer review of the Stoldt Memo (see Ex. E), the Stoldt Memo lacks evidentiary support for its conclusions regarding water supply and demand, calling into question the ability of the PWM Expansion Project to meet jurisdictional demand projections. (See Section II.B.1.) Even using the revised growth assumptions in the Stoldt Memo, the PWM Expansion Project could not meet demand under either the 10-year maximum daily demand required by CCR Title 22, Section 64554, or the Stoldt Memo's calculated 10-year average daily demand. (Ex. E, pp. 11-12.) The PWM Expansion Project would only meet the Stoldt Memo's reduced five-year demand projection for approximately three years before falling out of compliance. (*Ibid.*) Additionally, the Stoldt Memo fails to consider the reliability of the sources of water supply to the PWM Expansion Project during reduced usage or drought years, raising serious concerns regarding the PWM Expansion Project's ability to achieve the stated output of 2,250 afy. (*Id.* at p. 9.) As discussed in Section III.N *infra*, the Draft SEIR similarly fails to demonstrate that the PWM Expansion Project has obtained or will obtain sufficient water rights to meet projected regional demand or support future development and population growth. VV-61

Section 2.5.3.4 of the MPWSP Final EIR/EIS provides the projections of future water demand from local jurisdictions within Cal-Am's Monterey Peninsula service territory. (MPWSP Final EIR/EIS, pp. 2-28 to 2-29.) According to Table 2-5 of the Final EIR/EIS, "[a] total of 3,526 afy [is] needed to accommodate the projected growth at buildout that each [c]ity determined." (MPWSP Final EIR/EIS, p. 2-29.) In contrast, the water demands calculated by Mr. Stoldt suggest that 1,469 afy would be needed to accommodate regional growth through 2049. (Ex. E, p. 4.) Therefore, the gap in necessary water for the Peninsula is much larger than the Draft SEIR either discloses or analyses. VV-62

Cal-Am's Monterey Peninsula service area comprises the following jurisdictions: Monterey County (unincorporated), City of Carmel, City of Del Ray Oaks, City of Monterey, City of Pacific Grove, City of Sand City, City of Seaside, and Monterey Peninsula Airport District. (MPWSP Final EIR/EIS, p. 2-29.) Failing to meet water demand within these jurisdictions would conflict with, at a minimum, the following local planning objectives, resulting in significant environmental effects that the Draft SEIR neither discloses nor mitigates: VV-63

Monterey County General Plan:

Goal LU-1: "Promote appropriate and orderly growth and development while protecting desirable existing land uses."

Policy LU-1.4: "Growth areas shall be designated only where an adequate level of services and facilities such as water, sewerage, fire and police protection, transportation, and schools exists or can be assured concurrent with growth and development."

Policy H-2.9: "Support the development of housing affordable to the general workforce of Monterey County and encourage employers and other organizations to assist with the production of housing units needed for their employees."

Policy H-2.13: "Assist in infrastructure and public facility improvements that support existing and new affordable housing."

Policy H-3.1: "Ensure that there is sufficient developable land at appropriate densities with adequate infrastructure to accommodate the remaining RHNA of 174 new lower and moderate income units in the period 2009-2014."

Policy AG-5.2: "Policies and programs to protect and enhance surface water and groundwater resources shall be promoted, but shall not be inconsistent with State and federal regulations."

Goal PS-2: "Assure an adequate and safe water supply to meet the County's current and long-term needs."

Goal PS-3: "Ensure that new development is assured a long-term sustainable water supply."

City of Carmel General Plan:

Policy P3-5.4: "Encourage the private sector to produce affordable housing."

Policy P3-3.2: "Continue to monitor and work cooperatively with regional agencies to augment infrastructure in a manner that provides adequate capacity for existing and new housing needs while preserving and improving the unique visual character of the City."

VV-63 Cont.

City of Del Ray Oaks General Plan:

Public Services Goal 3: "Assure new development can be served by adequate public services and facilities."

Public Services Goal 5: "Provide water and maintain a water management policy that will provide a sufficient quantity of appropriate water to meet the needs of the existing and planned community."

City of Monterey General Plan:

Housing Goal a.: "Promote construction of new ownership housing units and conservation of existing ownership housing units to maintain and/or improve the existing balance between owner and rental units in Monterey."

Housing Policy a.1.: "Encourage the production of new ownership housing units."

Housing Policy b.1.: "Provide the opportunity to construct new multi-family housing units in pockets of opportunity."

Housing Policy f.1.: "Encourage construction of housing units that provide for special needs."

Public Facilities Goal m.: "Develop long-term water supplies and conservation methods so that there is sufficient water to implement General Plan goals."

City of Pacific Grove General Plan:

Housing Policy 2.3: "Encourage affordable housing development by providing incentives, working with developers to identify appropriate locations, and helping to offset the cost of affordable housing development."

Housing Goal 3: "Reduce governmental and infrastructure constraints to the improvement and development of housing for people of all income levels."

Housing Policy 3.1: "Provide public facilities and services in support of new housing construction and the revitalization of older neighborhoods and continue to work aggressively with the water district and other Monterey Peninsula cities to find long-term solutions to the water problem, to increase the water available for residential uses, and to provide for drought protection."

Housing Policy 4.1: "Facilitate the development and rehabilitation of housing for seniors and persons with physical, developmental, or mental disabilities."

City of Seaside General Plan:

Policy H-2.3: "Encourage the construction of high-density, well designed housing and residential-commercial mixed use projects."

Policy LU-5.1: "Review development proposals to ensure that adequate water supply, treatment, and distribution capacity is available to meet the needs of the proposed development without negatively impacting the existing community."

Policy LU-5.2: "Work cooperatively with local and regional water suppliers to ensure adequate water reserves."

Goal COS-2: "Provide a safe and adequate water supply to meet the needs of the community."

Implementation Plan COS-2.1.2: "Condition approval of all development plans on verification of an assured long-term water supply."

VV-63 Cont.

Each of the above-listed jurisdictions would be directly served by PWM Expansion Project water, and if production and delivery of that water results in precluding the additional water that would be provided by the MPWSP, then conflicts with applicable land use policies in those jurisdictions would result. Therefore, the Draft SEIR must disclose conflicts that would result with applicable General Plan policies and regulations if the PWM Expansion Project is developed in lieu of the MPWSP. Similarly, as demonstrated in Section III.M herein, the PWM Expansion Project would fail to supply adequate water to support the requirements of the Regional Housing Needs Allocation ("RHNA") plan for the Monterey Bay Area in the absence

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of the MPWSP. The inability of the PWM Expansion Project to support the RHNA needs and comply with applicable RHNA policies also would result in a conflict with an important land use policy designed to ensure adequate housing at all income levels in the region. VV-64 Cont.

If the above-referenced land use planning conflicts cannot be resolved through feasible mitigation, then a significant land use impact would result. The Draft SEIR's failure to address these substantial conflicts and the potential for significant land use impacts resulting from the PWM Expansion Project's implementation is noteworthy. The Draft SEIR therefore must be revised to disclose and analyze the important issues. VV-65

K. Marine Biological Resources

The Draft SEIR's marine biological resources analysis should be updated to reflect additional monitoring and sampling, as described below. VV-66

Specifically, SEIR Appendix J explains that the "water quality of the secondary effluent is dependent on the quality of the wastewater coming into the RTP as well as the treatment efficacy of the RTP" and, in turn, the "quality of the RO concentrate is directly related to the quality of the secondary effluent." (Draft SEIR, Appx. J, p. 7.) However, it appears that the latest source water monitoring campaign was conducted between July 2013 and June 2014. More current source water monitoring should be utilized in order to provide an accurate assessment of potential impacts to ocean water quality and marine biological resources from the PWM Expansion Project's ocean discharge. VV-67

In addition, Appendix J states: "Limited data sources were available for several of the new source waters (i.e., Farmworker Housing and Salinas River Diversion Facility backwash)." (Draft SEIR, Appx. J, p. 12.) Additional source water quality data should be obtained from these source waters through additional sampling in order to demonstrate whether the PWM Expansion Project's ocean discharge would continue to meet California Ocean Plan standards with the addition of these new source waters. VV-68

Further, as described in Exhibit A, although the Draft SEIR provides an assessment of the Proposed Modifications' compliance with Ocean Plan standards, the Draft SEIR's marine biological impacts analysis fails to provide a quantification of pollutant discharges or their impacts on marine species within the Zone of Initial Dilution. (Ex. A, pp. 10-11.) Therefore, the Draft SEIR fails to analyze the actual marine biological effects of changes in the ocean discharge due to the Proposed Modifications, and must be revised to disclose such impacts. VV-69

L. Noise and Vibration

1. <u>The Draft SEIR Fails to Adequately Describe the PWM Expansion Project's Noise and Vibration Setting</u>

As written, the Draft SEIR's description of the environmental setting for the PWM Expansion Project with respect to existing noise and vibration conditions does not provide a description of the nearest sensitive receptors or ambient noise measurements for the new Cal-Am VV-70

extraction wells. (Draft SEIR, p. 4.14-3.) The SEIR should be revised to incorporate such a description. VV-70 Cont.

2. The Draft SEIR's Analysis of Noise and Vibration Impacts Is Deficient

The Draft SEIR's discussion of potential PWM Expansion Project impacts related to noise and vibration is deficient in a number of aspects. VV-71

First, the Draft SEIR's assessment of construction noise impacts related to construction of the extraction wells states that: "Daytime well drilling would produce noise levels up to 85 dBA Leq at 50 feet, resulting in noise levels about 4 dBA lower at the Seaside Middle School and Hatten Road residences. Daytime construction activities would not exceed the daytime threshold of 70 dBA Leq." (Draft SEIR, p. 4.14-9.) It appears that this discussion refers back to the noise levels for trenching and pipeline construction, which are estimated at 89 dBA Leq. (*Ibid.*) However, if noise levels are at 85 dBA Leq at the identified sensitive receptors, then they would exceed the applicable noise threshold and result in a significant impact that has not been disclosed. Accordingly, the SEIR needs to be clarified to disclose whether daytime construction activities actually would exceed noise level thresholds at Hatten Road and the Seaside Middle School. VV-72

Second, the Draft SEIR's analysis of construction noise impacts related to the conveyance pipelines states that construction of the pipelines would result in noise levels above the 70 dBA Leq threshold, but that this impact would be less than significant because it would last for fewer than two weeks. (Draft SEIR, p. 4.14-9.) The SEIR should explain the origin of this two week timeline so as to provide clarity as to why these noise levels that exceed acceptable thresholds are not considered a significant impact. This conclusion appears to be based upon the unjustified assertion in Appendix K that daytime exposure to construction noise levels above the speech interference level would be less than significant so long as the noise level increases lasted for fewer than two weeks. (See *id*, Appx. K, p. 2.) However, throughout the remainder of the Draft SEIR and Appendix K, a peak noise threshold of 70 dBA Leq is used to assess PWM Expansion Project noise impacts. (See, e.g., *id*. at p. 4.14-7.) VV-73 The SEIR should be revised to provide support and justification for any deviation from standard noise impact analysis with respect to daytime pipeline construction noise. Based on the 70 dBA Leq peak threshold otherwise applied in the Draft SEIR, construction noise impacts related to the conveyance pipeline appear to be a significant undisclosed impact that would require recirculation of the Draft SEIR under CEQA. (CEQA Guidelines, § 15088.5, subd. (a).) VV-74

Third, the Draft SEIR states that implementation of MM NV-1a will reduce nighttime noise levels resulting from construction of the extraction wells to less than 60 dBA Leq at the nearest residence. (Draft SEIR, p. 4.14-10.) This statement is contradicted by the Draft SEIR's conclusion on page 4.14-9, which states that: "Accounting for the attenuation provided by the temporary barrier, the resultant daytime and nighttime construction noise levels at the nearest sensitive receptors could be as high as 80 dBA Leq." The Final SEIR must address this internal inconsistency and provide a revised discussion of impacts related to construction noise for the impact wells. VV-75 If construction of the extraction wells will in fact result in nighttime noise levels exceeding 80 dBA Leq at the nearest sensitive receptors, as is stated on page 4.14-9, then the VV-76

Draft SEIR must be recirculated to disclose this significant noise impact. (CEQA Guidelines, § 15088.5, subd. (a).) VV-76 Cont.

3. Draft SEIR Appendix K Must Be Revised to Properly Analyze PWM Expansion Project Noise Impacts

There are also a number of issues with respect to Appendix K, which the Draft SEIR heavily relies upon in assessing noise and vibration impacts. Notably, Appendix K does not provide a description of any applicable regulations or ordinances that establish the thresholds at which PWM Expansion Project noise impacts would be considered significant, but rather relies on quantitative thresholds that are not based on any particular local ordinance or regulation. (Draft SEIR, Appx. K, p. 2.) Moreover, Appendix K does not provide existing ambient noise levels in the vicinity of the four proposed extraction wells sites. (*Id.* at p. 6.) Finally, Appendix K states that monitoring wells could be located "within 850 feet of one or more residences in the Fitch Park neighborhood for the proposed modifications," but only provides an analysis of construction well impacts related to wells located 850 feet or more from the nearest sensitive receptors. (*Id.* at p. 10.) Appendix K, and any related discussions in the SEIR, must be revised to address these issues and disclose any significant noise impacts that were not appropriately disclosed in the Draft SEIR. VV-77

M. Population and Housing

The Draft SEIR's analysis of possible PWM Expansion Project population and housing impacts appears to rely in part on outdated and incomplete data. Table 4.15-3 on page 4.15-2 displays housing and population data in Monterey County as 2010 and 2014. However, the table does not provide any more recent data, despite the availability of 2019 data from the California Department of Finance.[12] Table 4.15-3, and the associated PWM Expansion Project impacts, should be updated to reflect the most recent available data. VV-78

Moreover, the Draft SEIR's analysis of population and housing impacts fails to account for any potential impacts related to the inability of the PWM Expansion Project to meet the Monterey Peninsula's water demand without implementation of the MPWSP. As explained herein, there is a significant likelihood that the PWM Expansion Project will not be able to provide a reliable, drought-proof water supply to the Monterey Peninsula that would achieve regional water demand. As discussed in the Hazen Memo, the Peninsula water supply with the PWM Expansion Project, but without the MPWSP, would be insufficient to meet the CPUC-approved demand projection for existing customers of 12,000 afy. (Ex. E, pp. 10-11.) Further, the PWM Expansion Project would only satisfy the reduced five-year demand average promoted by the Stoldt Memo (but unsupported by any applicable regulatory requirements) for three years before falling out of compliance. (*Ibid.*) Beyond that period, there would not be a reliable water supply to meet any reasonable estimate of projected economic growth on the Peninsula and associated water demand. (*Ibid.*) Therefore, the Draft SEIR must be revised to analyze any VV-79

[12] 2019 population and housing data from the California Department of Finance is available here: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/.

potential population and housing impacts related to the inability of the PWM Expansion Project to meet current and future water demand on the Monterey Peninsula. VV-79 Cont.

Failure to accommodate increased demand and Peninsula growth may also depress buildout of necessary housing on the Peninsula, as dictated by the RHNA plan for the Monterey Bay Area.[13] At the December 17, 2019 meeting of the MPWMD Water Demand Committee, Mr. Stoldt provided a memorandum quantifying the RHNA goals for each jurisdiction on the Monterey Peninsula, and estimating the water supply required to meet these goals.[14] Mr. Stoldt estimates that a water supply of 190 afy will be needed to meet the Peninsula's RHNA goals. (See Ex. K.) However, as explained in the Hazen Memo, Peninsula water supply with the PWM Expansion Project but without the MPWSP will only be able to meet Peninsula demand, even assuming Mr. Stoldt's depressed demand figures, for a maximum of three years. (Ex. E, pp. 10-11.) Based on Mr. Stoldt's projections, by 2024, demand for water will exceed the 10,000 afy supply that will be available with the PWM Expansion Project, leaving the Peninsula without any excess water supply to accommodate development of legal lots of record and regional housing growth. (*Ibid.*) As such, the PWM Expansion Project will not supply sufficient water to meet even the RHNA needs set forth in Mr. Stoldt's December 17 memo. A corresponding failure to meet the RHNA goals regarding affordable housing allocation would be a significant impact to population and housing—an impact that the Draft SEIR fails to disclose or analyze. VV-80 VV-81 VV-82

Therefore, the SEIR should be revised to analyze the potential for the PWM Expansion Project to fail to meet Peninsula water demands without the MPWSP, and any corresponding impacts on housing and population.

N. Water Supply and Wastewater Systems

1. The Draft SEIR Does not Evaluate Changed Circumstances and New Information Affecting Water Supply

The Draft SEIR asserts that "[t]he existing environmental setting information contained in the PWM/GWR Project Final EIR has generally remained unchanged since the certification of the PWM/GWR Project Final EIR." (Draft SEIR p. 4.18-3.) However, the Draft SEIR does not demonstrate that changes in climate conditions and agricultural and municipal water conservation have not impacted the quantity or reliability of the water sources available for the PWM Expansion Project. VV-83

The assertion that existing environmental setting information contained in the PWM Project Final EIR has generally remained unchanged is inaccurate with regard to the availability of source waters analyzed to supply the PWM Project. A comparison of Draft SEIR Appendix I (Schaaf & Wheeler 2019 memorandum evaluating source water availability, yield and use for the VV-84

[13] The 2014-2023 RHNA Plan for the Monterey Bay area is available here: https://ambag.org/sites/default/files/documents/RHNP%202014-2023_Final_revised_PDFA.pdf.

[14] A copy of Stoldt's memorandum regarding Monterey Peninsula RHNA goals and estimated water required to meet such goals is attached hereto as **Exhibit K**.

PWM Expansion Project ("2019 S&W Memo")) with the Schaaf & Wheeler's 2015 analysis for the PWM Project ("2015 S&W Memo," attached hereto as **Exhibit L**) shows that total water supplies have declined in some scenarios since 2015. VV-84 Cont.

For instance, Table 7 in the 2015 S&W Memo ("Full Surface Water Yields, Normal Water Year, Building a Drought Reserve") reports that the total projected water supply for the PWM Project is 29,707 afy. However, Table 8 in the 2019 S&W Memo ("Full Surface Water Yields, Normal Water Year, Building a Drought Reserve") reports that the total projected water supply for the original PWM Project and the PWM Expansion Project is 28,145 afy. A comparison between these two reports shows that in the 2019 S&W Memo, source waters from Tembladero Slough at Castroville have been reduced to zero while source waters from Reclamation Ditch at Davis Road have become less available. The 2019 S&W Memo explains that "[t]he Tembladero Slough diversion was removed during the permitting process, and the yield of the Reclamation Ditch diversion declined by 270 AFY due to the final water right permit conditions." (Draft SEIR, Appx. I, p. 11.) However, the availability, or lack thereof, of water from the Tembladero Slough at Castroville and the Reclamation Ditch at Davis Road is not disclosed in the Draft SEIR itself, except for a minor footnote on page 2-6. The availability and reliability of all water sources for the PWM Expansion Project should have been evaluated in the Draft SEIR and the changed environmental setting information contained in the PWM Project Final EIR should be updated to reflect existing conditions. VV-85 VV-86

2. The Draft SEIR Overstates the Security of Amended and Restated Water Recycling Agreement ("ARWRA") Source Water

The Draft SEIR explains that M1W and Monterey County Water Resources Agency ("MCWRA") have executed an ARWRA that provides for the responsibilities for construction, operation and financing of new source waters from the Blanco Drain, Reclamation Ditch, and the City of Salinas (produce wash water) for the CSIP and the PWM Project. (Draft SEIR, p. 4.18-5.) The Draft SEIR explains that four of the six conditions necessary for the ARWRA to become effective have not been completed, including the following conditions:

- Written findings are made by the Regional Water Quality Control Board that utilization of the Blanco Drain dry weather flows as new source water meets all treatment requirements for the aforesaid dry weather flows;

- An independent third-party review of proposed capital and operating costs and preparation of an Engineer's Report is approved by the MCWRA Board of Directors and Board of Supervisors. The costs of the aforesaid third-party review shall be shared equally between MCWRA and M1W; VV-87

- A successful assessment of Proposition 218 process for rates and charges related to the operation and maintenance of the new source water facilities and proportional primary and secondary treatment charges; and,

- A separate agreement between the Parties addresses inclusion of Salinas Pond Water Return Facilities as new source water facilities.

As a result, the Draft SEIR reports that M1W and MCWRA amended the agreement in June 2019 to allow additional time to address the conditions while allowing M1W to use the new source waters for the PWM Project until the conditions are met. However, the Draft SEIR does not discuss the status of these conditions and the likelihood that each condition is met. Nor does the Draft SEIR provide alternatives analysis concerning what may happen if these conditions are not met or the impact that alternative with have on source water reliability. VV-88

Moreover, Table 4.18-3 asserts that the "Municipal Wastewater Collection and Treatment System" is a "Secured" source of water and that "[t]he ARWRA is now in effect to address and resolve competing water rights of M1W, MCWD, and MCWRA." However, Draft SEIR page 4.18-5 explains that the ARWRA is not fully in effect because there are four precedent conditions that must be met. Page 4.18-5 states "After the conditions precedent have been met, M1W and MCWRA will share the long-term rights to these new source waters as outlined in the ARWRA, as amended." Likewise, footnote 5 on Draft SEIR page 4.18-12 concludes that between 3,400 and 3,800 afy will be available to M1W through the ARWRA. As stated above, the Draft SEIR does not explain if this water supply would be available if the conditions to the ARWRA are not met. Further, as described in the Dudek Memo (Ex. A), in light of the uncertainty surrounding implementation of the ARWRA, the PWM Expansion Project may be incapable of meeting its own stated project objectives or complying with the CDO by December 31, 2021. Therefore, the Draft SEIR must be revised to include analysis and a timeline of how ARWRA conditions will be completed and an analysis of water supply reliability in the event that completion of the ARWRA conditions is delayed or not completed – which is a reasonably foreseeable scenario. (See Ex. A, pp. 9-10.) VV-89 VV-90 VV-91

3. The Draft SEIR Overstates the Availability and Reliability of Source Waters

As explained in further detail in the attached technical memorandum from Dudek, multiple sources of water relied upon in the Draft SEIR are not adequately secured or documented. The Draft SEIR's conclusion that the PWM Expansion Project would have a less than significant impact on Operational Water Supply—that "[s]ufficient water supplies are available for operation of the Proposed Modifications"—is not supported by substantial evidence because the following water supplies have not been fully evaluated and may not be available to serve the PWM Expansion Project. (Draft SEIR, pp. 4.18-11 to 4.18-14; see also CEQA Guidelines, Appx. G, § XIX(b).) Therefore, the Draft SEIR has not demonstrated, consistent with CEQA Guidelines, Appendix G, § XIX(b), that there is sufficient water available for the operation of the PWM Expansion Project and for reasonably foreseeable future development in normal, dry and multiple dry years. VV-92

Agriculture Produce Wash Water. Agriculture Produce Wash Water is an important component of the source water for the PWM Expansion Project. However, the PWM Expansion Project does not have sufficient agreements in place to ensure that this source water can be acquired and used as contemplated. The October 27, 2015 Agreement for Conveyance and Treatment of Agricultural Produce Wash Water by and between the City of Salinas and M1W (formerly the Monterey Regional Water Pollution Control Agency) allows agricultural produce wash water to be used for the approved PWM Project, but does not provide for that water to be VV-93

used for other purposes—including the proposed 2,250 afy for the PWM Expansion Project.[15] Indeed, Salinas has the exclusive right to its wash water, and in the absence of an agreement that M1W can use that water for the PWM Expansion Project, Salinas has the right to use that water for itself and its farmers.[16] Similarly, the November 3, 2015 ARWRA also does not provide for agricultural produce wash water to be used by the PWM Expansion Project.[17] Without agreements in place to allow agricultural produce wash water to be used, the PWM Expansion Project's source water remains speculative, and undermines the Draft SEIR's claim that the PWM Expansion Project can produce an additional 2,250 afy of potable water to meet regional demand. VV-93 Cont. VV-94

Municipal Wastewater Flows. Dudek has determined that amount of municipal wastewater flows available to the PWM Expansion Project may be overestimated because the Draft SEIR analysis of municipal wastewater flows does not account for evidence that municipal wastewater flows were predicted to decrease until 2030. (Ex. A, pp. 6-7.) VV-95

Lake El Estero Source Water. The Draft SEIR confirms that the Lake El Estero source water diversion system necessary for the PWM Expansion Project to obtain 87 afy of urban runoff has not been constructed or even funded. (Draft SEIR, p. 2-6 n. 10.) Therefore, the Draft SEIR should not rely on this source of water for its determination that sufficient water supplies are available for the operation of the PWM Expansion Project. (Ex. A, p. 7.) VV-96

The Salinas Storm Water Collection System. Draft SEIR Table 4.18-3 identifies the status of water rights from the Salinas Storm Water Collection System as "pending." This is likely based on the analysis provided in Revised Source Water Rights Memorandum, Draft SEIR Appendix B, which states that "[w]e understand that there are currently no contractual arrangements or permits for diversion of stormwater or urban/agricultural runoff to the M1W wastewater collection and conveyance system." (Draft SEIR, Appx. B, p. 7.) Based upon the understanding that "the City of Salinas has been working cooperatively with M1W," Appendix B concludes that "agreement is reasonably likely" and thus, that there is a "reasonable likelihood that this source of water can be obtained." These conclusory statements regarding the status of ongoing negotiations and the potential for M1W to obtain water rights, alone, are insufficient to support the a reasonable likelihood that water from the Salinas Storm Water Collection System is likely to be available for the PWM Expansion Project. Moreover, this conclusion is speculative, and the Draft SEIR should take a more conservative approach and assess a scenario where an VV-97

[15] Only two permitted uses of the agricultural produce wash water are covered in the October 27, 2015 Agreement: (1) to serve the PWM Project as approved in 2015; and (2) augment the existing Castroville Seawater Intrusion Project's crop irrigation supply. (October 27, 2015 Agreement, §1.a-b.)

[16] Salinas has made clear that it wants the water for its own uses and does not want to send that water to the Peninsula. (See Letter from City of Salinas to M1W, Re: Use of Agriculture Produce Wash Water for the Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project, Draft Supplemental Environmental Impact Report (Draft SEIR), dated Jan. 29, 2020.)

[17] The ARWRA "relates to and implements certain portions of the [PWM Project] that the MRWPCA Board approved on October 8, 2015," and is "based on the EIR as certified" in 2015 for the PWM Project. (ARWRA, p. 6-7 [Recitals].)

agreement with the City of Salinas is not reached. Under this foreseeable scenario, the Draft SEIR must assume that this source water is unavailable and analyze potential reliability of remaining source water in order to achieve the PWM Expansion Project's maximum output of 2,250 afy. VV-97 Cont. VV-98

Further, if any analysis in the Draft SEIR continues to rely on the Salinas Storm Water Collection System as a water source, the Draft SEIR should provide a clear list of steps required to secure water rights from the Salinas Storm Water Collection System and explain if/how the PWM Expansion Project will secure rights to additional water if the storm water is not obtained in order to achieve the projected output. VV-99

Insufficient Analysis of Water Supplies During Drought Years. The CEQA Guidelines require the Draft SEIR to evaluate if there is sufficient water available for reasonably foreseeable future development in normal, dry and multiple dry years. (CEQA Guidelines, Appx. G, § XIX(b).) However, the Draft SEIR did not consider multi-drought years and overall effects of climate change. For instance, the 2019 S&W Memo (Draft SEIR, Appx. I) evaluated treated municipal wastewater sources for the PWM Expansion Project based on the average of years 2008-2013, a range that only includes a single year of drought. California is prone to prolonged multi-year droughts, the frequency of which is increasing.[18] Therefore, the Draft SEIR must base its analysis of water supply availability on data that assumes the presence of multiple dry years. (Ex. A, p. 7.) VV-100 VV-101

4. Total Available Source Water Is Unclear

The Draft SEIR fails as an informational document because it omits an accessible summary of the quantity of water expected to be generated from each analyzed source. Table 4.18-3 lists the various sources of water to be used for the PWM Expansion Project and the status of associated water rights. The table does not, however, identify the quantity of water expected to be obtained from each source or where such information can be found. Appendix I, and the technical tables, appear to provide this information but the data is not presented in a form readily understandable to the public. The Draft SEIR should provide the expected quantity of water to be generated by each source of water in Table 4.18-3 and demonstrate how the PWM Expansion Project will be able to achieve its stated output of 2,250 afy. More specifically, the Draft SEIR must demonstrate how the available source water will be sufficient for the approved PWM Project to produce its maximum output of 3,500 afy plus the additional output of 2,250 afy that the PWM Expansion Project proposes. These maximum outputs are necessary in order to achieve the demand scenarios provided in the Stoldt Memo, which are discussed in Exhibit E. (Ex. E, pp. 9, 12.) Further, the Draft EIR for the original PWM Project itself concluded that "[d]uring dry years, the [PWM] Project could provide less than 3,500 acre feet of water..." (PWM Project Draft EIR, p. S-3.) It remains unknown if the PWM Project will produce 3,500 VV-102 VV-103

[18] Public Policy Institute of California, California's Latest Drought, https://www.ppic.org/publication/californias-latest-drought/.

afy at all, as that project has failed to meet its July 1, 2019 delivery start date.[19] If the maximum output of the PWM Project is unattainable, then this calls into question the ability of the Expansion Project to achieve its claimed 2,250 afy of production, and means that the maximum combined production of the two projects – 5,750 afy – cannot be achieved. Therefore, the Draft SEIR has not demonstrated, consistent with CEQA Guidelines, Appendix G, § XIX(b), that there is sufficient water available for reasonably foreseeable future development in normal, dry and multiple dry years. VV-103 Cont.

Further, to demonstrate that there are adequate source waters for the PWM Expansion Project, the SEIR must reconcile how Table 4.18-3 concludes that the ARWRA represents a "Secured" water right. As discussed in Section II.C, above, the Draft SEIR acknowledges that the certain conditions set forth in the ARWRA must be met in order for full rights to the various water sources to be secured. In light of the concern that "some of [the conditions identified in the ARWRA] are outside of the control of the parties to the Agreement, [and thus,] may not be met in a timely fashion," there is a reasonable likelihood that the full rights to the various sources of water identified for the PWM Expansion Project will not be secured. (Ex. A, p. 9.) This uncertainty necessitates that the Draft SEIR to provide an alternative analysis explaining impacts to water supply reliability if the ARWRA conditions are not met. VV-104 VV-105

IV. OTHER CONSIDERATIONS

A. Growth Inducement

1. The Draft SEIR Improperly Relies Upon the Flawed Stoldt Memo

In assessing the PWM Expansion Project's potential for inducing significant population growth on the Monterey Peninsula, the Draft SEIR includes revised water demand estimates for the Peninsula based the flawed analysis of supply and demand in the Stoldt Memo. (See Draft SEIR, p. 5-4.) The Draft SEIR states: "This Draft Supplemental EIR's analyses of water supply, growth inducement, and groundwater impacts rely upon data and reports regarding existing and future water demands provided by the MPWMD staff. In public meetings, members of the public have expressed disagreement with this published data." (*Ibid.*) As explained in Section II.B and in Cal-Am's submissions to the California Coastal Commission and to MPWMD, the Stoldt Memo's demand estimates are wholly unsupported and should not be relied upon in the SEIR in any way. (See Exs. B-D.) Rather, the Stoldt Memo: (1) uses water and supply demand estimates that were rejected by the CPUC; (2) improperly relies upon vulnerable and unreliable water sources that are likely to be unavailable during drought conditions; (3) utilizes methodology that does not meet the requirements of the California Code of Regulations, the California Health and Safety Code, and CPUC General Order 103-A; (4) underestimates demand by projecting demand based on a 5-year average, rather than the required 10-year maximum daily demand; (5) makes unsupported assumptions regarding tiered water rates, conservation restrictions, and water use VV-106

[19] Pure Water Monterey in default on agreement after missing Monday deadline, https://www.montereyherald.com/2019/07/03/pure-water-monterey-in-default-on-agreement-after-missing-monday-deadline/.

reductions; and (6) fails to account for potential shortfalls in any of the water supplies analyzed therein. (See Ex. E; see also Section II.B.1 *supra*.) VV-106 Cont.

The Draft SEIR severely understates the level of opposition to the Stoldt Memo, completely accepts the analysis in the Stoldt Memo without any critique, and does not acknowledge the substantial evidence presenting the Memo's numerous flaws and lack of evidentiary support, as raised by Cal-Am and others. Moreover, as explained in the Dudek Memo, the Draft SEIR fails to justify its reliance upon the "updated water demand estimates" in the Stoldt Memo. (Ex. A, pp. 3, 5-6.) The Draft SEIR does not explain the authority that Stoldt had to deviate from the CPUC's determination of water demand in the Monterey District Service area, nor is the Stoldt Memo supported by any evidence that is either provided in or cited by the Draft SEIR. (*Ibid.*) As such, the Stoldt Memo cannot constitute substantial evidence upon which the Draft SEIR may rely in analyzing the PWM Expansion Project's potential for inducing significant population growth. Accordingly, the SEIR's growth inducement analysis must be revised to remove any reliance on the Stoldt Memo. VV-107

2. The Draft SEIR's Analysis of Cumulative Growth Inducement Impacts Is Deficient

The Draft SEIR states throughout that the PWM Expansion Project is to be considered as a "back-up" to the MPWSP, rather than as an alternative water supply. If such is the case, the SEIR must analyze the growth inducing effects of the PWM Expansion Project, ***in addition to*** any potential growth impacts disclosed in the Final EIR/EIS prepared for the MPWSP. (See, e.g., Draft SEIR, p. 5-4.) VV-108

"Assessment of a project's cumulative impact on the environment is a critical aspect of the EIR." (*Los Angeles Unified School Dist. v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1025.) In analyzing the cumulative impacts associated with a proposed project, an EIR must assess the "individually limited but cumulatively considerable" impacts of the proposed project when viewed in connection with the effects of past projects, other current projects, and probable future projects. (See *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1214 [citing CEQA Guidelines, § 15355, subd. (b)].) In carrying out a cumulative impacts assessment, an EIR "must reflect a conscientious effort to provide public agencies and the general public with adequate and relevant detailed information about them." (*Ultramar, Inc. v. South Coast Air Quality Management Dist.* (1993) 17 Cal.App.4th 689, 703 [citations omitted].) Indeed, "[a] cumulative impact analysis which understates information concerning the severity and significance of cumulative impacts impedes meaningful public discussion and skews the decisionmaker's perspective concerning the environmental consequences of the project, the necessity for mitigation measures, and the appropriateness of project approval." (*Ibid.*) VV-109

Here, if the PWM Expansion Project constitutes a "back-up" to the MPWSP, as stated in the Draft SEIR, meaning that the two projects would be implemented simultaneously, then the Draft SEIR must be revised to assess the potentially "cumulatively considerable" impacts of the PWM Expansion Project in connection with MPWSP. (*Bakersfield Citizens for Local Control, supra*, 124 Cal.App.4th at p. 1214.) The PWM Expansion Project must either be assessed as an

alternative to the MPWSP, or it must be assessed a cumulative project to be analyzed in addition to the MPWSP. (See Section I *supra*.) VV-109 Cont.

B. Alternatives

The Draft SEIR does not identify alternative *projects* to the PWM Expansion Project, but rather an alternative configuration of the proposed PWM Expansion Project. (See Draft SEIR, pp. 6-4 to 6-6 [identifying a No Project/No Modifications Alternative and an Elimination of Extraction Wells EW-3 and EW-4 Alternative].) However, other public agencies responsible for permitting the MPWSP—such as the California Coastal Commission in its October 28, 2019, staff report analyzing the MPWSP—consider the PWM Expansion Project as a water supply project alternative to the MPWSP. (See Section I *supra*.) Therefore, it is reasonably foreseeable that the PWM Expansion Project could be pursued as an alternative to the MPWSP. As such, the Draft SEIR should evaluate the MPWSP as a Project alternative and consider water supply reliability as a Project Objective, as the MPWSP Final EIR/EIS considered. VV-110

"An EIR must describe all reasonable alternatives to the project." (*County of Inyo v. City of Los Angeles* (1977) 71 Cal.App.3d 185, 200.) Here, at least to some, one such alternative to the PWM Expansion Project is the MPWSP. If the PWM Expansion Project is a true alternative to or replacement for the MPWSP, the SEIR must analyze the MPWSP as an alternative project as CEQA requires. (See CEQA Guidelines, § 15126.6.) But instead of analyzing the MPWSP as an alternative, the Draft SEIR incorporates the MPWSP into the "No Project/No Modifications Alternative." (Draft SEIR, p. 6-4.) VV-111

The Draft SEIR states that, as part of the No Project/No Modifications Alternative, "it remains reasonably likely that the MPWSP desalination project would be constructed; however, should the MPWSP be delayed and not able to meet the Cease and Desist Order deadline . . . there would be no back-up plan. As a result, under the No Project Alternative, the MPWSP may be constructed and operated by others." (*Ibid*.) This analysis, however, conflates the typical "No Project" alternatives analysis with analysis of the MPWSP as an alternative. "CEQA requires that the EIR's no-project alternative address *existing conditions* as well as what would reasonably be expected to occur in the foreseeable future if the project were not approved." (*Berkeley Keep Jets Over the Bay Com. v. Bd. of Port Commissioners of the City of Oakland* (2001) 91 Cal.App.4th 1344, 1361; CEQA Guidelines, § 15126.6, subd. (e)(2).) A "no project" description "provides decision makers and the public with specific information about the environment if the project is not approved. It is a factually based forecast of the environmental impacts of preserving the status quo." (*Planning & Conservation League v. Dept. of Water Resources* (2000) 83 Cal.App.4th 892, 917.) Because agencies consider the PWM Expansion Project as an actual alternative to the MPWSP, and because the MPWSP has not been built yet, the SEIR cannot assume that the MPWSP will be built as part of its No Project/No Modifications Alternative.[20] The SEIR should separately evaluate a true No Project alternative in which neither VV-112 VV-113

[20] Similarly, the Draft SEIR's alternatives analysis raises baseline concerns by assuming that the MPWSP will be built. (See Draft SEIR, p. 6-4.) The SEIR must evaluate environmental impacts of the PWM Expansion Project on the actual, existing environment, rather than hypothetical situations. (See

the PWM Expansion Project nor the MPWSP are constructed, and evaluate the MPWSP as a true alternative to the PWM Expansion Project. VV-113 Cont.

Similarly, given that certain regulatory agencies view the PWM Expansion Project as a water supply project alternative to the MPWSP,[21] the SEIR should include water supply reliability as a Project Objective. For instance, the MPWSP Project Objectives include: "Develop water supplies for the CalAm Monterey District service area to replace existing Carmel River diversions in excess of CalAm's legal entitlement"; "Develop water supplies to enable CalAm to reduce pumping from the Seaside Groundwater Basin"; and "Develop a reliable water supply for the CalAm Monterey District service area, accounting for the peak month demand of existing customers." (MPWSP Final EIR/EIS, pp. 1-5 to 1-6.) These or similar objectives are wholly absent from the Draft SEIR. Instead, the Draft SEIR identifies three Project Objectives: (1) be capable of commencing operation, or of being substantially complete, by the end of 2021 or as necessary to meet Cal-Am's replacement water needs; (2) be cost-effective such that the PWM Expansion Project would be capable of supplying reasonably-priced water; and (3) be capable of complying with applicable water quality regulations intended to protect public health. (Draft SEIR, p. S-1.) These Project Objectives are insufficient to address water supply reliability concerns if the PWM Expansion Project proceeds without the MPWSP. (See Section I *supra*.) VV-114

Given that the PWM Expansion Project is being considered by some to be a replacement for the MPWSP, the PWM Expansion Project Objectives should be revised to include water supply and water reliability-related objectives and the PWM Expansion Project should be properly analyzed in relation to those objectives. (CEQA Guidelines, § 15126.6, subds. (a), (c).) VV-115

V. RECIRCULATION OF THE DRAFT SEIR IS REQUIRED

The CEQA Guidelines require a lead agency to recirculate an EIR when significant new information is added prior to certification of the final EIR. (CEQA Guidelines, § 15088.5, subd. (a).) "Information" includes "changes in the project or environmental setting as well as additional data or other information." (*Ibid.*) Under CEQA Guidelines Section 15088.5, subdivision (a), information is "significant" if the "EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement." CEQA Guidelines Section 15088.5, subdivisions (a)(1)-(4), provide examples of "significant new information" requiring recirculation, which include: VV-116

Communities for a Better Environment v. S. Coast Air Quality Mgmt. Dist. (2010) 48 Cal.4th 310, 322; *San Joaquin Raptor Rescue Center v. County of Merced* (2007) 149 Cal.App.4th 645, 658.) Thus, the SEIR cannot assume the MPWSP will be built as part of its environmental analysis.

[21] As explained herein, the Draft SEIR is inconsistent in its treatment of the PWM Expansion. For certain analyses, the Draft SEIR treats the PWM Expansion Project as an alternative to the MPWSP, and for others, the Draft SEIR views the PWM Expansion Project as a "back-up" to the MPWSP. (See Section I *supra*.)

> (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
>
> (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
>
> (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.
>
> (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded."

VV-116 Cont.

The purpose of recirculation is to give the public and other agencies an opportunity to evaluate the new data and the validity of conclusions drawn from it. (*Spring Valley Lake Ass'n v. City of Victorville* (2016) 248 Cal.App.4th 91, 108; *Silverado Modjeska Recreation & Park Dist. v. County of Orange* (2011) 197 Cal.App.4th 282, 305; *Save Our Peninsula Comm. v. Monterey County Bd. of Supervisors* (2001) 87 Cal.App.4th 99, 131; *Sutter Sensible Planning, Inc. v. Board of Supervisors* (1981) 122 Cal.App.3d 813, 822.) The failure to adequately inform decision makers and the public of the environmental impacts of a project and comply with the basic disclosure requirements of CEQA is a fatal flaw in an EIR that requires revision and recirculation. (See *Bakersfield Citizens for Local Control v. City of Bakersfield* (2004) 124 Cal.App.4th 1184, 1198 ["Failure to comply with the information disclosure requirements constitutes a prejudicial abuse of discretion when the omission of relevant information has precluded informed decisionmaking and informed public participation"]; see also *Save Our Peninsula Comm. v. Board of Supervisors* (2001) 87 Cal.App.4th 99, 131 [EIR changed to allow transfer of water credits as mitigation late in process, depriving public of the meaningful opportunity to comment].)

As described above, the Draft SEIR is missing critical data and analysis of the PWM Expansion Project's potential impacts as a standalone project, as well as impacts that may occur if the PWM Expansion Project and the MPWSP are developed cumulatively. This includes impacts to air quality and greenhouse gas emissions; biological resources (terrestrial and marine); cultural and paleontological resources; energy; geology, soils, and seismicity; hydrology and water quality (groundwater and surface water); land use, agriculture, and forest resources; noise and vibration; population and housing; water supply and wastewater systems; and growth inducement. In addition, the Draft SEIR's alternatives analysis is flawed and must be revised to identify alternative projects to the PWM Expansion Project. Further, the Draft SEIR relies on "updated water demand estimates" prepared by Mr. Stoldt that are based on inaccurate assumptions about water supplies and demands, and thus, the Draft SEIR's reliance on Mr. Stoldt's flawed memorandum cannot constitute substantial evidence in support of the

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Draft SEIR's conclusions. Given these numerous and substantial deficiencies, the Draft SEIR must be revised and recirculated. VV-118 Cont.

Coalition of Peninsula Businesses

A coalition to resolve the Peninsula water challenge to
comply with the CDO at a reasonable cost

Members Include: Monterey County Hospitality Association, Monterey Commercial Property Owners' Association,
Monterey Peninsula Chamber of Commerce, Carmel Chamber of Commerce, Pacific Grove Chamber of Commerce, Monterey County Association of Realtors, Associated General Contractors-Monterey Division, Pebble Beach Co., Community Hospital of the Monterey Peninsula

January 31, 2020

Rachel Gaudoin, Public Outreach Coordinator
Monterey 1 Water
5 Harris Court, #D
Monterey, California 93942

Transmitted by fax to: 831-372-6178 and by e-mail to:purewatermontereyinfo@my1water.org

Dear Ms Gaudoin:

The Coalition of Peninsula Businesses submits these comments on the draft Supplemental Environmental Impact Report (dSEIR) on the proposed expanded Pure Water Monterey project.

As you know, the Coalition of Peninsula Businesses vigorously has supported the Monterey Peninsula Water Supply Project which includes the Pure Water Monterey water recycling and reuse project.

The Coalition has serious concerns about the availability of source water for the expansion project. Comments recently filed by the City of Salinas address this concern directly. XX-1

City of Salinas notes that the existing agreements for the use of agricultural wash water do not provide a legitimate basis for the contentions in the dSEIR that sufficient source XX-2

water is available and existing agreements cover the use of that water for the expansion. See dSEIR at 4.18.3.4 at page 4.18-4,5,6 and dSEIR at4.18.4.4 at page 4.18-12 at Table 4.18-3. XX-2 Cont.

The Coalition is also concerned that the dSEIR concludes that reduced CSIP benefit of 781 afy is acceptable without revisiting this issue with ag interests, Monterey County Water Resources Agency and other parties and without amendment of several legal agreements and contracts – specifically, the Amended and Restated Water Recycling Agreement (ARWRA) and the 2015 Conveyance and Treatment Agreement. XX-3

We note the recent delivery of letters to Monterey One Water by Monterey County Farm Bureau (January 10) and Salinas Valley Water Coalition (January 17) that both address the issue of changing perceptions about Salinas Valley Basin water use and water reclamation and reuse prompted, in large part, by the development of the state-mandated Salinas Valley Basin Groundwater Sustainability Plan. We attach copies of those letters for your reference as you address the issues City of Salinas and we raise in these comments. XX-4

Please revise your expanded Pure Water Monterey SEIR to reflect the reality that sufficient source water agreements may not exist to support the expansion of Pure Water Monterey and that more work needs to be done before the expansion project can be considered adequately studied.

Sincerely,

Jeff Davi, Co-chair

John Tilley, Co-chair

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MONTEREY

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January 10, 2020

Monterey One Water
Board of Directors
Ron Stefani, Chair
5 Harris Court, Bldg. D
Monterey, CA 93940

RE: Pure Water Monterey Expansion Project

Dear Chair Stefani and Directors:

Monterey County Farm Bureau represents family farmers and ranchers in the interest of protecting and promoting agriculture throughout our County. Since 1917, Farm Bureau strives to improve the ability of those engaged in production agriculture to provide a reliable supply of food and fiber through responsible stewardship of our local resources.

Over the past nearly eight years, our organization has been actively involved in the water supply solution for the Monterey Peninsula. Our belief is that a healthy Monterey County encompasses all aspects of our community, including water supplies in areas where there are current challenges to meet demand. While the Salinas Valley may not have a supply problem, but more a distribution problem, our involvement in the Monterey Peninsula Water Supply Project (MPSWP) came about due to a number of factors, including the health of our tourism and business community of the Peninsula having a secure, reliable water supply. XX-5

This involvement included support for the initial Pure Water Monterey project, part of the "three-legged stool" of projects proposed in the MPWSP. Combined with aquifer storage and recovery and desalination, this provided the best reliable and drought-proof resource for Peninsula water supplies for generations to come. Monterey County Farm Bureau actively supported this solution at the California Public Utilities Commission and continues to support this approach moving forward.

Since the approval of the initial Pure Water Monterey project, the Salinas Valley has undertaken the implementation of the Sustainable Groundwater Management Act (SGMA), including developing a groundwater sustainability plan for the seawater intruded portion of the basin (Pressure sub-basin). This process has altered the perceptions of water sources, reclamation and reuse, including the discharges of water from storm events, processing and manufacturing facilities, and effluent from farm fields.

FARM BUREAU
MONTEREY

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This changed perception of all waters of the basin has caused farmers and ranchers to reconsider all water use and how much is extracted annually, as well as the quality of any water discharged from a farm or processing facility into a conveyance or collection pond.

While we find there is still enthusiasm for reclaiming as much of these discharges for reuse, the paradigm shift in focus is now seeking to fulfill the needs of a new sustainability mandate; the reuse of water should be for the benefit of those who discharged the water from its original use.

The proposed expansion of Pure Water Monterey is to benefit the needs of users outside of the Salinas Valley basin, and thus we express wavering support for the expanded project that will benefit another water constituency. More farmers and landowners are concerned that waters discharged in the Salinas Valley basin should be returned to that same basin for reuse and to the benefit of those water users, such as crop production in an expanded Castroville Seawater Intrusion Project (CSIP) area or groundwater replenishment in the coastal zone or eastside sub-basin trough.

XX-5
Cont.

Since the implementation of SGMA and the change in attitudes towards all water use, Monterey County Farm Bureau recommends that the expansion of the Pure Water Monterey project be held off until more clarity on reclaimed water use in the Salinas Valley basin can be explored. The adoption of the groundwater sustainability plan includes a number of projects that may require additional water sources to comprehensively bring the Pressure sub-basin into balance, or to at least halt the progression of seawater intrusion, a threat to all water users in Monterey County.

We request a deferment of any decision to approve the expansion of Pure Water Monterey until there is more data on overall water sustainability and use in the greater Salinas Valley groundwater basin.

Sincerely,

Norman C. Groot
Executive Director

cc: Brent Buche, General Manager, Monterey County Water Resources Agency

Salinas Valley Water Coalition

33 El Camino Real • Greenfield, CA 93927
(831) 674-3783 • FAX (831) 674-3835

TRANSMITTED VIA EMAIL

Board of Directors
Ron Stefani, Chair
Monterey One Water
5 Harris Court, Bldg. D
Monterey, CA 93940

17 January, 2020

RE: Pure Water Monterey Expansion Project

Dear Chair Stefani and Directors:

The Salinas Valley Water Coalition is a non-profit organization comprised primarily of agriculture and ag-related business and individual members, whose members own and/or manage approximately 150,000 irrigated acres and land mass and water right holders within the Salinas Valley. The SVWC has operated for almost 30 years to specifically address our local water issues.

We became a party to the MPWSP's California Public Utilities Commission (CPUC) proceeding in 2012, and actively participated in that proceeding. We were concerned that Cal-Am's proposed desal project would be pumping a significant amount of groundwater from the Salinas River Groundwater Basin and as such would have an adverse impact on the Basin; both as to seawater intrusion and the overlying water rights of the basin's landowners. While wanting to be good neighbors and wanting to see the Peninsula be successful in developing a secure and stable water supply to meet their needs, it must not be at the degradation of our basin and its water right holders.

We were also concerned that the proposed desal facility had the potential to export groundwater from the northern end of the Salinas Valley Groundwater Basin (SVGB) to an area outside of the SVGB, contrary to the MCWRA Act and with adverse impacts to the overlying water right holders. The SVWC retained two hydrologists to assist us in the CPUC process to evaluate the potential impacts to the SVGB and to assist in developing a resolution that would protect the Salinas Valley Groundwater Basin and its water right holders. We believe we accomplished this within the CPUC process. XX-6

The communities and ratepayers of the Salinas Valley have spent hundreds of millions of dollars to build two reservoirs, the Castroville Seawater Intrusion Project, the Salinas Valley Reclamation Project and the Salinas Valley Water Project to address its basin's water problems. Stakeholders have worked as neighbors to resolve their differences so these projects could be successfully financed and implemented.

We have made significant progress, but we are not finished – seawater intrusion continues to advance into the SVGB. The overdraft is stable; additional intrusion is substantially reduced. The northern part of our SVGB still has significant water resource problems and needs for us to address.

Water and the reuse of water are critical issues within the agricultural community of Salinas Valley and with the continued advancement of seawater intrusion, the priority of the utilization of our wastewater and recycling project must be for the benefit of the Salinas Valley agricultural community.

As little as three years ago, there was enthusiasm for recycling as much wastewater as possible, and the Salinas Valley agricultural community supported the initial Pure Water

Monterey project, but this was with the understanding that there would remain opportunities for the agricultural community of the Salinas Valley to participate in and utilize the waste water. The current proposed expansion of the recycled water project to meet the needs of the Peninsula's urban uses comes at a time when farmers are rethinking where and how water is used, and particularly, where discharges ultimately end up being used when reclaimed. XX-6 Cont.

In the Salinas Valley there is wavering support for the proposed expansion of Pure Water Monterey for the benefit of Peninsula water users, due to the need for the expanded use of waste waters for the Salinas Valley. More farmers and landowners believe the Salinas Valley should be priority for utilization of the waste waters and that they should stay in the Salinas Valley.

The SVWC wants to be good neighbors and assist the Peninsula in meeting their water needs, but this cannot be at the degradation of the needs of the Salinas Valley. Therefore, we believe that the expansion of Pure Water Monterey as currently proposed not move forward at this time.

Sincerely

Salinas Valley Water Coalition Board
Keith Roberts, Chair
Roger Moitoso, Vice- Chair
Rodney Braga, Director
Lawrence Hinkle, Director
Bill Lipe, Director
David Gill, Director
Steve McIntyre, Director
Brad Rice, Director
Michael Griva, Past-Chair
Nancy Isakson, President

Cc: Brent Buche, MCWRA General Manager

Comment Document XX: Jeff Davi & John Tilley, Coalition of Peninsula Businesses

XX-1 See Master Response #3: Comments on Water Supply and Source Water Availability.

XX-2 See Master Response #3: Comments on Water Supply and Source Water Availability.

XX-3 See Master Response #3: Comments on Water Supply and Source Water Availability for information regarding CSIP benefits.

XX-4 The commenter cites letters from Monterey County Farm Bureau and Salinas Valley Water Coalition that were sent separately. Commenter notes that they have attached copies of these letters for reference. Please see response to Letter AAA and Letter BBB, respectively, in **Chapter 5.**

XX-5 The letter from Monterey County Farm Bureau, dated January 10, 2020, has been added as Letter AAA. Please see responses to Letter AAA.

XX-6 The letter from the Salinas Valley Water Coalition, dated January 10, 2020, has been added as Letter BBB. Please see responses to Letter BBB.

Appendix M
Source Water Operational Plan
Technical Memorandum

Monterey One Water
Providing Cooperative Water Solutions

TECHNICAL MEMORANDUM

To: ***Jennifer Gonzalez, PE, Engineering Manager***
Monterey One Water

From: ***Bob Holden, PE, LS, M.ASCE***
Principal Engineer
Monterey One Water

Alison Imamura, PE, AICP
Associate Engineer
Monterey One Water

Date: **April 11, 2020**

Subject: **Approved Pure Water Monterey (PWM) Project and Proposed Modifications to Expand the PWM Project - Source Water Operational Plan**

INTRODUCTION AND BACKGROUND

The Pure Water Monterey (PWM) Final Environmental Impact Report (EIR) certified in 2015 with addenda and the Draft Supplemental EIR dated 2019 (Draft SEIR) for the Proposed Modifications to expand the PWM Project[1] describe the source water availabilities, water rights, and uses. The EIR and Draft SEIR source waters analyses assumed 2009 to 2013 average flows would be consistent with future flows, plus these analyses assumed that the quantities of Salinas Industrial Wastewater (Ag Wash Water, AWW) would increase in the future. The PWM Project and the Proposed Modifications to expand the PWM Project yield include use of secondary-treated water as influent for the Advanced Water Purification Facility (AWPF) that provides purified water to MCWD for landscape irrigation and to convey for injection into the Seaside Groundwater Basin plus use of additional source water to augment Regional Treatment Plant (RTP) influent for the Salinas Valley Reclamation Project (SVRP) and the Castroville Seawater Intrusion Project (CSIP). The EIR identified that one acre-foot (AF) of AWPF product water requires 1.23 AF of RTP influent water (i.e., for every one AF of product water that is produced at the AWPF, 0.23 AF of reverse osmosis (RO) concentrate is sent into the outfall). Those analyses were not concerned with quantifying screening and membrane filtration (MF) backwashes as the backwash water returns to the RTP headworks and can be reused after primary and secondary treatment.

The purposes of this memorandum are 1) to describe M1W's rights to the AWPF feed water, 2) to describe quantities by month of secondary effluent that are available to use as influent to the AWPF in various conditions, and 3) to show how the AWPF feed water could be adjusted to a specific year's monthly flow. In these analyses, one AF of AWPF product water is assumed to require 1.37 AF water rights in the form

[1] The 2019 – 2020 SEIR addresses expanding the PWM Project for the purpose of providing a Back Up Plan for CalAm to meet the CDO in case the MPWSP desalination plant is delayed beyond milestones established in the State Water Resources Control Board's Cease and Desist Order.

of Ozone Feed Water. Of each one AF of product water, the Ozone Strainer and MF Pre-strainer backwashes removes 0.03 AF which returns to the headworks. Next, 0.11 AF are removed during MF backwash which is also returned to the Headworks. Finally, 0.23 AF of RO concentrate is removed and sent to the outfall. The analyses herein separately quantify the backwash water flows from the AWPF because when those flows return to primary and secondary treatment their water rights change. Water rights consider those rights to RTP secondary effluent prescribed by California Water Code section 1210 and the Amended and Restated Water Recycling Agreement (November 3, 2015, as amended in June 2019, herein referred to as the ARWRA). Volumes of wastewater flowing into the RTP's primary and secondary treatment processes that would be available to use as influent to the AWPF include municipal wastewater to which M1W and MCWD have contractual rights and the "new source waters" as described in the ARWRA. These AWPF source water flows will be determined for the three distinct AWPF uses: MCWD, the approved PWM Project, and the Proposed Modifications. Water sources and yields for the remainder of the PWM Project (SVRP/CSIP) are described in the Schaaf & Wheeler reports published in the Final PWM Project EIR (M1W/DD&A, 2015), Addendum No. 3 to the EIR (M1W/DD&A, October 2017), and in the Final SEIR in Master Response #3 of Chapter 3, and in Appendices I and R (M1W/DD&A, 2019).

COMPOSITION OF MUNICIPAL WASTEWATER FLOWS

Relative contributions of municipal wastewater from M1W's geographic areas that enters the M1W headworks and is metered there include: 51% from the Salinas urban area, 3% from Moss Landing and Castroville, 46% from the Monterey Peninsula, Marina, and Fort Ord areas (Source: M1W Sewer System Management Plan, 2019). Addition of AWW in recent years increases the percentage of flows from the Salinas area by up to 4% (peaking in the summer). These municipal flows are primarily from areas within M1W's 2001 Service Area, but also include some municipal/domestic flows from outside M1W's 2001 Service Area, including the following key geographic locations:[2]

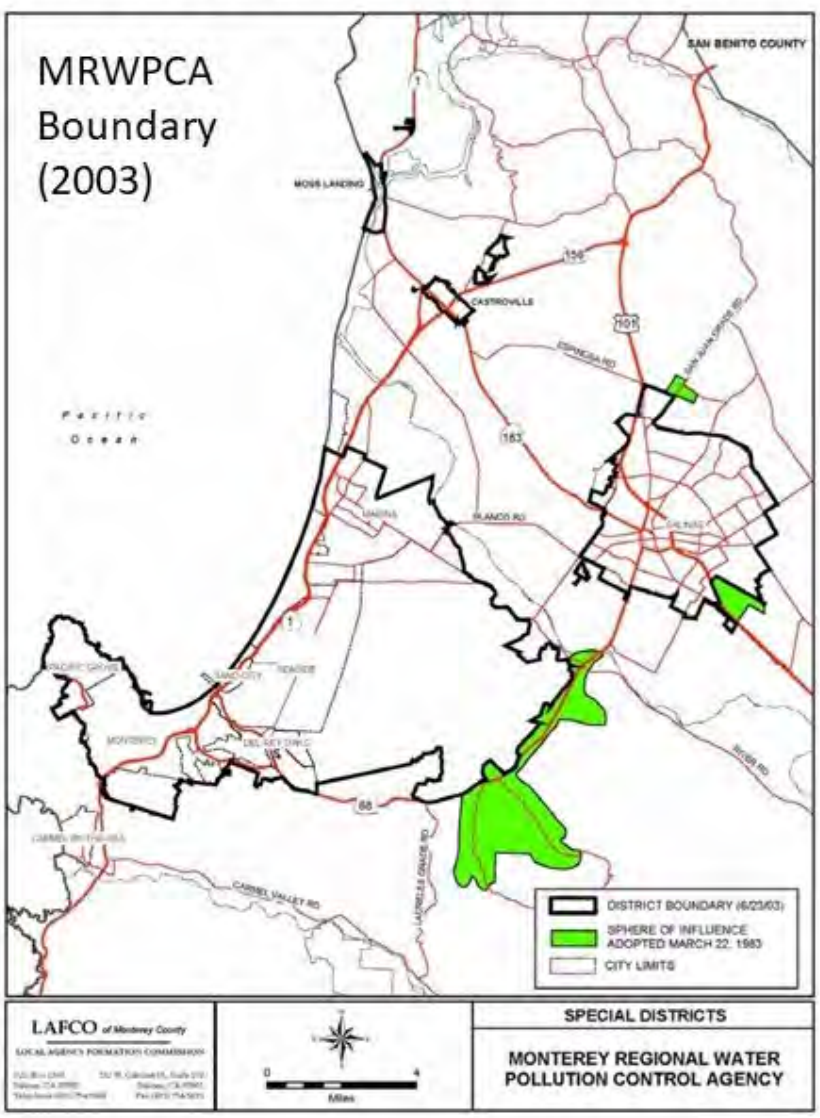
1. North County High School and the southeast portion of Castroville, as shown in Figures 1 and 2,[3]
2. Boronda and areas north and southeast of the City of Salinas, as shown Figures 1 and 2,
3. Starting in 2019, the Farmworker Housing site on Hitchcock Road, southwest of Salinas,
4. Monterey Regional Waste Management District landfill starting in 2016, and
5. M1W Regional Treatment Plant on-site wastewater.

These flows have not previously been individually metered and some flow through the headworks meter, however, monthly volumes throughout the year have been estimated for the analyses in this memorandum based on available pumping operations data, use assumptions, and other metered flow data (flow balance calculations). Because these are also wastewater flows which enter M1W-owned infrastructure, rights to these waters are also governed by California Water Code Section 1210 which provides for the ability for M1W to enter into agreements for assigning those rights to other entities. Currently, the ARWRA and the March 1996 *Annexation Agreement and Groundwater Mitigation Framework for Marina Area Lands* are the main agreements governing the water rights to these flows.

[2] The distinction between municipal flows coming from within and outside of the M1W 2001 Service Area are important for interpreting rights assigned to MCWRA by the Amended and Restated Water Recycling Agreement (November 2015).

[3] Figures 1 and 2 use maps of the M1W (at that time, known as Monterey Regional Water Pollution Control Agency) published by the Monterey County Local Agency Formation Commission in 2003 and 2012 because maps of the service area were not published in 2001, and a newer map has not been published since 2012.

Figure 1. LAFCO Boundary Maps of MRWPCA Service Areas in 2003 and 2012



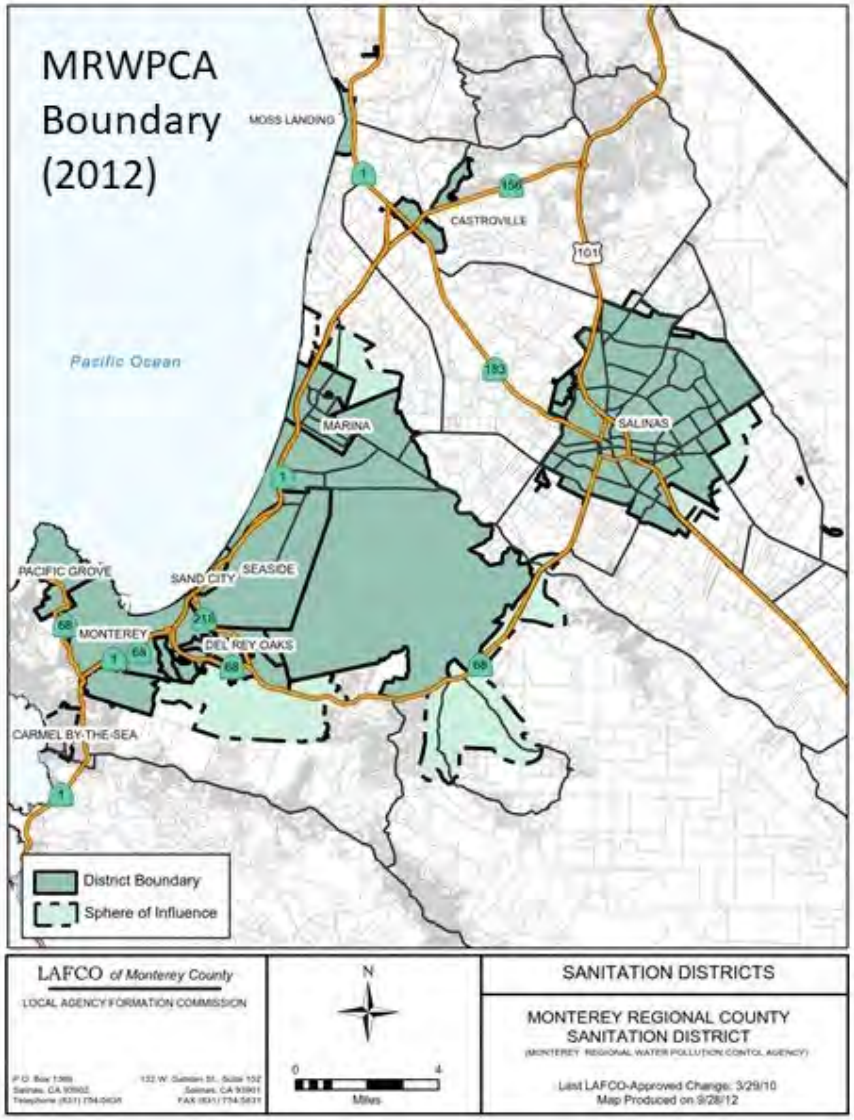
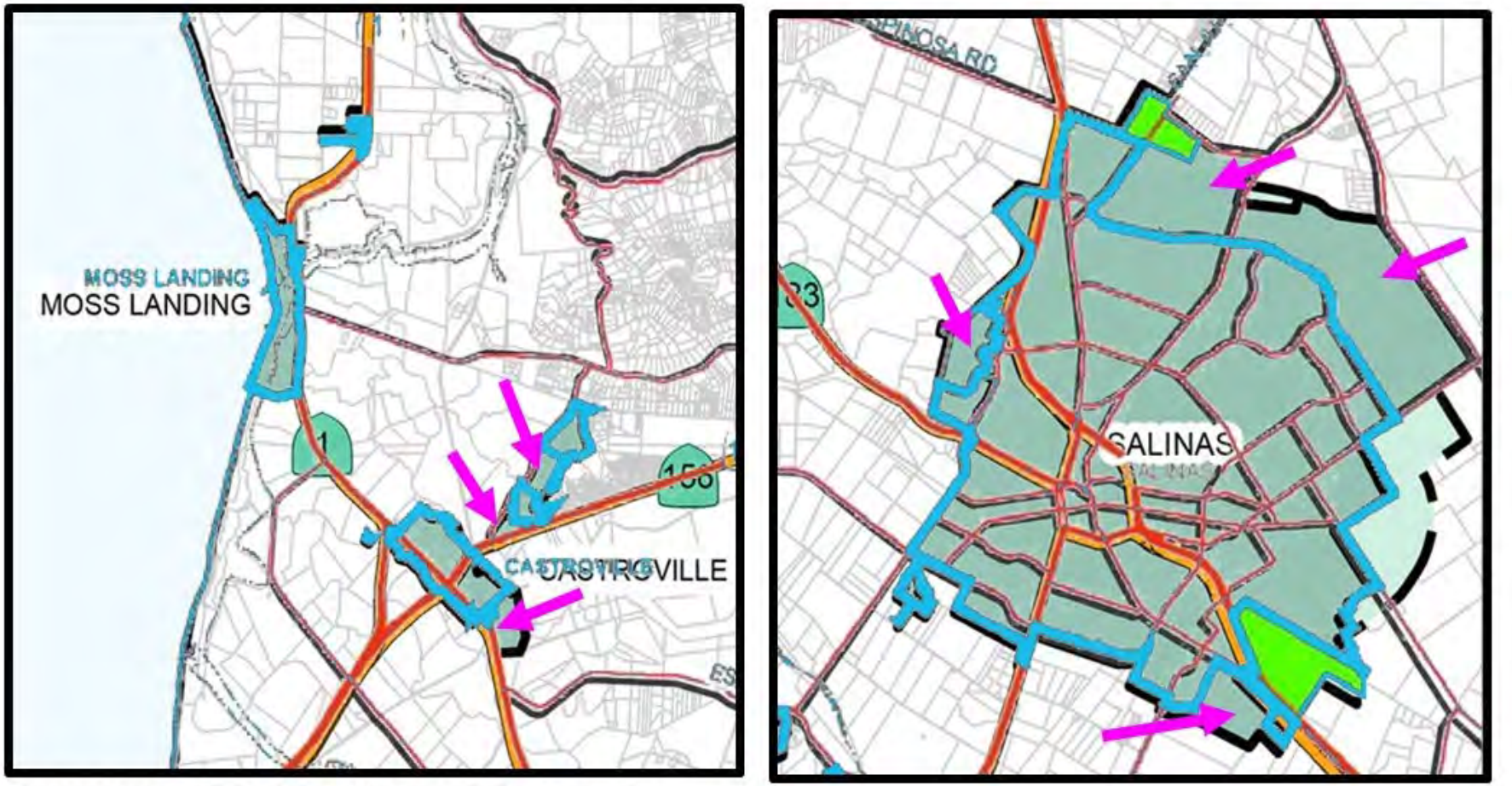


Figure 2. M1W Service Areas (northern & Salinas Area) added after 2003 (Noted with:)



= 2003 LAFCO-published of MRWPCA Service Area Boundary
= Current LAFCO-published M1W Service Area Boundary
= Areas within sphere of influence, but not within service area.

NEW SOURCE WATERS IN ARWRA

As described in the ARWRA, new source waters available for use for recycling include the following:

- **Reclamation Ditch surface water**. M1W can divert this water into the City wastewater collection system by using the recently completed diversion structure near Davis Road (which then flows to the RTP), as allowed by a State Board Water Rights Permit #21377 issued to the MCWRA and discussed by the ARWRA.
- **Blanco Drain surface water**. M1W can divert this water to the RTP headworks using the recently completed diversion structure near the Salinas River, as allowed by a State Board Water Rights Permit #21377 issued to the MCWRA and discussed by the ARWRA.
- **Agricultural Wash Water (Ag Wash Water)**. M1W can divert this water directly from the City of Salinas' separate industrial wastewater collection system to the M1W Salinas Pump Station using M1W's diversion facilities, as allowed by a State Board's Order approving Wastewater Change Petition #WW-0089 issued to the City of Salinas and the City/M1W Agreement for Conveyance and Treatment of Industrial Waste Water (October 27, 2015).

The use of these three categories of source water by M1W is subject to conditions precedent in Section 16.15 of the ARWRA as updated in Amendment No. 1 to the ARWRA. Under Amendment No. 1 to the ARWRA, M1W has rights to immediately use all the Reclamation Ditch and Blanco Drain surface waters and the Ag Wash Water, even before the conditions precedent are met. M1W may choose to use the Ag Wash Water to provide additional influent to the SVRP before the conditions precedent are met. In addition, Section 16.16 provides that if the conditions precedent are not met, then MCWRA would retain rights to the Ag Wash Water and M1W would retain rights to the Blanco Drain and Reclamation Ditch; however, for Section 16.16 to be in effect would require a separate agreement. Therefore, the analyses in this Technical Memorandum conservatively assume that Ag Wash Water:

1. is not available for use at the AWPF if conditions precedent are not met,
2. is only used for the Approved PWM Project during October through May in the scenarios where the conditions precedent are met, and
3. is not used for the Proposed Modifications.

Other new source waters that will be available to divert to the RTP to augment secondary effluent for recycling (and that are listed in the ARWRA) include City of Salinas urban runoff/stormwater that currently flows to the Salinas River, that will be mixed with AWW, conveyed to, and treated and stored in the Salinas Industrial Waste Water Treatment Facility (IWTF) ponds, and then diverted to the RTP from the northwest corner of Pond 3 at the IWTF. The infrastructure to enable this diversion is currently under construction. Currently, M1W does not have the ability to divert that treated water but will upon completion of the Pond 3 pump station. Nevertheless, because a contract with the City of Salinas or a contract amendment would be needed for M1W to use City of Salinas urban runoff/ stormwater, the analyses in this Technical Memorandum conservatively assume that City of Salinas urban runoff mixed with wastewater is not available for use at the AWPF. The ARWRA also lists Lake El Estero waters and SVRP modifications as new source waters, but to date there has been no implementation of this infrastructure due to lack of funding; therefore the analyses in this Technical Memorandum do not assume that these sources are available for use at the AWPF.

OTHER RELEVANT ANALYSES

This memorandum is complementary to the Perkins Coie Report "Water Rights Analysis for Proposed Modification to the Pure Water Monterey Groundwater Replenishment Project" (Perkins Coie Report). That report concluded:

- M1W, MCWD, and MCWRA all have secured rights to use water from the M1W's collection and treatment system.
- M1W has secured rights to divert and use AWW for recycling and delivery to customers, including SVRP treatment then distribution to CSIP plus AWPF treatment then injection to the Seaside Groundwater Basin (Agreement for Conveyance and Treatment of Industrial Waste Water By and Between the City of Salinas and the Monterey Regional Water Pollution Control Agency, dated Oct. 27, 2015).
- M1W needs a contract with the City of Salinas to acquire rights to divert, and treat for reuse, the City of Salinas storm water as enabled by M1W's Salinas Storm Water Projects. Prior agreements could be amended to allow M1W AWW to recycle flows through the SVRP and AWPF from Pond 3 at the City's IWTF to the Regional Treatment Plant (RTP) as enabled by the Salinas Storm Water Phase 1B Project.
- M1W and MCWRA have rights to Reclamation Ditch and Blanco Drain waters through two relevant SWRCB permits and the ARWRA, as amended. According to the ARWRA Section XVI, 16.16, if conditions precedent in Section XVI, 16.15 are not satisfied, M1W would retain the right to divert and use these waters and AWW would be available for MCWRA to use.

Another complementary report was Schaaf & Wheeler's Memorandum "Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project – Source Water Availability, Yield, and Use" dated November 1, 2019 (S&W Report) which was used to support the findings in the Draft SEIR. The Schaaf & Wheeler Report:

1. Dealt with the whole PWM Project that includes water for the AWPF and water for SVRP/CSIP. It emphasized the calculation of total additional water to flow into the RTP for treatment and reuse (added to existing wastewater flows) and the use of the flows by the AWPF and the SVRP and discharge to the outfall as recycled water or ocean discharge.
2. Used the 2015 EIR baseline data. This assumption was of interest to some stakeholders as the volumes of source water assumed to be available were based on 2009 through 2013 averages and industrial wastewater projections.[4] This Technical Memorandum provides supplemental analyses and results based on a different set of assumptions not reliant on the same baseline data.
3. Modeled flows going into or out of the RTP site and facilities owned by M1W but did not account for the backwash and on-site-generated flows that do not pass through the RTP headworks flow meter. The red box on **Figure 3** represents this flow model boundary as is appropriate for the overall PWM Project.

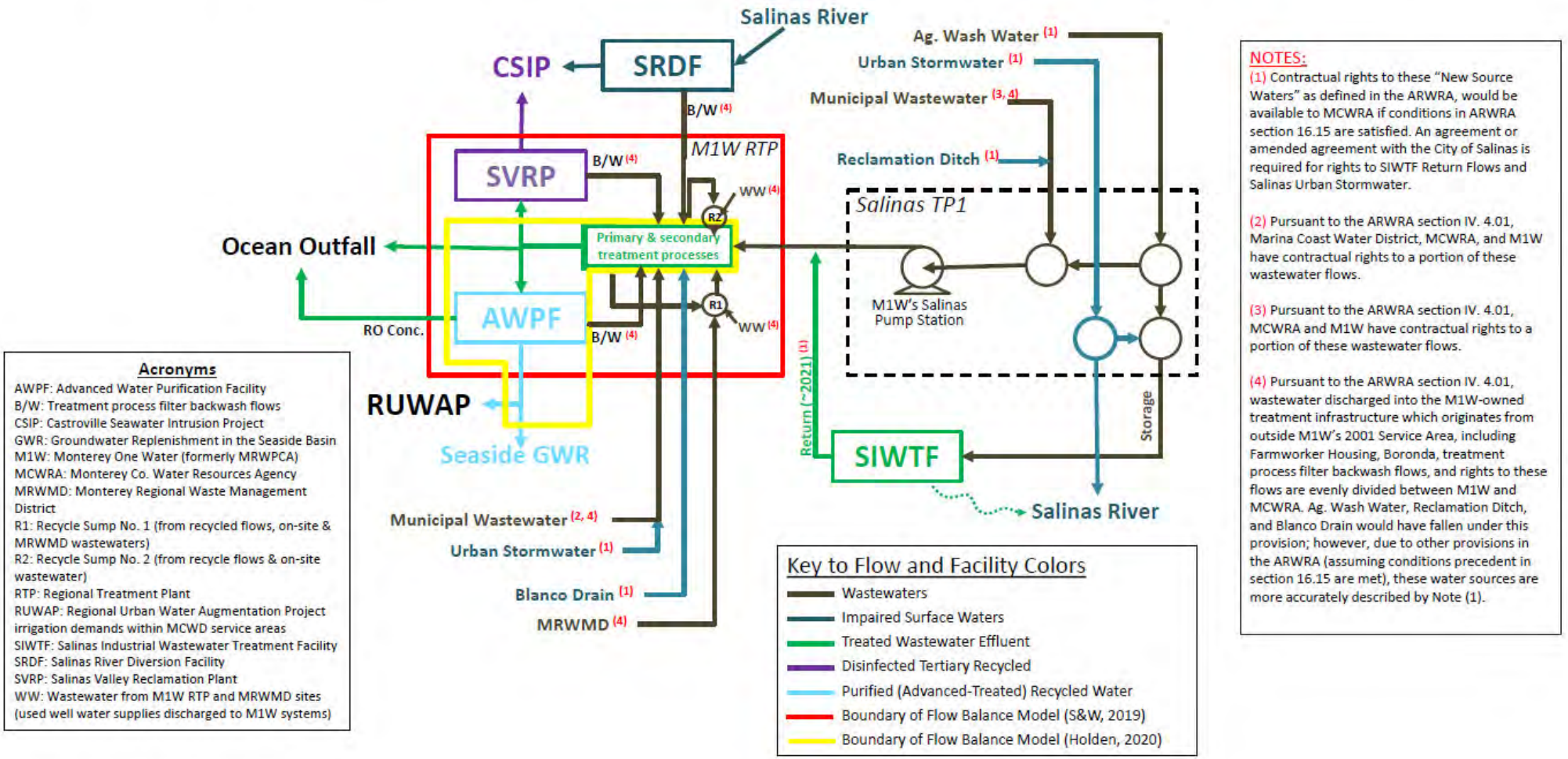
[4] Although some opined that this baseline did not incorporate more current data, this average was used only for the analysis of normal and wet years and included a severe drought year. In addition, wastewater influent volumes over the past three years has flattened and the provision of new water supplies to the Monterey Peninsula to eliminate constraints to growth will increase wastewater flows in the future under the Proposed Modifications. For these reasons, use of a 2009-2013 average for wastewater flows during normal and wet years is adequate.

4. Analyzed use of source waters, RTP inflows, ocean discharges, and recycling yields by month to meet both AWPF and SVRP demands based on the following four potential future scenarios:
    a. normal and wet year with drought reserve less than 1,000 AF,
    b. a normal and wet year with a 1,000 AF drought reserve,
    c. a drought year with a full 1,000 AF drought reserve, and
    d. a maximum diversion year without limiting diversion based on projected recycled demands.

    NOTE: The last scenario formed the basis for the environmental impact report analysis for various water resource topics since it provided a worst-case, conservative analysis of downstream impacts of surface water resources.
5. Ignored the SVRP, and AWPF backwash flows because they do not increase the amount of water at the RTP.
6. Ignored SRDF screening backwash flows because when screening is occurring, this indicates excess water available for meeting CSIP demands and these flows are inconsistent year-to-year.
7. Ignored rain and water in hauled waste (saline and septage) as influent to the RTP (these volumes are negligible).
8. Ignored evaporation and water in biosolids as a flow out of the RTP because these volumes are negligible.
9. Assumed AWW and Salinas Storm Water would be available directly and from Pond 3 IWTF Facility.
10. Assumed that the agencies implement the Lake El Estero Source Water diversion and the winter modifications to the Salinas Valley Reclamation Plant.
11. Estimated the reduced Reclamation Ditch water flow during drought for the drought scenario.
12. Estimated that Blanco Drain flow would not be reduced in drought, given that irrigation practices are consistent in drought and normal years enabled by the diversity of sources of irrigation water (river, groundwater wells, and recycled water -- the latter two of which are available even during drought years).

The Schaaf & Wheeler Report describes and quantifies source waters and uses for the entire PWM Project including SVRP/CSIP whereas this Technical Memorandum addresses use of flows for the AWPF portion of PWM Project.

Figure 3. Conceptual Flow Schematic for the Regional Collection, Treatment, and Recycling



Acronyms

AWPF: Advanced Water Purification Facility
B/W: Treatment process filter backwash flows
CSIP: Castroville Seawater Intrusion Project
GWR: Groundwater Replenishment in the Seaside Basin
M1W: Monterey One Water (formerly MRWPCA)
MCWRA: Monterey Co. Water Resources Agency
MRWMD: Monterey Regional Waste Management District
R1: Recycle Sump No. 1 (from recycled flows, on-site & MRWMD wastewaters)
R2: Recycle Sump No. 2 (from recycle flows & on-site wastewater)
RTP: Regional Treatment Plant
RUWAP: Regional Urban Water Augmentation Project irrigation demands within MCWD service areas
SIWTF: Salinas Industrial Wastewater Treatment Facility
SRDF: Salinas River Diversion Facility
SVRP: Salinas Valley Reclamation Plant
WW: Wastewater from M1W RTP and MRWMD sites (used well water supplies discharged to M1W systems)

Key to Flow and Facility Colors

- Wastewaters
- Impaired Surface Waters
- Treated Wastewater Effluent
- Disinfected Tertiary Recycled
- Purified (Advanced-Treated) Recycled Water
- Boundary of Flow Balance Model (S&W, 2019)
- Boundary of Flow Balance Model (Holden, 2020)

NOTES:

(1) Contractual rights to these "New Source Waters" as defined in the ARWRA, would be available to MCWRA if conditions in ARWRA section 16.15 are satisfied. An agreement or amended agreement with the City of Salinas is required for rights to SIWTF Return Flows and Salinas Urban Stormwater.

(2) Pursuant to the ARWRA section IV. 4.01, Marina Coast Water District, MCWRA, and M1W have contractual rights to a portion of these wastewater flows.

(3) Pursuant to the ARWRA section IV. 4.01, MCWRA and M1W have contractual rights to a portion of these wastewater flows.

(4) Pursuant to the ARWRA section IV. 4.01, wastewater discharged into the M1W-owned treatment infrastructure which originates from outside M1W's 2001 Service Area, including Farmworker Housing, Boronda, treatment process filter backwash flows, and rights to these flows are evenly divided between M1W and MCWRA. Ag. Wash Water, Reclamation Ditch, and Blanco Drain would have fallen under this provision; however, due to other provisions in the ARWRA (assuming conditions precedent in section 16.15 are met), these water sources are more accurately described by Note (1).

METHODOLOGY AND ASSUMPTIONS

The volumes of the municipal wastewater and new source waters for recycling for each M1W customer are described, quantified, and prioritized herein considering California Water Code section 1210, treated wastewater rights assigned by M1W with agreements, environmental benefits (reducing discharge of secondary effluent), operational needs (including efficiency of treatment and regulatory compliance), and cost considerations. The new source waters would preferentially be used for the Approved PWM Project as described by the ARWRA (Reclamation Ditch, Blanco Drain, and AWW if conditions precedent are met and just the Reclamation Ditch and Blanco Drain if conditions precedent are not met). The new source waters conservatively are not assumed to be available for the Proposed Modifications, regardless whether the conditions precedent are met. Flows from outside M1W's 2001 Service Area are prioritized to be used for the Proposed Modifications to avoid use of Salinas area drainage waters (Reclamation Ditch and Blanco Drain) and AWW. This strategy minimizes ocean discharges, optimizes water treatment efficiency, and keeps costs for recycling as low as possible. The analyses in this memorandum use updated source water flow rates and monthly volumes compared to the baseline data used previously in the EIR documents. Two scenarios are evaluated and presented representing two sets of assumptions about water availability and use for recycling:

- *A normal or wet water year while building a Drought Reserve (or Operating Reserve) in the Seaside Basin.* For these analyses, municipal wastewater and AWW flows are assumed to be the same as actual calendar year 2018 flows, which provide values for a representative (typical wet or normal) year.
- *A drought year starting with a full (1,000 AF) drought reserve.* Municipal wastewater and AWW flows for this scenario are assumed to be the same as in calendar year 2015, which had the lowest effluent flow to the ocean and the highest SVRP recorded use. The SVRP backwash flows are estimated assuming CSIP is optimized to maximize days of SVRP water production.

This memorandum looks at the source water use assuming scenarios in which MCWRA does or does not complete the "Conditions Precedent for New Source Water Facilities" from Section XVI, 16.15 of the ARWRA. According to the terms of the ARWRA, the Reclamation Ditch, Blanco Drain, and AWW water may be used by M1W at the AWPF if conditions precedent are met. This analysis conservatively assumes no New Source Waters (as defined by the ARWRA) are used for the Proposed Modifications regardless of whether conditions precedent are met. If conditions precedent are not met, AWW would be used to increase influent to the SVRP pending a new agreement pursuant to Section 16.16 of the ARWRA. In addition, if conditions precedent are not met, there would be no drought reserve and the Approved PWM Project would produce 3,500 AFY to 3,700 AFY in wet, normal, and drought years.

The analyses documented in this memorandum support responses to concerns about the quantity of water (as influent to the RTP) that would be available for recycling and advanced treatment at the AWPF (landscape irrigation and groundwater injection) portion of the approved PWM Project and Proposed Modifications to the PWM Project under an updated set of assumptions. The assumptions herein represent newer information and reflect how source waters might be used, depending upon whether conditions precedent are met or not, for specific types of water years noting that water source quantities differ each year so the quantity of water treated each month will differ each year.[5] These assumptions include the following:

[5] This analysis does not consider that the ARWRA would be revoked or rescinded as this scenario would mean that M1W would hold all rights to wastewater flows entering its collection and treatment system per California Water Code section 1210 less that water already allocated to MCWD by agreements.

1. Separately accounts for all flows going into or out of the primary and secondary processes at the RTP, the SVRP, and the AWPF, such as the recycle flows that do not pass through the RTP meter at the headworks. The yellow polygon on **Figure 3** represents this flow model boundary.
2. Considers recycle flow such as screening and MF backwash losses from the AWPF. Thus, the source water needs for the approved and expanded PWM Projects are assumed to be larger than the source water needs identified in the 2015 EIR, the 2019 Draft SEIR, and in the S&W Report. Screening and backwash flows, since they return to the RTP Headworks for retreatment do not change the overall amount of water available for the PWM Project. However, these losses are a required AWPF flow and for the analyses herein, the losses are assumed to reduce the amount of water to which M1W has rights. Backwash is a necessary part of the process but its return to the RTP primary and secondary treatment process results in the water rights to those flows being split between M1W and MCWRA in accordance with the ARWRA.
3. Identifies MCWD use of municipal wastewater flows from their service area as the source for meeting the RUWAP irrigation system demands for AWPF product water.
4. Assumes the 200 AFY of AWPF product water for building the CSIP drought reserve (if conditions precedent are met) would instead build the CalAm/M1W/MPWMD Water Purchase Agreement Operating Reserve (if conditions precedent have not been met).
5. Assumes the Farmworker Housing project's additional influent flows (35 AFY estimate) are additive to historic influent volumes (project came on line in 2019).
6. Identifies Boronda area on the western side of Salinas (170 AFY wastewater volume estimate) as the largest developed area that was not in M1W's 2001 Service Area. There are several other areas that would also be considered outside of M1W's 2001 Service Area, but they are smaller, and their flows have not yet been estimated.
7. Assumes Ozone and MF screening recovery is 98% and MF recovery is 92%.
8. Assumes AWPF is operational on average 90% of the time. It is assumed that more maintenance will be performed during April through September so the AWPF will be operational 87% during that period and would be operational 93% of the remainder of the year.
9. Assumes that the SVRP modifications have not been constructed to enable lower daily volumes of SVRP water to be delivered to CSIP directly, through bypassing the SVRP Storage Pond. If built, this would decrease the amount of secondary effluent to the ocean throughout the year, but primarily in the winter, and would increase the volume of SVRP backwash water.
10. Assumes that the extra 200 AF (beyond 3,500 AFY) will be injected every winter, even if the Drought Reserve and Operating Reserves are full, since M1W will not know during the winter if it will be a drought year and adequate excess secondary effluent will be available to meet this production amount in all year types. [6]

Like the Schaaf & Wheeler source water analysis, the analyses herein ignore rain, evaporation, hauled wastes (saline and septage), and the water content of biosolids. These analyses use the same RO recovery rate of 81%. These analyses also exclude SRDF screening backwash flows for the same rationale as the Schaaf & Wheeler analysis. Specifically, when SRDF is operating, this indicates excess water is available for meeting all CSIP demands, and these flows are inconsistent year-to-year.

[6] If a drought year does occur and the drought reserve is full, then the summer injection rate will be reduced to prevent exceeding the permitted annual injection volumes and to enable more secondary-treated RTP effluent to be available for CSIP in peak irrigation months, when demands are high enough.

The analysis presented in this memorandum assumes the following for analyzing the effect of MCWD use of their initial phase demands of 600 AFY AWPF product:

- MCWD demand schedule is in accordance with Section 3.02 (a) of the Pure Water Delivery and Supply Project Agreement Between Monterey Regional Water Pollution Control Agency and Marina Coast Water District (M1W/MCWD Agreement), dated April 8, 2016 which was amended in December 2017.
- MCWD has rights to all wastewater they provide to M1W which was 1,218 AF during 2018 subject to restrictions noted in the schedule discussed in the prior bullet item. Specifically, MCWD annexed portions of the former Fort Ord into their service area which may increase their annual rights to recycled water but limit their use of these water rights in peak irrigation months pursuant to restrictions in the ARWRA.
- MCWD needs 822 AFY of source water for 600 AFY of product water for their irrigation needs, including screening, MF backwash, and RO concentrate losses and MCWD needs 741 AF as shown in the Schaaf & Wheeler source water memorandum referenced above when excluding waste flows returned to the headworks,
- MCWD will utilize their full 300 AFY summer water allocation between April and September each year.
- M1W will utilize 342 AFY of their 650 AFY summer water allocation (ARWRA 4.01 (a)) as needed to supplement MCWD's water supply demand between May and August each year.
- MCWD has rights to the remainder of their rights to return flows during the winter (October through March) plus reallocation of any summer water (April through September) they do not use during those winter months.
- MCWD will utilize 179 AFY of their wastewater rights during October through March each year.
- MCWD has enough water rights that their 600 AFY project can proceed in wet, normal, or drought conditions. During severe droughts, the amount of MCWD's unutilized water rights would be reduced slightly. Because of its special nature, MCWD's portion of the AWPF source water issue is described above and summarized in **Table 1**.

Table 1. Source Waters for MCWD During Wet, Normal or Drought Years (600 AFY)

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Product Water Demand	600	469	131
Secondary Effluent (Winter)	179	0	179
MCWD Summer Water	300	300	0
M1W ARWRA 4.01 1 (d)	342	342	0
Total Source Water Utilized	822	642	179
Unutilized MCWD Effluent Rights	738	0	738

- MCWD's use of their summer water rights directly plus use of a portion of M1W's ARWRA 4.01 1(d) water rights reduces the amount of water available for SVRP/CSIP by about 642 AF between April and September. The result is that -- independent from the Proposed Modifications -- new source waters may be needed by SVRP/CSIP to meet peak demands if the Salinas River Diversion Facility is not operating and MCWD and M1W use some of, or all, their wastewater rights from April through September. Similarly, about 179 AF of MCWD's winter water rights will be utilized between October and March; however, this use will only reduce the ocean discharge of secondary effluent.

RESULTS

Prioritization of Source Waters (All Scenarios)

The assumed source water prioritization and quantities available to M1W are identified in **Table 2** for the Approved PWM Project and in **Table 3** for the Proposed Modification. This prioritization can and will change based on many factors over the years. These factors include: infrastructure reliability, treatability and efficiencies, changing agreements, regulatory requirements, agricultural and industrial changes, and population/economic growth and recessions If there are no other infrastructure or external restrictions, including changes to agreements, priority will be based on minimizing water cost, including treatability/water quality and energy demands.

Table 2. Source Water Priority for Approved Project AWPF (All Scenarios)

Priority	Source Water	Quantity of Water Available to M1W in a Typical Year (Acre Feet per Year)
1	Secondary Effluent to Ocean Outfall	5,811
2	Reclamation Ditch	808
3	Blanco Drain	2,620
4	AWW**	3,099
5	Recycle Sump #1*	41
6	Recycle Sump #2*	104
7	Approved PWM Project and MCWD AWPF Backwashes*	290
8	Proposed Modifications AWPF Backwashes (only available for Modifications) *	152
9	SVRP Backwash*	515
10	Boronda*	95
11	Farmworker Housing*	18
12	M1W's ARWRA Summer Water (ARWRA Section IV 4.01 1(d))	650
13	SRDF Screening ***	95
14	Salinas IWTF Pond System ***	150
	Total Available for M1W (without AWW, SRDF & Salinas IWTF Pond)	**11,104**

*Values shown are for 2018. Drought year (2015) values are provided in the attachments. *Those source water marked with * are assumed available ½ for M1W to meet the AWPF influent needs for Seaside Groundwater Basin injections and ½ for SVRP influent for CSIP. The values shown above are the M1W portion of the water source. **AWW is only available if conditions precedent are met and are assumed to not be available for the Proposed Modifications for the purpose of this analysis. ***SRDF Screening and Salinas IWTF Pond System waters are assumed to not be available.*

Table 3. Source Water Priority for Proposed Modifications AWPF (All Scenarios)

Priority	Source Water
1	Secondary Effluent to Ocean Outfall
2	Recycle Sump #1
3	Recycle Sump #2
4	Approved PWM Project and MCWD AWPF Backwashes
5	Proposed Modifications AWPF Backwashes (152 AFY additional above Table 2 quantities)
6	SVRP Backwash
7	Boronda
8	Farmworker Housing
9	M1W's ARWRA Summer Water (ARWRA Section IV 4.01 1(d))
Potential water quantities were provided in **Table 2, except as noted.**	

Scenario 1 (N-In): Source Waters for Normal/Wet Year Operation of AWPF While Building a Drought Reserve Assuming Conditions Precedent Are Met

Table 4 shows results of this analysis of water sources/types that would be available for AWPF influent (excluding MCWD which is covered in **Table 1**, above) to achieve the yield of the Approved PWM Project in a normal year of AWPF production (3,700 AFY), which includes Seaside Basin injections to build a reserve, assuming the Conditions Precedent are met. **Table 5** shows the parallel results for the Proposed Modifications to achieve a yield of 2,250 AFY production. **Table 6** shows the volumes of source waters to which M1W has existing water rights that will be left over after use of all of the flows needed for the full normal/wet year operation of an approved PWM Project and Proposed Modifications, including building a reserve and supplying MCWD's RUWAP demands (6,550 AFY total). These results are based on the assumptions listed above. **Figure 4** shows the results of this scenario of use of the various source waters for the Approved PWM Project and for the Proposed Modifications by month. **Attachment 1** provides the spreadsheet showing the detailed month by month use of the various waters.

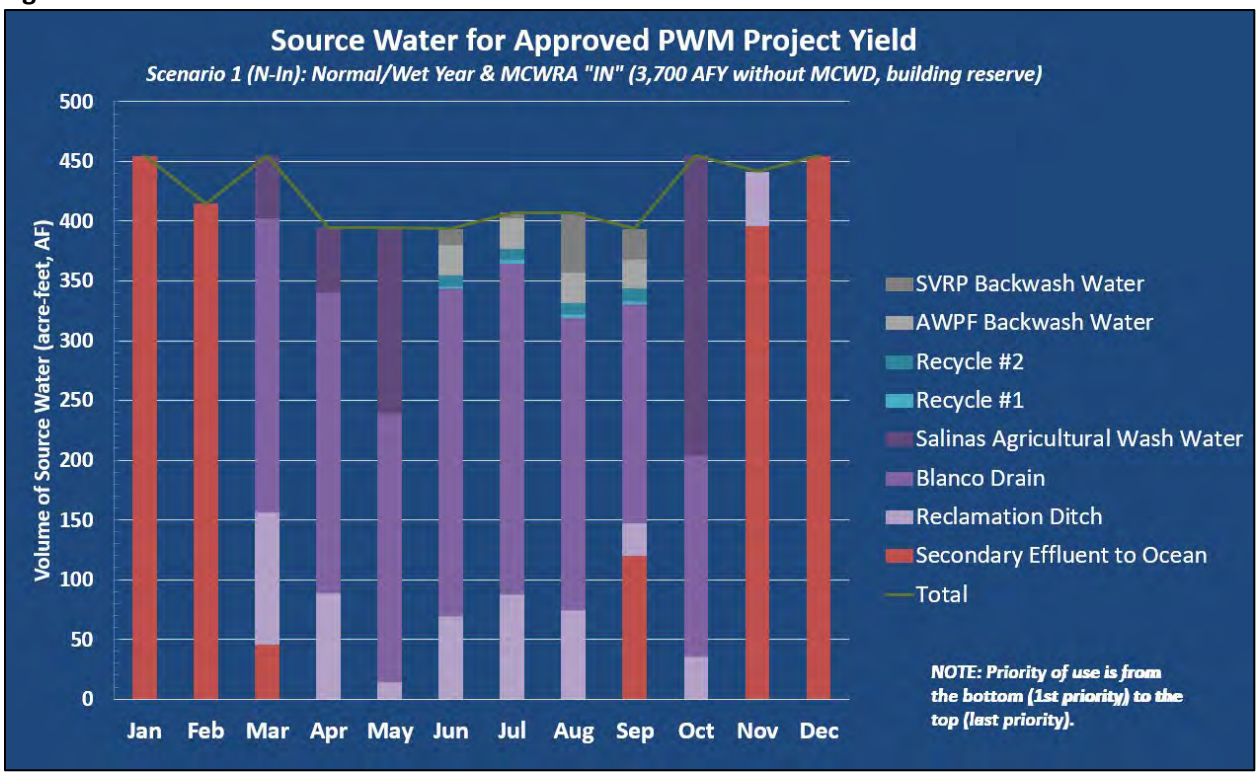
Table 4. Typical Source Waters Utilized for the Approved PWM Project (no MCWD) During Wet or Normal Years (3,700 AFY of AWPF Production) Assuming Conditions Precedent Are Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Excess Secondary Effluent to Outfall	*1,885*	*120*	*1,765*
SVRP Backwash	94	94	0
Boronda	0	0	0
Farmworker Housing	0	0	0
Recycle Sump #1	11	11	0
Recycle Sump #2	38	38	0
Approved PWM Project AWPF Backwash Flows	101	101	0
Reclamation Ditch	555	362	193
Blanco Drain	1,870	1,456	414
Ag Wash Water (October thru May)	**513**	**210**	**303**
Total Source Water	**5,067**	**2,391**	**2,675**
Total Backwash (Screening & MF) Returned to RTP	**499**	**235**	**263**
Total RO Concentrate to Outfall	**868**	**410**	**458**
Total AWPF Product Water	**3,700**	**1,746**	**1,954**

Table 5. Typical Source Waters Utilized for the Proposed Modifications During Wet or Normal Years (2,250 AFY of AWPF Production) Assuming Conditions Precedent Are Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Excess Secondary Effluent to Outfall	*2,595*	*66*	*2,529*
SVRP Backwash	195	195	0
Boronda	32	32	0
Farmworker Housing	5	5	0
Recycle Sump #1	7	7	0
Recycle Sump #2	18	18	0
PWM Project AWPF Backwash Flows	47	47	0
Additional AWPF Backwash Flows w/ Proposed Modifications	22	22	0
Reclamation Ditch	0	0	0
Blanco Drain	0	0	0
M1W ARWRA 4.01 1 (d)	159	159	0
Total Source Water	**3,081**	**551**	**2,530**
Total Backwash (Screening & MF) Returned to RTP	**303**	**54**	**249**
Total RO Concentrate to Outfall	**528**	**94**	**433**
Total AWPF Product Water	**2,250**	**403**	**1,847**

Figure 4. Source Water Use Scenario 1 Charts



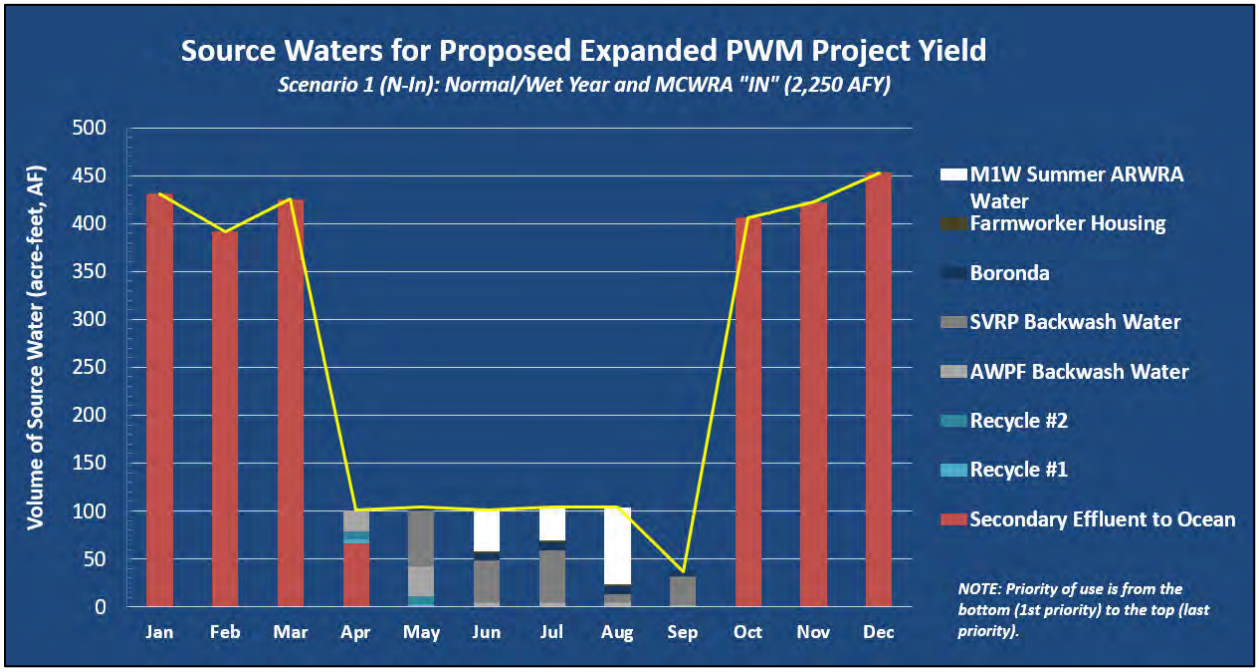


Table 6. Excess Winter Secondary Effluent, New Source Waters, and M1W Water Rights Remaining After Approved PWM Project (including MCWD RUWAP Phase 1) and Proposed Modifications During Wet or Normal Years (AWPF Producing 6,550 AFY, Total) Assuming Conditions Precedent Are Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Excess Unused Secondary Effluent to Outfall	***1,331***	***0***	***1,331***
M1W Source Waters			
SVRP Backwash	226	50	175
Boronda	63	16	47
Farmworker Housing	12	5	7
Recycle Sump #1	23	0	23
Recycle Sump #2	48	0	48
PWM Base Project and MCWD AWPF Backwashes	142	2	140
PWM Expansion Project AWPF Backwashes	129	5	124
Reclamation Ditch	253	0	253
Blanco Drain	750	0	750
M1W ARWRA 4.01 1 (d)	149	149	0
Total Unused Source Waters (excluding *Excess Unused Secondary Effluent to Ocean, above*)	**1,797**	**227**	**1,4570**
Total Unused Source Waters (including *Excess Unused Secondary Effluent to Ocean, above*)	**3,128**	**227**	**2,901**

** The ability to use Salinas Ag Wash Water and Storm Water that goes to the Salinas River would increase water remaining available for recycling by approximately 2,600 AFY, in this case (peaking in the summer).*

Scenario 2 (D-In): Source Waters for Drought Year Operation of AWPF With a Full Drought Reserve Assuming Conditions Precedent Are Met

A drought year, as mentioned above, does not affect MCWD water demands and only minimally their source waters. If conditions precedent in ARWRA Section 16.15 are completed, AWPF production under the approved PWM Project will be reduced to approximately 2,500 AFY during a drought year with a full drought reserve (reduction of 1,200 AFY production (including elimination, for one year, of building the drought reserve) and reducing AWPF influent by over 1,600 AFY) during the irrigation season. If conditions precedent in ARWRA Section 16.15 are not completed, then there would be no requirement for M1W to build a drought reserve for MCWRA and this reduction would not be required. The drought year source water availability estimates for Blanco Drain and Reclamation Ditch are based on Schaaf & Wheeler's report (Appendix I of the Draft SEIR) assuming the 2015 calendar year data (a severe drought condition). The SVRP backwash flow was estimated assuming CSIP optimization to maximize the number of days the SVRP would be producing water. The same source water priorities (**Tables 2 & 3**) will apply in a drought. The expectation is that winter production of purified water would be maximized in all years, such that during the winters of a drought year, flows to the ocean would be decreased further. The analysis in this scenario assumes that the Drought Reserve is available as a tool to provide water to CSIP in dry years.

Table 7 shows the results of this analysis of water sources/types needed for AWPF influent for the Approved PWM Project analysis for a drought year (2,500 AFY of production) starting with a full drought reserve. **Table 8** shows the results of this analysis of source waters to produce an additional 2,250 AFY of purified recycled water in a drought year. **Figure 5** shows the results of this scenario of use of the various

source waters for the Approved PWM Project and for the Proposed Modifications by month. **Table 9** shows the types and amounts of water rights that M1W will retain after satisfying the influent needs for the AWPF with the Approved PWM Project and Proposed Modifications to expand the AWPF capacity (a total of 4,637 AFY, which includes 2,500 AFY for Approved PWM Project injections, 600 AFY for MCWD irrigation, and 1,537 AFY for Proposed Modifications injections) during a drought year. **Attachment 2** provides the detailed analysis of drought year source water uses.

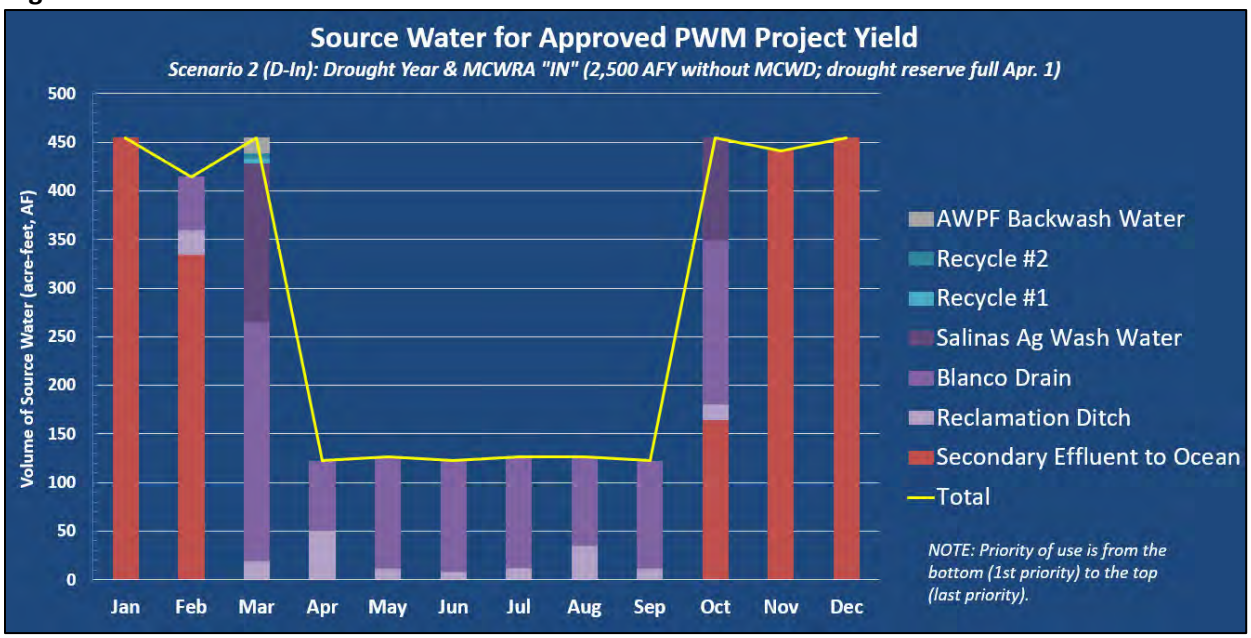
Table 7. Source Waters to be Used for the Approved PWM Project (2,500 AFY of yield, excludes MCWD) During Drought Year with Full Drought Reserve of 1,000 AF Assuming Conditions Precedent Are Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Secondary Effluent to Outfall	*1,850*	*0*	*1,850*
Reclamation Ditch	187	127	60
Blanco Drain	1,090	621	469
AWW (March & October only)	269	0	269
Recycle Sump #1	5	0	5
Recycle Sump #2	5	0	5
PWM Base Project and MCWD AWPF Backwashes	17	0	17
SVRP Backwash	0	0	0
Boronda	0	0	0
Farmworker Housing	0	0	0
M1W ARWRA 4.01 1 (d)	0	0	0
Total Source Water	**3,423**	**748**	**2,675**
Total Backwash (Screening & MF) Returned to RTP	**337**	**74**	**263**
Total RO Concentrate to Outfall	**586**	**128**	**458**
Total AWPF Product Water	**2,500**	**546**	**1,954**

Table 8. Source Waters to be Used for the Proposed Modifications to the PWM Project Yield During Drought Years (2,250 AFY using 133 AF Operating Reserve) Assuming Conditions Precedent Are Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Secondary Effluent to Outfall	*1,779*	*90*	*1,689*
Recycle Sump #1	23	18	5
Recycle Sump #2	72	55	17
PWM Base Project and MCWD AWPF Backwashes	122	68	54
PWM Expansion Project AWPF Backwashes	78	45	33
SVRP Backwash	442	302	139
Boronda	61	38	23
Farmworker Housing	10	7	3
M1W ARWRA 4.01 1 (d)	310	294	16
Reclamation Ditch	0	0	0
Blanco Drain	0	0	0
Total Source Water	**2,898**	**918**	**1,981**
Total Backwash (Screening & MF) Returned to RTP	***285***	***90***	***195***
Total RO Concentrate to Outfall	***496***	***157***	***339***
Total AWPF Product Water	***2,116***	***670***	***1,446***

Figure 5. Source Water Use Scenario 2 Charts



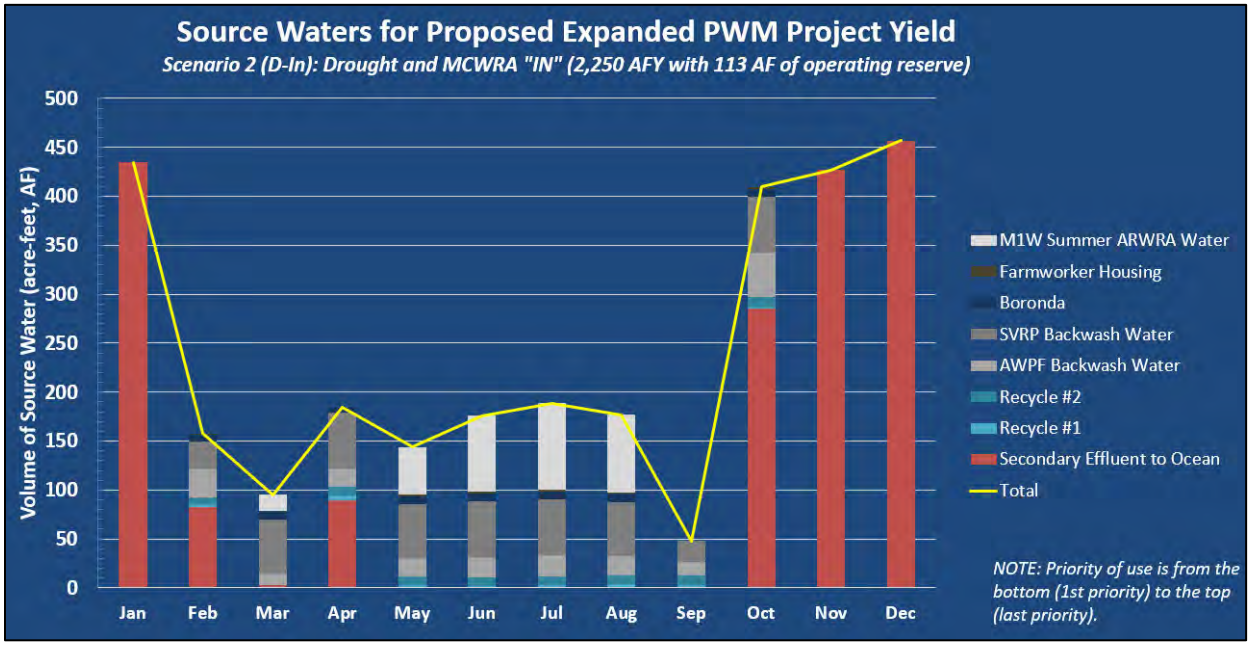


Table 9. Excess Winter Secondary Effluent, New Source Waters, and M1W Water Rights Remaining after Approved PWM Project (including MCWD RUWAP Phase 1), and Proposed Modifications During Wet or Normal Years (AWPF Producing 5,350 AFY) Assuming Conditions Precedent Are Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Secondary Effluent to Outfall	2,023	0	2,023
SVRP Backwash	108	35	73
Boronda	34	10	24
Farmworker Housing	7	3	4
Recycle Sump #1	13	0	13
Recycle Sump #2	26	0	26
PWM Base Project and MCWD AWPF Backwashes	70	0	70
PWM Expansion Project AWPF Backwashes	65	0	65
Reclamation Ditch	205	0	205
Blanco Drain	1,530	835	695
M1W ARWRA 4.01 1 (d)	0	0	0
Total Unused Source Waters (excluding *Excess Unused Secondary Effluent to Ocean, above*)	2,059	884	1,175
Total Unused Source Waters (including *Excess Unused Secondary Effluent to Ocean, above)*	4,082	884	3,198

* Salinas Ag Wash Water and Storm Water that drains from the City of Salinas to the Salinas River, if available to M1W for diversion, would increase secondary effluent remaining available for recycling by approximately 2,700 AFY.

Scenario 3 (N-Out): Source Waters for Normal/Wet Year Operation of AWPF While Building an Operating Reserve Assuming Conditions Precedent Are Not Met

Table 10 shows results of this analysis of water sources/types that would be available for AWPF influent (excluding MCWD which is covered in **Table 1**, above) to achieve the yield of the Approved PWM Project in a normal year of AWPF production (3,700 AFY), which includes Seaside Basin injections to build an Operating Reserve, assuming the Conditions Precedent are not met. **Table 11** shows the parallel results for the Proposed Modifications to achieve a yield of 2,250 AFY production, assuming the Conditions Precedent are not met. The Proposed Modifications would be dependent upon a Water Purchase Agreement (WPA) with California American Water Company. It is assumed, as with the existing WPA that the Operating Reserve would be one-half the average annual production (1,750 AF for the Approved PWM Project plus 1,125 AF for the Proposed Modifications or 2,875 AF total). **Figure 6** shows the results of this scenario of use of the various source waters for the Approved PWM Project and for the Proposed Modifications by month. **Table 12** shows the volumes of source waters to which M1W has existing water rights that will be left over after use of all of the flows needed for the full normal/wet year operation of the approved PWM Project and Proposed Modifications, including building an Operating Reserve and supplying MCWD's RUWAP Phase 1 demands (6,550 AFY total), assuming Conditions Precedent are not met. These results are based on the assumptions listed above. **Attachment 3** provides the spreadsheet showing the detailed month by month usage of the various waters.

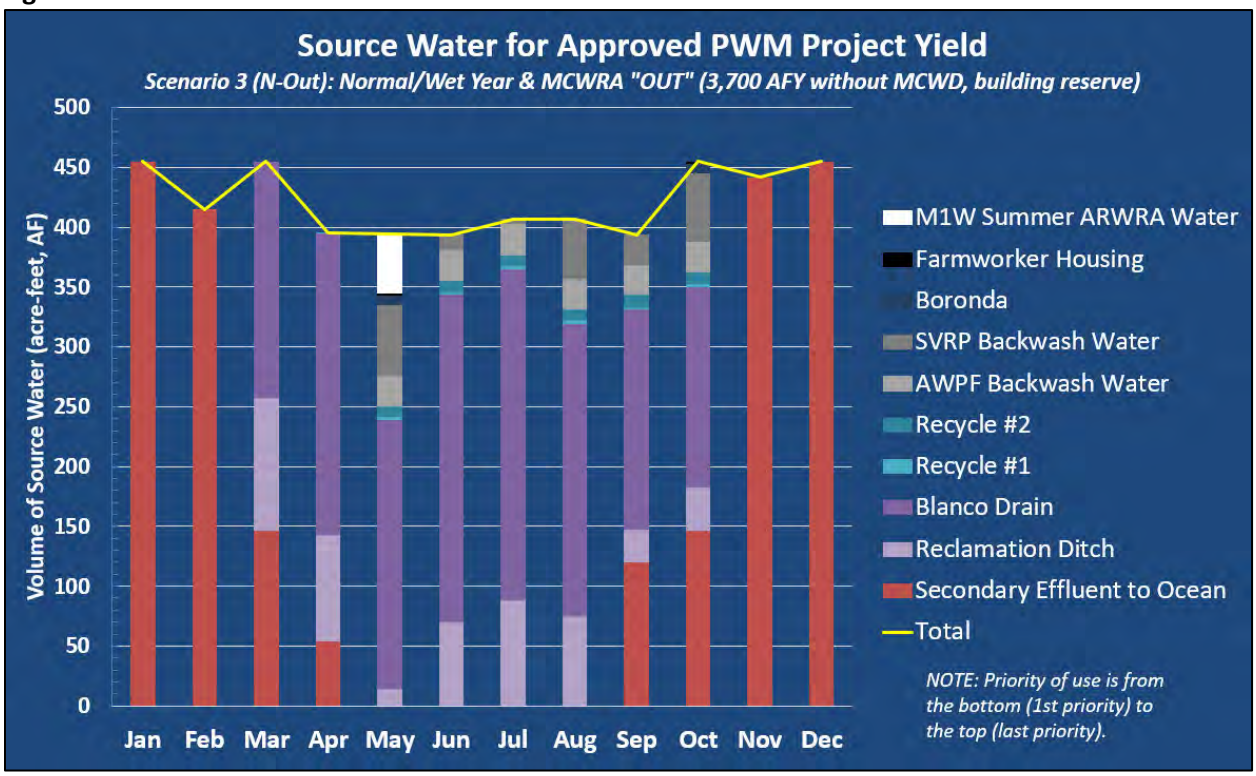
Table 10. Typical Source Waters Utilized for the Approved PWM Project (no MCWD) During Wet or Normal Years While Building an Operating Reserve (3,700 AFY of AWPF Production) Assuming Conditions Precedent Are Not Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Secondary Effluent to Outfall	*2,232*	*174*	*2,059*
Reclamation Ditch	509	362	147
Blanco Drain	1,821	1,456	365
Recycle Sump #1	17	14	3
Recycle Sump #2	56	47	10
Approved PWM Project and MCWD AWPF Backwashes	151	126	25
SVRP Backwash	210	153	57
Boronda	16	8	8
Farmworker Housing	4	2	2
M1W's ARWRA Summer Water (ARWRA §IV 4.01 1(d))	50	50	0
Total Source Water	**5,066**	**2,391**	**2,675**
Total Backwash (Screening & MF) Returned to RTP	***499***	***235***	***263***
Total RO Concentrate to Outfall	***868***	***410***	***458***
Total AWPF Product Water	***3,700***	***1,746***	***1,954***

Table 11. Typical Source Waters Utilized for the Proposed Modifications During Wet or Normal Years (2,250 AFY of AWPF Production) Assuming Conditions Precedent Are Not Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Secondary Effluent to Outfall	*2,358*	*12*	*2,346*
Recycle Sump #1	12	4	8
Recycle Sump #2	24	9	15
Approved PWM Project and MCWD AWPF Backwashes	70	23	47
Proposed Modifications AWPF Backwashes	79	27	52
SVRP Backwash	223	187	36
Boronda	48	40	8
Farmworker Housing	9	9	1
M1W ARWRA 4.01 1 (d)	258	258	0
Reclamation Ditch	0	0	0
Blanco Drain	0	0	0
Total Source Water	**3,081**	**568**	**2,513**
Total Backwash (Screening & MF) Returned to RTP	***303***	***56***	***247***
Total RO Concentrate to Outfall	***528***	***97***	***431***
Total AWPF Product Water	***2,250***	***415***	***1,835***

Figure 6. Source Water Use Scenario 3 Charts



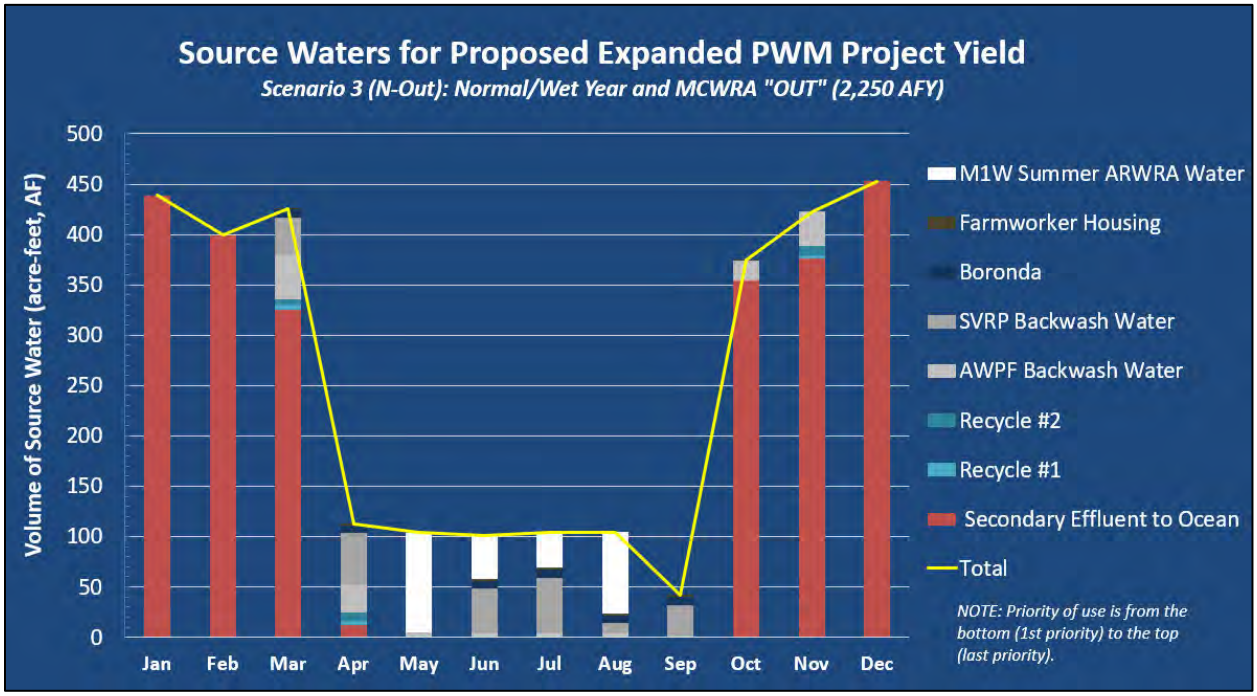


Table 12. Excess Winter Secondary Effluent, New Source Waters, and M1W Water Rights Remaining after the Approved PWM Project (including MCWD RUWAP Phase 1), and Proposed Modifications During Wet or Normal Years (AWPF Producing 6,550 AFY, Total) Assuming Conditions Precedent Are Not Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Secondary Effluent to Outfall	1,221	0	1,221
Recycle Sump #1	13	0	13
Recycle Sump #2	24	0	24
PWM Base Project and MCWD AWPF Backwashes	68	0	68
PWM Expansion Project AWPF Backwashes	72	0	72
SVRP Backwash	82	0	82
Boronda	31	0	31
Farmworker Housing	4	0	4
M1W ARWRA 4.01 1 (d)	0	0	0
Reclamation Ditch	299	0	299
Blanco Drain	799	0	799
Total Unused Source Waters (excluding *Excess Unused Secondary Effluent to Ocean, above*)	***1,393***	***0***	***1,393***
Total Unused Source Waters (including *Excess Unused Secondary Effluent to Ocean, above)*	***2,614***	***0***	***2,614***

Scenario 4 (D-Out): Source Waters for Drought Year Operation of AWPF With a Full Operating Reserve Assuming Conditions Precedent Are Not Met

A drought year, as mentioned above, does not affect MCWD water demands and only minimally their source waters. If conditions precedent in ARWRA Section 16.15 are not met, AWPF production under the approved PWM Project will remain 3,500 AFY during a drought year with a full Operating Reserve. If conditions precedent in ARWRA Section 16.15 are not completed, then there would be no drought reserve and no reduction in AWPF production in a drought. The drought year source water availability estimates for Blanco Drain and Reclamation Ditch are based on Schaaf & Wheeler's report (Appendix I of the Draft SEIR) assuming the 2015 calendar year data (a severe drought condition). The SVRP backwash flow was estimated assuming CSIP optimization to maximize the number of days the SVRP would be producing water. The same source water priorities (**Tables 2 & 3**) will apply in a drought. The expectation is that winter production of purified water would be maximized in all years, such that during the winters of a drought year, flows to the ocean would be decreased further. The analysis in this section assumes that the Operating Reserve is available as a tool to provide water to Cal Am in dry years.

Table 13 shows the results of this analysis of water sources/types needed for AWPF influent for the Approved PWM Project analysis for a drought year (3,500 AFY of production) starting with a full Operating Reserve. **Table 14** shows how 713 AF of the Operating Reserve would be utilized so that only 1,537 AFY of additional purified recycled water would need to be produced in the drought year. **Figure 7** shows the results of this scenario of use of the various source waters for the Approved PWM Project and for the Proposed Modifications by month. **Table 15** shows the types and amounts of water rights that M1W will retain after satisfying the influent needs for the AWPF with the Approved PWM Project and Proposed Modifications to expand the AWPF capacity (a total of 5,637 AFY, which includes 3,500 AFY for Approved PWM Project injections, 600 AFY for MCWD irrigation, and 1,537 AFY for Proposed Modifications injections) during a drought year). **Attachment 4** provides the detailed analysis of drought year source water uses.

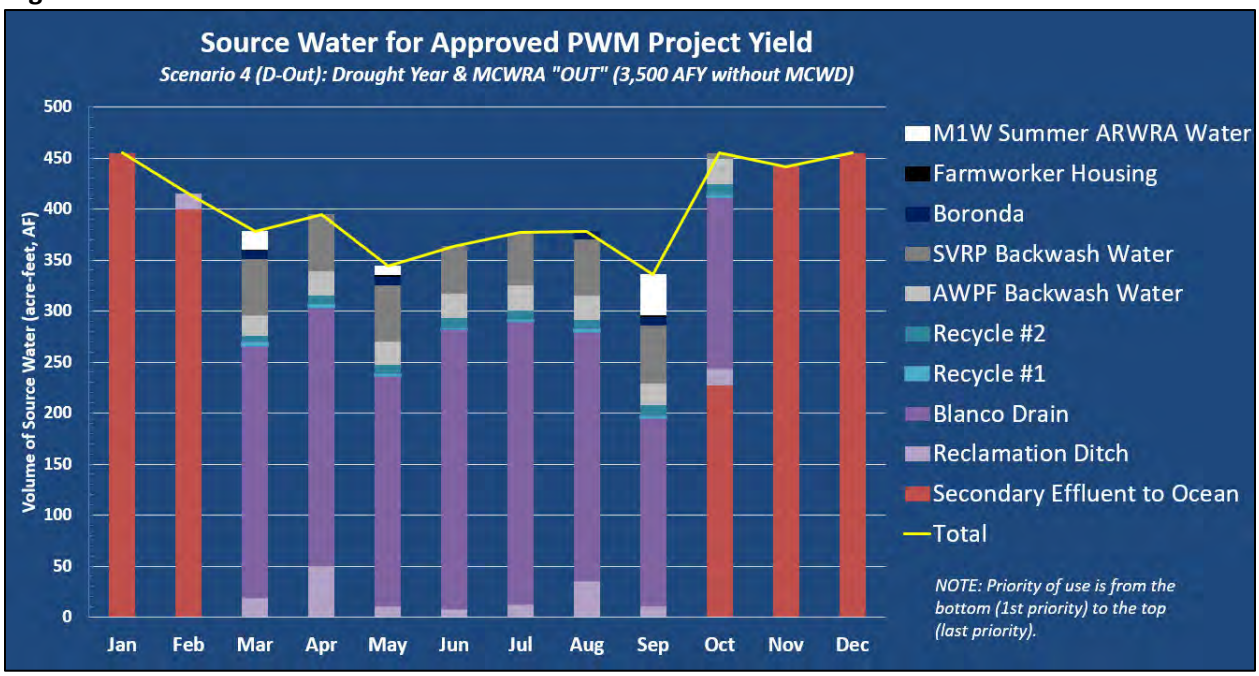
Table 13. Source Waters to be Used for the Approved PWM Project (3,500 AFY of yield, excludes MCWD) During Drought Year with Full Operating Reserve of 1,000 AF Assuming Conditions Precedent Are Not Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Secondary Effluent to Outfall	*1,978*	*0*	*1,978*
Reclamation Ditch	177	127	50
Blanco Drain	1,870	1,456	414
Recycle Sump #1	26	18	8
Recycle Sump #2	70	55	15
Approved PWM Project and MCWD AWPF Backwashes	185	140	46
SVRP Backwash	382	321	61
Boronda	32	24	8
Farmworker Housing	4	4	1
M1W ARWRA 4.01 1 (d)	68	50	19
Total Source Water	**4,793**	**2,194**	**2,599**
Total Backwash (Screening & MF) Returned to RTP	***472***	***216***	***256***
Total RO Concentrate to Outfall	***821***	***376***	***445***
Total AWPF Product Water	***3,500***	***1,602***	***1,898***

Table 14. Source Waters to be Used for the Proposed Modifications to the PWM Project Yield During Drought Years (2,250 AFY using 713 AF of Operating Reserve) Assuming Conditions Precedent Are Not Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Secondary Effluent to Outfall	*1,651*	*90*	*1,651*
Recycle Sump #1	3	0	3
Recycle Sump #2	7	0	7
Approved PWM Project and MCWD AWPF Backwashes	21	0	21
Proposed Modifications AWPF Backwashes	39	19	19
SVRP Backwash	95	16	79
Boronda	39	24	15
Farmworker Housing	9	7	3
M1W ARWRA 4.01 1 (d)	239	239	0
Reclamation Ditch	0	0	0
Blanco Drain	0	0	0
Total Source Water	**2,104**	**395**	**1,709**
Total Backwash (Screening & MF) Returned to RTP	***207***	***39***	***168***
Total RO Concentrate to Outfall	***361***	***68***	***293***
Total AWPF Product Water	***1,537***	***289***	***1,248***

Figure 7. Source Water Use Scenario 4 Charts



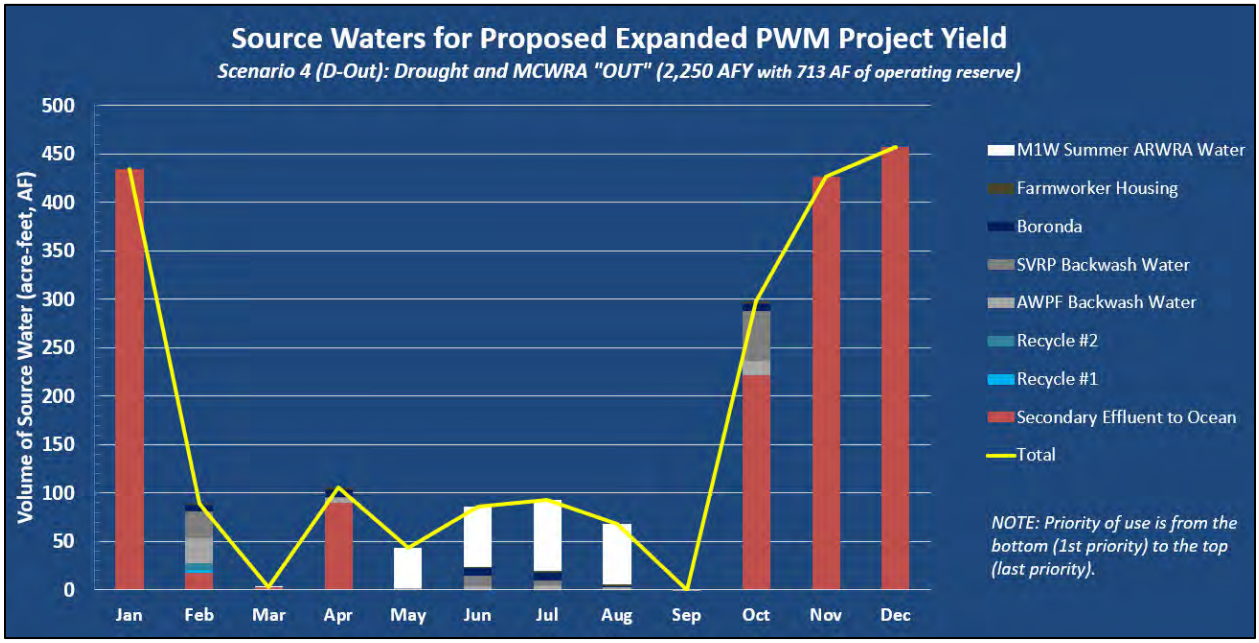


Table 15. Excess Winter Secondary Effluent, New Source Waters, and M1W Water Rights Remaining After Proposed Modifications to PWM Project During Drought Year (5,350 AFY, of AWPF production) Assuming Conditions Precedent Are Not Met

Source Water	Total (AFY)	April to September (AF)	October to March (AF)
Secondary Effluent to Outfall	2,023	0	2,023
SVRP Backwash	73	0	73
Boronda	24	0	24
Farmworker Housing	4	0	4
Recycle Sump #1	13	0	13
Recycle Sump #2	26	0	26
Approved PWM Project and MCWD AWPF Backwashes	70	0	70
Proposed Modifications AWPF Backwashes	65	0	65
Reclamation Ditch	215	0	215
Blanco Drain	750	0	750
M1W ARWRA 4.01 1 (d)	0	0	0
Total Unused Source Waters (excluding *Excess Unused Secondary Effluent to Ocean, above*)	***1,240***	***0***	***1,240***
Total Unused Source Waters (including Excess Unused Secondary Effluent to Ocean, above)	***3,263***	***0***	***3,263***

CONCLUSIONS

As shown above and in Appendix I of the Draft SEIR, the wastewater flows available for M1W to use to meet recycled water demands from the AWPF are substantial No other reasonably foreseeable projects that would increase CSIP demands or other recycled water use of these waters have been proposed or presented to M1W indicating an imminent reduction in availability. Even if the MCWRA takes its full rights to municipal wastewater within the 2001 service area, and the rights given via contract under the ARWRA, M1W would still have sufficient water rights for achieving the yield anticipated for the Proposed Modifications.

If Conditions Precedent are met, secondary effluent otherwise discharged to the ocean, wastewater from outside the 2001 service area, Blanco Drain, Reclamation Ditch, AWW, the Drought Reserve and Operating Reserve (during drought years), and the ARWRA water (4.01 1(d)) provide more than sufficient water for the Approved PWM Project. Secondary effluent otherwise discharged to the ocean, one-half of wastewater from outside the 2001 service area, and the ARWRA water (4.01 1(d)) provide more than sufficient source water for the Proposed Modifications in wet, normal, and drought conditions.

If Conditions Precedent are not met, secondary effluent otherwise discharged to the ocean, wastewater from outside the 2001 service area, Blanco Drain, Reclamation Ditch, the Operating Reserve (during drought year), and the ARWRA water (4.01 1(d)) provide more than sufficient water for the Approved PWM Project. Secondary effluent otherwise discharged to the ocean, one-half of wastewater from outside the 2001 service area, and the ARWRA water (4.01 1(d)), and the Operating Reserve provide more than sufficient source water for the Proposed Modifications in wet, normal, and drought conditions. In the future, City of Salinas IWTF Pond 3 Water and stormwater could also be available.

Attachment 1

Scenario 1 (N-In): Source Water Use During Normal/Wet Years and Conditions Precedent Are Met

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Source Water for M1W Portion of Base Project (3,700 AFY after removing 600 AFY MCWD's Portion from the 4,300 AFY total, building reserve)															
Source Water Needed for M1W Portion of Base Project (3,700)	455	415	455	395	395	394	407	407	394	455	441	455	**5,067**	2,391	2,675
Secondary Effluent to Ocean used for base project, 1st priority	455	415	46	0	0	0	0	0	120	0	395	455	**1,885**	120	1,765
Secondary Effluent to Ocean Remaining after Base Project	882	474	426	66	0	0	0	0	0	501	422	1155	**3,926**	66	3,860
Feed water needed after ocean flows	0	0	409	395	395	394	407	407	274	455	46	0	**3,182**	2,272	910
Reclamation Ditch used for base project, 2nd priority	0	0	111	89	14	70	88	75	27	36	46	0	**555**	362	193
Reclamation Ditch Flows remaining after Base Project	81	18	0	0	0	0	0	0	0	0	19	136	**253**	0	253
Feed Water needed after Reclamation Ditch	0	0	298	306	381	324	319	332	247	419	0	0	**2,627**	1,909	717
Blanco Drain used for base project, 3rd priority	0	0	246	252	225	274	277	244	184	168	0	0	**1,870**	1,456	414
Blanco Drain Flows after Base Project	209	223	0	0	0	0	0	0	0	0	133	185	**750**	0	750
Feed Water needed after Blanco Drain	0	0	52	54	156	50	42	88	63	251	0	0	**757**	453	303
AWW used for base project, 4th priority	0	0	52	54	156	0	0	0	0	251	0	0	**513**	210	303
AWW Flows remaining after Base Project	184	149	130	206	150	305	318	319	305	82	252	186	**2,585**	1,603	982
Feed Water needed after Reclamation Ditch	0	0	0	0	0	50	42	88	63	0	0	0	**243**	243	0
Recycle #1 used for base project, 5th priority	0	0	0	0	0	2	3	4	2	0	0	0	**11**	11	0
M1W's Portion of Recycle #1 after Base Project	7	3	5	5	3	0	0	0	0	3	3	3	**30**	7	23
Feed Water needed after Recycle #1	0	0	0	0	0	48	40	84	60	0	0	0	**232**	232	0
Recycle #2 used for Base Project, 6th priority	0	0	0	0	0	9	9	9	11	0	0	0	**38**	38	0
M1W's portion of Recycle #2 after base project	9	7	5	9	9	0	0	0	0	10	10	8	**66**	18	49
Feed Water needed after Recycle #2 water	0	0	0	0	0	39	31	75	50	0	0	0	**195**	195	0
PWM Base Project Backwash Water used for Base Project, 7th priority	0	0	0	0	0	25	26	25	24	0	0	0	**101**	101	0
M1W's portion of AWPF Backwash Water from base project after Base Project (1/2)	24	21	24	23	25	0	0	0	0	25	23	23	**189**	49	140
Feed Water needed after AWPF Backwash water	0	0	0	0	0	13	4	50	26	0	0	0	**94**	94	0
SVRP Backwash Water used for base project, 8th priority	0	0	0	0	0	13	4	50	26	0	0	0	**94**	94	0
M1W's portion of SVRP Backwash Water after Base Project	18	13	36	50	59	43	54	9	31	57	45	6	**421**	246	175
Feed Water needed after SVRP Backwash	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
Boronda used for base project, 9th priority	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W's Portion of Boronda after Base Project	8	7	8	8	8	8	8	8	8	8	8	8	**95**	48	47
Feed Water needed after Boronda	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
Farmworker Housing used for Base Project 10th priority	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W's Portion of Farmworker Housing after Base Project	1	1	1	2	2	2	2	2	2	2	2	1	**17**	11	7
Remaining Source Waters needed after Farmworker Housing	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W Summer ARWRA Water used only for Expansion remaining after MCWD Project, 11th prio	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W ARWRA Remaining Summer Water after MCWD, Base & Expansion Projects	0	0	0	0	50	82	93	83	0	0	0	0	**308**	308	0
Remaining Source Waters needed after ARWRA	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0

Source Waters for 2,250 AFY Proposed Expanded PWM/GWR Project--Winter Peaking Flow Scenario	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Source Waters needed for 2,250 AFY Expansion	431	392	425	101	104	101	104	104	37	406	423	453	**3,081**	551	2,530
Secondary Effluent to Ocean used for Expansion after Base Project, 1st Priority*	431	392	425	66	0	0	0	0	0	406	422	453	**2,595**	66	2,529
Remaining Effluent to Ocean after Base & Expansion Projects	451	83	0	0	0	0	0	0	0	94	0	702	**1,331**	0	1,331
Remaining Source Waters needed for Expansion after Ocean Flows	0	0	0	35	104	101	104	104	37	0	0	0	**486**	485	0
Recycle #1 after base project used for expansion, 2nd priority	0	0	0	5	3	0	0	0	0	0	0	0	**7**	7	0
M1W's Portion of Recycle #1 after Base & Expansion Projects	7	3	5	0	0	0	0	0	0	3	3	3	**23**	0	23
Feed Water needed after Recycle #1	0	0	0	30	102	101	104	104	37	0	0	0	**478**	478	0
Recycle #2 after base project used for Expansion, 3rd priority	0	0	0	9	9	0	0	0	0	0	0	0	**18**	18	0
M1W's portion of Recycle #2 after base & expansion Projects	9	7	5	0	0	0	0	0	0	10	9	8	**48**	0	48
Feed Water needed after Recycle #2 water	0	0	0	22	93	101	104	104	37	0	0	0	**460**	460	0
M1W's portion of PWM Base Backwash Water from Base used for Expansion Project, 4th Priority	0	0	0	22	25	0	0	0	0	0	0	0	**47**	47	0
M1W portion of Base PWM Backwash after Base & Expansion Projects	24	21	24	2	0	0	0	0	0	25	23	23	**142**	2	140
Remaining Source Waters needed after M1W Portion of AWPF Backwash	0	0	0	0	67	101	104	104	37	0	0	0	**413**	413	0
M1W's portion of PWM Expansion Backwash Water used for Expansion Project , 5th priority	0	0	0	0	5	5	5	5	2	0	0	0	**22**	22	0
M1W portion of PWM Expansion Backwash Water after Base & Expansion Projects	21	19	21	5	0	0	0	0	0	20	21	22	**129**	5	124
Feed Water needed after AWPF Expansion Backwash water	0	0	0	0	62	96	99	99	35	0	0	0	**391**	391	0
M1W's portion of SVRP Backwash Water used for expansion after Base Project, 6th Priority	0	0	0	0	59	43	54	9	31	0	0	0	**195**	195	0
M1W's portion of SVRP Backwash after Base & Expansion Projects	18	13	36	50	0	0	0	0	0	57	45	6	**226**	50	175
Remaining Source Waters needed after SVRP Backwash	0	0	0	0	3	53	45	91	5	0	0	0	**196**	196	0
Boronda after base project used for expansion, 7th priority	0	0	0	0	3	8	8	8	5	0	0	0	**32**	32	0
M1W's Portion of Boronda after Base & Expansion Projects	8	7	8	8	5	0	0	0	3	8	8	8	**63**	16	47
Feed Water needed after Boronda	0	0	0	0	0	45	37	82	0	0	0	0	**164**	164	0
Farmworker Housing after Base Project used for Expansion, 8th priority	0	0	0	0	0	2	2	2	0	0	0	0	**5**	5	0
M1W's Portion of Farmworker Housing after Base & Expansion Projects	1	1	1	2	2	0	0	0	2	2	2	1	**12**	5	7
Remaining Source Waters needed after Farmworker Housing	0	0	0	0	0	43	35	81	0	0	0	0	**159**	159	0
M1W Summer ARWRA Water used for Expansion remaining after MCWD Project, 9th priority	0	0	0	0	0	43	35	81	0	0	0	0	**159**	159	0
M1W ARWRA Summer Water Remaining after MCWD, Base & Expanded PWM	0	0	0	0	50	39	58	2	0	0	0	0	**149**	149	0
Remaining Source Waters needed after ARWRA	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0

**Available if otherwise not collected or would be discharged to ocean*

M1W Source Waters Not Used for Approved or Proposed Expanded PWM/GWR Projects	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Remaining Effluent to Ocean after Base & Expansion Project	451	83	0	0	0	0	0	0	0	94	0	702	**1,331**	0	1,331
M1W's portion of SVRP Backwash after Base & Expansion Projects	18	13	36	50	0	0	0	0	0	57	45	6	**226**	50	175
M1W's Portion of Boronda after Base & Expansion Projects	8	7	8	8	5	0	0	0	3	8	8	8	**63**	16	47
M1W's Portion of Farmworker Housing after Base & Expansion Projects	1	1	1	2	2	0	0	0	2	2	2	1	**12**	5	7
M1W's Portion of Recycle #1 after Base & Expansion Projects	7	3	5	0	0	0	0	0	0	3	3	3	**23**	0	23
M1W's portion of Recycle #2 after base & expansion Projects	9	7	5	0	0	0	0	0	0	10	9	8	**48**	0	48
M1W portion of Base PWM Backwash after Base & Expansion Projects	24	21	24	2	0	0	0	0	0	25	23	23	**142**	2	140
M1W portion of PWM Expansion Backwash Water after Base & Expansion Projects	21	19	21	5	0	0	0	0	0	20	21	22	**129**	5	124
Reclamation Ditch after Base & Expansion Projects	81	18	0	0	0	0	0	0	0	0	19	136	**253**	0	253
Blanco Drain Remaining Water after Base & Expansion Projects	209	223	0	0	0	0	0	0	0	0	133	185	**750**	0	750
M1W ARWRA Summer Water Remaining after MCWD, Base & Expanded PWM	0	0	0	0	50	39	58	2	0	0	0	0	**149**	149	0
M1W's Plus Unused other Source Waters after Base and Expansion Projects (excl. ocean)	378	313	101	66	57	39	58	2	5	125	262	391	**1,797**	227	1,570
M1W's Plus Unused other Source Waters after Base and Expansion Projects (incl. ocean)	829	395	101	66	57	39	58	2	5	219	262	1,094	**3,128**	227	2,901
M1W portion of SRDF Backwash Water	0	0	0	0	6	24	25	25	11	4	0	0	**95**	91	4
Salinas Industrial Wastewater (2018) Remaining	184	149	130	206	150	305	318	319	305	82	252	186	**2,585**	1,603	982
Salinas Pond Recovery Water (2018)*	0	0	0	0	300	0	0	0	0	0	0	0	**300**	300	0

**Flow may be much higher in 2021 when Salinas Pond PS Project Completed*

Attachment 2

Scenario 2 (D-In): Source Water Use During Drought Years and Conditions Precedent Are Met

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Source Water for M1W Portion of Base Project (2,500 AFY after removing 600 AFY MCWD's Portion from the 3,100 AFY total, drought)															
Source Water Needed for M1W Portion of Base Project (2,500)	455	415	455	123	127	123	127	127	123	455	441	455	**3,423**	748	2,675
Secondary Effluent to Ocean used for base project, 1st priority	455	335	0	0	0	0	0	0	0	165	441	455	**1,850**	0	1,850
Secondary Effluent to Ocean Remaining after Base Project	1,161	83	3	90	0	0	0	0	0	285	1,083	1,097	**3,803**	90	3,713
Feed water needed after ocean flows	0	80	455	122	127	123	127	127	123	290	0	0	**1,573**	748	825
Reclamation Ditch used for base project, 2nd priority	0	25	19	50	11	8	12	35	11	16	0	0	**187**	127	60
Reclamation Ditch Flows remaining after Base Project	0	0	0	0	0	0	0	0	0	0	133	72	**205**	0	205
Feed Water needed after Reclamation Ditch	0	55	436	72	116	115	115	92	112	274	0	0	**1,386**	621	765
Blanco Drain used for base project, 3rd priority	0	55	246	72	116	115	115	92	112	168	0	0	**1,090**	621	469
Blanco Drain Flows after Base Project	209	168	0	180	109	159	162	152	72	0	133	185	**1,530**	835	695
Feed Water needed after Blanco Drain	0	0	190	0	0	0	0	0	0	106	0	0	**296**	0	296
AAW used for base project, 4th priority	0	0	163	0	0	0	0	0	0	106	0	0	**269**	0	269
AWW Flows remaining after Base Project	172	139	0	270	297	302	305	300	288	206	239	154	**2,672**	1,763	910
Feed Water needed after Reclamation Ditch	0	0	27	0	0	0	0	0	0	0	0	0	**27**	0	27
Recycle #1 for expansion, 5th priority	0	0	5	0	0	0	0	0	0	0	0	0	**5**	0	5
M1W's Portion of Recycle #1 after Expansion	7	3	0	5	3	2	3	4	2	3	3	3	**36**	18	18
Feed Water needed after Recycle #1	0	0	22	0	0	0	0	0	0	0	0	0	**22**	0	22
Recycle #2 for Expansion, 6th priority	0	0	5	0	0	0	0	0	0	0	0	0	**5**	0	5
M1W's portion of Recycle #2 after expansion	9	7	0	9	9	9	9	9	11	10	10	8	**99**	55	44
Feed Water needed after Recycle #2 water	0	0	17	0	0	0	0	0	0	0	0	0	**17**	0	17
PWM Base Project Backwash Water used for Base Project, 7th priority	0	0	17	0	0	0	0	0	0	0	0	0	**17**	0	17
M1W's portion of AWPF Backwash Water after Base Project (1/2)	24	21	7	10	12	12	12	11	11	25	23	23	**192**	68	124
Feed Water needed after AWPF Backwash water	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
SVRP Backwash Water used for base project, 8th priority	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W's portion of SVRP Backwash Water after Base Project	18	27	55	57	55	57	57	55	57	57	37	18	**550**	337	213
Feed Water needed after SVRP Backwash	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
Boronda for expansion, 9th priority	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W's Portion of Boronda after Expansion	8	7	8	8	8	8	8	8	8	8	8	8	**95**	48	47
Feed Water needed after Boronda	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
Farmworker Housing for Expansion, 10th priority	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W's Portion of Farmworker Housing after Expansion	1	1	1	2	2	2	2	2	2	2	2	1	**17**	11	7
Remaining Source Waters needed after Farmworker Housing	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W Summer ARWRA Water for Expansion remaining after MCWD Project, 10th priority	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W ARWRA Remaining Summer Water after Expansion	0	0	0	0	50	82	93	83	0	0	0	0	**308**	308	0
Remaining Source Waters needed after ARWRA	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Source Waters for 2,250 AFY Proposed Expanded PWM/GWR Project--Drought Year Scenario (Source Water = 2,898 AFY and 133 AF Operational Reserve)															
Source Waters needed for 2,250 AFY Expansion	435	157	95	184	144	176	189	177	48	410	427	457	**2,898**	917	1,981
Remaining Secondary Effluent to Ocean for Expansion after Base Project, 1st Priority*	435	83	3	90	0	0	0	0	0	285	427	457	**1,779**	90	1,689
Remaining Effluent to Ocean after Expansion Project	726	0	0	0	0	0	0	0	0	0	657	640	**2,023**	0	2,023
Remaining Source Waters needed for Expansion after Ocean Flows	0	75	92	94	144	176	189	177	48	125	0	0	**1,119**	827	291
Recycle #1 for expansion, 2nd priority	0	3	0	5	3	2	3	4	2	3	0	0	**23**	18	5
M1W's Portion of Recycle #1 after Expansion	7	0	0	0	0	0	0	0	0	0	3	3	**13**	0	13
Feed Water needed after Recycle #1	0	72	92	90	141	174	186	173	45	122	0	0	**1,095**	809	286
Recycle #2 for Expansion, 3rd priority	0	7	0	9	9	9	9	9	11	10	0	0	**72**	55	17
M1W's portion of Recycle #2 after Expansion	9	0	0	0	0	0	0	0	0	0	10	8	**26**	0	26
Feed Water needed after Recycle #2 water	0	65	92	81	132	165	177	164	35	112	0	0	**1,023**	754	269
M1W's portion of PWM Base Backwash Water Remaining from Base Project, 4th Priority	0	21	7	10	12	12	12	11	11	25	0	0	**122**	68	54
M1W portion of Base PWM Backwash after Base & Expansion	24	0	0	0	0	0	0	0	0	0	23	23	**70**	0	70
Remaining Source Waters needed after M1W Portion of AWPF Backwash	0	43	85	71	120	153	165	153	24	87	0	0	**901**	686	215
M1W's portion of PWM Expansion Backwash Water, 5th priority	0	8	5	9	7	9	9	9	2	20	0	0	**78**	45	33
M1W portion of PWM Expansion Backwash Water after Base & Expansion	21	0	0	0	0	0	0	0	0	0	21	22	**65**	0	65
Feed Water needed after AWPF Expansion Backwash water	0	35	80	62	113	144	155	144	22	67	0	0	**823**	641	182
M1W's portion of SVRP Backwash Water after Base Project, 6th Priority	0	27	55	57	55	57	57	55	22	57	0	0	**442**	302	139
M1W's portion of SVRP Backwash after Base & Expansion	18	0	0	0	0	0	0	0	35	0	37	18	**108**	35	73
Remaining Source Waters needed after SVRP Backwash	0	8	25	5	58	87	98	89	0	10	0	0	**381**	338	43
Boronda for expansion, 7th priority	0	7	8	5	8	8	8	8	0	8	0	0	**61**	38	23
M1W's Portion of Boronda after Expansion	8	0	0	2	0	0	0	0	8	0	8	8	**34**	10	24
Feed Water needed after Boronda	0	1	17	0	50	80	90	81	0	2	0	0	**320**	301	20
Farm Worker Housing for Expansion, 8th priority	0	1	1	0	2	2	2	2	0	2	0	0	**10**	7	3
M1W's Portion of Farmworker Housing after Expansion	1	0	0	2	0	0	0	0	2	0	2	1	**7**	3	4
Remaining Source Waters needed after Farmworker Housing	0	0	16	0	48	78	89	79	0	0	0	0	**310**	294	16
M1W Summer ARWRA Water for Expansion remaining after MCWD Project, 9th priority	0	0	16	0	48	78	89	79	0	0	0	0	**310**	294	16
M1W ARWRA Remaining Summer Water after Expansion	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
Remaining Source Waters needed after ARWRA	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0

**Available if otherwise not collected or would be discharged to ocean*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Source Waters Not Used for Approved or Proposed Expanded PWM/GWR Projects															
Remaining Effluent to Ocean after Expansion Project	726	0	0	0	0	0	0	0	0	0	657	640	**2,023**	0	2,023
M1W's portion of SVRP Backwash after Base & Expansion	18	0	0	0	0	0	0	0	35	0	37	18	**108**	35	73
M1W's Portion of Boronda after Expansion	8	0	0	2	0	0	0	0	8	0	8	8	**34**	10	24
M1W's Portion of Farmworker Housing after Expansion	1	0	0	2	0	0	0	0	2	0	2	1	**7**	3	4
M1W's Portion of Recycle #1 after Expansion	7	0	0	0	0	0	0	0	0	0	3	3	**13**	0	13
M1W's portion of Recycle #2 after Expansion	9	0	0	0	0	0	0	0	0	0	10	8	**26**	0	26
M1W portion of Base PWM Backwash after Base & Expansion	24	0	0	0	0	0	0	0	0	0	23	23	**70**	0	70
M1W portion of PWM Expansion Backwash Water after Base & Expansion	21	0	0	0	0	0	0	0	0	0	21	22	**65**	0	65
Reclamation Ditch after Base & Expansion	0	0	0	0	0	0	0	0	0	0	133	72	**205**	0	205
Blanco Drain Remaining Water after Base & Expansion	209	168	0	180	109	159	162	152	72	0	133	185	**1,530**	835	695
M1W ARWRA Remaining Summer Water after Expansion	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W's Plus Unused other Source Waters after Base and Expansion Projects (exclude ocean)	297	168	0	184	109	160	163	152	117	0	369	340	**2,059**	884	1,175
M1W's Plus Unused other Source Waters after Base and Expansion Projects (exclude ocean)	1,023	168	0	184	109	160	163	152	117	0	1,025	981	**4,082**	884	3,198
M1W portion of SRDF Backwash Water	0	0	0	0	6	24	25	25	11	4	0	0	**95**	91	4
Salinas Industrial Wastewater Flows Remaining	172	139	0	270	297	302	305	300	288	206	239	154	**2,672**	1,763	910
Salinas Pond Recovery Water (2015)*	0	0	0	100	15	0	0	0	0	0	0	0	**115**	115	0

**Flow may be much higher in 2021 when Salinas Pond PS Project Completed*

Attachment 3

Scenario 3 (N-Out): Source Water Use During Normal/Wet Years and Conditions Precedent Are Not Met

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Source Water for M1W Portion of Base Project (3,700 AFY after removing 600 AFY MCWD's Portion from the 4,300 AFY total, building Operational Reserve)															
Source Water Needed for M1W Portion of Base Project (3,700)	455	415	455	395	395	394	407	407	394	455	441	455	**5,067**	2,391	2,675
Secondary Effluent to Ocean used for base project, 1st priority	455	415	147	54	0	0	0	0	120	146	441	455	**2,232**	174	2,059
Secondary Effluent to Ocean Remaining after Base Project	882	474	325	12	0	0	0	0	0	354	376	1155	**3,579**	12	3,567
Feed water needed after ocean flows	0	0	308	341	395	394	407	407	274	309	0	0	**2,834**	2,218	617
Reclamation Ditch used for base project, 2nd priority	0	0	111	89	14	70	88	75	27	36	0	0	**509**	362	147
Reclamation Ditch Flows remaining after Base Project	81	18	0	0	0	0	0	0	0	0	65	136	**299**	0	299
Feed Water needed after Reclamation Ditch	0	0	197	252	381	324	319	332	247	273	0	0	**2,325**	1,855	470
Blanco Drain used for base project, 3rd priority	0	0	197	252	225	274	277	244	184	168	0	0	**1,821**	1,456	365
Blanco Drain Flows after Base Project	209	223	49	0	0	0	0	0	0	0	133	185	**799**	0	799
Feed Water needed after Blanco Drain	0	0	0	0	156	50	42	88	63	105	0	0	**504**	399	105
Recycle #1 used for base project, 4th priority	0	0	0	0	3	2	3	4	2	3	0	0	**17**	14	3
M1W's Portion of Recycle #1 after Base Project	7	3	5	4	0	0	0	0	0	0	3	3	**25**	4	21
Feed Water needed after Recycle #1	0	0	0	0	153	48	40	84	60	102	0	0	**488**	386	102
Recycle #2 used for Base Project, 5th priority	0	0	0	0	9	9	9	9	11	10	0	0	**56**	47	10
M1W's portion of Recycle #2 after base project	9	7	5	9	0	0	0	0	0	0	10	8	**48**	9	39
Feed Water needed after Recycle #2 water	0	0	0	0	144	39	31	75	50	92	0	0	**431**	339	92
PWM Base Project Backwash Water used for Base Project, 6th priority	0	0	0	0	25	25	26	25	24	25	0	0	**151**	126	25
M1W's portion of AWPF Backwash Water from base project after Base Project (1/2)	24	21	24	23	0	0	0	0	0	0	23	23	**139**	23	115
Feed Water needed after AWPF Backwash water	0	0	0	0	119	13	4	50	26	67	0	0	**280**	213	67
SVRP Backwash Water used for base project, 7th priority	0	0	0	0	59	13	4	50	26	57	0	0	**210**	153	57
M1W's portion of SVRP Backwash Water after Base Project	18	13	36	50	0	43	54	9	31	0	45	6	**305**	187	118
Feed Water needed after SVRP Backwash	0	0	0	0	60	0	0	0	0	10	0	0	**70**	60	10
Boronda used for base project, 8th priority	0	0	0	0	8	0	0	0	0	8	0	0	**16**	8	8
M1W's Portion of Boronda after Base Project	8	7	8	8	0	8	8	8	8	0	8	8	**79**	40	39
Feed Water needed after Boronda	0	0	0	0	52	0	0	0	0	2	0	0	**54**	52	2
Farmworker Housing used for Base Project 9th priority	0	0	0	0	2	0	0	0	0	2	0	0	**4**	2	2
M1W's Portion of Farmworker Housing after Base Project	1	1	1	2	0	2	2	2	2	0	2	1	**14**	9	5
Remaining Source Waters needed after Farmworker Housing	0	0	0	0	50	0	0	0	0	0	0	0	**50**	50	0
M1W Summer ARWRA Water used for Expansion remaining after MCWD Project, 10th priority	0	0	0	0	50	0	0	0	0	0	0	0	**50**	50	0
M1W ARWRA Remaining Summer Water after MCWD, Base & Expansion Projects	0	0	0	0	0	82	93	83	0	0	0	0	**258**	258	0
Remaining Source Waters needed after ARWRA	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0

Source Waters for 2,250 AFY Proposed Expanded PWM/GWR Project--Winter Peaking Flow Scenario	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Source Waters needed for 2,250 AFY Expansion	439	399	425	113	104	101	104	104	42	374	423	453	**3,081**	568	2,513
Secondary Effluent to Ocean used for Expansion after Base Project, 1st Priority*	439	399	325	12	0	0	0	0	0	354	376	453	**2,358**	12	2,346
Remaining Effluent to Ocean after Base & Expansion Projects	443	75	0	0	0	0	0	0	0	0	0	702	**1,221**	0	1,221
Remaining Source Waters needed for Expansion after Ocean Flows	0	0	101	101	104	101	104	104	42	20	46	0	**723**	556	167
Recycle #1 after base project used for Expansion, 2nd priority	0	0	5	4	0	0	0	0	0	0	3	0	**12**	4	8
M1W's Portion of Recycle #1 after Base & Expansion Projects	7	3	0	0	0	0	0	0	0	0	0	3	**13**	0	13
Feed Water needed after Recycle #1	0	0	95	97	104	101	104	104	42	20	44	0	**711**	552	159
Recycle #2 after base project used for Expansion, 3rd priority	0	0	5	9	0	0	0	0	0	0	10	0	**24**	9	15
M1W's portion of Recycle #2 after base & expansion Projects	9	7	0	0	0	0	0	0	0	0	0	8	**24**	0	24
Feed Water needed after Recycle #2 water	0	0	90	88	104	101	104	104	42	20	34	0	**688**	543	144
M1W's portion of PWM Base Backwash Water from Base used for Expansion Project, 4th Priority	0	0	24	23	0	0	0	0	0	0	23	0	**70**	23	47
M1W portion of Base PWM Backwash after Base & Expansion Projects	24	21	0	0	0	0	0	0	0	0	0	23	**68**	0	68
Remaining Source Waters needed after M1W Portion of AWPF Backwash	0	0	66	65	104	101	104	104	42	20	11	0	**617**	520	97
M1W's portion of PWM Expansion Backwash Water used for Expansion Project , 5th priority	0	0	21	5	5	5	5	5	2	20	11	0	**79**	27	52
M1W portion of PWM Expansion Backwash Water after Base & Expansion Projects	21	19	0	0	0	0	0	0	0	0	10	22	**72**	0	72
Feed Water needed after AWPF Expansion Backwash water	0	0	45	60	99	96	99	99	40	0	0	0	**538**	493	45
M1W's portion of SVRP Backwash Water used for Expansion after Base Project, 6th Priority	0	0	36	50	0	43	54	9	31	0	0	0	**223**	187	36
M1W's portion of SVRP Backwash after Base & Expansion Projects	18	13	0	0	0	0	0	0	0	0	45	6	**82**	0	82
Remaining Source Waters needed after SVRP Backwash	0	0	9	9	99	53	45	91	10	0	0	0	**315**	306	9
Boronda after base project used for Expansion, 7th priority	0	0	8	8	0	8	8	8	8	0	0	0	**48**	40	8
M1W's Portion of Boronda after Base & Expansion Projects	8	7	0	0	0	0	0	0	0	0	8	8	**31**	0	31
Feed Water needed after Boronda	0	0	1	2	99	45	37	82	2	0	0	0	**267**	267	1
Farmworker Housing after Base Project used for Expansion, 8th priority	0	0	1	2	0	2	2	2	2	0	0	0	**9**	9	1
M1W's Portion of Farmworker Housing after Base & Expansion Projects	1	1	0	0	0	0	0	0	0	0	2	1	**4**	0	4
Remaining Source Waters needed after Farmworker Housing	0	0	0	0	99	43	35	81	0	0	0	0	**258**	258	0
M1W Summer ARWRA Water used for Expansion remaining after MCWD Project, 9th priority	0	0	0	0	99	43	35	81	0	0	0	0	**258**	258	0
M1W ARWRA Remaining Summer Water after MCWD, Base & Expansion Projects	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
Remaining Source Waters needed after ARWRA	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0

**Available if otherwise not collected or would be discharged to ocean*

Source Waters Not Used for Approved or Proposed Expanded PWM/GWR Projects	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Remaining Effluent to Ocean after Base & Expansion Project	443	75	0	0	0	0	0	0	0	0	0	702	**1,221**	0	1,221
M1W's portion of SVRP Backwash after Base & Expansion Projects	18	13	0	0	0	0	0	0	0	0	45	6	**82**	0	82
M1W's Portion of Boronda after Base & Expansion Projects	8	7	0	0	0	0	0	0	0	0	8	8	**31**	0	31
M1W's Portion of Farmworker Housing after Base & Expansion Projects	1	1	0	0	0	0	0	0	0	0	2	1	**4**	0	4
M1W's Portion of Recycle #1 after Base & Expansion Projects	7	3	0	0	0	0	0	0	0	0	0	3	**13**	0	13
M1W's portion of Recycle #2 after base & expansion Projects	9	7	0	0	0	0	0	0	0	0	0	8	**24**	0	24
M1W portion of Base PWM Backwash after Base & Expansion Projects	24	21	0	0	0	0	0	0	0	0	0	23	**68**	0	68
M1W portion of PWM Expansion Backwash Water after Base & Expansion Projects	21	19	0	0	0	0	0	0	0	0	10	22	**72**	0	72
Reclamation Ditch after Base & Expansion Projects	81	18	0	0	0	0	0	0	0	0	65	136	**299**	0	299
Blanco Drain Remaining Water after Base & Expansion Projects	209	223	49	0	0	0	0	0	0	0	133	185	**799**	0	799
M1W ARWRA Remaining Summer Water after MCWD, Base & Expansion Projects	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W's Plus Unused other Source Waters after Base and Expansion Projects (excl. ocean)	378	313	49	0	0	0	0	0	0	0	262	391	**1,393**	0	1,393
M1W's Plus Unused other Source Waters after Base and Expansion Projects (incl. ocean)	821	388	49	0	0	0	0	0	0	0	262	1,094	**2,614**	0	2,614
M1W portion of SRDF Backwash Water	0	0	0	0	6	24	25	25	11	4	0	0	**95**	91	4
Salinas Industrial Wastewater (2018)	184	149	182	261	305	305	318	319	305	333	252	186	**3,099**	1,813	1,285
Salinas Pond Recovery Water (2018)*	0	0	0	0	300	0	0	0	0	0	0	0	**300**	300	0

**Flow may be much higher in 2021 when Salinas Pond PS Project Completed*

Attachment 4

Scenario 4 (D-Out): Source Water Use During Drought Years and Conditions Precedent Are Not Met

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Source Water for M1W Portion of Base Project (3,500 AFY after removing 600 AFY MCWD's Portion from the 4,300 AFY total, drought)--not filling Operational Reserve															
Source Water Needed for M1W Portion of Base Project (3,700)	455	415	378	395	344	364	377	378	336	455	441	455	**4,793**	2,194	2,599
Secondary Effluent to Ocean used for base project, 1st priority	455	400	0	0	0	0	0	0	0	228	441	455	**1,978**	0	1,978
Secondary Effluent to Ocean Remaining after Base Project	1,161	18	3	90	0	0	0	0	0	222	1,083	1,097	**3,675**	90	3,585
Feed water needed after ocean flows	0	15	379	394	344	364	377	378	336	227	0	0	**2,815**	2,194	621
Reclamation Ditch used for base project, 2nd priority	0	15	19	50	11	8	12	35	11	16	0	0	**177**	127	50
Reclamation Ditch Flows remaining after Base Project	0	10	0	0	0	0	0	0	0	0	133	72	**215**	0	215
Feed Water needed after Reclamation Ditch	0	0	360	344	333	356	365	343	325	211	0	0	**2,638**	2,067	571
Blanco Drain used for base project, 3rd priority	0	0	246	252	225	274	277	244	184	168	0	0	**1,870**	1,456	414
Blanco Drain Flows after Base Project	209	223	0	0	0	0	0	0	0	0	133	185	**750**	0	750
Feed Water needed after Blanco Drain	0	0	114	92	108	82	88	99	141	43	0	0	**768**	611	157
Recycle #1 for base project, 5th priority	0	0	5	5	3	2	3	4	2	3	0	0	**26**	18	8
M1W's Portion of Recycle #1 after Expansion	7	3	0	0	0	0	0	0	0	0	3	3	**15**	0	15
Feed Water needed after Recycle #1	0	0	108	88	106	80	85	95	139	41	0	0	**741**	592	149
Recycle #2 for base project, 6th priority	0	0	5	9	9	9	9	9	11	10	0	0	**70**	55	15
M1W's portion of Recycle #2 after expansion	9	7	0	0	0	0	0	0	0	0	10	8	**34**	0	34
Feed Water needed after Recycle #2 water	0	0	103	79	97	71	76	87	128	31	0	0	**671**	537	134
PWM Base Project Backwash Water used for base project, 7th priority	0	0	20	23	23	24	25	24	21	25	0	0	**185**	140	46
M1W's portion of AWPF Backwash Water after Base Project (1/2)	24	21	0	0	0	0	0	0	0	0	23	23	**91**	0	91
Feed Water needed after AWPF Backwash water	0	0	83	56	74	47	52	63	107	6	0	0	**486**	398	88
SVRP Backwash Water used for base project, 8th priority	0	0	55	56	55	47	52	55	57	6	0	0	**382**	321	61
M1W's portion of SVRP Backwash Water after Base Project	18	27	0	1	0	10	5	0	0	51	37	18	**168**	16	152
Feed Water needed after SVRP Backwash	0	0	28	0	19	0	0	8	50	0	0	0	**104**	77	28
Boronda for base project, 9th priority	0	0	8	0	8	0	0	8	8	0	0	0	**32**	24	8
M1W's Portion of Boronda after Expansion	8	7	0	8	0	8	8	0	0	8	8	8	**63**	24	39
Feed Water needed after Boronda	0	0	20	0	11	0	0	0	42	0	0	0	**73**	53	20
Farmworker Housing for base project, 10th priority	0	0	1	0	2	0	0	0	2	0	0	0	**4**	4	1
M1W's Portion of Farmworker Housing after Expansion	1	1	0	2	0	2	2	2	0	2	2	1	**13**	7	6
Remaining Source Waters needed after Farmworker Housing	0	0	19	0	9	0	0	0	41	0	0	0	**68**	50	19
M1W Summer ARWRA Water for base project remaining after MCWD Project, 10th priority	0	0	19	0	9	0	0	0	41	0	0	0	**68**	50	19
M1W ARWRA Remaining Summer Water after Expansion	0	0	0	0	41	62	73	63	0	0	0	0	**240**	239	0
Remaining Source Waters needed after ARWRA	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Source Waters for 2,250 AFY Proposed Expanded PWM/GWR Project--Drought Year Scenario (Source Water = 2,105 AFY and 713 AF Operational Reserve)															
Source Waters needed for 2,250 AFY Expansion	435	89	4	105	43	86	93	68	0	298	427	457	**2,105**	395	1,709
Remaining Secondary Effluent to Ocean for Expansion after Base Project, 1st Priority*	435	18	3	90	0	0	0	0	0	222	427	457	**1,651**	90	1,561
Remaining Effluent to Ocean after Expansion Project	726	0	0	0	0	0	0	0	0	0	657	640	**2,023**	0	2,023
Remaining Source Waters needed for Expansion after Ocean Flows	0	71	1	15	43	86	93	68	0	76	0	0	**453**	306	148
Recycle #1 for Expansion, 2nd priority	0	3	0	0	0	0	0	0	0	0	0	0	**3**	0	3
M1W's Portion of Recycle #1 after Expansion	7	0	0	0	0	0	0	0	0	0	3	3	**13**	0	13
Feed Water needed after Recycle #1	0	69	1	15	43	86	93	68	0	76	0	0	**451**	306	145
Recycle #2 for Expansion, 3rd priority	0	7	0	0	0	0	0	0	0	0	0	0	**7**	0	7
M1W's portion of Recycle #2 after expansion	9	0	0	0	0	0	0	0	0	0	10	8	**26**	0	26
Feed Water needed after Recycle #2 water	0	61	1	15	43	86	93	68	0	76	0	0	**443**	306	138
M1W's portion of PWM Base Backwash Water Remaining from Base Project, 4th Priority	0	21	0	0	0	0	0	0	0	0	0	0	**21**	0	21
M1W portion of Base PWM Backwash after Base & Expansion	24	0	0	0	0	0	0	0	0	0	23	23	**70**	0	70
Remaining Source Waters needed after M1W Portion of AWPF Backwash	0	40	1	15	43	86	93	68	0	76	0	0	**422**	306	116
M1W's portion of PWM Expansion Backwash Water , 5th priority	0	4	0	5	2	4	5	3	0	15	0	0	**39**	19	19
M1W portion of PWM Expansion Backwash Water after Base & Expansion	21	0	0	0	0	0	0	0	0	0	21	22	**65**	0	65
Feed Water needed after AWPF Expansion Backwash water	0	35	0	10	41	82	88	65	0	61	0	0	**383**	286	97
M1W's portion of SVRP Backwash Water after Base Project, 6th Priority	0	27	0	1	0	10	5	0	0	51	0	0	**95**	16	79
M1W's portion of SVRP Backwash after Base & Expansion	18	0	0	0	0	0	0	0	0	0	37	18	**73**	0	73
Remaining Source Waters needed after SVRP Backwash	0	8	0	9	41	72	83	65	0	10	0	0	**288**	270	18
Boronda for Expansion, 7th priority	0	7	0	8	0	8	8	0	0	8	0	0	**39**	24	15
M1W's Portion of Boronda after Expansion	8	0	0	0	0	0	0	0	0	0	8	8	**24**	0	24
Feed Water needed after Boronda	0	1	0	2	41	64	75	65	0	2	0	0	**249**	246	3
Farmworker Housing for Expansion, 8th priority	0	1	0	2	0	2	2	2	0	2	0	0	**9**	7	3
M1W's Portion of Farm Worker Housing after Expansion	1	0	0	0	0	0	0	0	0	0	2	1	**4**	0	4
Remaining Source Waters needed after Farmworker Housing	0	0	0	0	41	62	73	63	0	0	0	0	**239**	239	0
M1W Summer ARWRA Water for Expansion remaining after MCWD Project, 9th priority	0	0	0	0	41	62	73	63	0	0	0	0	**239**	239	0
M1W ARWRA Remaining Summer Water after Expansion	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
Remaining Source Waters needed after ARWRA	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0

**Available if otherwise not collected or would be discharged to ocean*

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Apr-Sep	Oct-Mar
Source Waters Not Used for Approved or Proposed Expanded PWM/GWR Projects															
Remaining Effluent to Ocean after Expansion Project	726	0	0	0	0	0	0	0	0	0	657	640	**2,023**	0	2,023
M1W's portion of SVRP Backwash after Base & Expansion	18	0	0	0	0	0	0	0	0	0	37	18	**73**	0	73
M1W's Portion of Boronda after Expansion	8	0	0	0	0	0	0	0	0	0	8	8	**24**	0	24
M1W's Portion of Farm Worker Housing after Expansion	1	0	0	0	0	0	0	0	0	0	2	1	**4**	0	4
M1W's Portion of Recycle #1 after Expansion	7	0	0	0	0	0	0	0	0	0	3	3	**13**	0	13
M1W's portion of Recycle #2 after expansion	9	0	0	0	0	0	0	0	0	0	10	8	**26**	0	26
M1W portion of Base PWM Backwash after Base & Expansion	24	0	0	0	0	0	0	0	0	0	23	23	**70**	0	70
M1W portion of PWM Expansion Backwash Water after Base & Expansion	21	0	0	0	0	0	0	0	0	0	21	22	**65**	0	65
Reclamation Ditch after Base & Expansion	0	10	0	0	0	0	0	0	0	0	133	72	**215**	0	215
Blanco Drain Remaining Water after Base & Expansion	209	223	0	0	0	0	0	0	0	0	133	185	**750**	0	750
M1W ARWRA Remaining Summer Water after Expansion	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0
M1W's Plus Unused other Source Waters after Base and Expansion Projects (exclude ocean)	297	233	0	0	0	0	0	0	0	0	369	340	**1,240**	1	1,240
M1W's Plus Unused other Source Waters after Base and Expansion Projects (exclude ocean)	1,023	233	0	0	0	0	0	0	0	0	1,025	981	**3,263**	1	3,263
M1W portion of SRDF Backwash Water	0	0	0	0	6	24	25	25	11	4	0	0	**95**	91	4
Salinas Industrial Wastewater (2015)	172	139	163	270	297	302	305	300	288	312	239	154	**2,942**	1,763	1,179
Salinas Pond Recovery Water (2015)*	0	0	0	100	15	0	0	0	0	0	0	0	**115**	115	0

**Flow may be much higher in 2021 when Salinas Pond PS Project Completed*

ATTACHMENT N

Appendix I

Source Water Availability, Yield and Use Technical Memorandum

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MEMORANDUM

TO:	Bob Holden, PE and Alison Imamura, PE Monterey One Water	DATE:	November 1, 2019
CC:	Diana Staines, Denise Duffy & Assoc.		
FROM:	Andrew Sterbenz, PE	JOB #:	MRWP.01.14
SUBJECT:	Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project –Source Water Availability, Yield, and Use		

The purpose of this memorandum is to summarize the source water availability and yield estimates for proposed modifications to the approved Pure Water Monterey Groundwater Replenishment Project (as modified, the full project is referenced as the Expanded PWM/GWR Project), to explain the seasonal storage yield estimates, and to provide the proposed maximum and typical (or normal) water use estimates for the Proposed Modifications. This memorandum updates the earlier analysis prepared for the approved PWM/GWR Project Final Environmental Impact Report (EIR)[1] and Addendum 3 to the EIR[2]. Our analysis uses the same baseline assumptions as the earlier analysis, updates the projected surface water yields based on the final water right permits, adds demands for the Regional Urban Water Augmentation Project (RUWAP) as described under Addendum 3, and analyzes the effects of expanding the capacity of the approved PWM/GWR Project under the Proposed Modifications.

The approved PWM/GWR Project developed various source water diversions and conveyance facilities for bringing new influent flows to the Monterey One Water (M1W, formerly MRWPCA) Regional Treatment Plant (RTP) where they undergo primary and secondary treatment with the current municipal wastewater flows. After secondary treatment, a portion of the flow will undergo advanced treatment at the PWM Advanced Water Purification Facility (AWPF) before being conveyed for injection in the Seaside Groundwater Basin. Source waters conveyed to the RTP which are not treated by the AWPF for injection into the Seaside Basin will undergo tertiary treatment at the Salinas Valley Reclamation Plant (SVRP) and will be distributed for agricultural land irrigation with the Castroville Seawater Intrusion Project (CSIP).

A number of technical documents were prepared to analyze and confirm available source water supplies for the approved PWM/GWR Project. Source waters for the approved PWM/GWR Project and for the Proposed Modifications are unchanged and include: 1) surface water diversions, 2) agricultural wash water (Salinas industrial wastewater), 3) urban stormwater runoff, and 4) unused secondary-treated effluent from the RTP which would otherwise be discharged to the ocean, as further described below. The source water availability studies that have been used as the basis for estimating yield are cited throughout this report. These reports and studies include:

1. Schaaf & Wheeler, *Reclamation Ditch Yield Study*, March 2015
2. Schaaf & Wheeler, *Blanco Drain Yield Study*, August 2015

[1] Schaaf & Wheeler Memorandum, 9/23/2015

[2] Schaaf & Wheeler Memorandum, 10/23/2017

3. Data on Source Water Estimates provided by Bob Holden, MRWPCA, February 2014
4. Todd Groundwater, *Memorandum: Pure Water Monterey Groundwater Replenishment Project: Impacts of Changes in Percolation at the Salinas Industrial Wastewater Treatment Facility on Groundwater and the Salinas River,* February 2015
5. Schaaf & Wheeler, *Groundwater Replenishment Project, Salinas River Inflow Impacts,* August 2015
6. Schaaf & Wheeler, *Groundwater Replenishment Project, Urban Runoff Capture at Lake El Estero,* April 2014
7. Data from *Monterey County Water Recycling Projects/Salinas Valley Water Project/Salinas River Diversion Facility Update,* MCWRA Board Packet, February 24, 2014

The approved PWM/GWR Project's primary objective is to provide high quality replacement water to allow California American Water Company (CalAm) to extract 3,500 acre-feet per year (AFY) more water from the Seaside Basin for delivery to its customers in the Monterey District service area and reduce Carmel River system water use by an equivalent amount. To achieve this objective, the approved PWM/GWR Project produces purified recycled water using existing primary and secondary treatment processes at the RTP and further treatment at the AWPF currently in construction. After treatment by the AWPF, the purified recycled water will be conveyed to the Seaside Groundwater Basin for subsurface using a series of shallow and deep wells. In the Seaside Groundwater Basin, the treated water mixes with the groundwater present in the aquifers and is stored for future urban use. CalAm will use existing wells and improved potable water supply distribution facilities to extract and distribute the water produced by the approved PWM/GWR Project, enabling CalAm to reduce its diversions from the Carmel River system by this same amount. The approved PWM/GWR Project will also provide up to 600 AFY of purified recycled water to the Marina Coast Water District for urban irrigation, as the recycled water component of the Regional Urban Water Augmentation Project (RUWAP). This use is unchanged under the proposed Expanded PWM Project.

A secondary objective of the approved PWM/GWR Project is to provide additional water to the Regional Treatment Plant that can be recycled at the existing tertiary treatment facility (the SVRP) and used for crop irrigation using the CSIP system. The SVRP produces tertiary-treated, disinfected recycled water for agricultural irrigation within the CSIP service area. Municipal wastewater and certain urban dry weather runoff diversions treated at the RTP are currently the only sources of supply for the SVRP. Municipal wastewater flows have declined in recent years due to aggressive water conservation efforts by the M1W member entities. The new sources of water supply developed for the approved PWM/GWR Project increase supply available at the RTP for use by the SVRP during the peak irrigation season (April to September). In addition, the approved PWM/GWR Project included SVRP modifications to allow tertiary treatment at lower daily production rates, facilitating increased use of recycled water during the late fall, winter and early spring months when demand drops below 5 million gallons per day (MGD).

The Proposed Modifications would increase the PWM/GWR Project replacement supply for CalAm by 2,250 AFY, for a total yield of 5,750 AFY on average. The Proposed Modifications would enable CalAm to meet the State Water Resources Control Board Cease and Desist Order, as amended, and the requirements of the court-ordered adjudication of the Seaside Groundwater Basin. The Proposed Modifications would create this additional purified recycled water by using source waters described below through the existing primary and secondary treatment processes at the RTP and through a modified AWPF. The additional purified recycled water would be conveyed to the Seaside Groundwater Basin for subsurface injection. The additional injected water would be stored for future extraction and delivery by CalAm using new and existing wells; whereas the approved PWM/GWR Project would rely on only existing wells.

Agricultural Wash Water

The City of Salinas owns and operates an industrial wastewater collection and treatment system which serves approximately 25 agricultural processing and related businesses located in the southeast corner of the City. This wastewater collection system is separate from the Salinas municipal sewage collection system. These flows, referred to as agricultural wash water, are conveyed in a network of gravity pipelines to the Salinas Industrial Wastewater Treatment Facility (SIWTF), where they are treated using aeration and disposed of using evaporation and percolation. These flows may be seasonally redirected into the municipal wastewater system for conveyance to the RTP as a source of supply for the approved PWM/GWR Project, including treatment in either the AWPF or the SVRP.

Annual inflows to the SIWTF were analyzed and a projection of year 2017 flows was prepared by the M1W[3], as shown in the first row of Table 1, below. Recorded monthly inflows for calendar years 2007-2013 were tabulated and the annual averaged plotted (see Figure 1). A linear trend line was used to estimate future flows, and the projected annual average of 3.37 mgd in 2017 was used to scale the 2013 monthly inflow values.[4]

The SIWTF consists of an aeration basin, three storage/percolation ponds covering 108 acres, drying beds coving 67 acres and three rapid infiltration basins covering 1.3 acres. To assess the effects of diverting flows treated at the SIWTF, Todd Groundwater[5] estimated the percentages of flows disposed as evaporation, percolation from the main ponds, and disposal through the drying beds and rapid infiltration basins (RIBs). These values are show in Table 1, below, and are used in the estimation of seasonal storage losses discussed later in this memorandum.

Table 1: Agricultural Wash Water Projection (acre-feet)

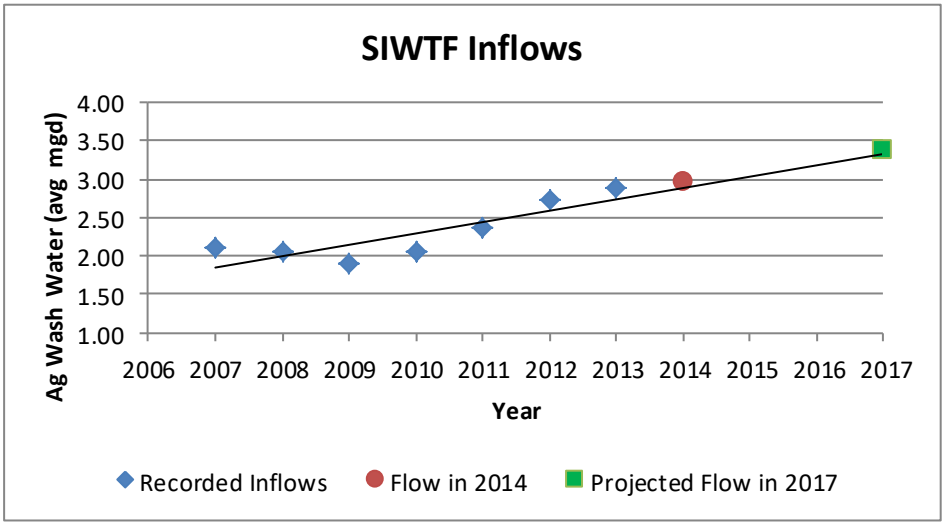
Source \ Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Ag. Wash Water	156	158	201	307	311	391	435	444	367	410	329	223	3,732
Rainfall	26.4	23.7	21.3	11.1	3.0	0.8	0.2	0.4	1.7	5.7	14.2	23.7	132
Evaporation	-12	-16	-29	-41	-46	-52	-45	-43	-32	-28	-15	-12	-372
Percolation from ponds 1, 2, and 3	-143	-129	-143	-138	-143	-138	-143	-143	-138	-143	-138	-143	-1,680
RIBs/Drying Beds	-28	-37	-51	-139	-125	-202	-247	-258	-198	-245	-190	-92	-1,812

[3] Estimation by Bob Holden, MRWPCA, February 2014

[4] The actual rate of increase is slower than projected. SIWTF inflows in 2017 were 2.9 mgd.

[5] Todd Groundwater, *Memorandum: Pure Water Monterey Groundwater Replenishment Project: Impacts of Changes in Percolation at the Salinas Industrial Wastewater Treatment Facility on Groundwater and the Salinas River,* February 2015

Figure 1: Agricultural Wash Water Projection



Urban Stormwater Runoff

The approved PWM/GWR Project EIR included capture and diversion of urban stormwater and dry weather runoff from several watersheds containing urban land uses. Stormwater and urban runoff from the southern portion of the City of Salinas is pumped to the Salinas River (the rest of the City drains into the Reclamation Ditch system). Schaaf & Wheeler[6] estimated the amount of stormwater flow which could be diverted to the municipal wastewater system or the SIWTF for use in the Proposed Modifications. The estimated average annual yield is provided in Table 2, below.

Stormwater and urban runoff from 2,400 acres within the City of Monterey flow to Lake El Estero, which is maintained as part of El Estero Park. Excess stormwater is pumped to a discharge point on Del Monte State Beach. Schaaf & Wheeler[7] estimated the amount of stormwater flow which could be diverted to the municipal wastewater system for use in the PWM Project. The estimated average annual yield is provided in Table 2.

Table 2: Urban Runoff Sources (acre-feet)

Source \ Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
South Salinas	52	41	34	16	2	0	0	0	2	8	23	47	225
Lake El Estero[8]	24	15	14	5	1	0	0	0	1	4	10	13	87

Surface Water Rights for Stream Flows

The approved PWM/GWR Project includes two surface water diversion sites to provide new source waters for recycling. The first is on the Reclamation Ditch, which has a drainage area of 157 square-miles. The

[6] Schaaf & Wheeler, *Groundwater Replenishment Project, Revised Salinas River Inflow Impacts,* August 2015

[7] Schaaf & Wheeler, *Groundwater Replenishment Project, Urban Runoff Capture at Lake El Estero,* April 2014

[8] A larger drainage basin to the west (including flows from Hartnell Gulch watershed) flows to a box culvert at Figueroa and Pearl Streets. Currently, those flows are redirected to discharge onto Del Monte Beach. This basin is approximately 1.85 square miles and produces an estimated average runoff of 227 acre-feet per year. If this drainage basin were reconnected to flow to the Lake, the average yield would increase to 136 acre-feet per year.

Reclamation Ditch carries seasonal stormwater flows, urban runoff from the City of Salinas and agricultural irrigation return flows. The Reclamation Ditch diversion is located just west of Davis Road, near an existing wastewater conveyance facility. A second diversion point downstream on the Tembladero Slough at Castroville was studied, but a permit for that site was not obtained. The yield from the Reclamation Ditch diversion under the final permit conditions was estimated, based on historic daily flow rates, allowing a maximum 6 cfs diversion rate and leaving an in-stream flow of 2 cfs in the winter, 1.0 cfs in June and 0.7 cfs in the summer and fall, with additional controls to allow fish passage when flows exceed 20 cfs. The estimated monthly yields are shown in Table 3, below.

The second diversion is from the Blanco Drain, just above its confluence with the Salinas River. The Blanco Drain conveys seasonal stormwater flows and agricultural tile drainage from 6,400 acres. Schaaf & Wheeler[9] estimated the yield from this system, assuming a maximum diversion rate of 6 cfs, as shown in Table 3.

Table 3: Surface Water Sources (acre-feet)

Source \ Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Reclamation Ditch	70	66	70	106	79	99	113	109	72	65	89	76	1,014
Blanco Drain	209	223	246	252	225	274	277	244	184	168	133	185	2,620

Secondary Treated Effluent

Secondary treated municipal wastewater from the RTP is used as influent to the SVRP, which produces recycled water for the CSIP. Average recycled water production for the period 2009-2013 was 12,955 AFY.[10] Average wastewater inflow to the RTP during that period was 21,764 AFY.[11] An average of 8,809 AFY of treated wastewater in excess of what was delivered to the CSIP was discharged to the Monterey Bay through the M1W's ocean outfall. The average monthly inflows and outflows from the RTP are shown in Table 4, below.

Table 4: Average RTP Inflows and Outflows, 2009-2013[12] (acre-feet)

Source/ Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
RTP Inflows[13]	1,798	1,678	1,867	1,796	1,850	1,799	1,893	1,888	1,813	1,844	1,762	1,776	21,764
SVRP Deliveries	13	459	726	1,376	1,763	1,750	1,866	1,854	1,698	984	448	18	12,955
Ocean Outfall	1,785	1,219	1,141	420	88	49	27	34	114	859	1,314	1,759	8,809

Additional wastewater originating from domestic use within the M1W facility and the adjacent Monterey Regional Waste Management District (landfill) plus Salinas River Diversion Facility (SRDF) screening backwash flows and Salinas Valley Reclamation Project (SVRP) filter backwash enters the RTP at a point after the headworks meter. A portion of these flows (on-site and landfill domestic flows) are metered at M1W's Recycle Sump #1. The average monthly inflow from this source is shown in Table 5, below. M1W treats metered backwash flows from the SVRP filters and unmetered backwash flows from the SRDF screens when those systems are operating. The SRDF brings water into the RTP site where it is filtered, disinfected, and added to SVRP reclamation storage pond. The reclamation water is distributed though the

[9] Schaaf & Wheeler, *Blanco Drain Yield Study*, August 2015.

[10] This is consistent with the 2018 SVRP production of 12,272 AFY.

[11] This is 9% greater than the latest 3-year average (2016-2018) RTP influent volume of 19,869 AFY.

[12] Data provided by Bob Holden, MRWPCA, February 2014.

[13] Flows measured at the headworks meter (Parshall Flume).

CSIP system to meet irrigation demands. The filter screens are periodically backwashed and that backwash water flows to the RTP headworks after the influent flow meter, so it represents an addition to the RTP flow. The SVRP backwash is process water, so it is not a net inflow or outflow from the RTP in the system flow balance.

Table 5: Average Unmetered RTP Inflows [14] (acre-feet)

Source/ Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Recycle Sump #1 (Domestic Wastewater)	14	5	10	9	5	4	5	8	5	5	5	7	82
SRDF Backwash [15]	0	0	0	0	13	49	50	50	22	8	0	0	192

It is conservatively assumed that future CSIP recycled water demands will be consistent with the recycled water use in the baseline time period. This period included one drought year (2013) and that the SRDF operated for only four of the five years (the SRDF was not placed into operation until the year 2010). The SRDF has operated in 8 of the 10 years since its commissioning, validating the earlier assumption that it will operate four out of every five years on a long-term average.

CSIP use of all water sources are shown in Table 6, below. Under current conditions, CSIP supplemental wells are used to maintain pressure in the distribution system and meet peak day demands that exceed the distribution system capacity and available recycled and river water supplies. Supplemental wells also meet small demands below the lower production limit of the SVRP (approximately 5 mgd). The CSIP groundwater use conservatively includes one year when the SRDF did not operate (similar to a multi-year drought condition such as occurred in 2014 and 2015).

Table 6: Average CSIP Use by Source, 2009-2013[16] (acre-feet)

Source/ Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CSIP-Wells	448	195	304	412	324	606	519	504	300	75	233	352	4,271
SRDF-River	0	0	0	100	561	819	886	739	266	56	0	0	3,427
SVRP-Recycled	5	483	733	1,383	1,738	1,748	1,843	1,853	1,698	984	452	18	12,939

Note: The SVRP numerical difference between Tables 4 and 6 is due to rounding differences, loss of yield through evaporation from the SVRP storage pond, and inflows at Recycling Sump #1 Meter. SRDF screening backwash has also been available for recycling as discussed previously.

PWM Project and CSIP Demands

[14] Data provided by Bob Holden, M1W, July 2019.

[15] SRDF Backwash during 2018. Because this source of inflow to the plant is intermittent (i.e., occurs in only 8 out of the 10 years of the SRDF project), these flows are not considered as an additional wastewater volume available for recycling in the flow analysis. Flows were estimated using the backwash pump run times and the pump flow rate.

[16] Data from MCWRA *Monterey County Water Recycling Projects/Salinas Valley Water Project/Salinas River Diversion Facility Update*, February 2014

The Proposed Modifications would increase production of the PWM/GWR Project by 2,250 AFY for an average yield of 5,750 AFY of purified recycled water for injection in the Seaside Groundwater Basin to allow CalAm to extract the same amount for treatment and distribution to their customers in their Monterey District service area. To produce that volume, approximately 7,098 AFY of source water inflows are required at the AWPF reverse-osmosis unit (19% of the influent flow is lost as RO concentrate discharge). During wet or normal water years, an additional 200 AFY may be produced and injected in the winter months to develop a drought reserve or to increase the operational reserve. This would require an additional 248 AFY of source water. The monthly distribution of this demand is shown in Table 7, below. For the Proposed Modifications, the average incremental increase in volume needed as inflow to the expanded AWPF is 12 AF/day in the winter months when secondary treated effluent would otherwise be discharged to the ocean, and is about 3.7 AF/day in the peak irrigation months (approximately April 1 through September 30).

Producing 600 AFY for the MCWD RUWAP will require 741 AFY of source water at the AWPF reverse-osmosis unit. Under previous agreements among MCWD, M1W and MCWRA, the source of supply for the RUWAP is municipal wastewater and not the additional sources developed under the approved PWM/GWR Project.

Source flows not required for the approved PWM/GWR Project would be made available to create additional recycled water for the CSIP. Table 7, Line 5 includes an estimate of new source water flows available in excess of the AWPF inflow needs during the months of April through September when the SVRP typically runs at its maximum production. These values assumes seasonal storage of agricultural wash water (discussed below), full diversion of surface water, and AWPF demands for a normal year building a drought reserve.

The CSIP system distributes recycled water, Salinas River water and well water from the Salinas Valley Groundwater Basin to agricultural irrigation demands in the northern Salinas Valley. Under existing conditions, well water is used to meet peak summer demands in excess of the supply available from the other sources, and also to meet low demands below the minimum production capacity of the SVRP (currently 5 MGD). As part of the approved PWM/GWR Project, the SVRP would be modified to meet recycled water demands as low as 0.5 MGD. With this modification the MCWRA could reduce the use of the CSIP wells, particularly in the winter months when secondary treated effluent is available. The average CSIP well use for the period 2009-2013[17] is shown in Table 7. This provides a reasonable estimate of how much additional recycled water could be used by the existing CSIP system in average year conditions.

[17] Data from *Monterey County Water Recycling Projects/Salinas Valley Water Project/Salinas River Diversion Facility Update,* MCWRA Board Packet, February 24, 2014

Table 7: Monthly PWM and CSIP Use of New Supplies (acre-feet) [18]

Use \ Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
PWM (Base) Project Demand	367	331	367	355	367	355	367	367	355	367	355	367	4,320
Drought Reserve	42	38	42							42	41	42	248
RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
Proposed Modifications to PWM/GWR Project (added) Demands	362	333	357	114	106	101	105	111	109	340	357	382	2,778
Excess New Source Waters for SVRP (Apr-Sept, only)[19]	-	-	-	249	245	480	353	319	162	-	-	-	1,808
CSIP (Average Well Usage)	448	195	304	412	324	606	519	504	300	75	233	352	4,272

Seasonal Storage at the SIWTF

To maximize the available supply during the peak irrigation months, the main ponds at the SIWTF will be used for seasonal storage of agricultural wash water and Salinas' urban stormwater. The analysis of source water yield and proposed diversions assumes that during the months of October through March, these flows are directed to the SIWTF. In addition, for the source water assumptions, the use of the drying beds and infiltration basins are discontinued, so the only losses are evaporation and percolation from the main ponds. During the months of April through September, industrial wastewater may be directly diverted into the municipal wastewater collection system, or may be routed through the SIWTF ponds and then pumped into the Salinas Interceptor and thence to the RTP. Winter flows collected in the SIWTF ponds (comprised of stormwater and treated industrial wastewater) will also be diverted to the Salinas Interceptor for recycling and injection into the Seaside Basin and tertiary treatment for CSIP during peak irrigation months (typically April through September).

Results of Source Water Availability Analysis

The Source Water Availability Analysis uses a net flow balance methodology and average monthly flows to evaluate the project yields under the scenarios described below. The net flows are assessed as they enter and exit the M1W RTP property (see Figure 2, below). New flows from SRDF (namely, screening backwash waters), and domestic wastewater generated on-site and at adjacent sites can be assumed as additive influent flows in the flow balance. Internal recycling of flows from all treatment processes (SVRP filter backwashing, mixed liquor suspended solids, RSSL) to the RTP headworks occur but are ignored, as they do not affect the net inflows or outflows on an average monthly basis. Similarly, minor evaporative losses and hauled liquid waste inflows are ignored. Deliveries from the AWPF or from the SVRP to CSIP are considered beneficial uses flowing out of the RTP site, and discharges to the Ocean Outfall as secondary treated effluent or as RO concentrate/reject water are considered losses. Water rights are covered by another memo which considers internal flow and not just the net flow balance as considered here.[20]

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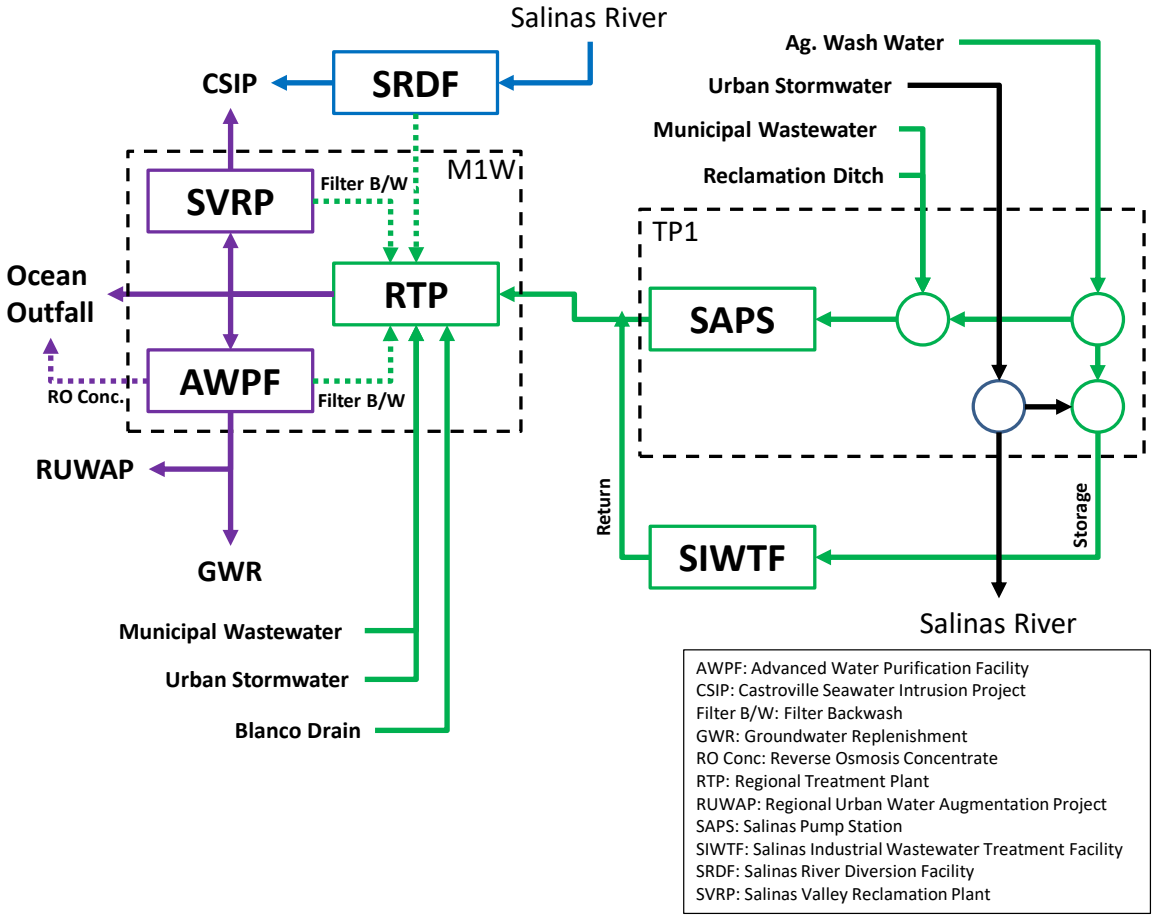
[18] This is the net RTP influent needed to produce 3,500 AFY. Process backwash flows which are recycled to the headworks are assumed to be recaptured with no net loss.

[19] Excess new source water supplies April through September are calculated as the total of new source water (not including secondary treated effluent) minus the AWPF demand. In October through March, new source waters are not typically needed, but could provide additional flows to meet all SVRP demands, including with SVRP "winter" modifications.

[20] Perkins Coie, *Memorandum RE: Water Rights Analysis for Proposed Modifications to the Pure Water Monterey Groundwater Replenishment Project*, September 27, 2019.

Figure 2: Project Inflows and Outflows



In the attached Table 8: Source Water Analysis, the existing inflows to the RTP headworks prior to the influent flow meter are entered in the top line under "Sources." Local sources of wastewater that bypass the headworks meter are entered separately, immediately below that. New Source Waters, starting with those originating from the City of Salinas infrastructure, are then listed. The monthly storage balance in the SIWTF ponds is calculated for a normal water year. The inflow, rainfall, evaporation and percolation from Table 1 are shown in rows 1, 3, 4 and 5, respectively. Urban Runoff from South Salinas is carried from Table 2 into line 2. Assuming the ponds are empty at the start of October, they would remain fully or partially wet for nine months per year.[21] The net yield of agricultural wash water and Salinas stormwater for the PWM Project is shown on line 8. Other source flows from Tables 2 and 3 are shown on lines 9 through 12, and the net new supply is shown on line 13. Under the Demands heading are included the average SVRP deliveries to the CSIP and the average groundwater use by the CSIP, as well as the AWPF feed-water demands. Line 21 shows the projected net supply to the CSIP (sum of existing and augmented flows), and Line 26 shows the supply for the PWM/GWR Project, after Proposed Modifications are operational, while developing a drought reserve. Assuming the agencies divert all of the water shown on this table (i.e., under an assumption that the PWM/GWR Project with modifications would divert the maximum available source waters), there would still be approximately 3,500 AFY of secondary-treated municipal wastewater discharged through the ocean outfall (line 28) during normal rainfall years.

[21] Full diversion of flows was analyzed in the report: *Groundwater Replenishment Project, Salinas River Inflow Impacts*, and the wastewater change petition (WW0089) issued by the State Water Resources Control Board on November 30, 2015 allows all Salinas industrial wastewater to be diverted to the RTP.

Diversion and Use Scenarios

The M1W has a goal of maximizing recycling and reuse of the secondary treated municipal effluent at the RTP and operating the system as efficiently as possible to reduce the energy demand. Therefore, rather than divert all waters as described in the last section and in Table 8, the Proposed Modifications would prioritize the use of secondary treated effluent above the diversion of surface water sources, to the extent possible, which would minimize adverse environmental impacts and maximize system efficiency. The proposed priority of source usage would be:

1. Secondary treated effluent not used at the SVRP
2. Salinas storm water
3. Reclamation Ditch
4. Blanco Drain
5. Agricultural wash water [22]
6. Lake El Estero (if available)

The analysis assumes that the Monterey County Water Resources Agency has funded capital and operational, maintenance, and repair/replacement costs of the projects and facilities needed to divert, convey to the RTP, and treat the new source waters listed in lines 1 through 12 of the attached tables. In the attached scenario tables (Tables 9 through 11), the use of the various sources is reduced to just meet the demands of the AWPF and offset the current CSIP groundwater use in the wet season (October-March). During the dry season (April-September), surface water diversions are shown meeting the monthly AWPF demands and providing extra flow for the CSIP, such that the annual use of new sources exceeds the annual AWPF demands. In practice, the surface water diversions could be reduced or increased based on the actual CSIP system demands, up to the total yields shown in Table 7. The demand scenarios considered are:

Table 9: A normal water year while developing a drought reserve (AWPF producing 6,550 AFY)
Table 10: A normal water year with a full drought reserve (AWPF producing 6,350 AFY)
Table 11: A drought year starting with a full reserve (AWPF producing 5,550 AFY)

In the drought year scenario, the stormwater and wastewater availability were reduced. Urban runoff from Salinas was assumed to be one-third of the historic average. Rainfall on the SIWTF ponds used the 2013 rainfall record (critically dry year). The unused secondary treated effluent values from 2013 were used, also the historic low. The CSIP groundwater well use from OCT 2013 to SEP 2014 was used as the CSIP augmentation target. Under this scenario, surface water diversions were required from the Reclamation Ditch, Blanco Drain and Lake El Estero, and the diversions were needed from March through November.

Reduced Benefit to CSIP

The additional flows available to CSIP under the PWM/GWR Project with Proposed Modifications are summarized in Table 12 and explained herein. New sources of supply developed in excess of the AWPF demands will be available for treatment at the SVRP and delivery to CSIP. During drought years, the PWM/GWR Project production may be reduced by the volume of drought reserve supply previously produced and stored in the Seaside Groundwater Basin, leaving more source water available for the SVRP. In the original PWM/GWR Project EIR, the estimated amount of additional water available to CSIP was 5,460 AFY in a normal year, and 5,728 AFY in a drought year. In the analysis for EIR Addendum 3, the estimated additional water available to CSIP was revised down to 4,970 in a normal year and 5,150 AFY in a drought year as a result of reductions needed to supply the RUWAP with municipal wastewater per

[22] For this analysis, the agricultural wash water is assumed to be used only after all other sources are diverted to the RTP and there remains unmet demands for secondary effluent for recycling.

contractual agreements between M1W, MCWRA and MCWD. Adjusting for the final surface water rights, the additional water for CSIP became 4,250 AFY in a normal year and 2,870 AFY in a drought year. The Tembladero Slough diversion was removed during the permitting process, and the yield of the Reclamation Ditch diversion declined by 270 AFY due to the final water right permit conditions. Adding the Proposed Modifications, the estimated additional water for CSIP becomes 3,600 AFY in a normal year and 2,858 AFY in a drought year. The drought year change occurs in the winter months, when the expanded AWPF is still projected to operate at full capacity. The model assumes that once the CSIP historic demand is met, no additional flow is needed in the winter months, so no surface water diversions are projected during the months of December through February. An estimated additional 880 AFY of surface water is available during those months, if there is a CSIP demand for it.

Table 12: Estimated Additional Supply to CSIP under Differing Scenarios[23]

	Normal Year	**Drought Year**
PWM/GWR Project Final EIR	5,460 AFY	5,728 AFY
PWM/GWR Project EIR Addendum 3	4,970 AFY	5,150 AFY
Water Right Adjustments	4,250 AFY	2,870 AFY
PWM/GWR Project with Proposed Modifications	3,600 AFY	2,858 AFY

[23] Assumes MCWRA participates in funding capital, operation, maintenance/repair, and replacement costs of new source water facilities, SVRP modifications are completed, and drought-reserve is available.

References:

City of Salinas, Industrial Wastewater Treatment Facility, 2013 Annual Report, January 2014

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Schaaf & Wheeler, *Reclamation Ditch Yield Study*, March 2015

Schaaf & Wheeler, *Memorandum: Pure Water Monterey Groundwater Replenishment Project – Proposed Source Water Availability, Yield, and Use*, September 23, 2015

Schaaf & Wheeler, *Memorandum: 600 AFY RUWAP Recycled Water Urban Irrigation Use and Implications for CSIP Yields*, October 23, 2017

State Water Resources Control Board, Division of Water Rights, *Order Issuing Water Rights for Applications A32263A and A32263B*, March 17, 2017.

Todd Groundwater, *Memorandum: Pure Water Monterey Groundwater Replenishment Project: Impacts of Changes in Percolation at the Salinas Industrial Wastewater Treatment Facility on Groundwater and the Salinas River*, February 2015

Table 8: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Full Surface Water Yields, Normal Water Year, Building a Drought Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Existing RTP Inflows (Average 2009 to 2013)	**1,798**	**1,678**	**1,867**	**1,796**	**1,850**	**1,799**	**1,893**	**1,888**	**1,813**	**1,844**	**1,762**	**1,776**	**21,764**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	52	41	34	16	2	0	0	0	2	8	23	47	225
	Urban runoff to ponds	*52*	*41*	*34*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*23*	*47*	*205*
	Urban runoff to RTP	*0*	*0*	*0*	*16*	*2*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*20*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	684	763	847	647	362	0	0	0	0	253	466	605	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	172	0	0	0	0	0	0	304
8	AWW and Salinas Runoff to RTP	0	0	0	355	413	563	435	444	369	0	0	0	2,579
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	209	223	246	252	225	274	277	244	184	168	133	185	2,620
10	Reclamation Ditch at Davis Road [10]	70	66	70	106	79	99	113	109	72	65	89	76	1,014
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	24	15	14	5	1	0	0	0	1	4	10	13	87
13	**Subtotal New Waters Available**	**303**	**304**	**330**	**718**	**718**	**936**	**825**	**797**	**626**	**237**	**232**	**274**	**6,299**
	Total Projected Water Supply	**2,115**	**1,987**	**2,207**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**2,085**	**1,999**	**2,057**	**28,145**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Average SVRP deliveries to CSIP (2009-2013)	13	459	726	1,376	1,763	1,750	1,866	1,854	1,698	984	448	18	12,955
14	FIVE YEAR AVERAGE CSIP AREA WELL WATER USE (2009-2013)	448	195	304	412	324	606	519	504	300	75	233	352	4,272
	TOTAL CSIP Demand (excludes SRDF use)	**461**	**654**	**1,030**	**1,788**	**2,087**	**2,356**	**2,385**	**2,358**	**1,998**	**1,059**	**681**	**370**	**17,227**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	355	367	355	367	367	355	367	355	367	4,320
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	42	38	42							42	41	42	248
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP[18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,087**
	Total Projected Water Demand	**1,260**	**1,376**	**1,829**	**2,328**	**2,668**	**2,922**	**2,971**	**2,929**	**2,547**	**1,860**	**1,455**	**1,169**	**25,314**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	461	654	1,030	1,735	1,747	1,693	1,785	1,802	1,733	1,059	681	370	14,750
20	New sources available to CSIP [13]	0	0	0	249	245	480	353	319	162	0	0	0	1,808
21	**Total Supply to CSIP**	**461**	**654**	**1,030**	**1,984**	**1,993**	**2,173**	**2,138**	**2,121**	**1,894**	**1,059**	**681**	**370**	**16,558**
	Net CSIP Increase													**3,603**
22	Surface waters at RTP to AWPF	303	304	330	114	106	101	105	111	109	237	232	274	2,325
23	Secondary effluent to AWPF	468	398	437	0	0	0	0	0	0	513	520	517	2,854
24	AWW and Salinas urban runoff to AWPF	0	0	0	355	367	355	367	367	355	0	0	0	2,166
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,086**
	Subtotal- all waters (including secondary effluent)	**1,260**	**1,376**	**1,829**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,860**	**1,455**	**1,169**	**24,644**
27	FIVE YEAR AVERAGE WASTE WATER EFFLUENT TO OCEAN OUTFALL (2009-2013)[15]	1,785	1,219	1,141	420	88	49	27	34	114	859	1,314	1,759	8,809
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	854	611	377	0	0	0	0	0	0	226	545	887	3,501
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(468)	(398)	(437)	249	245	480	353	319	162	(513)	(520)	(517)	(1,046)
30	AWT BRINE TO OCEAN OUTFALL	152	137	152	102	110	108	111	109	104	152	147	152	1,536

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

2 Table 2-1, p. 5, Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler Consulting Engineers, August 2015.

3 Volume of effluent from City of Salinas agricultural wash water to be directed into ponds 1,2,3, and the aeration pond for storage.

4 Average monthly flow from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015.

5 Rainfall from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015. Pond area presumed to be Ponds 1,2, 3 + Aeration lagoon. No rainfall/evaporation or storage assigned to drying beds.

6 Table 3, Todd Groundwater, Memorandum, Pure Water Monterey Groundwater Replenishment Project: Impacts of Changes in Percolation at the Salinas Industrial Wastewater Treatment Facility on Groundwater and the Salinas River, February 11, 2015.

7 Table 4, Ibid.

8 Ponds 1,2,3 and aeration basin hold up to 1,065 acre-feet (one foot of freeboard). If flow to ponds would exceed the maximum volume, it is presumed that excess flow can be diverted to the RIBs or drying beds or flow can be diverted to the RTP. Presume that pond storage goes to zero sometime during the year (shown here starting in July).

9 Water right application 32263A. Max diversion = 6 cfs diversion. If SRDF is not operating (drought year), 2 cfs is bypassed to the Salians River. See final water right permit 21376

10 Water right applciation 32263B. Max. diversion = 6 cfs. See final water right permit 21377. Assumes 2 cfs instream bypass requirement Dec-May, 1 cfs bypass in June and 0.7 cfs instream bypass requirement for July-Nov. Also assumes diversion stopped when flows reach 30 cfs (migration window) and restart when flow declines to 20 cfs. See final water right permit 21377

11 Water right application 32263C. Max. diversion = 3 cfs. Removed from project portfolio during water rights process. See RECLAMATION DITCH YIELD STUDY, Schaaf and Wheeler, March 2015.

12 Includes secondary effluent wastewater currently used to produce recycled water at the Salinas Valley Reclamation Project (SVRP), and additional amounts which may be used during periods of low demand (<5 mgd) with the proposed improvements to the SVRP.

13 New source waters not used by AWPF will be available to SVRP for CSIP.

14 A drought reserve of up to 1,000 AF would be created over five years by producing 200 AFY additional product water from the GWR Project AWTF during winter months and storing the water in the Seaside Basin. This would establish a "water bank" that the CSIP can draw on in droughts. The drought reserve would allow flow at the RTP for the GWR Project to be temporarily reduced during critically dry periods, thus freeing up more of the newly available inflows to the RTP to be sent to the CSIP area. Extraction from the Seaside Basin would continue at the average rate to supply the Monterey Peninsula.

15 Average monthly RTP discharge, 2009-2013 (reported by M1W).

16 Secondary treated municipal effluent not used for SVRP or the AWPF.

17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

Table 9: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Diversion Pattern for a Normal Water Year, Building a Drought Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Existing RTP Inflows (Average 2009 to 2013)	**1,798**	**1,678**	**1,867**	**1,796**	**1,850**	**1,799**	**1,893**	**1,888**	**1,813**	**1,844**	**1,762**	**1,776**	**21,764**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	52	41	34	16	2	0	0	0	2	8	23	47	225
	Urban runoff to ponds	*52*	*41*	*34*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*23*	*47*	*205*
	Urban runoff to RTP	*0*	*0*	*0*	*16*	*2*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*20*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	684	763	847	647	362	0	0	0	0	253	466	605	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	172	0	0	0	0	0	0	304
8	AWW and Salinas Runoff to RTP	0	0	0	355	413	563	435	444	369	0	0	0	2,579
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	0	0	0	252	225	274	277	244	184	0	0	0	1,456
10	Reclamation Ditch at Davis Road [10]	0	0	0	106	79	99	113	109	72	11	0	0	589
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	0	0	0	5	1	0	0	0	1	0	0	0	7
13	**Subtotal New Waters Available**	**0**	**0**	**0**	**718**	**718**	**936**	**825**	**797**	**626**	**11**	**0**	**0**	**4,631**
	Total Projected Water Supply	**1,812**	**1,683**	**1,877**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,860**	**1,767**	**1,783**	**26,477**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Average SVRP deliveries to CSIP (2009-2013)	13	459	726	1,376	1,763	1,750	1,866	1,854	1,698	984	448	18	12,955
14	FIVE YEAR AVERAGE CSIP AREA WELL WATER USE (2009-2013)	448	195	304	412	324	606	519	504	300	75	233	352	4,272
	TOTAL CSIP Demand (excludes SRDF use)	**461**	**654**	**1,030**	**1,788**	**2,087**	**2,356**	**2,385**	**2,358**	**1,998**	**1,059**	**681**	**370**	**17,227**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	355	367	355	367	367	355	367	355	367	4,320
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	42	38	42							42	41	42	248
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP[18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,087**
	Total Projected Water Demand	**1,260**	**1,376**	**1,829**	**2,328**	**2,668**	**2,922**	**2,971**	**2,929**	**2,547**	**1,860**	**1,455**	**1,169**	**25,314**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	461	654	1,030	1,735	1,747	1,693	1,785	1,802	1,733	1,059	681	370	14,750
20	New sources available to CSIP [13]	0	0	0	249	245	480	353	319	162	0	0	0	1,808
21	**Total Supply to CSIP**	**461**	**654**	**1,030**	**1,984**	**1,993**	**2,173**	**2,138**	**2,121**	**1,894**	**1,059**	**681**	**370**	**16,558**
	Net CSIP Increase													**3,603**
22	Surface waters at RTP to AWPF	0	0	0	114	106	101	105	111	109	11	0	0	657
23	Secondary effluent to AWPF	771	702	767	0	0	0	0	0	0	738	752	791	4,522
24	AWW and Salinas urban runoff to AWPF	0	0	0	355	367	355	367	367	355	0	0	0	2,166
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,086**
	Subtotal- all waters (including secondary effluent)	**1,260**	**1,376**	**1,829**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,860**	**1,455**	**1,169**	**24,644**
27	FIVE YEAR AVERAGE WASTE WATER EFFLUENT TO OCEAN OUTFALL (2009-2013)[15]	1,785	1,219	1,141	420	88	49	27	34	114	859	1,314	1,759	8,809
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	552	308	47	0	0	0	0	0	0	0	313	614	1,833
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(771)	(702)	(767)	249	245	480	353	319	162	(738)	(752)	(791)	(2,714)
30	AWT BRINE TO OCEAN OUTFALL	152	137	152	102	110	108	111	109	104	152	147	152	1,536

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

2 Table 2-1, p. 5, Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler Consulting Engineers, August 2015.

3 Volume of effluent from City of Salinas agricultural wash water to be directed into ponds 1,2,3, and the aeration pond for storage.

4 Average monthly flow from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015.

5 Rainfall from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015. Pond area presumed to be Ponds 1,2, 3 + Aeration lagoon. No rainfall/evaporation or storage assigned to drying beds.

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8 Ponds 1,2,3 and aeration basin hold up to 1,065 acre-feet (one foot of freeboard). If flow to ponds would exceed the maximum volume, it is presumed that excess flow can be diverted to the RIBs or drying beds or flow can be diverted to the RTP. Presume that pond storage goes to zero sometime during the year (shown here starting in July).

9 Water right application 32263A. Max diversion = 6 cfs diversion. If SRDF is not operating (drought year), 2 cfs is bypassed to the Salians River. See final water right permit 21376

10 Water right applciation 32263B. Max. diversion = 6 cfs. See final water right permit 21377. Assumes 2 cfs instream bypass requirement Dec-May, 1 cfs bypass in June and 0.7 cfs instream bypass requirement for July-Nov. Also assumes diversion stopped when flows reach 30 cfs (migration window) and restart when flow declines to 20 cfs. See final water right permit 21377

11 Water right application 32263C. Max. diversion = 3 cfs. Removed from project portfolio during water rights process. See RECLAMATION DITCH YIELD STUDY, Schaaf and Wheeler, March 2015.

12 Includes secondary effluent wastewater currently used to produce recycled water at the Salinas Valley Reclamation Project (SVRP), and additional amounts which may be used during periods of low demand (<5 mgd) with the proposed improvements to the SVRP.

13 New source waters not used by AWPF will be available to SVRP for CSIP.

14 A drought reserve of up to 1,000 AF would be created over five years by producing 200 AFY additional product water from the GWR Project AWTF during winter months and storing the water in the Seaside Basin. This would establish a "water bank" that the CSIP can draw on in droughts. The drought reserve would allow flow at the RTP for the GWR Project to be temporarily reduced during critically dry periods, thus freeing up more of the newly available inflows to the RTP to be sent to the CSIP area. Extraction from the Seaside Basin would continue at the average rate to supply the Monterey Peninsula.

15 Average monthly RTP discharge, 2009-2013 (reported by M1W).

16 Secondary treated municipal effluent not used for SVRP or the AWPF.

17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

Table 10: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Diversion Pattern for a Normal Water Year with a Full Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Existing RTP Inflows (Average 2009 to 2013)	**1,798**	**1,678**	**1,867**	**1,796**	**1,850**	**1,799**	**1,893**	**1,888**	**1,813**	**1,844**	**1,762**	**1,776**	**21,764**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	52	41	34	16	2	0	0	0	2	8	23	47	225
	Urban runoff to ponds	*52*	*41*	*34*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*23*	*47*	*205*
	Urban runoff to RTP	*0*	*0*	*0*	*16*	*2*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*20*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	684	763	847	647	362	0	0	0	0	253	466	605	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	172	0	0	0	0	0	0	304
8	AWW and Salinas Runoff to RTP	0	0	0	355	413	563	435	444	369	0	0	0	2,579
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	0	0	0	252	225	274	277	244	184	0	0	0	1,456
10	Reclamation Ditch at Davis Road [10]	0	0	0	106	79	99	113	109	72	0	0	0	578
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	0	0	0	5	1	0	0	0	1	0	0	0	7
13	**Subtotal New Waters Available**	**0**	**0**	**0**	**718**	**718**	**936**	**825**	**797**	**626**	**0**	**0**	**0**	**4,620**
	Total Projected Water Supply	**1,812**	**1,683**	**1,877**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,849**	**1,767**	**1,783**	**26,466**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Average SVRP deliveries to CSIP (2009-2013)	13	459	726	1,376	1,763	1,750	1,866	1,854	1,698	984	448	18	12,955
14	FIVE YEAR AVERAGE CSIP AREA WELL WATER USE (2009-2013)	448	195	304	412	324	606	519	504	300	75	233	352	4,272
	TOTAL CSIP Demand (excludes SRDF use)	**461**	**654**	**1,030**	**1,788**	**2,087**	**2,356**	**2,385**	**2,358**	**1,998**	**1,059**	**681**	**370**	**17,227**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	355	367	355	367	367	355	367	355	367	4,320
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	0	0	0							0	0	0	0
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP[18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**757**	**683**	**757**	**539**	**581**	**566**	**585**	**572**	**549**	**758**	**733**	**758**	**7,839**
	Total Projected Water Demand	**1,218**	**1,338**	**1,787**	**2,328**	**2,668**	**2,922**	**2,971**	**2,929**	**2,547**	**1,818**	**1,414**	**1,127**	**25,066**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	461	654	1,030	1,735	1,747	1,693	1,785	1,802	1,733	1,059	681	370	14,750
20	New sources available to CSIP [13]	0	0	0	249	245	480	353	319	162	0	0	0	1,808
21	**Total Supply to CSIP**	**461**	**654**	**1,030**	**1,984**	**1,993**	**2,173**	**2,138**	**2,121**	**1,894**	**1,059**	**681**	**370**	**16,558**
	Net CSIP Increase													**3,603**
22	Surface waters at RTP to AWPF	0	0	0	114	106	101	105	111	109	0	0	0	646
23	Secondary effluent to AWPF	729	664	724	0	0	0	0	0	0	707	712	749	4,285
24	AWW and Salinas urban runoff to AWPF	0	0	0	355	367	355	367	367	355	0	0	0	2,166
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**757**	**683**	**757**	**539**	**581**	**566**	**585**	**572**	**549**	**758**	**733**	**758**	**7,839**
	Subtotal- all waters (including secondary effluent)	**1,218**	**1,338**	**1,787**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,818**	**1,414**	**1,127**	**24,397**
27	FIVE YEAR AVERAGE WASTE WATER EFFLUENT TO OCEAN OUTFALL (2009-2013)[15]	1,785	1,219	1,141	420	88	49	27	34	114	859	1,314	1,759	8,809
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	594	346	90	0	0	0	0	0	0	31	354	656	2,070
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(729)	(664)	(724)	249	245	480	353	319	162	(707)	(712)	(749)	(2,477)
30	AWT BRINE TO OCEAN OUTFALL	144	130	144	102	110	108	111	109	104	144	139	144	1,489

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

2 Table 2-1, p. 5, Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler Consulting Engineers, August 2015.

3 Volume of effluent from City of Salinas agricultural wash water to be directed into ponds 1,2,3, and the aeration pond for storage.

4 Average monthly flow from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015.

5 Rainfall from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015. Pond area presumed to be Ponds 1,2, 3 + Aeration lagoon. No rainfall/evaporation or storage assigned to drying beds.

6 Table 3, Todd Groundwater, Memorandum, Pure Water Monterey Groundwater Replenishment Project: Impacts of Changes in Percolation at the Salinas Industrial Wastewater Treatment Facility on Groundwater and the Salinas River, February 11, 2015.

7 Table 4, Ibid.

8 Ponds 1,2,3 and aeration basin hold up to 1,065 acre-feet (one foot of freeboard). If flow to ponds would exceed the maximum volume, it is presumed that excess flow can be diverted to the RIBs or drying beds or flow can be diverted to the RTP. Presume that pond storage goes to zero sometime during the year (shown here starting in July).

9 Water right application 32263A. Max diversion = 6 cfs diversion. If SRDF is not operating (drought year), 2 cfs is bypassed to the Salians River. See final water right permit 21376

10 Water right applciation 32263B. Max. diversion = 6 cfs. See final water right permit 21377. Assumes 2 cfs instream bypass requirement Dec-May, 1 cfs bypass in June and 0.7 cfs instream bypass requirement for July-Nov. Also assumes diversion stopped when flows reach 30 cfs (migration window) and restart when flow declines to 20 cfs. See final water right permit 21377

11 Water right application 32263C. Max. diversion = 3 cfs. Removed from project portfolio during water rights process. See RECLAMATION DITCH YIELD STUDY, Schaaf and Wheeler, March 2015.

12 Includes secondary effluent wastewater currently used to produce recycled water at the Salinas Valley Reclamation Project (SVRP), and additional amounts which may be used during periods of low demand (<5 mgd) with the proposed improvements to the SVRP.

13 New source waters not used by AWPF will be available to SVRP for CSIP.

14 A drought reserve of up to 1,000 AF would be created over five years by producing 200 AFY additional product water from the GWR Project AWTF during winter months and storing the water in the Seaside Basin. This would establish a "water bank" that the CSIP can draw on in droughts. The drought reserve would allow flow at the RTP for the GWR Project to be temporarily reduced during critically dry periods, thus freeing up more of the newly available inflows to the RTP to be sent to the CSIP area. Extraction from the Seaside Basin would continue at the average rate to supply the Monterey Peninsula.

15 Average monthly RTP discharge, 2009-2013 (reported by M1W).

16 Secondary treated municipal effluent not used for SVRP or the AWPF.

17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

Table 11: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Diversion Pattern for a Drought Year, Starting with a Full Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Minimum Year RTP Inflows (2013)	***1,725***	***1,494***	***1,645***	***1,657***	***1,722***	***1,675***	***1,748***	***1,773***	***1,715***	***1,690***	***1,634***	***1,612***	**20,090**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	17	14	11	5	1	0	0	0	1	3	8	16	76
	Urban runoff to ponds	*17*	*14*	*11*	*0*	*0*	*0*	*0*	*0*	*0*	*3*	*8*	*16*	*69*
	Urban runoff to RTP	*0*	*0*	*0*	*5*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*7*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	598	650	711	511	226	0	0	0	0	248	446	554	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	36	0	0	0	0	0	0	168
8	AWW and Salinas Runoff to RTP	0	0	0	344	412	427	435	444	368	0	0	0	2,430
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	0	0	246	252	225	274	277	244	184	168	133	0	2,003
10	Reclamation Ditch at Davis Road [10]	0	0	70	106	79	99	113	109	72	65	89	0	802
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	0	0	14	5	1	0	0	0	1	4	10	0	35
13	**Subtotal New Waters Available**	**0**	**0**	**330**	**707**	**717**	**800**	**825**	**797**	**625**	**237**	**232**	**0**	**5,270**
	Total Projected Water Supply	**1,739**	**1,499**	**1,985**	**2,373**	**2,444**	**2,479**	**2,578**	**2,578**	**2,345**	**1,931**	**1,871**	**1,619**	**25,442**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Max Year SVRP deliveries to CSIP (2013)	*0*	*692*	*1,558*	*1,669*	*1,799*	*1,675*	*1,786*	*1,803*	*1,725*	*1,548*	*1,127*	*88*	15,469
14	PEAK CSIP AREA WELL WATER USE (10/2013-09/2014)	*509*	*9*	*221*	*242*	*1,197*	*1,261*	*1,303*	*1,025*	*453*	*165*	*35*	*730*	7,150
	TOTAL CSIP Demand (excludes SRDF use)	**509**	**701**	**1,779**	**1,911**	**2,996**	**2,936**	**3,089**	**2,828**	**2,178**	**1,713**	**1,162**	**818**	**22,619**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	133	137	133	137	137	133	367	355	367	2,963
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	0	0	0							0	0	0	0
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP [18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**757**	**683**	**757**	**317**	**351**	**344**	**355**	**342**	**327**	**758**	**733**	**758**	**6,482**
	Total Projected Water Demand	**1,266**	**1,384**	**2,537**	**2,228**	**3,348**	**3,280**	**3,444**	**3,170**	**2,505**	**2,471**	**1,894**	**1,575**	**29,102**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	509	701	1,227	1,596	1,619	1,569	1,640	1,687	1,635	1,173	1,138	818	15,312
20	New sources available to CSIP [13]	0	0	0	460	474	567	583	549	383	0	0	0	3,015
21	**Total Supply to CSIP**	**509**	**701**	**1,227**	**2,056**	**2,093**	**2,136**	**2,223**	**2,236**	**2,018**	**1,173**	**1,138**	**818**	**18,328**
	Net CSIP Increase													**2,858**
22	Surface waters at RTP to AWPF	0	0	330	114	106	101	105	111	109	237	232	0	1,445
23	Secondary effluent to AWPF	729	664	394	0	0	0	0	0	0	471	480	749	3,487
24	AWW and Salinas urban runoff to AWPF	0	0	0	133	137	133	137	137	133	0	0	0	809
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**757**	**683**	**757**	**317**	**351**	**344**	**355**	**342**	**327**	**758**	**733**	**758**	**6,482**
	Subtotal- all waters (including secondary effluent)	**1,266**	**1,384**	**1,985**	**2,373**	**2,444**	**2,479**	**2,578**	**2,578**	**2,345**	**1,931**	**1,871**	**1,575**	**24,810**
27	*DRY YEAR WASTEWATER EFFLUENT TO OCEAN OUTFALL (2013)* [15]	*1,725*	*802*	*87*	*0*	*0*	*0*	*0*	*0*	*0*	*142*	*507*	*1,607*	4,870
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	473	115	0	0	0	0	0	0	0	0	0	43	632
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(729)	(664)	(394)	460	474	567	583	549	383	(471)	(480)	(749)	(471)
30	AWT BRINE TO OCEAN OUTFALL	144	130	144	60	67	65	68	65	62	144	139	144	1,232

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

2 Table 2-1, p. 5, Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler Consulting Engineers, August 2015.

3 Volume of effluent from City of Salinas agricultural wash water to be directed into ponds 1,2,3, and the aeration pond for storage.

4 Average monthly flow from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015.

5 Rainfall from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015. Pond area presumed to be Ponds 1,2, 3 + Aeration lagoon. No rainfall/evaporation or storage assigned to drying beds.

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7 Table 4, Ibid.

8 Ponds 1,2,3 and aeration basin hold up to 1,065 acre-feet (one foot of freeboard). If flow to ponds would exceed the maximum volume, it is presumed that excess flow can be diverted to the RIBs or drying beds or flow can be diverted to the RTP. Presume that pond storage goes to zero sometime during the year (shown here starting in July).

9 Water right application 32263A. Max diversion = 6 cfs diversion. If SRDF is not operating (drought year), 2 cfs is bypassed to the Salians River. See final water right permit 21376

10 Water right applciation 32263B. Max. diversion = 6 cfs. See final water right permit 21377. Assumes 2 cfs instream bypass requirement Dec-May, 1 cfs bypass in June and 0.7 cfs instream bypass requirement for July-Nov. Also assumes diversion stopped when flows reach 30 cfs (migration window) and restart when flow declines to 20 cfs. See final water right permit 21377

11 Water right application 32263C. Max. diversion = 3 cfs. Removed from project portfolio during water rights process. See RECLAMATION DITCH YIELD STUDY, Schaaf and Wheeler, March 2015.

12 Includes secondary effluent wastewater currently used to produce recycled water at the Salinas Valley Reclamation Project (SVRP), and additional amounts which may be used during periods of low demand (<5 mgd) with the proposed improvements to the SVRP.

13 New source waters not used by AWPF will be available to SVRP for CSIP.

14 A drought reserve of up to 1,000 AF would be created over five years by producing 200 AFY additional product water from the GWR Project AWTF during winter months and storing the water in the Seaside Basin. This would establish a "water bank" that the CSIP can draw on in droughts. The drought reserve would allow flow at the RTP for the GWR Project to be temporarily reduced during critically dry periods, thus freeing up more of the newly available inflows to the RTP to be sent to the CSIP area. Extraction from the Seaside Basin would continue at the average rate to supply the Monterey Peninsula.

15 Average monthly RTP discharge, 2009-2013 (reported by M1W).

16 Secondary treated municipal effluent not used for SVRP or the AWPF.

17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

ATTACHMENT O

	RTP Source Water Flow Blends by Scenario and Month (flows in ac-ft per month)													
	Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Maximum New Source Waters	Municipal WW	1,578	1,387	1,643	1,598	1,601	1,563	1,609	1,610	1,541	1,563	1,551	1,567	18810
	Agricultural Wash Water	0	0	0	309	407	477	318	319	307	0	0	0	2137
	Blanco Drain	209	223	246	252	225	274	277	244	184	168	133	185	2620
	El Estero	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tembladero Slough	0	0	0	0	0	0	0	0	0	0	0	0	0
	Reclamation Ditch	70	66	70	106	79	99	113	109	72	65	89	76	1014
Winter Peaking Operation	Municipal WW	1,578	1,387	1,643	1,598	1,601	1,563	1,609	1,610	1,541	1,563	1,551	1,567	18810
	Ag Wash	0	0	0	309	407	477	318	319	307	0	0	0	2137
	Blanco Drain	0	0	246	252	225	274	277	244	184	168	0	0	1870
	El Estero	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tembladero Slough	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rec Ditch	0	0	70	106	79	99	113	109	72	65	5	0	718

ATTACHMENT P

California American Water
Peer Review of Supply and Demand for Water on the Monterey Peninsula

Prepared By: Kevin Alexander, P.E.
Reviewed By: Cindy L. Miller, P.E.; Jack Kiefer, PhD, Greg Gates, P.E., Luke Wang, P.E.
Hazen and Sawyer - August 11, 2020

This memorandum is in response to the following:

- Monterey Peninsula Water Management District (MPWMD), Exhibit 4-A Supply and Demand for Water on the Monterey Peninsula dated March 13, 2020 prepared by David J. Stoldt, General Manager;
- Exhibit 4-B Marina Coast Water District Demand (MCWD) Study by WaterDM dated April 21, 2020;
- Final Supplemental EIR for the PWM Expansion dated April 2020; and
- WaterDM Supplemental Study dated June 24, 2020.

California American Water Company (CalAm) is responsible for ensuring the Monterey Peninsula's available water supply is adequate to meet demand not just under ideal circumstances, but particularly under any number of adverse conditions that have some probability of occurrence.

There is no dispute that the Monterey Peninsula Water Supply Project (MPWSP) will provide a supply required to meet the demand of the Monterey Peninsula. The MPWSP is the only solution that meets the stated goals of Governor Newsom's 2020 Water Resilience Portfolio of: diverse water supplies, protect and enhance natural ecosystems, build connections and be prepared[1].

PHOTOS: USGS (TOP), HAZEN AND SAWYER (ABOVE)

MPWMD's General Manager is asking CalAm to utilize recycled water with sources that are vulnerable to drought, climate change, and water quality challenges. CalAm is asking for consideration of the MPWSP as a means to address those concerns and to address vulnerable supply issues for the entire region.

Considering the Ocean as a safe, secure, reliable, and resilient source as part of the Monterey Peninsula water supply portfolio is critical to solving the region's water supply.

- Since 2001, 13 dry years and 4 critically dry years have affected the Peninsula's water supplies.
- Agricultural flows are diminished by a third when compared to past years.[2]
- Water demands are down and that is reducing municipal wastewater flows available for water recycling.[3]

The Pure Water Monterey(PWM) Expansion project as proposed by Monterey One Water (M1W) is intended to provide additional water supply, but fails to provide the reliability, resiliency and supply diversity needed to meet demand on the Monterey Peninsula under multiple probable adverse scenarios including demand variability, wastewater flow variability, and surface water supply limitations as discussed further in this memorandum.

In contrast, the resiliency and certainty of the MPWSP facility provides the ability to meet uncertain demands across multiple probable adverse scenarios, flexibility to manage supply to protect the environment, and enough water to support stated goals of safe, secure, reliable and resilient water for the Peninsula at all times.

Phase One of the Pure Water Monterey Groundwater Replenishment Project (PWM Phase One) is intended to provide up to 3,500 acre-feet per year of recycled water as a valuable part of the Peninsula's supply portfolio, but expanding the facility with the PWM Expansion means more reliance on an uncertain water source and creates an imbalance in the Peninsula's supply portfolio. Such heavy reliance on one source means more scrutiny must be placed on assessing the risks of the supply.

> **Only the Monterey Peninsula Water Supply Project provides a source that can meet the objectives of a reliable and adequate potable water supply for the Monterey Peninsula.**

Water Resource Management

CalAm is responsible for assessing the ability of water supplies to meet the demands of the community and the environment in Monterey. With that responsibility comes a need to identify potential risks to its customers' water supplies and the need to develop plans and supplies resilient to those risks. CalAm has developed the MPWSP to accomplish these objectives, ensuring the ability to protect public health and the environment on the Peninsula for the foreseeable future.

CalAm Considers Water Supplies Through Supply Reliability, Diversification, Data, and Dry Year Resiliency.

Supply Reliability – Water agencies throughout the world consider water supply reliability when developing water supply plans to account for known and unknown risks. California Water Code 10635(a) requires water suppliers to assess the reliability of supplies. Of the proposed supply projects for the Peninsula, only the MPWSP fully accounts for water supply reliability to protect the Peninsula from adverse supply conditions.

Diversification – Diversification is a foundational strategy for minimizing the risks to any kind of water supply portfolio. Even California Water Code section 10608(c) declares that diverse supply portfolios will increase supply reliability. Governor Newsom's 2020 Water Resilience Portfolio includes diversification as the first approach to address climate change in the state's water supply systems and explains that diversification "will strengthen water security and reduce pressure on river systems across the state." (Portfolio, at p. 5.) The Governor explains that local and regional entities "must reduce reliance on any one source and diversify supplies to enable flexibility as conditions change." (Portfolio, p. 17.) The MPWSP increases the diversity of the Peninsula's water portfolio by introducing a new source of raw water and reduces risk, as opposed to the PWM Phase One and the PWM Expansion, which rely on the availability of effluent treated at a centralized recycling facility to generate 51% of total supply available to CalAm's Customers.

Data – Analysis of proposed water sources and demands over the same time period is important to account for impacts such as financial downturns, drought, water restrictions, tiered rates, regulatory changes and population considerations. The MPWMD Supply and Demand Report fails to fully account for historical data and thus fails to tell a complete story by using only the past 3 or 5 years of demand data, while simultaneously using a different time range (2009-2013) for other sources. Informed decisions based on a complete picture of supply and demand and concrete data from the historic and available record can and should be made together and in the best Interest of the Peninsula.

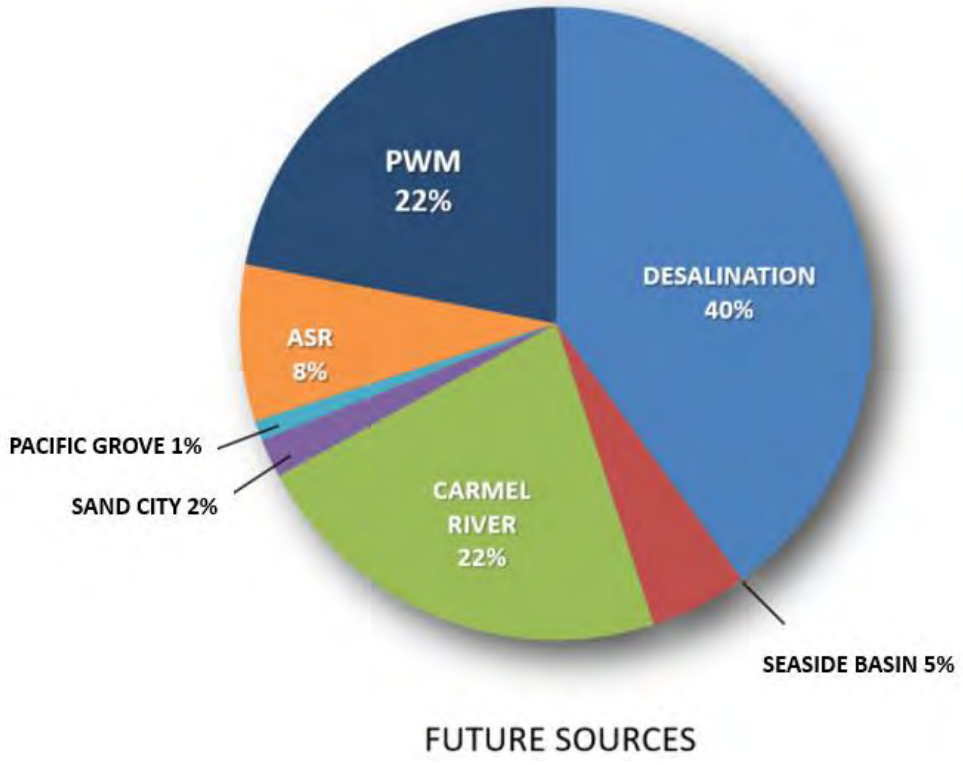
Dry Year Resiliency – Throughout an increasing percentage of the world, the western United States, and certainly California, planning for a very dry year (and a succession of dry years) is a key element to water supply planning as required by the California Water Code. The source water for the MPWSP, the Pacific Ocean, is not vulnerable to drought – and the regulatory conservation that often accompanies it – unlike the source water for PWM Phase One and the PWM Expansion. Governor Newsom's 2020 Water Resilience Portfolio specifically notes that water suppliers need to plan for deeper droughts and "develop strategies to protect communities and fish and wildlife in the event of a drought lasting at least six years. (p. 25) Only the MPWSP provides for such dry year resiliency. (Portfolio, pp. 25-26.)

Water Supply to Meet Demand

CalAm is responsible for meeting the requirements of the California Water Code for Urban Water Management Planning, which requires the assessment of the reliability of water service under multiple scenarios (normal, dry, and multiple dry years, including a repeat of the 5 consecutive historic driest years) and consideration of the reliability of water service given the combination of supplies available to it. (See Water Code §10635.) If PWM Phase One and the PWM Expansion are considered key sources of supply for the Peninsula, then the Peninsula is required to rely on production from PWM Phase One and PWM Expansion and ASR at all times to barely achieve normal year demands. Accepting the PWM Expansion as a key supply does not line up with informed and thorough engineering practices for water supply planning required by the California Water Code. (Water Code §§ 10610 *et seq.*) Figure 1 below illustrates why a diverse and balanced portfolio of water supplies is required for the Peninsula to meet the range of water demands including low optimistic demand values to the higher and more conservative demand values.

The only solution that addresses the water supply issue in a way that provides appropriate supply reliability on the Peninsula is the MPWSP. As depicted in Figure 1 below, coupled with the existing PWM Phase One and other existing sources, the MPWSP provides a robust and diversified portfolio of water supplies to address known and probable challenges such as prolonged drought conditions, limited wastewater flows, limited PWM Phase One injection, limited agricultural drain flows, flows from the Sand City Desal and possible limited flows from Aquifer Storage and Recovery (ASR).

Figure 1: Monterey Peninsula Water Supply Portfolio Diversification



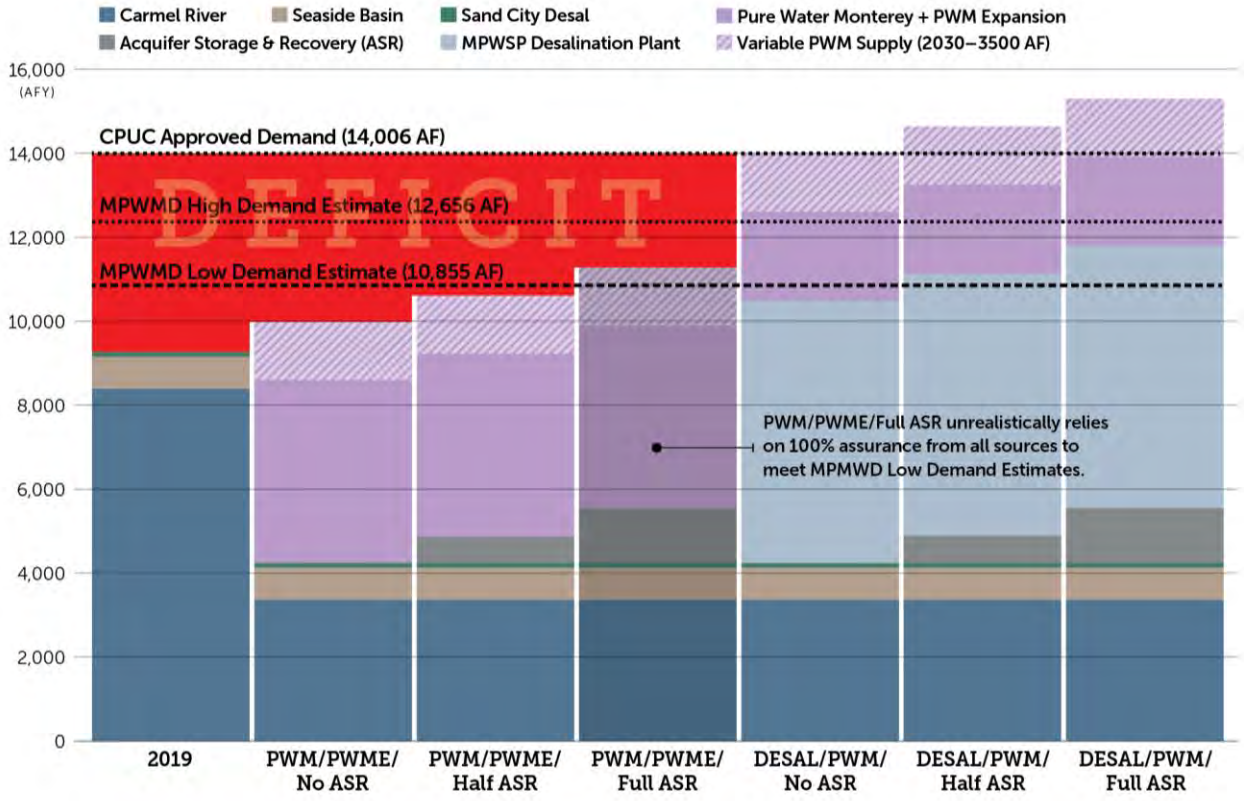
ASR build-up in particular has not been successfully demonstrated throughout the development and use of the ASR system over a 15-year period. As shown in Figure 6, included in the Appendix hereto, only once in the past 15 years has ASR achieved 1,300 AFY. As explained in Hazen's prior memo, ASR water availability is reduced to 63% in a single dry year, and even further reduced to 4% following three dry years. Therefore, ASR does not meet Water Code reliability standards (5 consecutive historic driest years) or Governor Newsom's 2020 Water Resilience Portfolio that requires consideration of a drought lasting six years.

Further, over the past 15 years, the average availability of ASR is approximately 138 AFY, far less than the 1,300 AFY assumed by MPWMD General Manager David Stoldt and WaterDM as available to meet water demand on the Peninsula. Even over the last five years, the average availability of ASR is 352 AFY, which again is far less than the 1,300 AFY assumed available by Stoldt and WaterDM. Analysis offered by Stoldt in September 2019 to the Coastal Commission and WaterDM relied on the full availability of ASR in order for the PWM Expansion to meet existing demand on the Peninsula, however, such analysis is based on the unrealistic assumption that no drought will take place between now and 2034. Such an assumption is contradicted by plain history—there has been a multi-year drought in California in virtually every decade since 1917—and as discussed above is inconsistent with applicable water planning regulations and guidance.

In addition, counting on ASR storage at 100% with limited knowledge of losses to the ocean and other basins imparts uncertainty in that supply as a continuous resource and drought mitigation strategy. In Figure 2 below, ASR volume is shown under three distinct scenarios to account for the limited volume stored over the past 15 years and these other uncertainties—No ASR, Half ASR and Full ASR. Notably, even the Half ASR scenario requires 650 AFY, which is almost double the average ASR availability over the past five years, and over five times the 15-year ASR average. When the variability of ASR is considered, the PWM Phase One and PWM Expansion do not meet the Peninsula's minimum water demands. This is one of the reasons that the California Public Utilities Commission concluded that "only in conjunction with construction of a desalination plant of some size within five to fifteen years" would the PWM Expansion be capable of providing a "sufficient and reliable water supply" for the Peninsula. (See CPUC Decision D.18-09-017, Appx. C, p. C-71.)

Figure 2: Monterey Peninsula Water Supplies to Meet Demands
Comparison of PWM Expansion and MPWSP with Variable ASR

MPWSP opponents claim that the MPWSP is not currently needed to meet existing demand projections. However, meeting even the lowest demand projections without the MPWSP requires full capacity operation of two other supplies that have yet to prove reliable and are vulnerable to high-probability risks.



Wastewater as a Source for PWM Phase One and PWM Expansion

Stoldt's characterization of the PWM Expansion as a project that can replace CalAm's existing water supplies and meet the long-term needs of the Peninsula also does not accurately and transparently account for the risks of having wastewater as a primary water supply that varies with demand and drought.[4,5] As discussed below, publicly available evidence demonstrates that wastewater cannot be relied upon as a primary water source for the PWM Expansion, and additional reliable supplies would be needed to ensure that the PWM Phase One and PWM Expansion can supply water in the amounts those projects have promised/projected.

The MPMWD Supply and Demand Report and the Supplemental EIR for the PWM Expansion focus on demands being low and use the last 3, 5 and 10 years as the basis for revised demand assumptions in CalAm's service territory. (See MPWMD Supply and Demand Report page 8, Table 3 .) MPMWD had WaterDM evaluate demands with recent data in an attempt to explain the differences in demands between estimates by CalAm and what has been observed on the Peninsula in the past 5 years.[6]

In contrast to MPMWD's and WaterDM's attempt to focus only on the most recent years to support their positions, Appendix I to the Supplemental EIR for the PWM Expansion asserts that the average wastewater treatment plant (WWTP) flows should be based on the period from 2009 to 2013 where WWTP flows were 21,764 AF, or a worse case flow of 20,090 AF based on the 2013 drought year.[7] By failing to account for the most recent years since 2013, Appendix I substantially overstates the available wastewater flows that could potentially be used as source water for recycled water projects on the Peninsula.

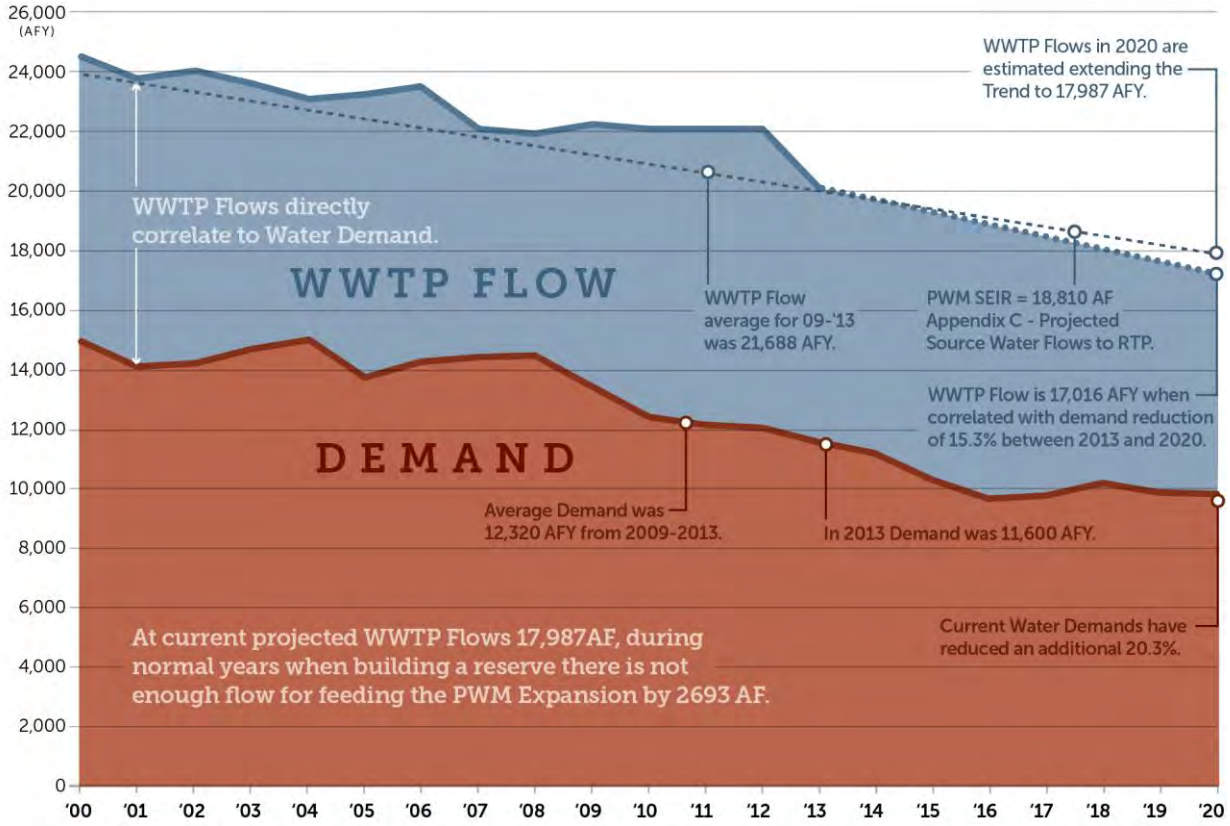
The approach taken in Appendix I ignores that WWTP flows correlate to water demand/use, which has continued to decrease on the Peninsula due to conservation and other factors. Based on available data, Figure 3 below depicts an overall downward trend in WWTP flows that is consistent with the observed decline in water demand on the Peninsula. The EIR from 2016 for PWM Phase One shows WWTP flows trending downward from approximately 25,000 AF in 2000 to approximately 20,000 AF in 2013.[8] A separate appendix to the Supplemental EIR (Appendix E) shows further reduced WWTP flows to 18,810 AF (16.79 MGD) .[9] However, this number was not utilized in the Supplemental EIR to calculate available WWTP flows as source water for either PWM Phase One or PWM Expansion, which is a significant error.

Moreover, additional data collected by M1W and presented to its Ad-Hoc JPA Revision Committee on July 20, 2020, indicates that since the beginning of 2020 WWTP flows are yet again further reduced to 17,980 AF or 16.05 mgd, as specified in Exhibit 5.[10]

Figure 3 shows that the WWTP Flows correlate with demand reductions on the Peninsula. For example, as shown in Figure 3, since 2013 demand has declined 20.3% when compared to the average demand from 2009 to 2013. Additionally, 2013 drought year demand compared to current demand, represents a 15.3% reduction.[11] Calculating the WWTP flows over these same time periods using these respective reduction percentages (20.3% and 15.3%), a conservative estimate of current average WWTP flows is 17,296 AF to as low as 17,016 AF, respectively. An alternative method of determining todays WWTP flows based on a linear trend of the existing flow data indicates that current flows are 17,987 AF, as shown in Figure 3. All of these WWTP flow estimates, which are based on a more complete picture of recent data, are much lower than those used in the SEIR Appendix I -Tables 8 to 11. As result the SEIR substantially overstates the availability of WWTP flows available as source water available to PWM Phase One and the PWM Expansion.

Figure 3: Reduced Demand = Reduced WWTP Flow (=Reduced Recycled Water Supply)

Monterey Wastewater Flows shown in the SEIR Appendix I-Table 8,9,10 (Normal Yr) and Table 11(Dry Yr) use data from 2009-2013 which does not represent the current WWTP Flows. The graph below estimates current WWTP flows in 2020 based on demand correlation from MPWMD Supply and Demand Report-Fig 1.



SEIR Appendix I -Tables 8 to 11 have been updated in Table 1 below to reflect more realistic estimates of WWTP flows, along with minor reductions to Reclamation Ditch flows in the Surface Waters category based on the analysis provided in the next section of this memorandum demonstrating these flows also are expected to be reduced compared to amounts claimed in the SEIR. When realistic estimates of WWTP flows are utilized, it becomes clear, the MPMWD Supply and Demand Study and the SEIR failed to assess how reduced WWTP flows would adversely affect production of the PWM Phase One or the PWM Expansion. The following Table 1 provides a comparison of Supply and Demand from SEIR Appendix I - Tables 8 to 11 with updated WWTP flows and Reclamation Ditch flows to show the impact of these expected reductions on the water available to use for the CSIP, PWM Phase One, PWM Expansion, and the Regional Urban Water Augmentation Project (RUWAP). In all conditions there is a supply deficit.

TABLE 1 – IMPACTS OF REDUCED WWTP FLOW ON TABLES 8 – 11 FROM SEIR APPX. I

	Original SEIR Appx. I Data				Updated Appx. I Data			
Supply and Demand *in Acre-Ft*	**Table 8**	**Table 9**	**Table10**	**Table11**	**Table 8** Updated	**Table 9** Updated	**Table10** Updated	**Table11** Updated
SUPPLY								
WWTP Flow[a]	21764	21764	21764	20090	17987	17987	17987	17016
Domestic Flows	82	82	82	82	82	82	82	82
New Sources[b]	2579	2579	2579	2430	2579	2579	2579	2430
Surface Water[c]	3721	2052	2041	2840	3641	1972	1961	2304
TOTAL	**28146**	**26477**	**26466**	**25442**	**24289**	**22620**	**22609**	**21832**
DEMAND								
CSIP and CSIP Well	17227	17227	17227	22619	17227	17227	17227	22619
PWM	4320	4320	4320	2963	4320	4320	4320	2963
PWM drought	248	248	0	0	248	248	0	0
PWM Expansion	2778	2778	2778	2778	2778	2778	2778	2778
RUWAP	741	741	741	741	741	741	741	741
TOTAL	**25314**	**25314**	**25066**	**29101**	**25314**	**25314**	**25066**	**29102**
Annual Supply Excess[d]	**2833**	**1164**	**1400**	**-3659**	**-1025**	**-2693**	**-2457**	**-7270**

Notes:

a Updated WWTP Flows based on Figure 2 Trends and calculated Dry Year from Demand Correlation

B New sources from Table 8-11

c Surface water updated by reducing Reclamation Ditch Values from USGS 10yr average.

d Annual supply excess calculated from Supply minus Demand. A negative value means a supply deficit.

Table 2 represents a flow balance to compare SEIR Appendix I Tables 8 to 11 compared to updated Table 8 to 11 with updated WWTP flow and Reclamation Ditch waters from Figure 3. Based on the flow balance for the updated Normal/Wet Year when building a reserve "Table 9 Updated column" would allow for 84 Acre-Ft to be fed to the PWM Expansion. The available supply for the Dry Year, as shown in the "Table 11 Updated" column, demonstrates that there is no flow available for PWM Phase One and PWM Expansion during a dry year, and flow for RUWAP would have to be taken as a water right to serve those flows. All scenarios analyzed demonstrate that there is little to no WWTP flow available to PWM Expansion. As a result, PWM Expansion would not have sufficient source water to produce the promised supply of 2,250 AFY.

TABLE 2 – IMPACTS OF REDUCED WWTP FLOW ON SUPPLY FLOW BALANCE

Flow Balance – *in Acre-Ft*	**Table 8**	**Table 9**	**Table 10**	**Table 11**	**Table 8** Update	**Table 9** Update	**Table 10** Update	**Table 11** Update
Flow to CSIP + CSIP Well Pumping	17227	17227	17227	22619	17227	17227	17227	21091[e]
Flow to PWM[f]	4320	4320	4320	2963	4320	4320	4320	0
Flow to PWM Drought	248	248	0	0	248	248	0	0
Flow to PWME[g]	2778	2778	2778	2778	1753	84	321	0
Flow to RUWAP	741	741	741	741	741	741	741	741
Actual Use Flows[h]	**25314**	**25314**	**25066**	**29101**	**24289**	**22620**	**22609**	**21832**
Flow to ASR[i]	5950	5950	5750	4650	5120	3768	3759	0
Concentrate Flow to Outfall[j]	1536	1536	1489	1232	1342	1025	1023	141
Deficit To ASR	**0**	**0**	**0**	**-1100**	**-830**	**-2182**	**-1991**	**-4651**

Notes:

e CSIP and CSIP Well Flows from Table 8-11 Demand. Reduced CSIP in "Table 11 Updated" by taking Water Right
f Revised flow to PWM down for Table 11 to match actual Use to supply
g Flow available to PWME is calculated based on maintaining flow to PWM and RUWAP and to Concentrate
h Actual Use is calculated to confirm balance with Supply
i ASR Flow is from the AWT product water flow without RUWAP
j Concentrate flow is 19% of Flow for PWM, PWM Drought, PWME, and RUWAP
k Deficit to ASR based on Flow to ASR minus the PWM AND PWME DEMAND from Table 1

The above analysis of the WWTP flows demonstrates the need for a very thorough and transparent analysis of the current WWTP flows and the impact to the reliability of PWM Phase One and PWM Expansion. At present, there appear to be significant limitations on the availability of source water from WWTP Flows for the PWM Expansion.

Surface Water Flow Analysis

As discussed above, another area that requires consideration is the flow available to the PWM Phase One and PWM Expansion from the proposed Surface Water supplies. The Reclamation Ditch flows were analyzed originally in the Schaaf & Wheeler Agricultural Ditch Yield Study, March 2015 based on 2006-2014 data, and were updated in the SEIR Appendix I Tables 8-11. A detailed analysis of the Reclamation Ditch flows using the most recent USGS data reveals that average flows are lower than indicated in Schaaf & Wheeler and the SEIR Appendix I. The following Table 3 below shows the average monthly flow according to USGS for the last 5 years, 10 years and 2013 as compared to the values in the SEIR Appendix I Tables 8 to 11.

Table 3: Reclamation Ditch Flows[12]

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Normal Years (Ac-ft)												
USGS 5 yr Avg minus Instream	>360	>360	>360	340	123	74	83	77	35	108	>360	>360
USGS 10 yr Avg minus Instream	>360	>360	>360	356	59	93	98	96	45	129	>360	>360
Table 8	70	66	70	106	79	99	113	109	72	65	89	76
Table 9	0	0	0	106	79	99	113	109	72	11	0	0
Table 10	0	0	0	106	79	99	113	109	72	0	0	0
Dry Years (Ac-ft)												
USGS 2013(Same Jan/Feb as Tbl11)	0	0	42	4	0	28	53	57	23	16	43	0
Table 11	0	0	70	106	79	99	113	109	72	65	89	0

Note: >360 is when diversion flows above 6 cubic feet per second (CFS) after subtraction of the instream of 2 CFS.

Table 3 shows that for the months of May through September there is a reduction of average flow per month of 16% between the Table 8, 9 and 10 compared to the USGS flows for a 10 year comparison. Table 3 also shows that for the months of June through September there is a reduction of average flow per month of 16% between the Table 8, 9 and 10 compared to the USGS flows for a 5 year comparison. In addition, using the USGS flows for 2013 with similar assumptions for December-February, there is a 67% reduction

in flow as compared to the predicted dry year in SEIR Table 11. As a result, the SEIR overstates the availability of Reclamation Ditch flow potentially available as source water for PWM Phase One and the PWM Expansion. Again, in this case the available flow to the PWM Phase One and the PWM Expansion should be reconsidered and revised accordingly.

The Schaaf & Wheeler report for the Reclamation Ditch indicates that agricultural flows are continuing to drop, and have dropped 1/3 in recent years. This would likely mean there are reductions in the monthly flows from Blanco Drain as well as the Agricultural Wash Water below what is projected in the SEIR. The flows for these two proposed sources were not updated beyond what was provided in the original Draft EIR for the PWM Phase One in 2016 in Appendix B – Source Water Assumptions Memorandum dated March 26, 2015. Both of those data sources in the SEIR Appendix I Tables 8 through 11 are based on similar dated information from 2014. If the flows from the Blanco Drain and Agricultural Wash Water are considered to have similar percentage reductions during the April to October period as Reclamation Ditch flows, then there are likely conditions where the actual flows available may not be able to supply the PWM Phase One let alone the PMW Expansion.

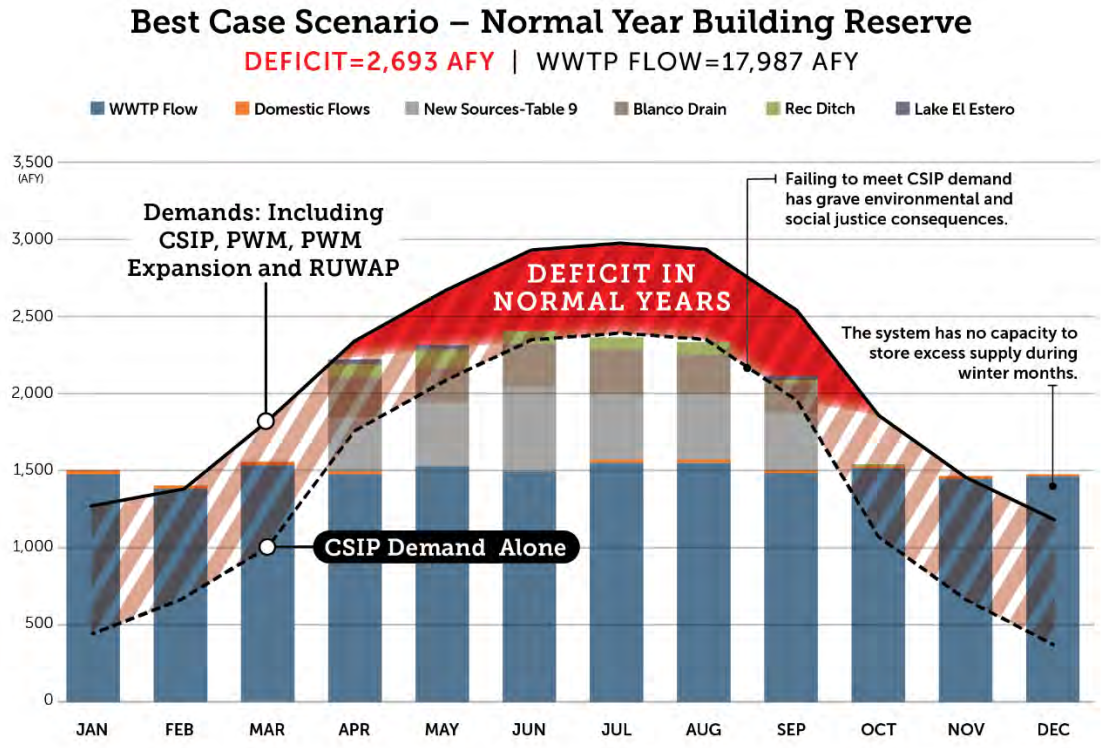
Supplies and Demands

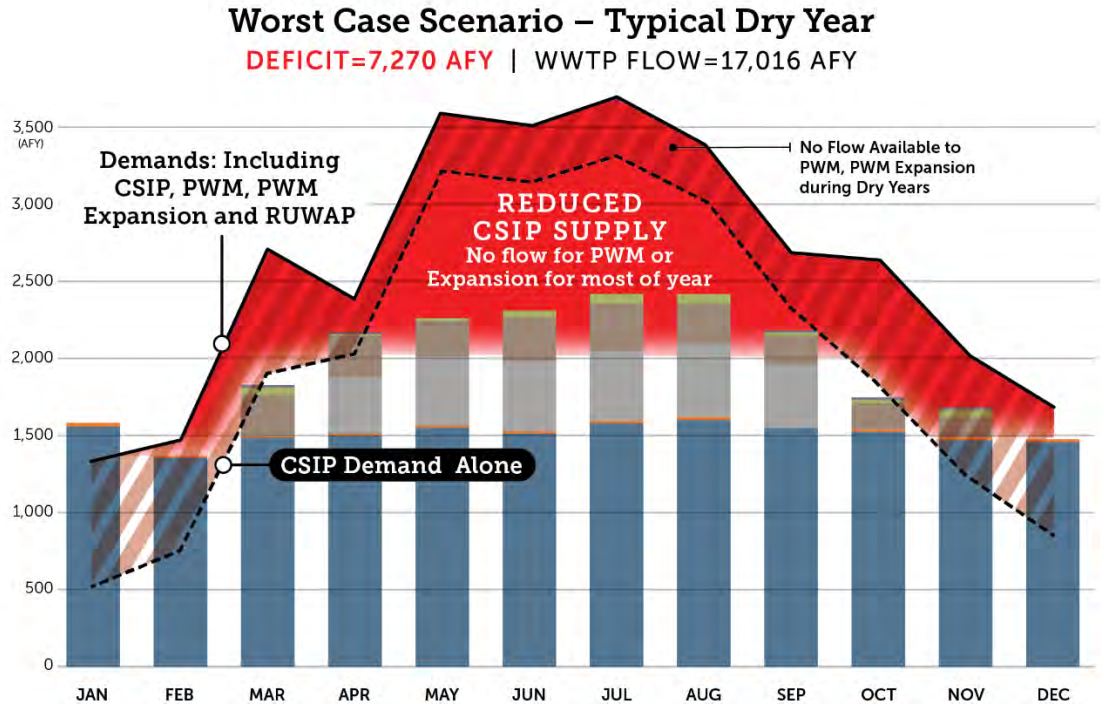
The combined analysis of supplies and demand illustrated in Figure 4 below (Normal/ Wet Year Building ASR) and (Dry Year) are based on monthly supply and demand from SEIR Appendix I-Tables 9 and 11 with data updated as noted in Table 1 above. Figure 4 shows that when lower WWTP Flow from Figure 3 and lower Reclamation Ditch flows from Table 3 and all other available sources are accounted for, that demand for those specific source waters far exceeds available supplies in Normal/Wet Years and in Dry Years.

Table 2 above shows that in Normal Years Building a Reserve (Table 9 Updated Column), there is potentially only 84 AF available from all of the available supplies for the PWM Expansion. Then in Dry Years, Table 2 shows there is actually no flow available from all of the supplies for the PWM Phase One or the PWM Expansion assuming water is still supplied to the CSIP with some flow taken from CSIP as a water right (as described in the Final Supplemental EIR-3.3 Master Response #3: Comments on Water Supply and Source Water Availability) to serve the Regional Urban Water Augmentation Project (RUWAP). Based on this analysis, PWM Phase One and PWM Expansion would not be able to provide their promised product water to the Peninsula during dry years, which are 3,500 AFY and 2,250 AFY, respectively.

Figure 4: Impacts of Demands Exceeding Limited Supplies

Best Case Scenario based upon SEIR Appendix I-Table 9 with revised WWTP Flows (Updated Table 9) shows a supply deficit such that 84 Acre-Ft is available to PWM Expansion. The Worst Case Scenario based upon SEIR Appendix I – Table 11 Dry Year with revised WWTP Flows (Updated Table 11) shows a deficit with Zero flow available to PWM, PWM Expansion and reduced flow to CSIP.





The demand assumptions in Figure 4 use the same values in SEIR Appendix I Tables 9 and 11 for CSIP, PWM Phase One, PWM Expansion and RUWAP which are the same values used in Table 1 above.

As shown in Figure 4 above there is a demonstrable water deficit. Monthly supply of water as compared to demand even when the additional proposed supplies of Agricultural Wash Water, Urban Runoff, Blanco Drain, and Reclamation Ditch are included does not satisfy the demand during a significant portion of the year – particularly during the summer months.

Water Supply Deficit for either PWM Expansion or CSIP

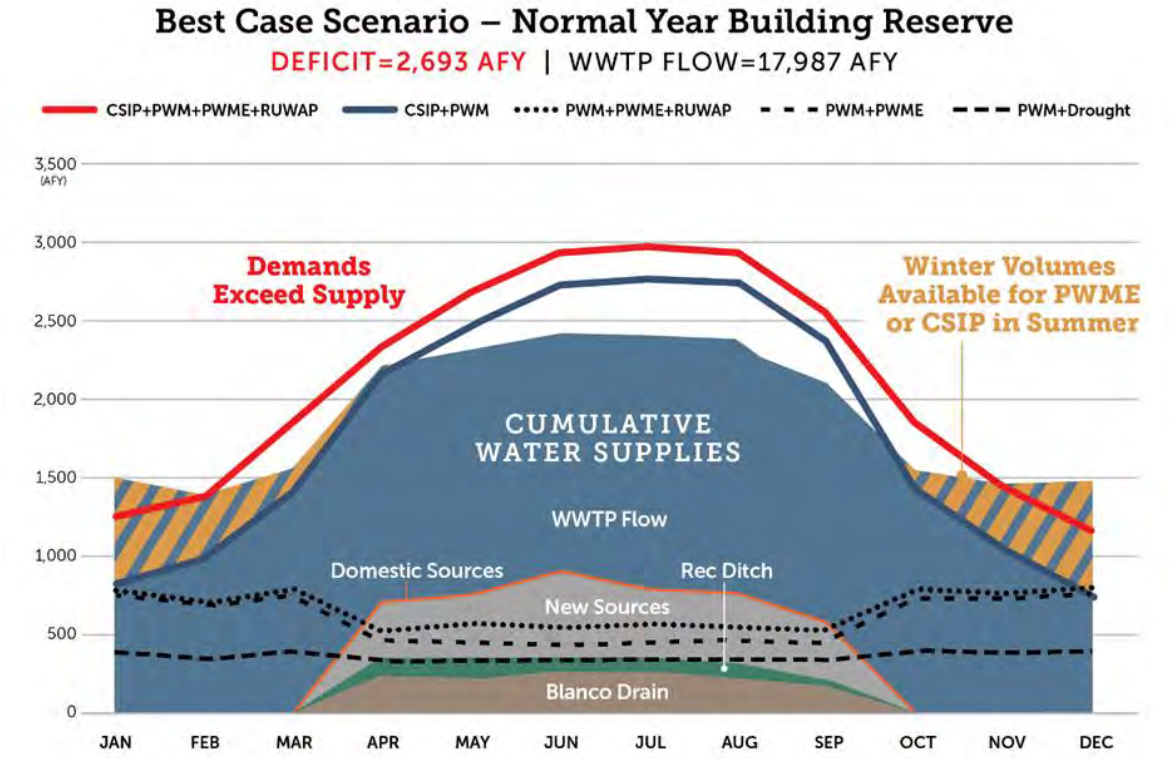
Without an adequate supply of source water, the Peninsula is placed in a difficult position of whether to supply water to the PWM Expansion or the CSIP system, which will impact the environment long term. Although there are water rights for the water that MWMWD proposes to use to supply the PWM Expansion, there are overstatements of the actual flows that need to be addressed. Protecting public health and the environment requires determining the true volumes available for the project and whether those flows can be counted on day in and day out for supply of water to the Peninsula.

Figure 5 closely correlates the cumulative water supplies to the respective cumulative demands. The water supplies are shown in the order of use with the PWM Phase One using Blanco Drain and Rec Ditch. Based on agreements, such as the Amended and Restated Water Recycling Agreement between the M1W and the Monterey County Water Resources Agency, those flows are unavailable to the PWM Expansion. Then New Sources are added to serve as the supplies for the PWM Expansion according to the priorities and water rights as defined in SEIR Appendix M. The supplies are cumulative by month. The graphs are based on SEIR Appendix I -Table 9 and 11 with the WWTP and Reclamation Ditch flows updated. These graphs include Lake El Estero and AWW, which are now not included in the water supply as noted in SEIR Appendix M as a best-case supply scenario (SEIR Appendix M-Page 5).

The demands in Figure 5 are each shown cumulatively for PWM, then PWM+PWME, then PWM+PWME+RUWAP, and ultimately PWM+PWM+RUWAP and CSIP. There is a separate blue line of PWM+CSIP to show a normal year today without the PWM Expansion. That line is necessary to determine available volume in the winter.

Figure 5: Supply Available for PWM Expansion or CSIP (Not Both)

Best Case Scenario based upon SEIR Appendix I-Table 9 with revised WWTP Flows (Updated Table 9) shows winter volume available for PWM Expansion or if injected could be used for CSIP in the summer. The Worst Case Scenario is based upon SEIR Appendix I – Table 11 Dry Year with revised WWTP Flows (Updated Table 11) shows there is near Zero flow available for the PWM Expansion in winter and significant reduced flow to CSIP.



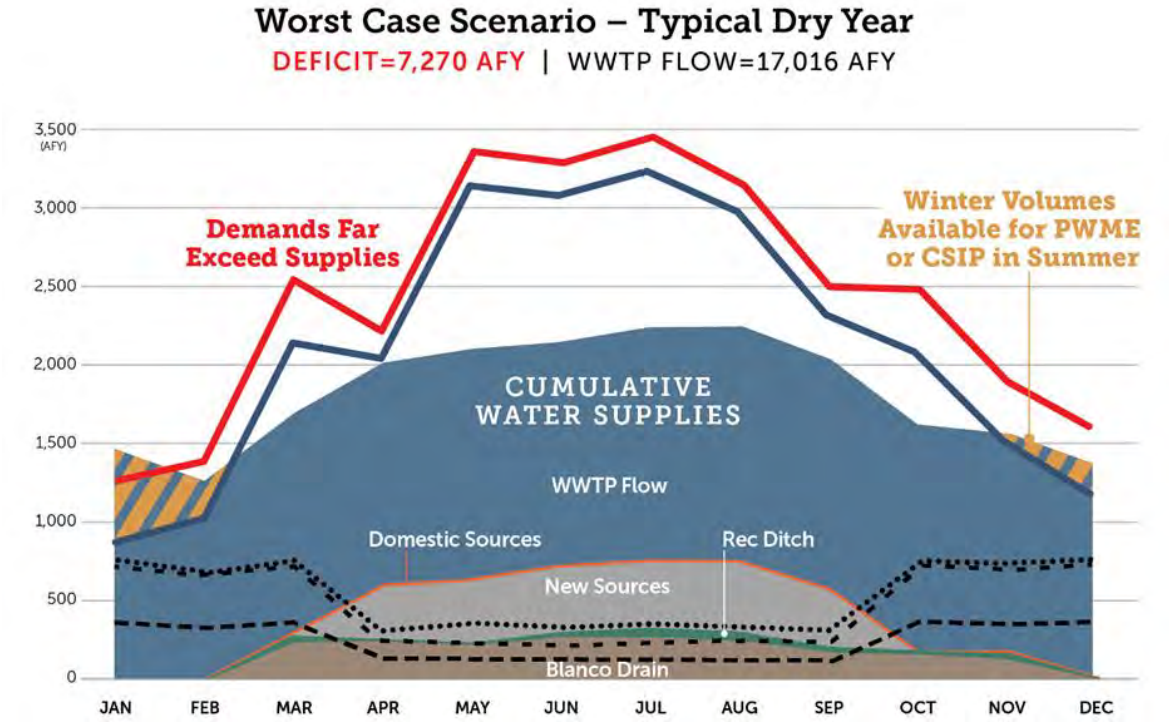


Figure 5 demonstrates that in normal years, excess winter effluent that would ultimately go to the Ocean can be used or it is otherwise wasted. However, with current CSIP demand the system will always be in a deficit. If CSIP could capture winter flow (such as the proposed but not implemented improvements to the Salinas Valley Reclamation Project (SVRP) (SEIR Master Response #3 p. 3-20, SEIR Appendix M- Page 5)) to run SVRP and CSIP at lower flows without using wells in conjunction with water storage or groundwater infiltration, then excess winter water could be available for use in the summer for CSIP. Implementing such a storage program would be a sizable new development project and would require a significant investment to secure and develop the necessary property where the storage program could be implemented (such as a reservoir). Further, for CSIP and CSIP well demands in SEIR Appendix I Tables 9-11 to be met, this would require all of the other New Water sources, Blanco Drain and Reclamation Ditch as well to meet the combined CSIP and CSIP well flows now and especially in dry years.

CSIP flows are shown in Figure 5 based on the SEIR Tables 8-11 including the CSIP well pumping. It should be noted that the improvements to SVRP have not been completed and therefore, the CSIP must rely on well pumping.

It should be highlighted that the flows shown in SEIR Appendix I for Tables 8-11 were not updated to match the assumptions in Final SEIR Appendix M. If the flows shown in Tables 8 to 11 were updated to account for the assumptions made in Final SEIR Appendix M, then the water supply deficit depicted in Figures 4 and 5 above would be even greater. For example, the Agricultural Wash Water and Lake El Estero were assumed to be unavailable in Final SEIR Appendix M. Moreover, Reclamation Ditch Flows were not reduced as noted in Table 3-B in the Final SEIR Master Response #3.

In addition, the SEIR Master Response #3 Table 3-A and SEIR Appendix M Table 2 both support the reduced flow of wastewater highlighted in Figure 3 above. One example is the use of 5,811 AFY as the Secondary Effluent available from the Outfall which is 3,000 AFY less than the estimated amount in Table 8, 9 and 10 of the SEIR Appendix I of 8,809 AFY. Assuming this is the updated Outfall flow, this would correlate to roughly 18,810 AFY of WWTP flow in 2018. Again, this was not highlighted in Source Water Availability, Use and Yield in SEIR Appendix I and as discussed earlier in this memorandum the regional wastewater flows have reduced since then. When these reductions are accounted for, the supply deficit will only increase. As a result, the technical analysis of the PWM Expansion has greatly overstated the reliability and availability of the source water. It is not feasible to achieve the PWM Expansion's projected water deliveries of 2,250 AFY based on the proposed water sources.

Responding to MPMWD and Water Demand Analysis

CalAm is responsible for assessing water demand on the Peninsula and continues to evaluate the impacts from climate change, regulatory drivers, growth in residential and commercial demands, impacts from water rates and restrictions imposed, and considers a future when the MPWSP is in place and how available water will shift demands. CalAm is contributing to conservation programs, participating in cutting edge research on leakage to apply the latest approaches to loss to their system.

All of this is done to ensure their customer demands are met, the environment is protected, and that water is not wasted. In performance of these duties, CalAm is continuing to assess the risks associated with meeting average demands, maximum day demand and peak hour demands. Hazen has participated in the studies with CalAm on system loss and is providing water resources planning services.

Hazen and Sawyer response to comments from MPMWD and WaterDM regarding prior memorandum:

Hazen and Sawyer is a national consulting engineering firm with a focus on all aspects of water supplies, planning, treatment and demands. We have local and national experts working on evaluation of water supplies and demands. It should be noted that WaterDM is a firm that collaborates with Hazen and Sawyer on large water supply projects and is currently a team partner for projects on the East Coast.

MPWMD and WaterDM reviewed Hazen's prior memorandum dated January 2020 and point to many areas that they consider deficient, in error or misleading. Hazen disagrees with this claim. The Hazen memorandum as written highlights the substantial concern with assuming lower water demands on the Peninsula with no discussion of range of uncertainty. We feel the higher demands are warranted to provide a buffer for uncertainty. WaterDM and MPMWD have been unwilling to address the risk of the potential demand increases on supply. For supply to the PWM Expansion, these entities have avoided updating the flow data with transparent information on the proposed supplies.

WaterDM does not address variability or uncertainty of supplies in their report to a level to assess the risk of the supplies to meeting the lowest projected demands that they developed.

Hazen asserts that supply and demand planning in an area like the Monterey Peninsula that is dependent on new sources of water must look at the risk and must apply an appropriate level of reliability and resiliency as good engineering principles. MPMWD has not addressed the current supply as required by the California CWC Section 10635 for normal, dry and multiple dry years to prove the resilience of that supply. Our analysis highlights the need for more analysis with recent data including consideration of historical impacts to supply. This also gets to the heart of our prior memorandum.

Current codes and regulations as well as their interpretation are important to establishing a reliable and resilient water supply across a range of likely supply and demand conditions. MPMWD focused on the interpretation of Maximum Day Demand and Peak Day Demand versus annual demand which is well understood, but avoided the topic of assessing the long-term historical data in determining future demands and not just picking data to fit a narrative.

In addition, interpreting the latest revisions to American Waterworks Association (AWWA) M50 Manual to say that MPWMD can use 3 or 5 years of data when there is over 20 years of data available is not in line with the intent and spirit of the latest version of that document which Hazen participated in developing.

Hazen and Sawyer had the MPMWD Supply and Demand Report reviewed independently by Hazen's nationally recognized demand expert, Dr. Jack Kiefer. He noted: "*There is not a standard or minimum amount of empirical rigor formally promulgated, which leads many to focus on simple averaging and story-telling instead of modeling cause and effect and then using official economic forecasts for evaluating and predicting growth. In addition, it is seldom when you see uncertainty explicitly accounted for or at least addressed which detracts from a higher-level objective of identifying, reducing and mitigating risks.*"

Hazen's intentions with our comments on MPWMD's analysis are consistent with that objective – a desire to see the Water Supply Solutions for the Monterey Peninsula truly evaluated and the risks of the water supply mitigated.

(Continued next page)

The demand analysis performed by WaterDM assumes that existing water conservation measures will result in increased conservation without implementing more stringent measures, such as use moratoriums and water rationing. CalAm has invested heavily in Conservation Programs as well as paying for research into water loss and loss detection and mitigation strategies in an assertive effort to minimize the impact to the area in the absence of a water supply solution meeting the basic requirements noted herein. WaterDM and MPMWD do not acknowledge that the MPWSP was designed to avoid the need for further implementation of stringent measures, like moratoriums and water rationing. Those types of measures may be necessary to achieve the demands that WaterDM and MPWMD are projecting.	**MPMWD's response** to the Hazen memorandum regarding ASR, states that there is "no immediate present-day demands" for the PWM Expansion flow. If the PWM Expansion is the backup project to satisfy the CDO, as noted in the SEIR (Final SEIR Page 1-1), to supply water if MPWSP is not available then the water demand today would require all of that flow and flow from ASR that is not available. **MPMWD references** multiple times the SEIR Appendix I-Tables 9 through 11 and states "the annual use of the new sources exceeds the annual AWPF demands." The SEIR documents however do not provide recent flow data as a basis for the claim that the multiple sources of water in the Appendix M of the SEIR actually available to the PWM Expansion. It highlights those flows are from assumptions and flow balance calculations. As noted herein, there is a need to assess the current water supplies with recent data from the water sources to fully validate that statement.	To assume that paper water is presently available without evaluating actual flow data is a significant error. **The WaterDM Supplemental Study maintains the same errors at the first WaterDM Study.** The water projections in the WaterDM Supplemental Study remain unreasonable, including an over estimation of the availability of ASR and PWM Phase One. Likewise, the WaterDM Supplemental Study understates demand on the Peninsula and overlooks M1W's July 20, 2020 report that indicates since the beginning of 2020 WWTP flows were reduced to 17,980 AF or 16.05 mgd. Nonetheless, meeting even the lowest demand projection in the Supplemental Study is unrealistic without the MPWSP and would require full capacity operation of the PWM Phase One and the PWM Expansion, supplies that have yet to prove reliable and are vulnerable to high-probability risks.

Recommendations and Conclusions

This memorandum is based on extensive analysis and a thorough review of the MPWMD Supply and Demand Report, the WaterDM Study, the Supplemental EIR for the PWM Expansion as well as other supporting documents. The following recommendations and conclusions are offered to the California Coastal Commission to consider as it evaluates the MPWSP and considers the feasibility of the PWM Expansion:

1. MPWMD Supply and Demand Report and SEIR for the PWM Expansion put the Peninsula in jeopardy of not having water available for meeting current demands with no recognition and accommodation for future uncertainty within the supplies proposed. (Refer to Figure 2).

2. MPWSP is the only currently proposed and feasible solution that provides safe secure reliable and resilient supply for a diversified portfolio for the Peninsula. (Refer to Figure 2).

3. The water supplies proposed for the PWM Expansion need further analysis with recent flow data to assess that water is actually available. Even if it is assumed that MPWMD has sufficient water rights to the source water for the PWM Expansion, which we understand it does not, holding adequate water rights will not actually secure water for the PWM Expansion if there is not actual water available to treat. (Refer to Figure 3).

4. The complex water supply management strategy to prioritize water supplies with limited historical flow information is a risk that must be considered in evaluating flows used for ensuring potable water supplies.

5. There is a deficit in water that will be available to the PWM Expansion when considering todays wastewater flows and Reclamation Ditch flows based on the most recent available data. Figure 4 highlights the deficit in supplies available to meet demands of PWM Phase One , CSIP, RUWAP and PWM Expansion.

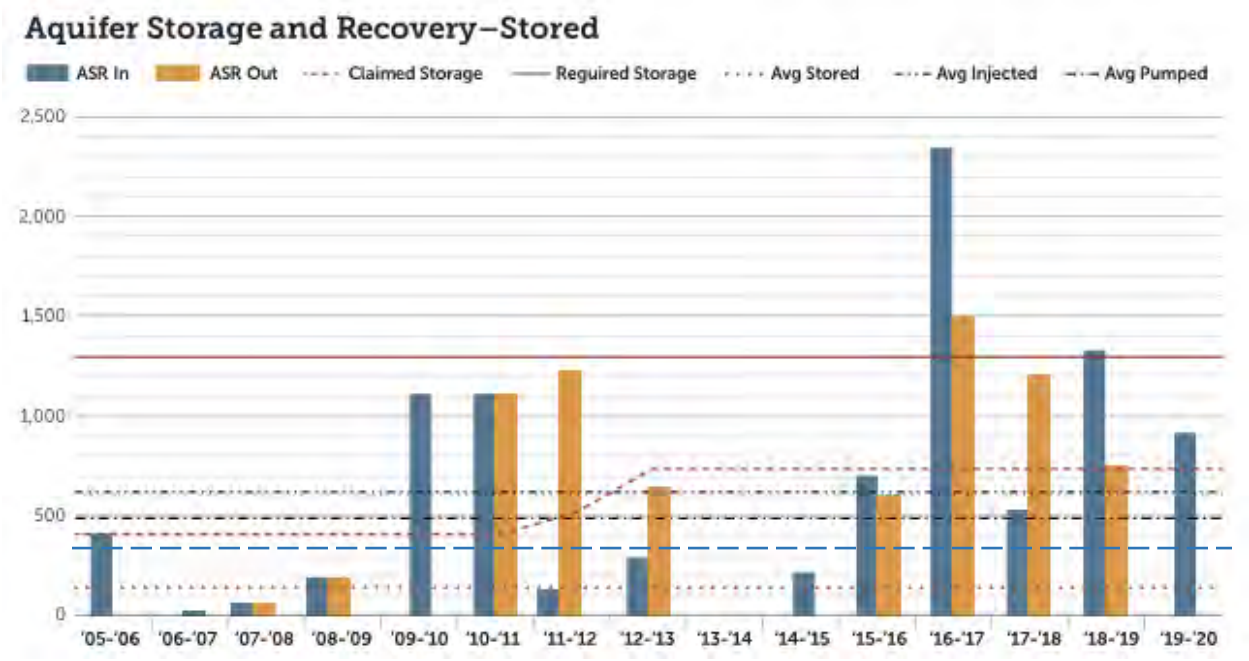
6. Assuming that there are adequate water rights for the water supplies that MPMWD proposes to supply the PWM Expansion, the SEIR and supporting studies overstate the actual flows available for the PWM Expansion. The true flow available to the PWM Expansion needs to be addressed to determine the true volumes available and to determine if those flows can be counted on day in and day out to supply the Peninsula. Based on the proposed supplies as studied to date, PWM Expansion appears infeasible.

7. The PWM Expansion should be reevaluated based on updated and accurate flow data and demands such as CSIP and PWM. Current flows even in best of water supply cases shows that CSIP will always be in a deficit. The impact of the CSIP deficit should be evaluated to avoid unintended environmental impacts if seawater intrusion is not mitigated by CSIP flows.

Appendix

Figure 6 represents the current Aquifer Storage and Recovery program over the past 15 years in operation. Figure 4 shows the average annual injected and annual average pumped volume. The average stored volume annually over 15 years is 138 acre-ft. Over 15 years there is only 700 acre-ft claimed as storage yet the MPMWD Supply and Demand Report indicates they can store 1,300 acre-ft per year. There are only two years the system has achieved more than 1,300 acre-ft into the aquifer. The limited average storage coupled with the injection limitations being experienced at PWM Phase One means these supplies are not yet reliable to be considered as a source that CalAm or any other public agency.

Figure 6: Aquifer Storage and Recovery



Figures 7 and 8 are provided as further information for Updated Tables 8 and 10 to highlight that in all conditions, there is a flow deficit with updated WWTP and Reclamation Ditch Flows. In the above document, Best Case and Worst Case were used to keep the discussion simple and direct. There is a flow deficit in all conditions and there is a need to update the relevant calculations with recent flow data to give an accurate assessment of supply and demand in a clear and transparent way.

Figure 7: Supply Deficit – SEIR Appendix I - Updated Table 8

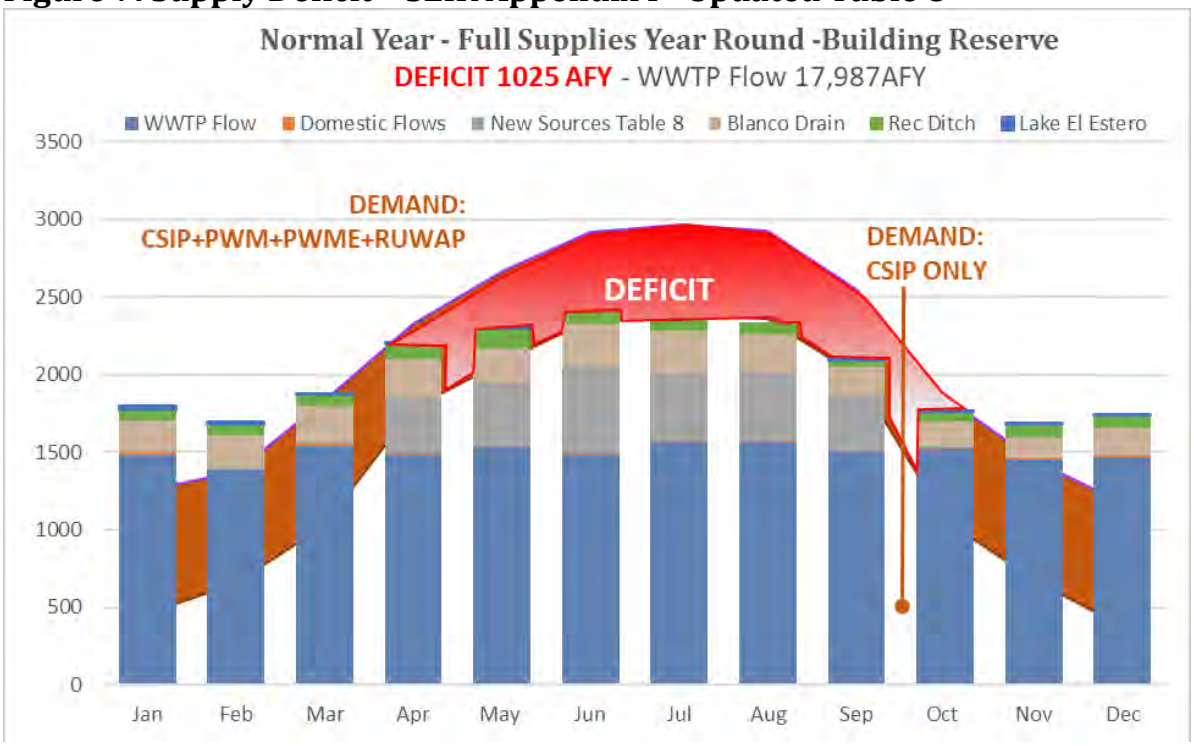
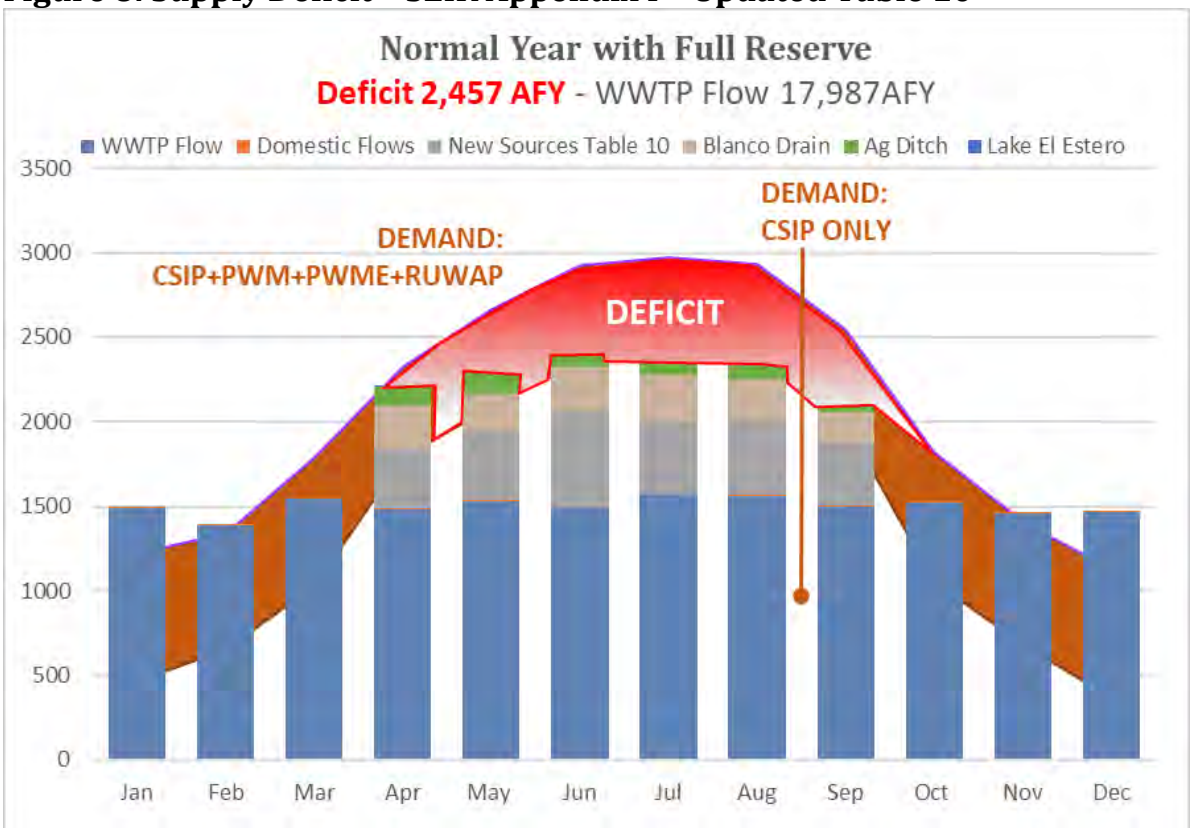


Figure 8: Supply Deficit – SEIR Appendix I – Updated Table 10



References

[1] Governor Gavin Newsome's 2020 Water Supply Portfolio – Executive Summary-Page 1

[2] PWM Phase One 2016 Draft EIR Appendix P-Reclamation Ditch Yield Study - Page 12

[3] PWM Expansion Supplemental EIR, April 2020 – Main Body, Page 3-1

[4] PWM Expansion Final Supplemental EIR, Appendix O, Supply and Demand for Water on the Monterey Peninsula, March 13, 2020. Page 20

[5] PWM Expansion Supplemental EIR, April 2020 – Main Body, Page S-1

[6] Exhibit 4-B Expert Report and Recommendations of Peter Mayer, P.E. Regarding Water Supply and Demand in the California American Water Company's Monterey Main System, prepared for The Marina Coast Water District, April 21, 2020 page 26

[7] PWM Expansion Supplemental EIR, April 2020, Appendix I – Source Water Availability, Yield, and Use Technical Memorandum, Tables 8-11.

[8] Final PWM Phase One 2016 EIR Consolidated – Jan 2016 - Volume I - Figure 2-9 Historic Regional Treatment Plant Flows

[9] Supplemental EIR, April 2020, Appendices to the M1W Draft Supplemental EIR 11-7-2019 -Appendix E - Water Quality and Statutory Compliance Report-Appendix C – Projected Monthly Flows of Source Waters to the Regional Treatment Plant Influent

[10] M1W Adhoc Committee Meeting, July 20, 2020 supporting documents.

[11] PWM Expansion Final Supplemental EIR, Appendix O, Supply and Demand for Water on the Monterey Peninsula, March 13, 2020, Page 7 [Figure 1 – Annual Water Production for Customer Service (Demand) Last 21 Years]

[12] USGS Website - https://waterdata.usgs.gov/nwis/uv?site_no=11152650

EXHIBIT 1

Jack Kiefer, PhD Resume

Hazen and Sawyer

Water Resources Expert

Jack C. Kiefer, PhD

Senior Associate

Dr. Kiefer is an economist and geographer specializing in multiple consulting areas of water resource economics and planning, econometrics, and integrated water demand and supply planning and management.

Education

PhD, Geography, Southern Illinois University

MA, Monetary and Development Economics, Southern Illinois University

BA, Economics, Southern Illinois University

Areas of Expertise

- Water Resources Planning
- Economic Analysis
- Econometrics
- Water Demand Forecasting
- Impact and Process Evaluation
- Risk and Uncertainty Analysis
- Water Supply Reliability Planning

Experience

- 30 total years
- 13 years with Hazen

Professional Activities

American Water Works Association

American Water Resources Association

Prior to joining Hazen and Sawyer, Dr. Kiefer led CDM's Water Economics group and was a Lead Practitioner in the area of Water Resources. Before joining CDM, Dr. Kiefer directed Planning and Management Consultants, Ltd.'s Water Resources Research program and its five business service lines of Integrated Water Demand and Supply Planning, Resource Economics and Quantitative Analysis, Navigation Analysis, Military Resources Planning and Environmental Planning.

Dr. Kiefer is an expert in forecasting the demand for potable water. He has performed numerous analyses of water demand, including the development of long term water demand forecasts for some of the largest water utilities in the United States, including the Metropolitan Water District of Southern California, Tampa Bay Water, and San Diego County Water Authority. Dr. Kiefer is also an expert in conducting empirical evaluations of demand management programs. He has led water conservation studies for large utilities in the Southwest and demand management plans for Tampa Bay Water, the City of Phoenix, and New York City. He has also served as principal investigator on several Water Research Foundation (WaterRF), projects where he has led evaluations of urban water demands as part of WaterRF's Strategic Climate Change initiative and Water Demand Forecasting focus area.

Dr. Kiefer has more than 15 years of consulting experience with the U.S. Army Corps of Engineers (Corps) for whom he directed economic and water resources planning studies. He has addressed the Corps' major Civil Works program functions, including Water Supply, Hydropower, Navigation, Recreation, Ecosystem Restoration, and Flood Damage Reduction. Dr. Kiefer has considerable expertise in the areas of risk analysis, multipurpose planning, and multi-criteria decision support techniques.

In 1997, he received the Commander's Award for Public Service from the Department of the Army for outstanding performance in support of the U.S. Army Corps of Engineers Cost Savings Task Force, which helped to identify and automate cost savings measures and to facilitate the analysis of those same measures nationwide.

Hazen

Technical Publications

Evaluation of Customer Information and Data Processing Needs for Water Demand Planning and Management. Kiefer, J. and L. Krentz. 2016. Denver, Colo.: Water Research Foundation.

"Differentiating the Impacts of the Economy, Efficiency, and Conservation on Water Demands." J. Kiefer. 2016. The Georgia Operator, Volume 53, No.3, Summer 2016.

Water Demand Forecasting in Uncertain Times: Isolating the Effects of the Great Recession. Kiefer, J., Johns, G., Snaith, S., and B. Dziegielewski. 2016. Denver, Colo.: Water Research Foundation.

Methodology for Evaluation Water Use in Commercial, Industrial, and Institutional Sectors. 2015. J. Kiefer, L. Krentz, and B. Dziegielewski. Water Research Foundation, Denver.

Analysis of Changes in Water Use under Regional Climate Change Scenarios. 2013. J. Kiefer, J. Clayton, B. Dziegielewski, and J. Henderson. Water Research Foundation, Denver.

U.S. Water Demand, Supply and Allocation: Trends and Outlook. 2007. B. Dziegielewski and J. Kiefer. IWR Report 2007-R-03, Institute for Water Resources, Alexandria, Virginia.

Literature Review of Computer-Aided Collaborative Decision Making. 2007. A. Imwiko and J. Kiefer. U.S. Army Corps of Engineers, Institute for Water Resources. Alexandria, Virginia.

"Prevailing Water Demand Forecasting Practices and Implications for Evaluating the Effects of Climate Change." 2006. J. Kiefer. Proceedings of American Water Works Association 2006 Water Sources Conference, Albuquerque, New Mexico.

Evaluation of Water Ratemaking Practices and Rate Structure Complexity in Illinois Water Systems. 2004. J. Kiefer. Doctoral dissertation. Copyright © 2004, Jack C. Kiefer.

"Water Supply Planning and Risk Management: Coping with the Costs of Uncertainty." 2004. J. Kiefer. Proceedings of North

Water Demand Planning and Management

Principal Investigator, Portfolio of Applied Research for the Water Research Foundation

- Uncertainty in Long Term Water Demand Forecasting (Project 4558)
- Water Use in the Multifamily Sector (Project 4554)
- Water Demand Forecasting in Uncertain Times: Isolating the Effects of the Great Recession (Project 4458)
- Methodology for Evaluating Water Use in Commercial, Institutional and Industrial Sectors (Project 4375) –
- Analysis of Changes in Water Use under Regional Climate Change Scenarios (Project 4263)
- Evaluation of Customer Information and Data Processing Needs for Water Demand Planning and Management (Project 4527)
- Principal Investigator, Water Research Foundation Project 4735, Methodology for Determining Baseline Commercial, Institutional and Industrial End Uses of Water

Long-Term Demand Forecasting System (LTDFS) Update, Tampa Bay Water, Tampa Bay, FL

Technical Director leading a team to redevelop all elements of LTDFS, including estimation of econometric and end use water efficiency models, focusing on exploratory data analysis of an expanded time-series and cross-sectional database of water demands in the Tampa Bay region.

Long-term Water Demand Forecasts, San Diego County Water Authority, San Diego, CA

Project Manager of development of five consecutive water demand forecasts and forecast updates for the San Diego County Water Authority, in support of the Agency's periodic development of its Urban Water Management Plan. Original efforts involved the development of econometric models of M&I water demands, which were followed by development of predictive models for agricultural demands. More recent support to the Authority has included the analysis of climate change impacts on water demand and the development and application of risk-based simulation procedures to support long-term supply reliability and capital improvement planning.

Modeler/Analyst, Water Research Foundation Project 4309, Residential End Uses of Water Update

Dr. Kiefer was responsible for developing models of key indoor and outdoor residential end uses of water, using end use logging data for a large sample of households across the US and Canada, relating end use water consumption to household demographic and economic characteristics, as well as the price for water and sewer services.

Carolina American Water Works Association/Water Environment Association 84th Annual Conference, November 14-17, 2004, Charlotte, NC.

"Development of Probabilistic Water Demand Forecast for the Tampa Bay Region: A Review of Methodological Features." 2003. J. Kiefer. Proceedings of American Water Works Association 2003 Annual Conference and Exposition, Anaheim, CA.

"Relating Demand and Supply Uncertainty to the Incremental Cost of Water Supply Reliability." 2003. J. Kiefer, D. Anderson, and A. Adams. Proceedings of Florida Section of American Water Works Association 2003 Annual Conference and Exposition.

"Risk-Based Water Demand Forecasting: Balancing Uncertainty and Sustainability in Water Supply Planning." 2003. J. Kiefer. Proceedings of American Institute of Hydrology 2003 Annual Conference, Atlanta, Georgia.

"Water Demand Forecasting in a Regulatory Environment." 2002. J. Kiefer and B. Dziegielewski. Proceedings of American Water Works Association 2002 Water Sources Conference. Denver, Colorado.

Commercial and Institutional End Uses of Water. 2000. B. Dzigielewski, J. Kiefer, E. M. Opitz, G. A. Porter, G. Lantz, P. Mayer, W. DeOreo and J. Nelson. American Water Works Association Research Foundation. Denver, Colorado.

Residential End Uses of Water. 1999. P. Mayer, W. DeOreo, E. M. Opitz, B. Dzigielewski, J. Kiefer, W. Y. Davis and J. Nelson. American Water Works Association Research Foundation. Denver, Colorado.

"The Search for Acceptable Water Rates: Research Needs and Possibilities." 1999, J. Kiefer. Journal of Contemporary Water Research and Education (formerly Water Resources Update), Vol. 114.

"Demand Uncertainty: Portraying and Quantifying the Risks for Planning." 1998. J. Kiefer. Proceedings of the American Water Works Association (AWWA) 1998 Annual Conference. AWWA. Denver, Colorado.

Technical Director, Water Conservation Planning Support, NYC-DEP, NY

Technical Director, of the development of NYC DEP's Water Demand Management Plan (WDMP) through a series of investigations involving pilot efficiency projects, water reuse at specific facilities, spatial demand profiling, and assessment of large users, drought management, and water pricing strategies. The objective of this project was to assist NYC DEP in the development of its WDMP through a series of investigations involving pilot efficiency projects, water reuse at specific facilities, spatial demand profiling, assessment of large users, drought management, and water pricing strategies.

Enhancements to New York City's Long-Term Water Demand Forecasting Model, NYCDEP, NY

Technical Director for this project. The objective was to make incremental improvements to NYCDEP's long-term water demand forecasting model to incorporate key future trends and uncertainties related to water efficiency and climate. The updated model included a water efficiency index, climatic variables, and residual variance factors at both annual and monthly time steps, which supports development of multiple forecast scenarios.

Other Relevant Experience

- Co-Principal Investigator, Water Reuse Research Foundation Project 09-04, The Value of Water Supply in the Commercial, Industrial, and Institutional (CII) Sector
- Principal Investigator, Water Conservation Metrics Study
- Water Demand Management Plan, Tampa Bay Water, FL
- Project Manager, Phoenix Water Demand Management Plan Support, AZ
- Technical Director, Long-Term Forecast Performance Monitoring, Tampa Bay Water, FL
- Principal Investigator, Long-Term Probabilistic Water Demand and Supply Reliability Forecast for Tampa Bay Water, FL
- Project Manager, Future Needs Analysis, Tampa Bay Water, FL
- Project Director, Development of Water Demand Forecasting Methodologies for the Delaware River Basin Commission, FL
- Principal Investigator, Phoenix Meter Accuracy Study, AZ
- Project Manager, Study of Institutional and Legal Environment of Texas Water Supply Allocation, TX
- Project Manager, Model Development and Long-Term Water Demand Forecasts for Metropolitan Water District of Southern California, CA

"Anticipating Nonresidential Flood Damages: A Report of Findings of a Survey of Businesses in the Wyoming Valley of Pennsylvania." 1998. J. Kiefer and S. Davis. Proceedings of the 22nd Annual Conference of the Association of State Floodplain Managers (ASFPM).

Incorporating Risk and Uncertainty into Forecasts of Waterborne Traffic Flows: A Reference Manual of Methodologies and Hypothetical Examples. 1997. J. Kiefer. U.S. Army Corps of Engineers, Institute for Water Resources. Alexandria, Virginia.

Analysis of Non-residential Content Value and Depth-Damage Data for Flood Damage Reduction Studies. 1996. J. Kiefer and S. Willett. U.S. Army Corps of Engineers, Institute for Water Resources. Alexandria, Virginia.

"Statistical Analyses of Water Conservation Issues: The Case of Phoenix, Arizona." 1996. J. Kiefer and J. DeWitt. Proceedings of CONSERV96. Conference hosted by the American Water Works Association in Orlando, Florida.

Guidebook for the Preparation and Use of Project Study Plans. 1996. J. Kiefer and J. Prather. U.S. Army Corps of Engineers, Institute for Water Resources. Alexandria, Virginia.

"Estimation of Single-Family Residential Irrigation Demands: A Model-Based Approach." In Water in the 21st Century: Conservation, Demand and Supply. J. Kiefer and J. DeWitt. April 23-26, 1995. Proceedings of AWRA Annual Spring Symposium. Salt Lake City, Utah.

"Isolating the Impact of a Change in Rate Structure." In Water in the 21st Century: Conservation, Demand and Supply. Proceedings of AWRA Annual Spring Symposium. April 23-26, 1995. J. Kiefer and J. DeWitt. Salt Lake City, Utah.

Urban Water Conservation Programs Volume I: Annotated Bibliography. 1994. Opitz, E.M., B. Dziegielewski, N.A. Hanna-Somers, J. Kocik, J.R.M. Steinbeck, H.P. Garbharran, J.C. Kiefer and K.L. O'Grady. U.S. Army Corps of Engineers, Institute for Water Resources; U.S. Geological Survey; Metropolitan Water District of Southern California; Southern Nevada Water Authority; California Urban Water Agencies; Phoenix Water Services Department and American Water Works Association.

- Project Manager, IWR-MAIN Water Demand Management Suite
- Project Manager/Principal Investigator, City of Albuquerque Water Conservation Program, NM
- Coauthor and Principal Modeler, AWWARF Residential End Uses of Water and Commercial & Institutional Uses of Water Studies
- Project Manager/Principal Investigator, Cost-Effectiveness Evaluations of Pilot Water Conservation Projects for the Cities of Lacey, Olympia and Tumwater (LOTT Wastewater Partnership)

Water Resources Planning and Economics

- Principal Investigator, Civil Works Program Strategy Papers. USACE Institute for Water Resources
- Principal Investigator, Review of Computer-Aided Decision-Making in Water Resources Planning and Management. USACE Institute for Water Resources
- Project Manager, Expert Independent Reviews of Corps of Engineers Economics and Planning Studies, USACE Institute for Water Resources
- Economics Team Leader, National Economic Analysis of Water Use for the Republic of Ireland
- Principal Investigator, USACE New Orleans District, Economic Impact Analysis of Louisiana Coastal 2050 Restoration Initiative, LA
- Project Manager/Principal Investigator, Evaluation of National U.S. Army Corps Capital Stock Investments and Programmatic Benefits
- Project Manager, National Dredging Needs Study of U.S. Ports and Harbors
- Principal Investigator, Plan Formulation Training Course for the Corps of Engineers
- Project Manager, America's Water Resources Challenges for the 21st Century
- Project Manager, USACE/BPA Hydroelectric Investment Guide
- Project Manager/Principal Investigator, USACE Flood Damage Reduction Studies

EXHIBIT 2

SEIR Appendix I – Source Water Availability, Yield and Use Technical Memorandum-

Tables 8, 9, 10 and 11

Table 8: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Full Surface Water Yields, Normal Water Year, Building a Drought Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Existing RTP Inflows (Average 2009 to 2013)	**1,798**	**1,678**	**1,867**	**1,796**	**1,850**	**1,799**	**1,893**	**1,888**	**1,813**	**1,844**	**1,762**	**1,776**	**21,764**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	52	41	34	16	2	0	0	0	2	8	23	47	225
	Urban runoff to ponds	*52*	*41*	*34*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*23*	*47*	*205*
	Urban runoff to RTP	*0*	*0*	*0*	*16*	*2*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*20*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	684	763	847	647	362	0	0	0	0	253	466	605	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	172	0	0	0	0	0	0	304
8	AWW and Salinas Runoff to RTP	0	0	0	355	413	563	435	444	369	0	0	0	2,579
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	209	223	246	252	225	274	277	244	184	168	133	185	2,620
10	Reclamation Ditch at Davis Road [10]	70	66	70	106	79	99	113	109	72	65	89	76	1,014
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	24	15	14	5	1	0	0	0	1	4	10	13	87
13	**Subtotal New Waters Available**	**303**	**304**	**330**	**718**	**718**	**936**	**825**	**797**	**626**	**237**	**232**	**274**	**6,299**
	Total Projected Water Supply	**2,115**	**1,987**	**2,207**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**2,085**	**1,999**	**2,057**	**28,145**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Average SVRP deliveries to CSIP (2009-2013)	13	459	726	1,376	1,763	1,750	1,866	1,854	1,698	984	448	18	12,955
14	FIVE YEAR AVERAGE CSIP AREA WELL WATER USE (2009-2013)	448	195	304	412	324	606	519	504	300	75	233	352	4,272
	TOTAL CSIP Demand (excludes SRDF use)	**461**	**654**	**1,030**	**1,788**	**2,087**	**2,356**	**2,385**	**2,358**	**1,998**	**1,059**	**681**	**370**	**17,227**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	355	367	355	367	367	355	367	355	367	4,320
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	42	38	42							42	41	42	248
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP[18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,087**
	Total Projected Water Demand	**1,260**	**1,376**	**1,829**	**2,328**	**2,668**	**2,922**	**2,971**	**2,929**	**2,547**	**1,860**	**1,455**	**1,169**	**25,314**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	461	654	1,030	1,735	1,747	1,693	1,785	1,802	1,733	1,059	681	370	14,750
20	New sources available to CSIP [13]	0	0	0	249	245	480	353	319	162	0	0	0	1,808
21	**Total Supply to CSIP**	**461**	**654**	**1,030**	**1,984**	**1,993**	**2,173**	**2,138**	**2,121**	**1,894**	**1,059**	**681**	**370**	**16,558**
	Net CSIP Increase													**3,603**
22	Surface waters at RTP to AWPF	303	304	330	114	106	101	105	111	109	237	232	274	2,325
23	Secondary effluent to AWPF	468	398	437	0	0	0	0	0	0	513	520	517	2,854
24	AWW and Salinas urban runoff to AWPF	0	0	0	355	367	355	367	367	355	0	0	0	2,166
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,086**
	Subtotal- all waters (including secondary effluent)	**1,260**	**1,376**	**1,829**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,860**	**1,455**	**1,169**	**24,644**
27	FIVE YEAR AVERAGE WASTE WATER EFFLUENT TO OCEAN OUTFALL (2009-2013)[15]	1,785	1,219	1,141	420	88	49	27	34	114	859	1,314	1,759	8,809
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	854	611	377	0	0	0	0	0	0	226	545	887	3,501
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(468)	(398)	(437)	249	245	480	353	319	162	(513)	(520)	(517)	(1,046)
30	AWT BRINE TO OCEAN OUTFALL	152	137	152	102	110	108	111	109	104	152	147	152	1,536

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

2 Table 2-1, p. 5, Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler Consulting Engineers, August 2015.

3 Volume of effluent from City of Salinas agricultural wash water to be directed into ponds 1,2,3, and the aeration pond for storage.

4 Average monthly flow from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015.

5 Rainfall from Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler, August 2015. Pond area presumed to be Ponds 1,2, 3 + Aeration lagoon. No rainfall/evaporation or storage assigned to drying beds.

6 Table 3, Todd Groundwater, Memorandum, Pure Water Monterey Groundwater Replenishment Project: Impacts of Changes in Percolation at the Salinas Industrial Wastewater Treatment Facility on Groundwater and the Salinas River, February 11, 2015.

7 Table 4, Ibid.

8 Ponds 1,2,3 and aeration basin hold up to 1,065 acre-feet (one foot of freeboard). If flow to ponds would exceed the maximum volume, it is presumed that excess flow can be diverted to the RIBs or drying beds or flow can be diverted to the RTP. Presume that pond storage goes to zero sometime during the year (shown here starting in July).

9 Water right application 32263A. Max diversion = 6 cfs diversion. If SRDF is not operating (drought year), 2 cfs is bypassed to the Salians River. See final water right permit 21376

10 Water right applciation 32263B. Max. diversion = 6 cfs. See final water right permit 21377. Assumes 2 cfs instream bypass requirement Dec-May, 1 cfs bypass in June and 0.7 cfs instream bypass requirement for July-Nov. Also assumes diversion stopped when flows reach 30 cfs (migration window) and restart when flow declines to 20 cfs. See final water right permit 21377

11 Water right application 32263C. Max. diversion = 3 cfs. Removed from project portfolio during water rights process. See RECLAMATION DITCH YIELD STUDY, Schaaf and Wheeler, March 2015.

12 Includes secondary effluent wastewater currently used to produce recycled water at the Salinas Valley Reclamation Project (SVRP), and additional amounts which may be used during periods of low demand (<5 mgd) with the proposed improvements to the SVRP.

13 New source waters not used by AWPF will be available to SVRP for CSIP.

14 A drought reserve of up to 1,000 AF would be created over five years by producing 200 AFY additional product water from the GWR Project AWTF during winter months and storing the water in the Seaside Basin. This would establish a "water bank" that the CSIP can draw on in droughts. The drought reserve would allow flow at the RTP for the GWR Project to be temporarily reduced during critically dry periods, thus freeing up more of the newly available inflows to the RTP to be sent to the CSIP area. Extraction from the Seaside Basin would continue at the average rate to supply the Monterey Peninsula.

15 Average monthly RTP discharge, 2009-2013 (reported by M1W).

16 Secondary treated municipal effluent not used for SVRP or the AWPF.

17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

Table 9: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Diversion Pattern for a Normal Water Year, Building a Drought Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Existing RTP Inflows (Average 2009 to 2013)	**1,798**	**1,678**	**1,867**	**1,796**	**1,850**	**1,799**	**1,893**	**1,888**	**1,813**	**1,844**	**1,762**	**1,776**	**21,764**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	52	41	34	16	2	0	0	0	2	8	23	47	225
	Urban runoff to ponds	*52*	*41*	*34*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*23*	*47*	*205*
	Urban runoff to RTP	*0*	*0*	*0*	*16*	*2*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*20*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	684	763	847	647	362	0	0	0	0	253	466	605	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	172	0	0	0	0	0	0	304
8	AWW and Salinas Runoff to RTP	0	0	0	355	413	563	435	444	369	0	0	0	2,579
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	0	0	0	252	225	274	277	244	184	0	0	0	1,456
10	Reclamation Ditch at Davis Road [10]	0	0	0	106	79	99	113	109	72	11	0	0	589
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	0	0	0	5	1	0	0	0	1	0	0	0	7
13	**Subtotal New Waters Available**	**0**	**0**	**0**	**718**	**718**	**936**	**825**	**797**	**626**	**11**	**0**	**0**	**4,631**
	Total Projected Water Supply	**1,812**	**1,683**	**1,877**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,860**	**1,767**	**1,783**	**26,477**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Average SVRP deliveries to CSIP (2009-2013)	13	459	726	1,376	1,763	1,750	1,866	1,854	1,698	984	448	18	12,955
14	FIVE YEAR AVERAGE CSIP AREA WELL WATER USE (2009-2013)	448	195	304	412	324	606	519	504	300	75	233	352	4,272
	TOTAL CSIP Demand (excludes SRDF use)	**461**	**654**	**1,030**	**1,788**	**2,087**	**2,356**	**2,385**	**2,358**	**1,998**	**1,059**	**681**	**370**	**17,227**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	355	367	355	367	367	355	367	355	367	4,320
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	42	38	42							42	41	42	248
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP[18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,087**
	Total Projected Water Demand	**1,260**	**1,376**	**1,829**	**2,328**	**2,668**	**2,922**	**2,971**	**2,929**	**2,547**	**1,860**	**1,455**	**1,169**	**25,314**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	461	654	1,030	1,735	1,747	1,693	1,785	1,802	1,733	1,059	681	370	14,750
20	New sources available to CSIP [13]	0	0	0	249	245	480	353	319	162	0	0	0	1,808
21	**Total Supply to CSIP**	**461**	**654**	**1,030**	**1,984**	**1,993**	**2,173**	**2,138**	**2,121**	**1,894**	**1,059**	**681**	**370**	**16,558**
	Net CSIP Increase													**3,603**
22	Surface waters at RTP to AWPF	0	0	0	114	106	101	105	111	109	11	0	0	657
23	Secondary effluent to AWPF	771	702	767	0	0	0	0	0	0	738	752	791	4,522
24	AWW and Salinas urban runoff to AWPF	0	0	0	355	367	355	367	367	355	0	0	0	2,166
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**799**	**721**	**800**	**539**	**581**	**566**	**585**	**572**	**549**	**800**	**773**	**800**	**8,086**
	Subtotal- all waters (including secondary effluent)	**1,260**	**1,376**	**1,829**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,860**	**1,455**	**1,169**	**24,644**
27	FIVE YEAR AVERAGE WASTE WATER EFFLUENT TO OCEAN OUTFALL (2009-2013)[15]	1,785	1,219	1,141	420	88	49	27	34	114	859	1,314	1,759	8,809
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	552	308	47	0	0	0	0	0	0	0	313	614	1,833
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(771)	(702)	(767)	249	245	480	353	319	162	(738)	(752)	(791)	(2,714)
30	AWT BRINE TO OCEAN OUTFALL	152	137	152	102	110	108	111	109	104	152	147	152	1,536

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

2 Table 2-1, p. 5, Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler Consulting Engineers, August 2015.

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10 Water right applciation 32263B. Max. diversion = 6 cfs. See final water right permit 21377. Assumes 2 cfs instream bypass requirement Dec-May, 1 cfs bypass in June and 0.7 cfs instream bypass requirement for July-Nov. Also assumes diversion stopped when flows reach 30 cfs (migration window) and restart when flow declines to 20 cfs. See final water right permit 21377

11 Water right application 32263C. Max. diversion = 3 cfs. Removed from project portfolio during water rights process. See RECLAMATION DITCH YIELD STUDY, Schaaf and Wheeler, March 2015.

12 Includes secondary effluent wastewater currently used to produce recycled water at the Salinas Valley Reclamation Project (SVRP), and additional amounts which may be used during periods of low demand (<5 mgd) with the proposed improvements to the SVRP.

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15 Average monthly RTP discharge, 2009-2013 (reported by M1W).

16 Secondary treated municipal effluent not used for SVRP or the AWPF.

17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

Table 10: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Diversion Pattern for a Normal Water Year with a Full Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Existing RTP Inflows (Average 2009 to 2013)	**1,798**	**1,678**	**1,867**	**1,796**	**1,850**	**1,799**	**1,893**	**1,888**	**1,813**	**1,844**	**1,762**	**1,776**	**21,764**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	52	41	34	16	2	0	0	0	2	8	23	47	225
	Urban runoff to ponds	*52*	*41*	*34*	*0*	*0*	*0*	*0*	*0*	*0*	*8*	*23*	*47*	*205*
	Urban runoff to RTP	*0*	*0*	*0*	*16*	*2*	*0*	*0*	*0*	*2*	*0*	*0*	*0*	*20*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	684	763	847	647	362	0	0	0	0	253	466	605	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	172	0	0	0	0	0	0	304
8	AWW and Salinas Runoff to RTP	0	0	0	355	413	563	435	444	369	0	0	0	2,579
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	0	0	0	252	225	274	277	244	184	0	0	0	1,456
10	Reclamation Ditch at Davis Road [10]	0	0	0	106	79	99	113	109	72	0	0	0	578
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	0	0	0	5	1	0	0	0	1	0	0	0	7
13	**Subtotal New Waters Available**	**0**	**0**	**0**	**718**	**718**	**936**	**825**	**797**	**626**	**0**	**0**	**0**	**4,620**
	Total Projected Water Supply	**1,812**	**1,683**	**1,877**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,849**	**1,767**	**1,783**	**26,466**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Average SVRP deliveries to CSIP (2009-2013)	13	459	726	1,376	1,763	1,750	1,866	1,854	1,698	984	448	18	12,955
14	FIVE YEAR AVERAGE CSIP AREA WELL WATER USE (2009-2013)	448	195	304	412	324	606	519	504	300	75	233	352	4,272
	TOTAL CSIP Demand (excludes SRDF use)	**461**	**654**	**1,030**	**1,788**	**2,087**	**2,356**	**2,385**	**2,358**	**1,998**	**1,059**	**681**	**370**	**17,227**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	355	367	355	367	367	355	367	355	367	4,320
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	0	0	0							0	0	0	0
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP[18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**757**	**683**	**757**	**539**	**581**	**566**	**585**	**572**	**549**	**758**	**733**	**758**	**7,839**
	Total Projected Water Demand	**1,218**	**1,338**	**1,787**	**2,328**	**2,668**	**2,922**	**2,971**	**2,929**	**2,547**	**1,818**	**1,414**	**1,127**	**25,066**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	461	654	1,030	1,735	1,747	1,693	1,785	1,802	1,733	1,059	681	370	14,750
20	New sources available to CSIP [13]	0	0	0	249	245	480	353	319	162	0	0	0	1,808
21	**Total Supply to CSIP**	**461**	**654**	**1,030**	**1,984**	**1,993**	**2,173**	**2,138**	**2,121**	**1,894**	**1,059**	**681**	**370**	**16,558**
	Net CSIP Increase													**3,603**
22	Surface waters at RTP to AWPF	0	0	0	114	106	101	105	111	109	0	0	0	646
23	Secondary effluent to AWPF	729	664	724	0	0	0	0	0	0	707	712	749	4,285
24	AWW and Salinas urban runoff to AWPF	0	0	0	355	367	355	367	367	355	0	0	0	2,166
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**757**	**683**	**757**	**539**	**581**	**566**	**585**	**572**	**549**	**758**	**733**	**758**	**7,839**
	Subtotal- all waters (including secondary effluent)	**1,218**	**1,338**	**1,787**	**2,523**	**2,574**	**2,739**	**2,723**	**2,692**	**2,443**	**1,818**	**1,414**	**1,127**	**24,397**
27	FIVE YEAR AVERAGE WASTE WATER EFFLUENT TO OCEAN OUTFALL (2009-2013)[15]	1,785	1,219	1,141	420	88	49	27	34	114	859	1,314	1,759	8,809
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	594	346	90	0	0	0	0	0	0	31	354	656	2,070
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(729)	(664)	(724)	249	245	480	353	319	162	(707)	(712)	(749)	(2,477)
30	AWT BRINE TO OCEAN OUTFALL	144	130	144	102	110	108	111	109	104	144	139	144	1,489

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

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11 Water right application 32263C. Max. diversion = 3 cfs. Removed from project portfolio during water rights process. See RECLAMATION DITCH YIELD STUDY, Schaaf and Wheeler, March 2015.

12 Includes secondary effluent wastewater currently used to produce recycled water at the Salinas Valley Reclamation Project (SVRP), and additional amounts which may be used during periods of low demand (<5 mgd) with the proposed improvements to the SVRP.

13 New source waters not used by AWPF will be available to SVRP for CSIP.

14 A drought reserve of up to 1,000 AF would be created over five years by producing 200 AFY additional product water from the GWR Project AWTF during winter months and storing the water in the Seaside Basin. This would establish a "water bank" that the CSIP can draw on in droughts. The drought reserve would allow flow at the RTP for the GWR Project to be temporarily reduced during critically dry periods, thus freeing up more of the newly available inflows to the RTP to be sent to the CSIP area. Extraction from the Seaside Basin would continue at the average rate to supply the Monterey Peninsula.

15 Average monthly RTP discharge, 2009-2013 (reported by M1W).

16 Secondary treated municipal effluent not used for SVRP or the AWPF.

17 Excess is calculated as Line 13 minus Lines 15 & 16

18 RUWAP supply comes from existing RTP inflows of municipal wastewater. Demands reflect existing urban irrigation customers along trunk main.

Table 11: Source Water Analysis for the Pure Water Monterey Groundwater Replenishment Project

Diversion Pattern for a Drought Year, Starting with a Full Reserve

All facilities built [1] - average water year conditions - all flows in acre-feet **10/14/2019**

	SOURCES	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Minimum Year RTP Inflows (2013)	***1,725***	***1,494***	***1,645***	***1,657***	***1,722***	***1,675***	***1,748***	***1,773***	***1,715***	***1,690***	***1,634***	***1,612***	**20,090**
	Existing domestic flows to RTP (wells at RTP and MRWMD)	**14**	**5**	**10**	**9**	**5**	**4**	**5**	**8**	**5**	**5**	**5**	**7**	**82**
	New Source Water													
	City of Salinas													
1	Salinas Agricultural Wash Water [2]	156	158	201	307	311	391	435	444	367	410	329	223	3,732
	Agricultural Wash Water (AWW) to Ponds [3]	*156*	*158*	*201*	*0*	*0*	*0*	*0*	*0*	*0*	*410*	*329*	*223*	*1,477*
	AWW directly to RTP	*0*	*0*	*0*	*307*	*311*	*391*	*435*	*444*	*367*	*0*	*0*	*0*	*2,255*
2	Salinas Urban Storm Water Runoff [4]	17	14	11	5	1	0	0	0	1	3	8	16	76
	Urban runoff to ponds	*17*	*14*	*11*	*0*	*0*	*0*	*0*	*0*	*0*	*3*	*8*	*16*	*69*
	Urban runoff to RTP	*0*	*0*	*0*	*5*	*1*	*0*	*0*	*0*	*1*	*0*	*0*	*0*	*7*
3	Rainfall (on SIWTF, 121 acre pond area) [5]	26	24	21	11	3	1	0	0	2	6	14	24	132
4	Evaporation (from SIWTF, 121 acre pond area) [6]	(12)	(16)	(29)	(41)	(46)	(52)				(28)	(15)	(12)	(251)
5	Percolation [7]	(143)	(129)	(143)	(138)	(143)	(138)				(143)	(138)	(143)	(1,257)
6	SIWTF pond storage balance [8]	598	650	711	511	226	0	0	0	0	248	446	554	
7	Recovery of flow from SIWTF storage ponds to RTP	0	0	0	32	100	36	0	0	0	0	0	0	168
8	AWW and Salinas Runoff to RTP	0	0	0	344	412	427	435	444	368	0	0	0	2,430
	Water Rights Applications to SWRCB													
9	Blanco Drain [9]	0	0	246	252	225	274	277	244	184	168	133	0	2,003
10	Reclamation Ditch at Davis Road [10]	0	0	70	106	79	99	113	109	72	65	89	0	802
11	Tembladero Slough at Castroville [11]	0	0	0	0	0	0	0	0	0	0	0	0	0
12	City of Monterey - Diversion at Lake El Estero	0	0	14	5	1	0	0	0	1	4	10	0	35
13	**Subtotal New Waters Available**	**0**	**0**	**330**	**707**	**717**	**800**	**825**	**797**	**625**	**237**	**232**	**0**	**5,270**
	Total Projected Water Supply	**1,739**	**1,499**	**1,985**	**2,373**	**2,444**	**2,479**	**2,578**	**2,578**	**2,345**	**1,931**	**1,871**	**1,619**	**25,442**

	DEMANDS	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
	Max Year SVRP deliveries to CSIP (2013)	*0*	*692*	*1,558*	*1,669*	*1,799*	*1,675*	*1,786*	*1,803*	*1,725*	*1,548*	*1,127*	*88*	15,469
14	PEAK CSIP AREA WELL WATER USE (10/2013-09/2014)	*509*	*9*	*221*	*242*	*1,197*	*1,261*	*1,303*	*1,025*	*453*	*165*	*35*	*730*	7,150
	TOTAL CSIP Demand (excludes SRDF use)	**509**	**701**	**1,779**	**1,911**	**2,996**	**2,936**	**3,089**	**2,828**	**2,178**	**1,713**	**1,162**	**818**	**22,619**
15	FEEDWATER AMOUNT AT RTP TO PWM BASE PROJECT AWPF	367	331	367	133	137	133	137	137	133	367	355	367	2,963
16	FEEDWATER TO ESTABLISH CSIP AREA DROUGHT RESERVE (200 AFY AWTF PRODUCT WATER) [14]	0	0	0							0	0	0	0
	FEEDWATER FOR 2250 AFY EXPANSION	362	333	357	114	106	101	105	111	109	340	357	382	2,778
17	FEEDWATER TO AWPF FOR MCWD RUWAP [18]	28	19	33	70	108	110	113	94	85	51	21	9	741
18	**TOTAL TO GWR ADVANCED WATER TREATMENT FACILITY**	**757**	**683**	**757**	**317**	**351**	**344**	**355**	**342**	**327**	**758**	**733**	**758**	**6,482**
	Total Projected Water Demand	**1,266**	**1,384**	**2,537**	**2,228**	**3,348**	**3,280**	**3,444**	**3,170**	**2,505**	**2,471**	**1,894**	**1,575**	**29,102**

	Use of Source Water	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
19	Secondary effluent to SVRP for CSIP [12]	509	701	1,227	1,596	1,619	1,569	1,640	1,687	1,635	1,173	1,138	818	15,312
20	New sources available to CSIP [13]	0	0	0	460	474	567	583	549	383	0	0	0	3,015
21	**Total Supply to CSIP**	**509**	**701**	**1,227**	**2,056**	**2,093**	**2,136**	**2,223**	**2,236**	**2,018**	**1,173**	**1,138**	**818**	**18,328**
	Net CSIP Increase													**2,858**
22	Surface waters at RTP to AWPF	0	0	330	114	106	101	105	111	109	237	232	0	1,445
23	Secondary effluent to AWPF	729	664	394	0	0	0	0	0	0	471	480	749	3,487
24	AWW and Salinas urban runoff to AWPF	0	0	0	133	137	133	137	137	133	0	0	0	809
25	Secondary effluent to AWPF for MCWD RUWAP	28	19	33	70	108	110	113	94	85	51	21	9	741
26	**Feedwater to AWPF**	**757**	**683**	**757**	**317**	**351**	**344**	**355**	**342**	**327**	**758**	**733**	**758**	**6,482**
	Subtotal- all waters (including secondary effluent)	**1,266**	**1,384**	**1,985**	**2,373**	**2,444**	**2,479**	**2,578**	**2,578**	**2,345**	**1,931**	**1,871**	**1,575**	**24,810**
27	*DRY YEAR WASTEWATER EFFLUENT TO OCEAN OUTFALL (2013)* [15]	*1,725*	*802*	*87*	*0*	*0*	*0*	*0*	*0*	*0*	*142*	*507*	*1,607*	4,870
28	WASTE WATER EFFLUENT TO OCEAN OUTFALL WITH PROPOSED DIVERSIONS TO CSIP/AWT/RUWAP [16]	473	115	0	0	0	0	0	0	0	0	0	43	632
29	NEW SUPPLIES IN EXCESS OF AWT DEMANDS FOR GWR [17]	(729)	(664)	(394)	460	474	567	583	549	383	(471)	(480)	(749)	(471)
30	AWT BRINE TO OCEAN OUTFALL	144	130	144	60	67	65	68	65	62	144	139	144	1,232

Notes

1 Presumes all facilities associated with diversions are completed, including SVRP modifications.

2 Table 2-1, p. 5, Groundwater Replenishment Project, Salinas River Inflow Impacts, Schaaf & Wheeler Consulting Engineers, August 2015.

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EXHIBIT 3

Volume I – Consolidated Final PWM EIR, January 2016 - Figure 2-9
Historic Regional Treatment Plant Flows

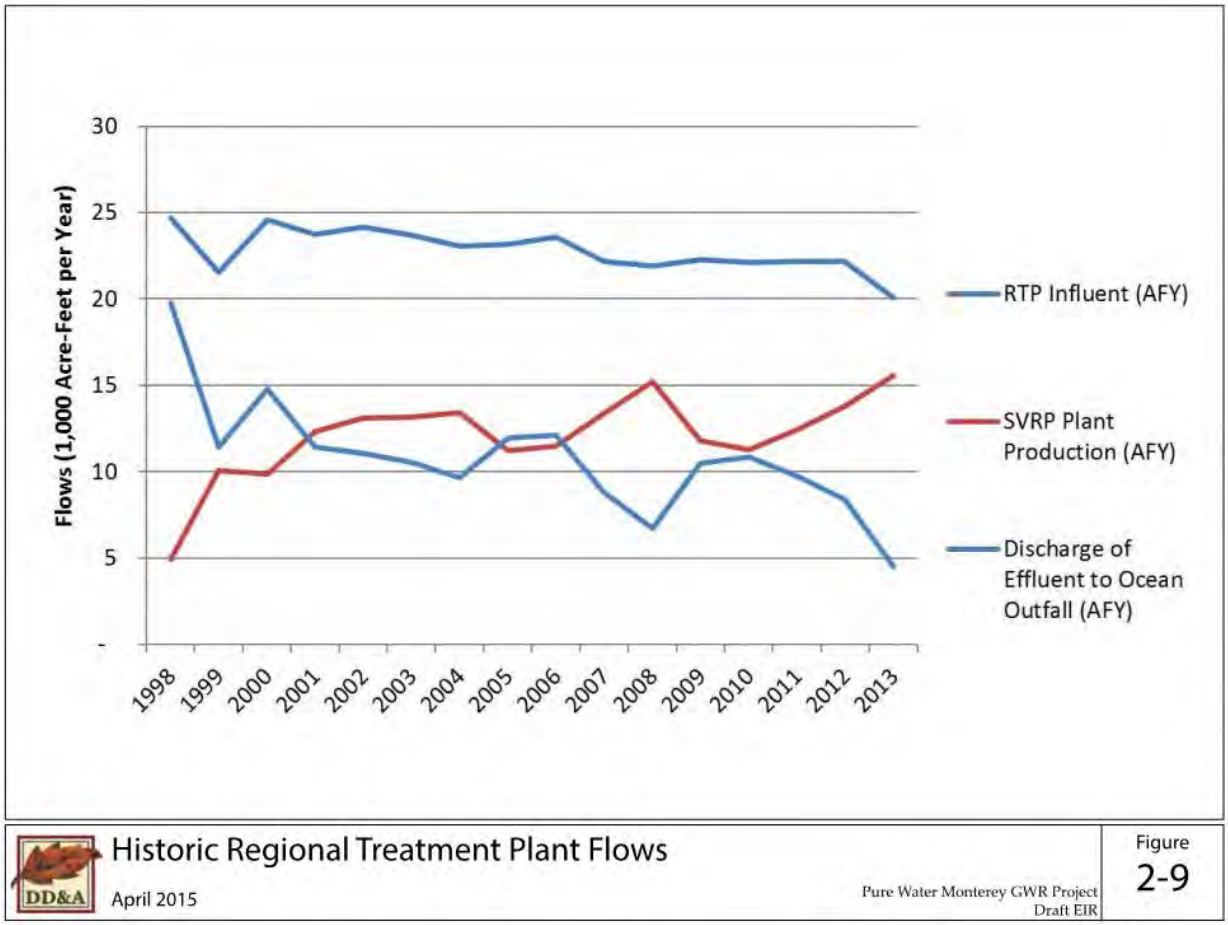

EXHIBIT 4

SEIR Appendices to the M1WS Draft Supplemental EIR 11-7-2019

Appendix E - Water Quality and Statutory Compliance Report- Appendix C – Projected Monthly Flows of Source Waters to the Regional Treatment Plant Influent

10/24/19 Appendix C - Projected Source Water Flows to the RTP

	RTP Source Water Flow Blends by Scenario and Month (flows in ac-ft per month)													
	Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Maximum New Source Waters	Municipal WW	1,578	1,387	1,643	1,598	1,601	1,563	1,609	1,610	1,541	1,563	1,551	1,567	18810
	Agricultural Wash Water	0	0	0	309	407	477	318	319	307	0	0	0	2137
	Blanco Drain	209	223	246	252	225	274	277	244	184	168	133	185	2620
	El Estero	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tembladero Slough	0	0	0	0	0	0	0	0	0	0	0	0	0
	Reclamation Ditch	70	66	70	106	79	99	113	109	72	65	89	76	1014
Winter Peaking Operation	Municipal WW	1,578	1,387	1,643	1,598	1,601	1,563	1,609	1,610	1,541	1,563	1,551	1,567	18810
	Ag Wash	0	0	0	309	407	477	318	319	307	0	0	0	2137
	Blanco Drain	0	0	246	252	225	274	277	244	184	168	0	0	1870
	El Estero	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tembladero Slough	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rec Ditch	0	0	70	106	79	99	113	109	72	65	5	0	718

EXHIBIT 5

Monterey One Water

July 20, 2020 Special Meeting of the Ad-Hoc JPA Revision Committee

Attachment 3: Table 1 Member Entity Population Revenue and Account Data

Table 1 - Monterey One Water Member Entity Data

Member Entity	Population	Population Percentage	Avg. Dry Weather Flows (MGD)	Flow Percentage	Revenue Contribution			Revenue Percentage	Accounts			Accounts Percentage
					Residential (Monthly)	Commercial (Monthly)	Annual Total		Residential	Commercial	Total	
Boronda CSD	1,325	0.49%		#	$ 8,925.20	$ 2,527.65	$ 137,434.20	0.51%	424	65	489	0.48%
Castroville/Moss Landing	7,097	2.63%	0.64	3.99%	$ 50,625.25	$ 10,690.60	$ 735,790.20	2.73%	2,405	322	2,727	2.65%
County of Monterey*												
Del Rey Oaks	1,662	0.62%		+	$ 14,970.80	$ 1,310.70	$ 195,378.00	0.73%	712	59	771	0.75%
MCWD	28,233	10.48%	2.09	13.02%	$ 264,543.95	$ 29,920.27	$ 3,533,570.64	13.13%	12,569	737	13,306	12.93%
Monterey	28,170	10.45%	1.97	12.27%	$ 269,517.00	$ 103,043.34	$ 4,470,724.08	16.61%	12,828	2,973	15,801	15.36%
Pacific Grove	15,265	5.66%	1.15	7.17%	$ 168,139.50	$ 25,798.91	$ 2,327,260.92	8.65%	7,998	1,009	9,007	8.76%
Salinas	162,222	60.20%	8.39	52.27%	$ 906,380.10	$ 179,299.36	$ 13,028,153.52	48.41%	43,074	8,339	51,413	49.98%
Sand City	385	0.14%		+	$ 3,692.25	$ 4,227.85	$ 95,041.20	0.35%	177	242	419	0.41%
Seaside	33,537	12.45%	1.81	11.28%	$ 172,475.60	$ 26,357.76	$ 2,386,000.32	8.87%	8,200	736	8,936	8.69%
TOTALS	269,474		16.05		$ 1,859,269.65	$ 383,176.44	$ 26,909,353.08		88,387	14,482	102,869	

Notes - Residential totals include vacant residences
Population Numbers are per the department of Finance as of 1/1/20
Flows are averages for January through June 2020
* - Monterey County data needs to be confirmed prior to inclusion in this table
# - Boranda flows accounted for in Salinas
+ - Del Rey Oaks and Sand City flows accounted for in Seaside

EXHIBIT 6 - Water Use Figure

SEIR Appendix O - Supply and Demand for Water on the Monterey Peninsula

FINAL

March 13, 2020, Page 7

Figure 1
Annual Water Production for Customer Service (Demand)
Last 21 Years
(Acre-Feet)

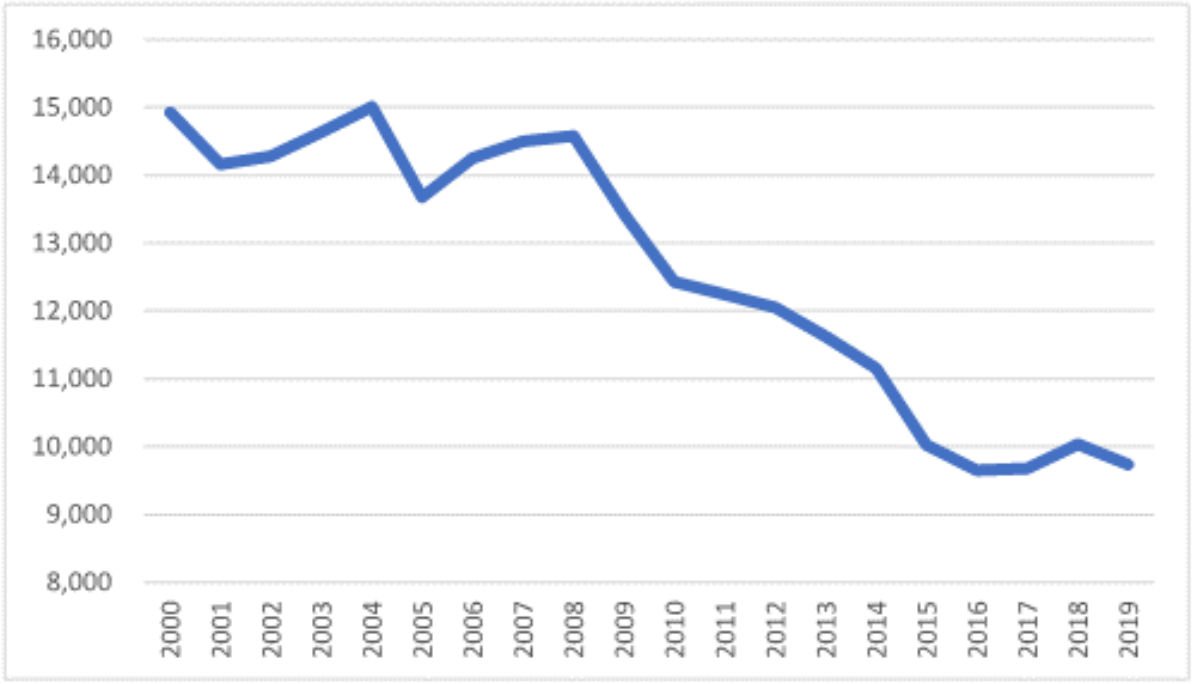

EXHIBIT 7 - Reclamation Ditch Flow

USGS 5 year Monthly Discharge Data from Reclamation Ditch Monitoring Station at Davis Road

USGS 11152650 RECLAMATION DITCH NR SALINAS CA

Available data for this site | Time-series: Monthly statistics | GO

Monterey County, California Hydrologic Unit Code 18060015 Latitude 36°42'18", Longitude 121°42'14" NAD27 Drainage area 53.2 square miles Gage datum 16 feet above NGVD29	**Output formats** HTML table of all data Tab-separated data Reselect output format

00060, Discharge, cubic feet per second,												
YEAR	Monthly mean in ft3/s (Calculation Period: 2015-01-01 -> 2020-03-31) Period-of-record for statistical calculation restricted by user											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	0.978	4.63	1.75	2.92	1.58	1.12	0.951	1.37	0.933	0.988	9.37	18.9
2016	69.3	8.66	72.1	4.42	2.78	2.07	2.15	1.86	1.48	7.69	7.44	16.8
2017	191.1	194.6	37.1	12.3	3.29	2.35	1.96	1.78	1.05	0.965	2.13	0.821
2018	10.6	1.83	17.5	15.2	2.23	2.32	2.28	2.04	1.23	1.59	15.3	15.4
2019	10.9	107.8	24.7	3.77	10.1	3.36	2.93	2.73	1.77	1.05	3.96	42.9
2020	7.8	1.78	16.4									
Mean of monthly Discharge	48	53	28	7.7	4	2.2	2.1	2	1.3	2.5	7.6	19

** No Incomplete data have been used for statistical calculation

USGS 10 year Monthly Discharge Data from Reclamation Ditch Monitoring Station at Davis Road

USGS 11152650 RECLAMATION DITCH NR SALINAS CA

Available data for this site | Time-series: Monthly statistics | GO

Monterey County, California Hydrologic Unit Code 18060015 Latitude 36°42'18", Longitude 121°42'14" NAD27 Drainage area 53.2 square miles Gage datum 16 feet above NGVD29	**Output formats** HTML table of all data Tab-separated data Reselect output format

00060, Discharge, cubic feet per second,												
YEAR	Monthly mean in ft3/s (Calculation Period: 2010-01-01 -> 2020-04-30) Period-of-record for statistical calculation restricted by user											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2010	36.7	29.1	43.3	29	5.6	3.93	3.93	3.21	2.11	2.89	12.2	23.8
2011	19.7	32.7	75.8	9.47	5.24	4.6	3.71	2.9	2.28	7.78	7.67	1.24
2012	10.3	3.39	17.9	17.1	2.38	3.11	2.33	3.6	1.44	1.57	9.77	45.8
2013	15.2	3.64	2.68	2.07	1.52	1.47	1.57	1.63	1.08	0.964	1.42	1.38
2014	1.4	13.3	10.6	4.59	1.23	1.23	1.33	1.54	1.39	2.45	7.12	74.5
2015	0.978	4.63	1.75	2.92	1.58	1.12	0.951	1.37	0.933	0.988	9.37	18.9
2016	69.3	8.66	72.1	4.42	2.78	2.07	2.15	1.86	1.48	7.69	7.44	16.8
2017	191.1	194.6	37.1	12.3	3.29	2.35	1.96	1.78	1.05	0.965	2.13	0.821
2018	10.6	1.83	17.5	15.2	2.23	2.32	2.28	2.04	1.23	1.59	15.3	15.4
2019	10.9	107.8	24.7	3.77	10.1	3.36	2.93	2.73	1.77	1.05	3.96	42.9
2020	7.8	1.78	16.4	13.6								
Mean of monthly Discharge	34	36	29	10	3.6	2.6	2.3	2.3	1.5	2.8	7.6	24

** No Incomplete data have been used for statistical calculation

ATTACHMENT Q

California American Water
Peer Review of August 20, 2020 Letter from M1W to CCC

Prepared By: Kevin Alexander, P.E.
Hazen and Sawyer - August 23, 2020

This memorandum addresses Monterey One Water's (M1W) August 20, 2020 letter to Tom Luster of the California Coastal Commission, which responds to Hazen and Sawyer's August 11, 2020 Peer Review of Supply and Demand for the Monterey Peninsula. Hazen has reviewed M1W's response and offers the following comments:

- As an initial matter, Hazen notes its concern with M1W's tone and use of terms like "inaccuracies" and "falsify" to describe Hazen's analysis. All of the assumptions that are used in Hazen's analysis are explained clearly and directly. While M1W may dispute the basis for those assumptions, none of them amount to either inaccuracies or falsification of information.

- M1W and the Monterey Peninsula Water Management District (MPWMD), as the proponents of the Pure Water Monterey Expansion project (PWM Expansion), have the burden to demonstrate the PWM Expansion will have sufficient water supply to meet demand. We do not agree that they have provided adequate information regarding the availability and reliability of source waters for the PWM Expansion to be considered a resilient sustainable supply source for the Peninsula.

- M1W misrepresents that the August 11 Hazen and Sawyer Memorandum contains inaccurate analyses and conclusions. Hazen's analysis was based on the information provided in the SEIR for the PWM Expansion by M1W and MPMWD. To the extent that information is inaccurate, such inaccuracies are that of M1W and MPMWD. For example, Hazen's memorandum did not (and could not) include the new wastewater flow information provided by M1W in its August 20 letter because M1W has not made these numbers publicly available until now. Despite providing wastewater flow information for 2014 to 2019 for the first time, M1W still has not provided evidence supporting these numbers and instead requests that the Coastal Commission take the numbers at face value.

    - Nevertheless, the new wastewater flow numbers support Hazen's analysis and further demonstrate that there are insufficient source waters for the PWM Expansion.

    - Further, if this flow information was readily available to M1W, why did M1W not evaluate it in the SEIR for the PWM Expansion? The flow information represents significant new information that should have been made available to the public, subject to review and analyzed by M1W in the SEIR.

- By M1W's own admission, M1W states that the wastewater influent data in the SEIR was incomplete. Hazen did a thorough review and found multiple discrepancies and

inaccuracies in the wastewater flows used throughout the SEIR. Hazen's review and analysis clearly shows that the accurate wastewater flows were either not provided or updated in a transparent manner to the community.

- Wastewater flow data after 2013 was not used in M1W's analysis of the PWM Expansion and was never considered in the SEIR, despite the apparent availability of this information to M1W. Rather than rely solely on old data, Hazen's peer review of M1W's analysis utilized data for 2018 from Appendix E of the PWM Expansion Draft SEIR that demonstrated flows had been reduced to 18,810 AF, and additional data presented by M1W to its Ad-Hoc JPA Revision Committee on July 20, 2020, which indicated that since the beginning of 2020 wastewater flows have been reduced to 17,980 AF (which is a decrease of 2,110 AF from the 2013 drought year flow of 20,090 AF utilized in the SEIR). The reduction of wastewater flows to 17,980 AF is not disputed by M1W. Absent additional information from M1W, the 17,980 AF number presented to M1W's Ad-Hoc JPA Revision Committee is the most current flow information available.

    - Hazen's analysis utilized the 17,980 AF number for non-drought conditions, and the 17,016 AF number for drought conditions. Hazen did not solely rely on the 17,016 AF number as M1W claims. Nonetheless, the consideration of flow at 17,016 AF is important because, as explained in Hazen's prior memo, prolonged drought conditions are likely if not certain to occur.

    - The SEIR for the PWM Expansion has never been updated to account for either the 2018 flow of 18,810 AF, or the 2020 flow of 17,980 AF, much less the new flow data that M1W has just provided. When accounting for the new flow information, the slope of the decreased flows since 2013 is very similar to the declining trend that Hazen previously projected (see Updated Figure 3). In fact, M1W's new flow information is confirmation of the trend that Hazen presented and further demonstrates that source water for the PWM Expansion is inadequate.

- When M1W's wastewater flow information for 2018 to 2020 is evaluated on a three year basis, the three year average is 18,555 AF, which is only 500 AF above Hazen's prior projection of 17,980 AF for 2020, rather than the 3,000 AF difference that M1W claims.

- Even using M1W's own numbers and ignoring the 17,980 AF number that M1W previously presented, Hazen's conclusions remain accurate. Hazen's approach throughout used actual information provided to the public by M1W in the SEIR for the PWM Expansion and did not use assumptions as was done by MPMWD and M1W.

    - Any extrapolations, interpretations, calculations and projections made by Hazen are based upon similar mathematical approaches used throughout the SEIR to be consistent. Figures 3, 4 and 5 and Tables 1 and 2 from Hazen and

Sawyer's August 11 Memorandum have been updated below to account for the revised average flow of 18,555 AFY using the last 3 years of data. Even based on this updated information, Hazen's prior conclusions remain valid and it is evident that there is not enough wastewater flow to support the PWM Phase One and the PWM Expansion as a reliable source of water supply for the Peninsula. In particular, there will be deficits over the summer months – particularly in dry years – given the existing commitments of source waters that are proposed for PWM Phase One and PWM Expansion. M1W has not provided any evidence to counter these real deficits or explain how they can be avoided.

  - The deficits that Hazen has demonstrated – using M1W's own updated numbers – show that there is not sufficient source water for PWM Phase One and PWM Expansion to produce their promised product water to CalAm's customers of 3,500 AFY and 2,250 AFY, respectively.

- In addition, M1W has provided no evidence that Hazen's projections of reduced Reclamation Ditch flows are incorrect. Even though Hazen has serious concerns with the amount of other surface water flows from other sources purportedly available to the PWM Expansion, Hazen conservatively only made reductions as to Reclamation Ditch flows because there was publicly available evidence from USGS that Reclamation Ditch flows were lower than presented in the SEIR.

Updated Figure 3:
Reduced Demand = Reduced WWTP Flow
(=Reduced Recycled Water Supply)

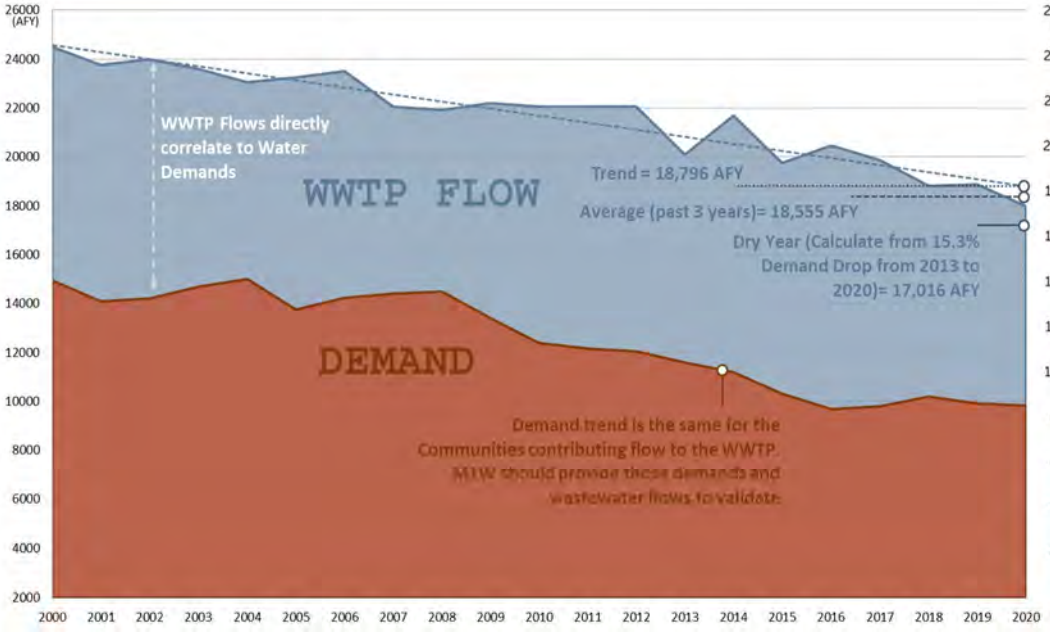

Figure 3:
Reduced Demand = Reduced WWTP Flow
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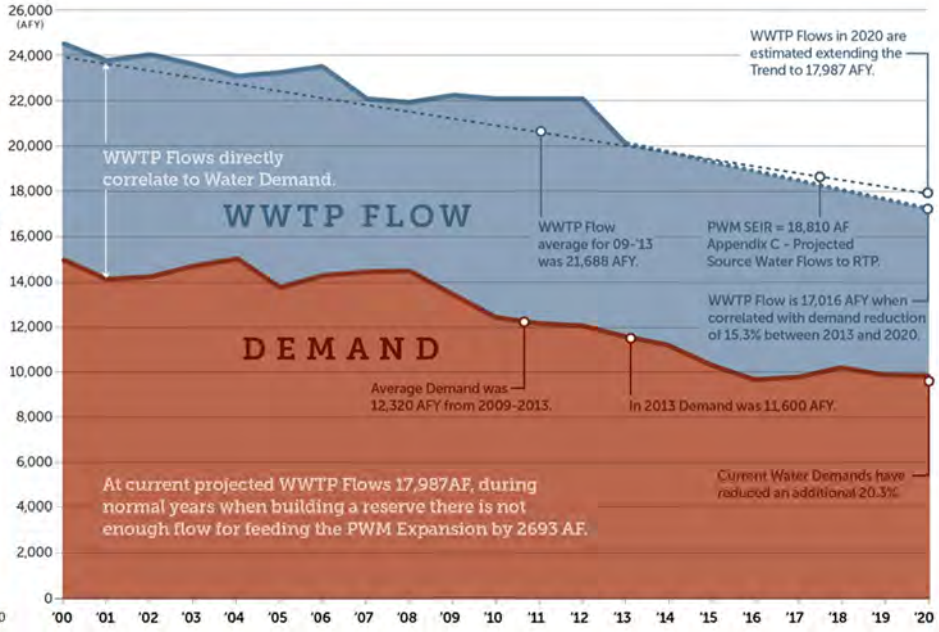


Updated TABLE 1 – IMPACTS OF REDUCED WWTP FLOW ON TABLES 8 – 11 FROM SEIR APPX. I

	Original SEIR Appx. I Data				Updated Appx. I Data			
Supply and Demand *in Acre-Ft*	**Table 8**	**Table 9**	**Table10**	**Table11**	**Table 8** Updated	**Table 9** Updated	**Table10** Updated	**Table11** Updated
SUPPLY								
WWTP Flow[a]	21764	21764	21764	20090	18555	18555	18555	17016
Domestic Flows	82	82	82	82	82	82	82	82
New Sources[b]	2579	2579	2579	2430	2579	2579	2579	2430
Surface Water[c]	3721	2052	2041	2840	3641	1972	1961	2304
TOTAL	**28146**	**26477**	**26466**	**25442**	**24857**	**23188**	**23177**	**21832**
DEMAND								
CSIP and CSIP Well	17227	17227	17227	22619	17227	17227	17227	22619
PWM	4320	4320	4320	2963	4320	4320	4320	2963
PWM drought	248	248	0	0	248	248	0	0
PWM Expansion	2778	2778	2778	2778	2778	2778	2778	2778
RUWAP	741	741	741	741	741	741	741	741
TOTAL	**25314**	**25314**	**25066**	**29101**	**25314**	**25314**	**25066**	**29101**
Annual Supply Excess[d]	**2833**	**1164**	**1400**	**-3659**	**-457**	**-2126**	**-1889**	**-7269**

TABLE 1 – IMPACTS OF REDUCED WWTP FLOW ON TABLES 8 – 11 FROM SEIR APPX. I

	Original SEIR Appx. I Data				Updated Appx. I Data			
Supply and Demand *in Acre-Ft*	**Table 8**	**Table 9**	**Table10**	**Table11**	**Table 8** Updated	**Table 9** Updated	**Table10** Updated	**Table11** Updated
SUPPLY								
WWTP Flow[a]	21764	21764	21764	20090	17987	17987	17987	17016
Domestic Flows	82	82	82	82	82	82	82	82
New Sources[b]	2579	2579	2579	2430	2579	2579	2579	2430
Surface Water[c]	3721	2052	2041	2840	3641	1972	1961	2304
TOTAL	**28146**	**26477**	**26466**	**25442**	**24289**	**22620**	**22609**	**21832**
DEMAND								
CSIP and CSIP Well	17227	17227	17227	22619	17227	17227	17227	22619
PWM	4320	4320	4320	2963	4320	4320	4320	2963
PWM drought	248	248	0	0	248	248	0	0
PWM Expansion	2778	2778	2778	2778	2778	2778	2778	2778
RUWAP	741	741	741	741	741	741	741	741
TOTAL	**25314**	**25314**	**25066**	**29101**	**25314**	**25314**	**25066**	**29102**
Annual Supply Excess[d]	**2833**	**1164**	**1400**	**-3659**	**-1025**	**-2693**	**-2457**	**-7270**

Updated TABLE 2 – IMPACTS OF REDUCED WWTP FLOW ON SUPPLY FLOW BALANCE

Flow Balance *– in Acre-Ft*	**Table 8**	**Table 9**	**Table 10**	**Table 11**	**Table 8** Update	**Table 9** Update	**Table 10** Update	**Table 11** Update
Flow to CSIP + CSIP Well Pumping	17227	17227	17227	22619	17227	17227	17227	21091[e]
Flow to PWM[f]	4320	4320	4320	2963	4320	4320	4320	0
Flow to PWM Drought	248	248	0	0	248	248	0	0
Flow to PWME[g]	2778	2778	2778	2778	1753	84	321	0
Flow to RUWAP	741	741	741	741	741	741	741	741
Actual Use Flows[h]	**25314**	**25314**	**25066**	**29101**	**24289**	**22620**	**22609**	**21832**
Flow to ASR[i]	5950	5950	5750	4650	5120	3768	3759	0
Concentrate Flow to Outfall[j]	1536	1536	1489	1232	1342	1025	1023	141
Deficit To ASR	**0**	**0**	**0**	**-1100**	**-370**	**-1722**	**-1530**	**-4650**

TABLE 2 – IMPACTS OF REDUCED WWTP FLOW ON SUPPLY FLOW BALANCE

Flow Balance *– in Acre-Ft*	**Table 8**	**Table 9**	**Table 10**	**Table 11**	**Table 8** Update	**Table 9** Update	**Table 10** Update	**Table 11** Update
Flow to CSIP + CSIP Well Pumping	17227	17227	17227	22619	17227	17227	17227	21091[e]
Flow to PWM[f]	4320	4320	4320	2963	4320	4320	4320	0
Flow to PWM Drought	248	248	0	0	248	248	0	0
Flow to PWME[g]	2778	2778	2778	2778	1753	84	321	0
Flow to RUWAP	741	741	741	741	741	741	741	741
Actual Use Flows[h]	**25314**	**25314**	**25066**	**29101**	**24289**	**22620**	**22609**	**21832**
Flow to ASR[i]	5950	5950	5750	4650	5120	3768	3759	0
Concentrate Flow to Outfall[j]	1536	1536	1489	1232	1342	1025	1023	141
Deficit To ASR	**0**	**0**	**0**	**-1100**	**-830**	**-2182**	**-1991**	**-4651**

Updated Figure 4: Impacts of Demands Exceeding Limited Supplies

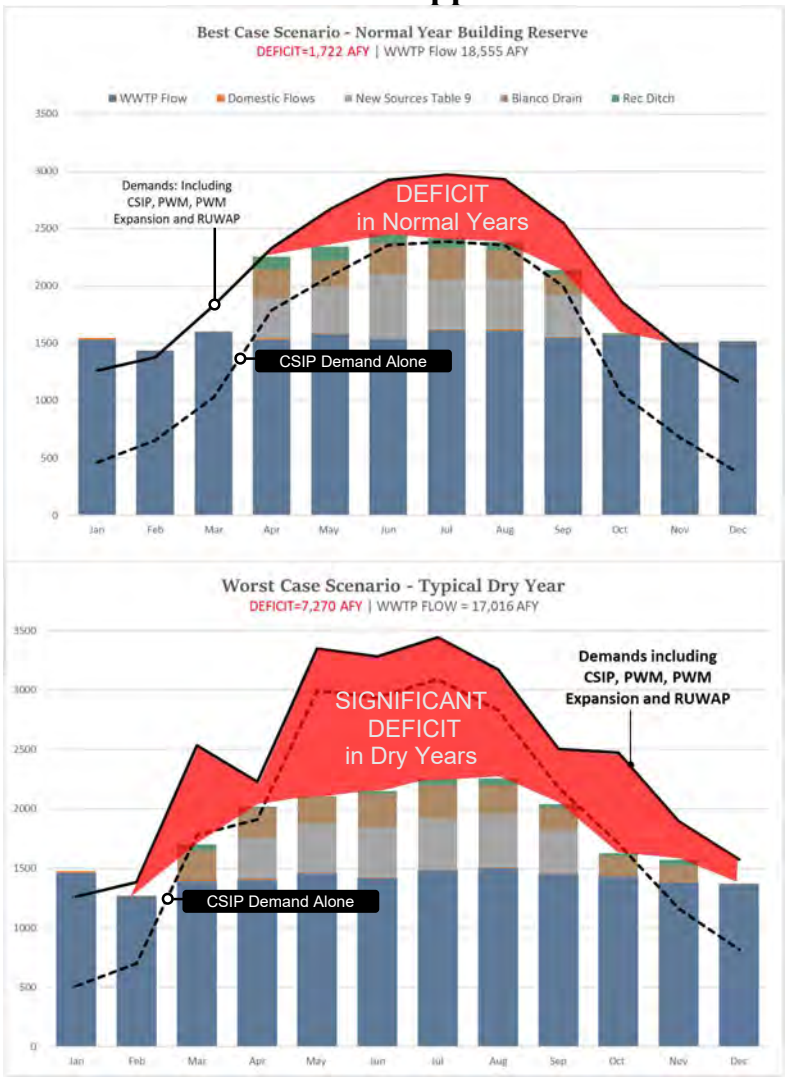
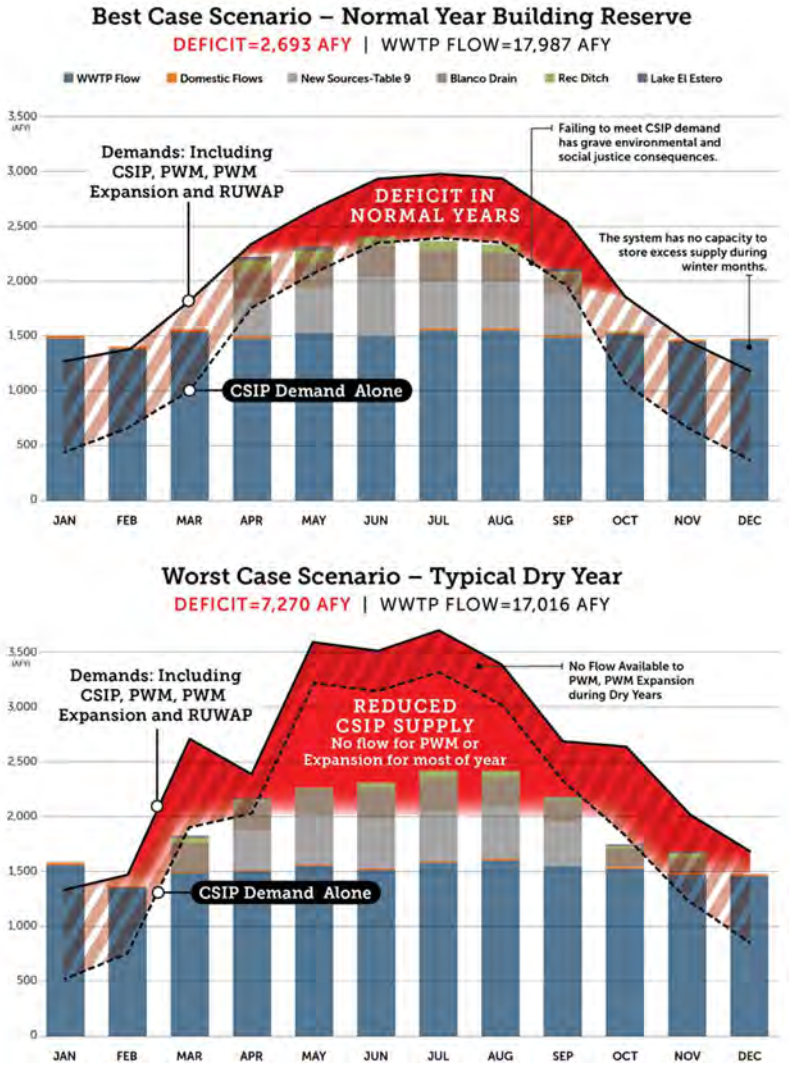
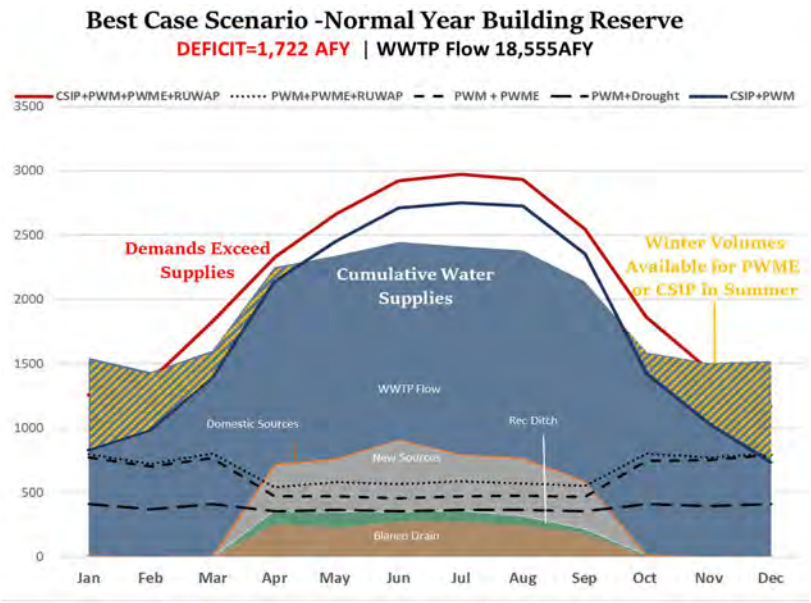


Figure 4: Impacts of Demands Exceeding Limited Supplies



Updated Figure 5: Supply Available for PWM Expansion or CSIP (Not Both)



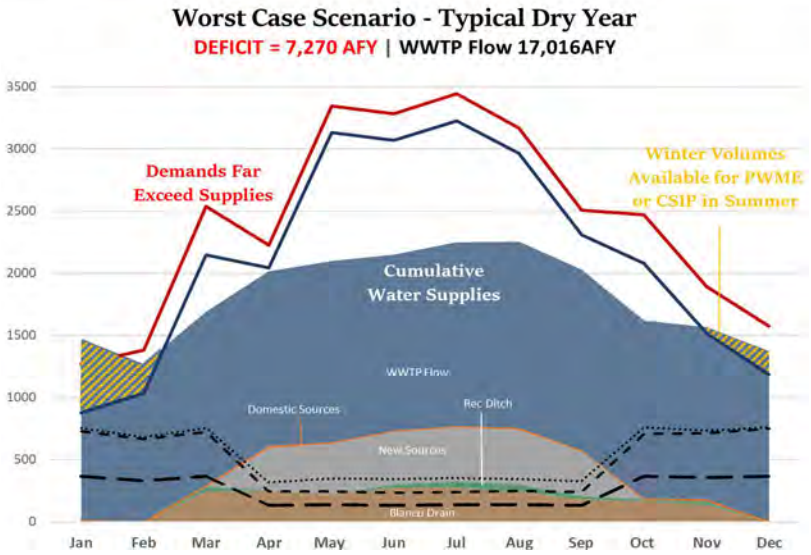
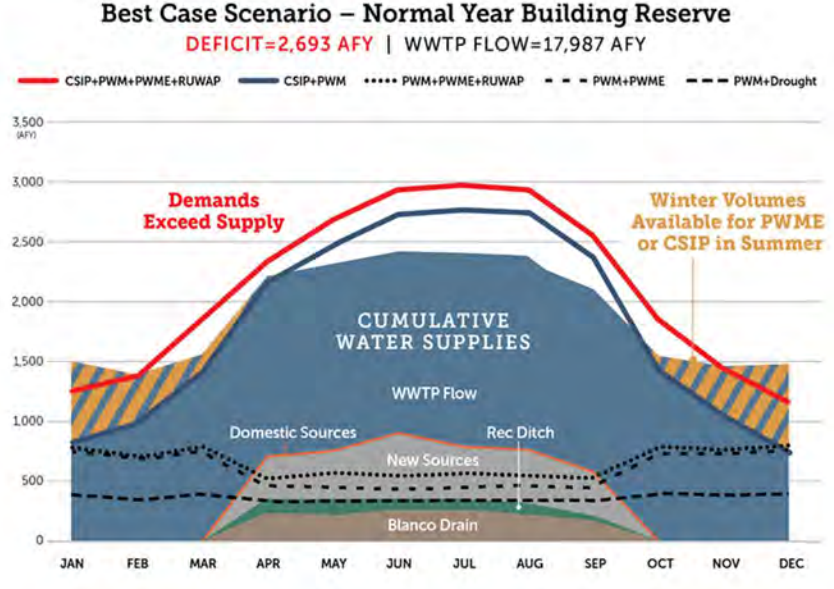
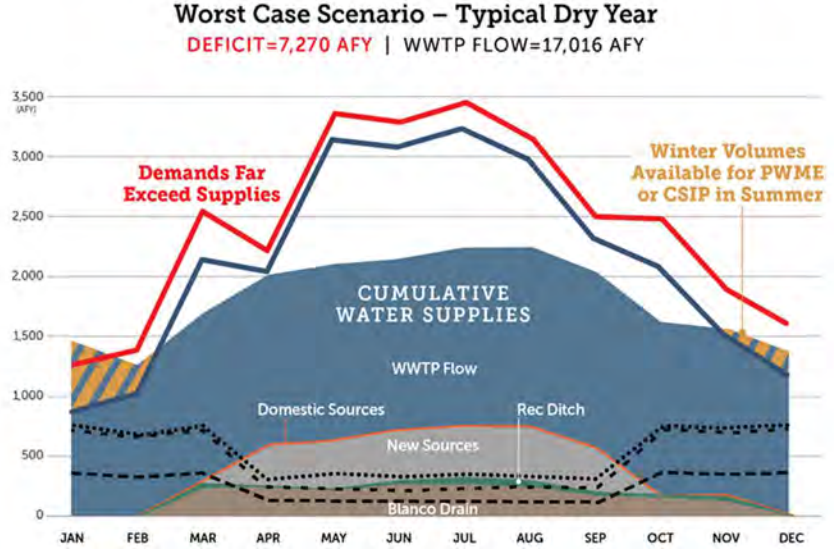


Figure 5: Supply Available for PWM Expansion or CSIP (Not Both)





ATTACHMENT R

California American Water
Peer Review of CCC Staff Report, Lon House Report and MCWD Media Statement

Prepared By: Kevin Alexander, P.E.
Hazen and Sawyer – September 10, 2020

This memorandum is in response to a review of the September 25, 2020 California Coastal Commission (CCC) Staff Report concerning California-American Water Company's (Cal-Am) proposal to construct and operate the Monterey Peninsula Water Supply Project (Project), the Energy and Water Consulting memorandum by Lon House, PhD. dated April 2020 that was provided to the CCC, and the Media Statement by Marina Coast Water District issued September 9, 2020.

I. RESPONSE TO STAFF REPORT

The following are Hazen's comments on the CCC Report:

- Hazen and Sawyer's August 11, 2020 and August 23, 2020 memoranda demonstrate that water supply and demand analysis provided to the CCC by Monterey One Water (M1W) and Monterey Peninsula Water Management District (MPWMD) relied on outdated wastewater flow data and that M1W and MPWMD were aware that wastewater flows were decreasing. Moreover, outdated and misleading assumptions of 2009 to 2013 wastewater flows were carried throughout the Draft and Final SEIR for the Pure Water Expansion, which indicates that the SEIR analysis of water supply and demand was inadequate. In response to Hazen and Sawyer's August 11 memorandum demonstrating these inadequacies, on August 20, 2020, M1W provided for the first time its purported wastewater flows from 2014 to 2019 (though without the underlying data). Hazen and Sawyer's August 23 memorandum reviewed the 2014 to 2019 flow information provided by M1W and confirmed that wastewater flows are insufficient to supply the Pure Water Expansion as previously concluded by Hazen.

  The Staff Report largely ignores Hazen's August 11, 2020 and August 23, 2020 memoranda and does not consider M1W's recent flow information. As a result, the Staff Report does not address the significance of Hazen's conclusion that the Pure Water Expansion project simply does not have an adequate source of water supplies for it to produce its promised 2,250 acre-feet per year (afy). It is clear that the CCC staff has not reviewed or relied upon the latest information provided by Hazen or by M1W. Page 7 of the Staff Report states: "However, based on staff's evaluation of technical information provided by Monterey One Water and others, staff believe there is sufficient source water, include at least one certain source – i.e., no less than about 8,000 acre-feet per year of treated wastewater – to provide the approximately 3,000 acre-feet per year the Pure Water Expansion will need to produce its expected 2,250 acre-feet per year and satisfy the service area's water demand."

- The Staff Report is incorrect in stating there is 8,000 acre-feet of wastewater flows available. Although the Draft SEIR indicated that there was approximately 8,000 afy of wastewater effluent available to the ocean outfall in a normal year, the Final SEIR updated this assumption and states that only 5,811 afy is assumed to be available. (Appendix M Table 2.)

- When average flows per year for the past 3 years of 18,555 afy are considered, the 5,811 afy of available wastewater is further reduced to 5,732 acre-feet. When considering the most current data for 2020, wastewater flows are 17,980 acre-feet, which will reduce the available wastewater flow to the ocean outfall to 5,554 acre-feet.

- The current Pure Water project requires 4,320 acre-feet of that wastewater to produce the 3,500 acre-feet of water for Cal-Am's customers, and 4,568 acre-feet of wastewater to produce 3,700 acre-feet when building a drought reserve.

- The Regional Urban Water Augmentation Project (RUWAP) must be supplied from wastewater effluent at 822 acre-feet; however, with backwash flows re-introduced, that flow is reduced to 741 acre-feet.

- Therefore, the remaining amount of wastewater available for the Pure Water Expansion is 5,732 minus 4,568 minus 741, which equals **432 acre-feet**. 432 afy is not sufficient source water for the Pure Water Expansion to produce 2,250 afy. Instead, at least 2,778 afy of source water would be required.

- In Dry Years as noted, the actual wastewater flows are estimated to be substantially less and therefore, no flow is available for the Pure Water Expansion.

- The quantity of source water to supply the Pure Water project and the Pure Water Expansion are evaluated in the Staff Report. However, as noted above, the Staff Report incorrectly relies on the availability of source water base on flawed analysis from M1W and MPWMD without consideration for whether the availability of a given source is documented and reliable year round or during drought. CCC Staff are directed to Appendix M of the SEIR Table 2 and Table 3 for available sources for the Pure Water Expansion. The Staff Report noted that M1W has agreements for more than enough water actually needed to supply the Pure Water Expansion. This conclusion is incorrect based on the methodology and assumptions and Table 2 and 3 of the SEIR Appendix M. Continuing the calculation from above:

    - When all available assumed and estimated flows, including the 432 acre-ft calculated above, according to the Source Water Priority Table 3 in Appendix M of the SEIR are available, there is only 2,297 acre-feet actually available for Pure Water Expansion. The maximum flow that could be produced at best case is 1,860 acre-feet. This assumes all flows from all of the sources "allowed" to feed the Pure Water Expansion are available 100 percent of the time. That flow is further reduced to 1,597 afy if the flows are reduced for the current wastewater

flow of 17,980 afy. The following Table 1 shows the flows from SEIR Appendix M Table 2 used in assessing the available water to the Pure Water Expansion:

TABLE 1

Source Water	**Quantity of Water Available to M1W in a Typical Year (Acre Feet Per Year)**
Secondary Effluent to Ocean Outfall	432 afy remaining from calculation above. (245 afy if WW flow to ocean outfall is 5,554 based on current year at 17,980 afy)
Reclamation Ditch	0 - (SEIR Appx M, Pg 9) "The new source waters conservatively are not assumed toe available for the Proposed Modification, regardless whether condition precedence are met."
Blanco Drain	0 - (SEIR Appx M, Pg 9) "The new source waters conservatively are not assumed toe available for the Proposed Modification, regardless whether condition precedence are met."
Agricultural Wash Water (AWW)	0 - (SEIR Appx M, Pg 9) "The new source waters conservatively are not assumed toe available for the Proposed Modification, regardless whether condition precedence are met."
Recycle Sump #1	41
Recycle Sump #2	104
Approved PWM Project and MCWD AWPF Backwashes	290
Proposed Modifications AWPF Backwashes (only available for Modifications)	152 at 2250 AFY (36 when producing 528 AFY with current WW flows at 17,980)
SVRP Backwash	515 in 2018 (492 when WW flow reduced from 18,810 to 17,980 in 2020)
Boranda	95
Farmworker Housing	18
M1W's ARWRA Summer Water (ARWRA Section IV 4.01 1(d))	650
SRDF Screening	0 - SEIR Appendix M -Table 2, "*** SRDF Screening and Salinas IWTF Pond System waters are assumed to not be available."
Salinas IWTF Pond System	0 - SEIR Appendix M -Table 2, "*** SRDF Screening and Salinas IWTF Pond System waters are assumed to not be available."
Total Available for feed to the M1W AWPF	2,297 (1,971 including current 17,980 WW flow)

- M1W stated in the SEIR Appendix M that its assumptions are conservative. Hazen does not agree, as it is clear there is not enough wastewater flow, since

M1W's own flow information from 2014 to 2019 shows that wastewater flow has declined significantly since 2013, the last year evaluated in the SEIR. Additionally, the other surface water flows proposed as source water for the Pure Water Expansion are based on unverified flows that were stated to be "assumed and estimated" in the SEIR. (SEIR Appendix M, pp. 7, 9 10 and 12.)

- The "Assumed Flows and Estimated Flows" in SEIR Appendix M do not have backup information that validates the reliability of these flows in recent years or over multiple years. Additionally, according to SEIR Appendix M, Methodology and Assumptions, the Blanco Drain, Reclamation Ditch and Agricultural Wash Water are not included as source water available to the PWM Expansion. These flows, although not part of the source water to the Pure Water Expansion, have not been updated with recent information and the validity, availability and reliability of flow from those supplies even to the existing Pure Water project are speculative.

- Staff Report page 110 states that the August 20, 2020 letter from M1W to the CCC addresses Cal-Am's contentions and clarifies that Cal-Am's concerns about inadequate wastewater were based on incorrect analysis. The Staff Report asserts that Cal-Am's concerns about source water quality are misplaced because the Pure Water Project has treated wastewater from agricultural operations.

  - M1W states that wastewater flows from the Peninsula make up a portion of the influent to the Wastewater Treatment Plant and asserts that because they are only a portion of the flows, the demand reductions are not proof that the wastewater flows are reducing. The data provide by M1W in the August 2020 memorandum clearly reveals otherwise and supports the deficit conclusions in the Hazen Memorandum from August 11, 2020.

  - In an area where demands are weighed down by moratoria, outdoor watering is limited by regulations, and tiered rates are used as a mechanism to drive down, excess use results in water use being closer to wastewater flow since indoor water ends up in the sewer. The contributing agencies to M1W all use such tools to control water demand meaning reductions in demand declines would be similar across the area. Hazen reaffirms its analysis that clearly shows wastewater flows are reduced to the levels predicted in Hazen's August 11, 2020 memorandum. Hazen's August 11 memorandum estimated 17,987 acre-feet of wastewater flow today using a demand corollary. Based on M1W's new flow information, flows are 17,980 acre-feet today.

  - Regarding Water Quality of the source waters, the Draft SEIR Appendix E -Water Quality and Statutory Compliance Report, at Appendix B-1 (2013-2014 test data) used testing procedures for perfluorooctanoic acid and perfluorooctanesulfonate (PFOA/PFOS) compounds that had a higher detection limit than current procedures. M1W was recently added to the list of agencies having to provide updated data for 31 PFOA/PFOS compounds in its effluent and RO concentrate

using updated testing methods that detect such compounds at much lower levels.[1] It should be noted that even with the older test data that the Lake El Estero has PFOA/PFOS compounds at detectible levels. With current regulations for drinking water supplies being much lower, it will be important to understand each source of supply and if the levels will be required to be removed. The RO Technology will remove the compound, however it will end up in the Bay as concentrate at much higher concentrations which could be another issue. This issue has not been evaluated by M1W or the CCC.

- The Staff Report fails to consider the limited availability of ASR. Throughout the 2020 and 2019 MPWMD reports and in the CCC Staff Report there are references to ASR being a proven approach. Hazen would agree with that statement that ASR when used appropriately can be a solution. However, what is not addressed by MPWMD or the SEIR (as noted in the Hazen Memorandum dated August 11, 2020 and August 23, 2020) is that *there must be water available to treat to be able to inject into the aquifer for storage and ultimate recovery*. ASR using excess Carmel River water in the past 15 years has not shown the ability to build adequate storage. In the context of the proposed Pure Water Expansion, there is not enough flow available to build the drought reserve over time let alone meet current demand.

- Regarding startup related issues, the CCC Staff Report references the Orange County Water District (OCWD) Groundwater Replenishment System (GWRS) and notes that the system did not start up at full capacity for various reasons. It should be noted that the reason the system did not produce at the full capacity in the first years of operation is that wastewater flows had dropped at Orange County Sanitation District (OCSD) Wastewater Treatment Plant No. 1 similar to the situation being faced by M1W. That reduction in wastewater flow ultimately forced OCWD to install very large 15 million gallon equalization tanks to capture excess flows during the day to allow the system to operate at nearly full flow at night. The Author of this memorandum was the lead process engineer for OCWD during development of the Phase 1, planning of the Phase 2 and ultimate build out of the GWRS projects for OCWD. Further, the Author is intimately familiar with that system and how it started and continues to operate.

- The Draft and Final SEIR have water supply projections that have not been updated to address lower wastewater flows. The environment will be impacted if MPMWD and M1W divert effluent by Water Right from the CSIP program to the Pure Water projects. No analysis has been provided with regard to how to prioritize CSIP and reducing seawater intrusion from continued groundwater pumping versus supplying the Pure Water project.

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[1] State Water Resources Control Board, Water Code Sections 13267 and 13383 Order for the Determination of The Presence of Per and Polyfluroralkyl Substances at Publicly Owned Treatment Works, ORDER WQ 2020-0015-DWQ, Attachment 2, available at https://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2020/wqo2020_0015_dwq.pdf.

- Table 6 on page 121 of the Staff Report provides a comparison of Cal-Am's water supply portfolio with Cal-Am's desalination Project or with the Pure Water Expansion. What is not made clear is what the table looks like when actual available water supplies and updated SEIR Tables 9, 10, and 11 based on the most recent 3 years of wastewater flow data are accounted for. Appendix A below provides that updated accounting. Although Hazen and Sawyer used the same methodology and approaches used to calculate predictions of current and future demand by MPWMD and House, as shown in Appendix A, when ASR is accounted for at a realistic level, the Pure Water Expansion cannot meet MPWMD lowest demand estimate of 10,855 acre-feet per year. Likewise, when WWTP flows and Reclamation Ditch flows are accounted for based on current flow data, the Pure Water Expansion cannot meet 10,855 acre-feet per year demand. When the SEIR tables are updated to account for current WWTP flow and Reclamation Ditch Flow, it is apparent that MPWMD has overestimated supplies. In Appendix A, Updated SEIR Table 9 reveals there is enough flow to produce 528 acre-feet from the Pure Water Expansion. Appendix A, Updated Table 10 would likely never apply because there is not adequate flow to build a reserve. Appendix A, Updated Table 11 reveals that during drought years, there must be 5,311 acre-feet available from ASR that is not actually available because, as explained in the August 11, 2020 report from Hazen and Sawyer, between 1997 and 2019, annual ASR reinjection only reached the 1,300 acre-feet per year twice, averaging only 450 acre-feet per year over a 22 year period. During drought conditions, ASR is essentially unavailable. These are significant issues that MPMWD and M1W must address before the CCC can consider the Pure Water Expansion as a potential alternative to Cal-Am's Project. The future demand ranges presented in House Table 3 are similar to the demand ranges provided by MPWMD and for the same reasons that the Pure Water Expansion cannot meet MPWMD's lowest estimate of demand, it is speculative to assume that the demand levels presented by House are attainable.

II. RESPONSE TO LON HOUSE MEMORANDUM

The following response is based on a review of the Lon House Memorandum:

- The House Report asserts that MPWMD is an expert at water supply and demand determinations "and has no reason to defer to the CPUC or any other agency[.]" (House Report, p. 1.) Based on Hazen and Sawyer's peer review of MPWMD's supply and demand analysis, it is clear that their evaluation of these issues neglected to consider the complete and current picture of how the supplies and demands work together, which is especially important when supply is inextricably linked to demand as is the case with wastewater. In this case, MPMWD did not make available or evaluate key information on wastewater flows and the impacts of those flows on the availability of water supplies to the community. In the case of supply, MPWMD selectively used outdated data that supported its narrative that there is plenty of supply for the Pure Water Expansion. In the case of demand, the MPWMD elected to use up to the minute demand information and actually updated its report between September 2019 and December 2019 to better support MPWMD's narrative. In our judgement, an expert should not selectively choose a dataset to sway results to achieve an outcome.

- Page 2 of the House Report states: "Three more full years (2017-2019) of recorded water demand data is now available. This recent data makes the CPUC data set obsolete, reducing the existing customer 10-year average water demand available in the CPUC proceeding by 1,275 acre-feet per year (afy), a reduction of 10.7 percent."

    - The House Report overlooks the data that M1W presented to its Ad-Hoc JPA Revision Committee on July 20, 2020 that indicates since the beginning of 2020, wastewater treatment plant (WWTP) flows were reduced by 20.3.% since 2013 to 17,980 afy or 16.05 mgd.[2] If the CPUC data set is rendered "obsolete" because of new demand data, then so is the WWTP flow data in the SEIR and in the analysis by Stoldt that only relied on WWTP flow data from 2009 to 2013. 2013 to 2020 WWTP flow information demonstrates that WWTP flows are inadequate to supply the Expansion so that it could provide product water to meet the most restrictive demand projections by MPWMD (10,855 afy). Appendix A below and the Hazen memorandum from August 11, 2020 and August 23, 2020 show how the current wastewater flows translates directly to reduced capacity for supply.

- Page 3 of the House Report states: "The CPUC recognizes the importance of using the latest water demand data. In its decision in CalAm's last General Rate Case, the CPUC concluded "'Given the declining consumption pattern in the Monterey main district, the most recent data available is likely to be the most accurate.' What could substitution of a couple more years of recent water demand information make? It turns out – a lot."

    - Similar to the CPUC's consideration of the last 3 years of data for demand, the same could be said for the WWTP Flows. ***What could substitution of a couple more years of recent wastewater flow information make? It turns out – a lot.***

    - The Expansion SEIR relied on WWTP flow data from 2009 to 2013. Hazen and CalAm commented that the WWTP flow data did not reflect actual WWTP flow available to M1W. In Hazen's August 11 memo, Hazen identified publicly available data (including evidence of 2020 flows) indicating that WWTP flows have declined significantly since 2013. On August 20, 2020, M1W provided WWTP flow data from 2014 to 2019. So what difference does a few years make? "It turns out – a lot." Since 2009 to 2013, WWTP flows have decreased from 21,764 afy to 17,980 afy, a reduction of 3,209 afy. Using M1W's own updated numbers, it is evident that WWTP is not a sufficient or reliable source water for the Pure Water project or the Pure Water Expansion to produce its promised product water to CalAm's customers of 3,500 afy and 2,250 afy, respectively.

- Pages 3, 4 and 5. The House Report confuses various characterizations of demand by calling CPUCs Planning Level Demand of 12,350 the "current" demand. It is not the current demand but is the planning level that is used to identify what level of demand to use based on the 2021 CDO date for starting the future projections of demand to use in planning for future water supplies. Planning level demand makes various additions

[2] Attached as Exhibit 5 to Hazen's August 11, 2020 memorandum.

including tourism bounce back, Lots of Record, and Pebble Beach to the "current" demand to account for uncertainty in the demand when the pressures to suppress demand are lifted as supply constraints are mitigated.

- Similarly, House developed the table below as a comparison of Customer Existing Water Demand. None of the values in that table are Customer Existing Water Demand. These numbers are Planning Level Demand.

- In addition, it appears there is an error in the analysis between the 10-year average Demand and the 5-year average demand when compared to the 2020 Stoldt Memorandum at 10,863 and 9,825 afy, respectively. The Lon House Memorandum table below appears to use different values that are not explained in the memorandum for the same time period. With no transparency in how this was determined, these numbers form a speculative base to calculate future demand.

Table 1. Comparison of Estimates of CalAm Customer Existing Water Demand

CalAm Application	CPUC Adopted	10-year average (2010-2019)	5-year average (2015-2019)
13,290 afy	12,350 afy	10,619 afy	9,727 afy

- As noted above, House provides updated 10-year and 5-year average data that do not agree with the Stoldt updates from March 2020. House carries those numbers into the House Table 3 below estimating the Eventual Demand ranges.

Table 3. Comparison of Estimates of Eventual Monterey Peninsula Water Demand

	MPWSP Application	CPUC Adopted	10-yr Average Customer Demand plus MPWMD New Demands	5-yr Average Customer Demand plus MPWMD New Demands
Existing Customer Demand	13,290 afy	12,000 afy	10,619 afy	9,727 afy
New Water Demand	2,006 afy	2,000 afy	1,067-1,424 afy	1,067-1,424 afy
Total Eventual Demand	**15,296 afy**	**14,000 afy**	**11,686-12,043 afy**	**10,794-11,151 afy**

14 to 17% lower than CPUC adopted

20 to 23% lower than CPUC adopted

House again references Existing Customer Demand and adds New Water Demand and introduces the concept of Eventual Demand. Eventual Demand would appear to mean the demand to use in starting future planning and future demand projection efforts rather than relying on current water demand data that does not account for uncertainty. House

does not address uncertainty in the estimates of Existing Customer Demand that can be weighed down by measures such as the moratorium and the cost of purchasing allocations. Secondly, he does not address uncertainty in the estimates of the New Water Demands but continues to use the Range of Eventual Demands. Although the demand projections made by House appear to be uncertain and in error, the demand range presented by House is well within the range presented by MPWMD and others, which the Pure Water Expansion is unable to satisfy.

- House does not appear to analyze the water supply of 2,250 afy that can be produced from the PWM Expansion. The House memorandum does not evaluate available wastewater supply necessary to produce that 2,250 afy and therefore does not come to the conclusion that the PWM Expansion cannot meet "existing" and "eventual" demands. This is a mistake considering the updated wastewater flow information that calls further into question supply availability, reliability or sustainability. However, what is key is that House understands that another water supply is necessary and given the updated supply information would have only been able to state that the MPWSP is the only project that will add a new supply of water that is critical to meeting todays demands and future demands.

    - Due to lack of wastewater flows and other supplies, the PWM Expansion fails to meet even the lowest Eventual (future) demand projection of 10,855 from Stoldt and the 10,794 afy from House.

    - Refer to Updated Table 2 below from August 11, 2020 with the Flows updated with the latest WW Flows from M1W. The importance of the Updated Table 2 shown in the ERRATA below is that in Normal Years while building a reserve (Updated Table 9 column) there is only 652 afy available as feed to the PWM Expansion. ***The Pure Water Expansion will therefore only produce 528 afy.***

    - Refer to the Table 2, Updated Table 9 column, for actual water supplies available to meet current and future demands with the Pure Water Expansion. The demands above 9,772 afy cannot be met even with a speculative maximum ASR output of 1,300 afy.

- Page 7. House introduces a calculation for instantaneous and permanent water demand increase of 881 afy. The calculation is based on an increase from 2019 demand up to the 10 year average demand or a 9% change. We do not agree with this calculation which underestimates the demand that should be used for planning and does not account for uncertainty in demand.

- Page 9. House notes that MPMWD has clearly identified water supplies and demands. This is an incorrect statement. House does not look at the where the water is originating similar to the errors made by MPWMD and the SEIR. Paper water without actual flow is not an adequate source.

III. ERRATA TO AUGUST 23, 2020 UPDATED TABLE 2

Table 2 in the Hazen and Sawyer August 11 and August 23, 2020 memorandums highlight the impact of the reduced wastewater flow on the actual supply flow balance and ultimately in the amount of flow to ASR.

In Hazen's August 11, 2020 memorandum, wastewater flows were based on the 17,987 afy calculated from the correlation with demand. In Hazen's August 23, 2020 memorandum, wastewater flows were revised based on the 18,555 afy average of the last 3 years of wastewater flows provided by M1W.

The Flow to PWME in the Table 8-11 Updates are adjusted to reduce flow to allow the Actual Use Flows to match with the available Supplies in the Updated Table 1 from the August 23, 2020 memorandum. The ASR Deficit calculated for the Table 8-11 Updates are calculated by subtracting the planned ASR value from the amount of ASR calculated in the Table 8-11 Update. In all cases, there is and will be a deficit to ASR based on the reduced wastewater flows. Updated TABLE 2 from Hazen's August 23, 2020 memoranda is replaced with the Updated TABLE 2 below to correct a tabulation error highlighted herein. This revision does not impact or modify Hazen and Sawyer's conclusion that due to reduced wastewater flows, there is only enough supply flows available to send 652 afy feed to the Pure Water Expansion to produce 528 afy in the normal years.

UPDATED TABLE 2 – IMPACTS OF REDUCED WWTP FLOW ON SUPPLY FLOW BALANCE

Flow Balance in Acre-Ft	Table 8	Table 9	Table 10	Table 11	Table 8 Update	Table 9 Update	Table 10 Update	Table 11 Update
Flow to CSIP + CSIP Well Pumping	17227	17227	17227	22619	17227	17227	17227	21091[e]
Flow to PWM[f]	4320	4320	4320	2963	4320	4320	4320	0
Flow to PWM Drought	248	248	0	0	248	248	0	0
Flow to PWME[g]	2778	2778	2778	2778	2321 ~~1753~~	652 ~~84~~	889 ~~321~~	0
Flow to RUWAP	741	741	741	741	741	741	741	741
Actual Use Flows[h]	**25314**	**25314**	**25066**	**29101**	**24857** ~~**24289**~~	**23188** ~~**22620**~~	**23177** ~~**22609**~~	**21832**
Flow to ASR[i]	5950	5950	5750	4650	5580 ~~5120~~	4228 ~~3768~~	4219 ~~3759~~	0
Concentrate Flow to Outfall[j]	1536	1536	1489	1232	1450	1133	1130	141
Deficit To ASR	**0**	**0**	**0**	**-1100**	**-370**	**-1722**	**-1530**	**-4650**

Notes:

e CSIP and CSIP Well Flows from Table 8-11 Demand. Reduced CSIP in "Table 11 Updated" by taking Water Right

f Revised flow to PWM down for Table 11 to match actual Use to supply

g Flow available to PWME is calculated based on maintaining flow to PWM and RUWAP and to Concentrate

h Actual Use is calculated to confirm balance with Supply

i ASR Flow is from the AWT product water flow without RUWAP

j Concentrate flow is 19% of Flow for PWM, PWM Drought, PWME, and RUWAP

k Deficit to ASR based on Flow to ASR minus the PWM AND PWME DEMAND from Table 1

IV. REVIEW OF THE MCWD MEDIA STATEMENT ISSUED SEPTEMBER 9, 2020

The Marina Coast Water District issued a Media Statement on September 9, 2020 titled Contractual Agreements Guarantee Source Water To Monterey One Water For Pure Water Monterey Expansion. Hazen and Sawyer reviewed the Media Statement and provide the following comments:

- The Media Statement is continuing to mislead the community as to the volume of surface water and wastewater that are available as compared to "paper" water rights. Possession of certain water rights and agreements does not mean there is actually water available. This is similar to the Colorado River, where there are more water rights than available water. Recent wastewater flow information provided by Monterey One Water for years 2013 to 2020 prove that wastewater volumes available on an annual basis have dropped substantially compared to what was indicated and planned in the SEIR for the Pure Water Monterey Expansion.

- According to the SEIR, the newly identified sources proposed by MCWD for use by the Pure Water Expansion are not available to be used by that project. (SEIR Appendix M, pg. 9). Therefore, claiming the volume of water from these sources can be used does not demonstrate that these source are actually available and conflicts with the SEIR already circulated under CEQA.

- The Salinas Urban Runoff/Stormwater requires additional agreements as stated in the SEIR Appendix M, pg. 5. Therefore, the contractual agreements for this source are not in place and reliance on the availability of this source is speculative.

- The Reclamation Ditch and wastewater water volumes assumed available by MCWD and M1W in the SEIR have been shown to be much less than estimated. The Agricultural Wash Water flows and the Blanco Drain flows are both unverified and remain speculative. The agricultural waste water volumes have not been verified on an annual basis beyond 2013 and were only estimated according to the yield studies in the SEIR. The Blanco Drain flows beyond 2013 have not been provided and were estimated based on very limited data as stated in the Blanco Drain Yield Study, page. 7. Knowing that the Reclamation Ditch and wastewater flows have been shown to be much less than claimed in the SEIR, there is a need for verifiable data and values for these new sources identified by MCWD's media statement.

- The EIR for the Pure Water Monterey project included modifications to the Salinas Valley Reclamation Plant (SVRP) to allow for more treated wastewater to be sent to Castroville Seawater Intrusion Project (CSIP) during winter months. Although, the proposed modifications to the SVRP have not been completed, it will further reduce the wastewater available to the Pure Water Monterey Expansion. Additionally, MCWRA intends to take wells offline in the CSIP area to reduce the increasing seawater intrusion.

    - In conclusion, MCWD by its own Media Statement is continuing to mislead the community that water is available for the PWM Expansion.

- The “New Sources” referenced are not to be used for the Pure Water Monterey Expansion accordingly to its own SEIR.

- The volume of wastewater available has been shown to be much less than planned.

- Finally, MCWRA is planning to expand CSIP and is reducing the number of wells in the area of seawater intrusion thus needing more of the treated wastewater effluent.

- Having adequate, reliable, sustainable water supplies for the Peninsula are critical to the community. When there are competing interests for limited supplies of water, it is critical to know that water supplies will actually be available and not just the paper volume stated in a water rights document or agreement.

Appendix A: Identified Available Water Supplies In Acre-Feet Per Year

Source / Assumption Scenario	Proposed by Others			ASR Controlled*			Wastewater & Reclamation Ditch Controlled*		
	CPUC	MPWMD 2020	MPWMD 2019	No ASR	Half ASR (650 AFY)	Full ASR (1,300 AFY)	Updated Table 9 – Normal Year building Reserve	Updated Table 10 – Normal Yr after full Reserve	Updated Table 11 – Dry Year
1. Carmel River	3,376	3,376	3,376	3,376	3,376	3,376	3,376	3,376	3,376
2. Seaside Groundwater Basin	774	774	774	774	774	774	774	774	774
3. Aquifer Storage and Recovery	1,300	1,300	1,300	0	650	1,300	1,300	1,300	1,300
4. Sand City Desalination Facility	94	94	94	94	94	94	94	94	94
5. Pure Water Project	3,500	3,500	3,500	3,500	3,500	3,500	3,700	3,500	0
6. Pure Water Expansion	-	2,250	2,250	2,250	2,250	2,250	528	719	0
7. Other Available Supplies	-	300	406	-	-	-	-	-	-
Total without desalination Project	9,044	11,594	11,700	9,994	10,644	11,294	9,772	9,763	5,544
Surplus/Deficit assuming 10,855 afy demand	**-1,811**	**739**	**845**	**-861**	**-211**	**439**	**-1083**	**-1,092**	**-5,311**

* Figure 2 from the August 11, 2020 Hazen and Sawyer report depicts these alternative scenarios. (August 11, 2020 Hazen Memo, p. 19.)

ATTACHMENT S

Pure Water Monterey
Deliveries and Reserve Balances
(AF)
FY 2021-22

	Delivery	Operating Reserve				Drought Reserve				
Month	Injected	Beginning Balance	Injected	Withdrawn for Customer Service	Ending Balance	Beginning Balance	Injected	Withdrawn for Customer Service	Ending Balance	Company Water
July	306.5726	1033.9087	166.5726	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	140.0000
August	306.9125	1200.4813	0.0000	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	306.9125
September	292.6476	1200.4813	0.0000	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	292.6476
October	298.1989	1200.4813	0.0000	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	298.1989
November	289.9656	1200.4813	0.0000	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	289.9656
December	312.2669	1200.4813	0.0000	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	312.2669
January	320.5097	1200.4813	0.0000	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	320.5097
February	282.2149	1200.4813	0.0000	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	282.2149
March	341.9173	1200.4813	0.0000	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	341.9173
April	362.0942	1200.4813	0.0000	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	362.0942
May	295.5769	1200.4813	0.0000	0.0000	1200.4813	0.0000	0.0000	0.0000	0.0000	295.5769
June	264.5534	1200.4813	6.8579	0.0000	1207.3392	0.0000	0.0000	0.0000	0.0000	257.6955
Total	3673.4305		173.4305	0.0000			0.0000	0.0000		3500.0000

ATTACHMENT T

Monterey One Water
Providing Cooperative Water Solutions

Recycled Water Committee
Staff Report

TO: Recycled Water Committee

FROM: Paul A. Sciuto, General Manager

MEETING DATE: April 14, 2022

AGENDA ITEM NO: 12

SUBJECT: **Consider Recommending Approval of M1W Distribution of Source Water for the Salinas Valley Reclamation Plant and for the Advanced Water Purification Facility**

BACKGROUND

Currently, M1W is party to the following agreements related to M1W's use of secondary effluent (source water) for influent to the Salinas Valley Reclamation Plant (SVRP) and the Advanced Water Purification Facility (AWPF):

1. Amended and Restated Water Recycling Agreement (M1W and MCWRA) dated November 2015, and the related Amendment Nos.1, 2, and 3 dated June 2021 (collectively, referred to herein as the "ARWRA")
2. Agreement for Conveyance and Treatment of Industrial Waste Water by and between the City of Salinas and the Monterey Regional Water Pollution Control Agency, dated October 27, 2015 ("IWW Agreement")
3. Right of Entry Agreement Salinas Industrial Wastewater Treatment Facility and Salinas Pump Station, dated October 27, 2020 ("ROE Agreement")

PROPOSED USE OF SOURCE WATERS

These three agreements describe 14 water sources of which M1W staff proposes to use for AWPF influent in the following order (a summary table is included in Attachment 1):

Municipal Wastewater from M1W's 2001 Service Area (Water # 1)

M1W can use excess secondary effluent not required to meet the SVRP influent needs in accordance with ARWRA section 4.01(1)(c). The amount available varies over time. The SVRP Winter Modifications have no design, nor funding source to construct, and significant planning, environmental, design and capital investment is needed to expand the CSIP distribution system, or to improve hydraulics of the CSIP system such that the SVRP can use substantially more secondary effluent. Staff recommends that excess secondary effluent is available and used on days when more than 0.5 acre foot (or other small, non-zero volume) of secondary effluent is discharged to the outfall. A non-zero discharge of secondary effluent is an indicator that excess was available and not utilized as influent by SVRP, due to lack of demand and/or hydraulic

constraints of the SVRP and CSIP systems. In addition to the excess secondary effluent identified herein, M1W can use 650 AF of summer municipal wastewater from within M1W's 2001 service area (May 1 through August 31) as described in ARWRA section 4.01(1)(d). MCWD will use most of this water as influent to the AWPF for meeting their former Fort Ord irrigation demands in accordance with other agreements upon full operation of MCWD's recycled water irrigation system.

> *Quantity available:* Not including the M1W rights to 650 AFY of municipal wastewater in May through August every year, the amount of this source water available to M1W for the AWPF or increases to SVRP has varied between **4,000 and 10,000 AFY** for the 5-year period prior to the AWPF start-up based on metered data. The majority is available outside of the peak irrigation season. AMBAG's Regional Housing Needs Assessment requirements would increase housing for the region, and thus new wastewater service connections. If new development occurs and it is within the M1W service area in 2001, that water would only be available to M1W in the non-peak irrigation season and some of the increased wastewater flows would be counteracted by continued stringent indoor water conservation.

Blanco Drain (Water #2) and Reclamation Ditch (Water #3)

These waters are two, Pure Water Monterey New Source Waters to which M1W has priority use in accordance with ARWRA Section 4.02 and Amendment 3 to the ARWRA. If the amount available is less than 360 acre-feet per month (AFM), the remainder of the 360 AFM may come from "Pond Return Facilities" (described below), which M1W included in the Pure Water Monterey Project EIR (2015), sought, and received funding, and constructed according to the requirement in that section and ARWRA section 1.04(e).

> *Quantity available:* Schaaf & Wheeler estimated that as much as **4,000 AFY** could be available to divert to the RTP depending on recycled water demands and irrigation practices within the Blanco Drain watershed. During drought years, far less is available to divert to the RTP for reuse (estimate is currently **1,000 to 1,500 AFY)**. Note: There is no historic metered data of flows of either.

Salinas Pond Return Water - portion comprised of Storm Water (Water #4)

ARWRA defines Salinas Storm Water as a "New Source Water." M1W will use this source water in accordance with the ARWRA and the ROE Agreement with the City. In normal or wet precipitation years, it can provide a portion of the 360 AF per month identified as a priority use in ARWRA Sections 4.02(2) and 4.02(4).

> *Quantity available:* This source will vary depending on precipitation and availability of excess capacity in the Salinas Industrial Wastewater Treatment Facility ponds. Estimates of amount of capture and recovery to the RTP in a wet year are **225 to 300 AFY** (negligible in a dry year).

Salinas Pond Return Water - portion comprised of Treated Industrial Wastewater Effluent (Water #5)

The ARWRA defines Pond Return Facilities as "New Source Water Facilities," but utilization of the treated industrial wastewater effluent from Pond 3 requires a new 3-way agreement and an amendment to the ARWRA. Consistent with the approved PWM Project and its environmental review, the SWRCB Wastewater Change Petition, (WW-00089), the City's WDR for the Industrial Wastewater Treatment Facility, and the Salinas Storm Water Round 1 Grant Agreement, M1W proposes use of this water to make up the balance of the demands allowed for use at the AWPF in ARWRA Section 4.02(1); namely, the remainder of the 360 AF per month which is not provided by Blanco Drain, Reclamation Ditch, and Salinas Storm Water in Pond 3 [see also ARWRA sections 1.04(e), 2.02, 4.02(1), 4.02(2), and 4.02(4)][1]

Quantity available: This source will vary year to year depending on the following factors:

- Timing and amount of M1W diversions of IWW to the Salinas Pump Station and diversion of treated effluent from Pond 3 using M1W's Pond 3 Pump Station
- Management of treated effluent and at the Salinas Industrial Wastewater Treatment Facility
- Amount and timing of storm water captured by M1W's storm water diversion facilities
- Precipitation
- Evaporation (cloud/fog cover and temperature)
- Percolation (including the effects of high or low river levels and the frequency and timing of scarification or scraping of the bottom of the ponds).

The amount of capture and recovery to the RTP will vary from about **1,000 AFY to 3,000 AFY** with the maximum occurring when there is little or no diversion of IWW to the RTP at the Salinas Pump Station, optimization of Pond 3 Pump Station use, and extremely low percolation or evaporation losses.

RTP and Local Wastewater, including AWPF Backwash (Waters #6, #7 and #8)

This includes Waste Sump #1, Waste Sump #2 and AWPF Waste Equalization Basin flows pumped to the RTP Headworks. The ARWRA sections 4.01(1)(b) & 4.01(2) state that waters generated from M1W operations at the RTP are available for AWPF influent.[2]

Quantity available: Approximately **200 to 300 AFY** of local and onsite wastewater is available distributed equally throughout the year. The AWPF backwash volumes that would be available from production of 3,700 AFY for the base PWM Project would be approximately 550 AFY and would be recirculated within the RTP. [3]

[1] Of relevance, the City received State Water Resources Control Board approval of a Wastewater Change Petition Permit (Order WW-00089) allowing use of all water previously discharged to the Salinas Industrial Wastewater Treatment Facility for beneficial reuse for the existing Castroville Seawater Intrusion Area and the California American Water Company – Main System service area.

[2] ARWRA section 4.01(1)(b) "Such flows as are lost or as must be diverted in the ordinary course of operating and maintaining the treatment plant and ocean outfall."

[3] The AWPF backwash from full operation of the Expanded PWM Project would be approximately 350 AFY.

Wastewaters from Outside M1W's 2001 Service Area (Waters #9, #10 and #11)

This includes Farmworker Housing, Boronda, and wastewater from other areas. M1W and MCWRA can use up to ½ of the total in accordance with ARWRA section 4.01(2). Currently, only Farmworker Housing (Hitchcock Road) and the Boronda area are quantifiable. M1W can estimate flow from other areas until flow measuring devices are installed.

> *Quantity available:* M1W's portion is currently, approximately **100 AFY**, but this amount increases over time to over 1,000 acre-feet per year due to projected growth in areas outside of city incorporated boundaries, based on development and flow modeling in the City of Salinas Sanitary Sewer Master Plan and land use plans for other unincorporated areas.

The remaining source waters which staff propose to be prioritized for SVRP influent requirements, in addition to the municipal wastewater within M1W's 2001 Service Area as defined in the ARWRA:

SVRP Backwash (Water #12) and SRDF Screening Filter Backwash (Water #13)

MCWRA and M1W managers have directed staff that ARWRA section 4.01(1)(b) "Such flows as are lost or as must be diverted in the ordinary course of operating and maintaining the treatment plant and ocean outfall" – do not apply to SVRP and SRDF backwash (M1W and MCWRA staff proposed that the volume of backwash waters from each recycled water plant be assumed to return as influent to their respective plant). Although not previously assessed, MCWRA has acknowledged the need to pay for treatment of waste waters that cannot be directly used or discharged except to the RTP headworks. Another staff report presents the proposed incremental rate for M1W to treat these backwash waters.

Industrial Wastewater (Untreated) Diversion to Salinas Pump Station (Water #14)

In accordance with the existing agreements and permits, M1W can use the industrial wastewater by diverting it to the Salinas Pump Station and subsequently to the RTP for meeting either of the current recycling demands; however, staff desires that it be reserved for use by the SVRP. In meetings between MCWRA and M1W staff, MCWRA has indicated they may invoke ARWRA section 16.16 and to enter into a separate 3-way agreement with the City of Salinas and may enter another amendment to the ARWRA. Although negotiations are not complete, the future agreement(s) may include that diversion ("shunt") of raw Industrial Wastewater to the Salinas Pump Station for M1W to use exclusively for SVRP influent.

FISCAL IMPACT

The fiscal impacts of use of new source waters are summarized in a separate agenda item.

RECOMMENDED ACTION:

That the Recycled Water Committee recommend that the Board Approve M1W Distribution of Source Water for the Salinas Valley Reclamation Plant and for the Advanced Water Purification Facility.

ATTACHMENT:
1. Summary of Source Waters for Recycling at the RTP

Attachment 1

Summary of Source Waters for Recycling at the RTP

#	Source Water	Approximate Quantity Available (AFY)	Allocated To
1	Municipal Wastewater from M1W's 2001 Service Area *(the portion of secondary effluent not needed to meet SVRP demands, in addition to 650 AFY May 1 – August 30)*	4,000 to 10,000 *(See Note 1)*	WRA/M1W/MCWD – as defined by ARWRA and MCWD agreements
2	Blanco Drain	1,200 to 2,600	M1W - see ARWRA Amendment 3
3	Reclamation Ditch	100 to 1,400	M1W - see ARWRA Amendment 3
4	Salinas Pond Return Water - portion comprised of Storm Water	0 to 300	M1W - see 2020 M1W/City agreement
5	Salinas Pond Return Water – portion comprised of treated IWW effluent	*(See Note 3)*	To be determined; requires new/amended agreements
6	RTP Waste Sump #1	40	M1W - as defined in ARWRA
7	RTP Waste Sump #2	100	M1W - as defined in ARWRA
8	AWPF Waste Equalization Basin, including AWPF Backwash	550	M1W - as defined in ARWRA
9, 10, 11	Wastewaters from Outside M1W's 2001 Service Area *(see Note 4)*	200	WRA/M1W (50/50) as defined in ARWRA
12	SVRP Backwash	1,000 to 1,500	Staff proposes WRA
13	SRDF Screening Filter Backwash	150 to 220	
14	Industrial Wastewater (untreated) diverted to Salinas Pump Station	Up to 3,000	Staff proposes WRA *(See Note 5)*

NOTES:
1- The unused secondary effluent quantity in 2015-2019; majority October-December and Jan-April. Some is duplicative of Waters #9, #10, and #11. In addition, 650 AFY of this municipal wastewater is available to be used by the AWPF from May 1 to August 30 each year, but some may be used in the future by MCWD for irrigation demands in the former Fort Ord.
3 – Water #14 minus diversions to Salinas Pump Station, minus percolation and evaporation at the Industrial Wastewater Treatment Facility.
4 – Municipal wastewater flows from outside M1W's 2001 Boundary are split 50/50 between WRA and M1W. Currently, M1W quantifies only Farmworker Housing and Boronda because others have not been metered. Some is already accounted for in Water #1.
5 - WRA/M1W as defined in SWRCB WW-0089, ARWRA & 2015 M1W/Salinas agreement;

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ATTACHMENT U

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BRENT BUCHE
GENERAL MANAGER

STREET ADDRESS
1441 SCHILLING PLACE, NORTH BUILDING
SALINAS, CA 93901

June 9, 2022

Paul Sciuto
General Manager
Monterey One Water
5 Harris Court, Building D
Monterey, CA 93940

Re: Use of New Source Water per the Amended and Restated Water Recycling Agreement

Dear Mr. Sciuto,

As you know, the Monterey County Water Resources Agency (MCWRA) and Monterey One Water (M1W) entered into the Amended and Restated Water Recycling Agreement (ARWRA) in 2015 and since then, have entered into three amendments to the ARWRA related to the use of the New Source Water and Facilities. The current amendment requires that the six conditions described in Section 16.15 be satisfied by June 30, 2022. Although Conditions 1 and 2 have been satisfied for quite some time, Condition 3 has not been satisfied to date and it cannot be met. Staff from both MCWRA and M1W put in a significant effort in trying to resolve Condition 3 over the last seven years. However, the Central Coast Regional Water Quality Control Board ("Central Coast Water Board") sent M1W and MCWRA a letter on June 30, 2021, stating that Condition 3 could not be met and offered that it be reconsidered by early 2026 (see Attachment 1). Given the Central Coast Water Board's assertion on Condition 3 and due to the long lead time for potential reconsideration, the MCWRA has no choice but to deem Condition 3 unsatisfied and to invoke Section 16.16 of the ARWRA.

The MCWRA Board of Supervisors, upon a recommendation from the Board of Directors, directed MCWRA staff to begin negotiations related to the use of New Source Waters as described in Section 16.16 (see Attachment 2). This includes the Blanco Drain and Reclamation Ditch water rights and the use of Agricultural Wash Water (also referred to as Industrial Wastewater). In addition, the MCWRA Boards directed WRA staff to continue negotiations towards reaching a separate long-term agreement related to the Salinas Pond Water Return Facilities. As you know, M1W, the City of Salinas, and MCWRA have been meeting regularly over the past few months in order to negotiate the use of that facility.

MCWRA requests that our two agencies amend the ARWRA and enter into any necessary new agreements related to New Source Waters and Facilities by the end of the current calendar year. This will be best accomplished through continued regular meetings between the two agencies and sharing of redline versions of the current ARWRA. MCWRA looks forward to collaborating with M1W to successfully complete this matter.

Sincerely,

Brent Buche, PE
MCWRA General Manager

Attachment 1: Central Coast Regional Water Quality Control Board letter, dated June 30, 2021

Attachment2: MCWRA Board of Supervisors Board Order, dated March 15, 2022

Cc: Tamsen McNarie, M1W
Alison Imamura, M1W
Elizabeth Krafft, MCWRA
Shaunna Murray, MCWRA

Central Coast Regional Water Quality Control Board

June 30, 2021

Via email only

Paul Sciuto, General Manager
Monterey One Water
paul@my1water.org

Brent Buche, General Manager
Monterey County Water Resources Agency
bucheb@co.monterey.ca.us

Dear Mr. Sciuto and Mr. Buche:

USE OF BLANCO DRAIN WATERS FOR TREATMENT AND REUSE AS PART OF PURE WATER MONTEREY PROJECT

Monterey One Water (M1W), in cooperation with Monterey County Water Resources Agency (MCWRA) pursuant to a water recycling agreement,[1] has constructed and is operating the Pure Water Monterey project, which was designed to treat water from various sources and provide recycled water to irrigate Salinas Valley cropland and recharge the Seaside groundwater basin.

One of the sources being utilized is water from the Blanco Drain. Per Water Right Permit 21376 issued by the State Water Resources Control Board, the project is allowed to divert all dry weather flows from the Blanco Drain, exclusive of any dry weather flows required to be bypassed, up to six cubic feet per second (cfs) and 3,000 acre-feet per year.[2] The point of diversion is within the Blanco Drain just upstream of its confluence with the Salinas River. At the diversion point, Blanco Drain dry weather and wet weather flows contain high concentrations of various pollutants, including nutrients, pesticides and herbicides, and sediment. These pollutants are removed from the lower Blanco Drain and prevented from entering the Salinas River during the implementation of complete dry weather flow diversions. The Blanco Drain is subject to water quality limits for nutrients and pesticides/toxicity associated with the Lower Salinas River Watershed Total Maximum Daily Loads (TMDLs) as well as other non-TMDL water quality parameters, such as turbidity, specified in the Water Quality Control Plan for the Central Coastal Basin (Basin Plan). The Central Coast Water Board's recently adopted agricultural order[3] (Ag Order 4.0) implements these Basin Plan water quality limits.

[1] November 3, 2015, Amended and Restated Water Recycling Agreement Between Monterey Regional Water Pollution Control Agency and Monterey County Water Resources Agency (Note: Monterey One Water was formerly known as the Monterey Regional Water Pollution Control Agency).
[2] The water right requires that M1W maintain certain minimum flows from Blanco Drain into the Salinas River during drought conditions, as specified.
[3] General Waste Discharge Requirements for Discharges from Irrigated Lands, Order No. R3-2021-0040; https://www.waterboards.ca.gov/centralcoast/water_issues/programs/ag_waivers/regulatory_information.html

Section 16.15 of the water recycling agreement includes the following condition precedent for new source water facilities, and this letter is in response to this condition precedent:

3. *Written findings are made by the Regional Water Quality Control Board that utilization of the Blanco Drain dry weather flows as a New Source Water meets all treatment requirements for the aforesaid dry weather flows(.)*

Although Central Coast Water Board staff supports the Pure Water Monterey project and associated Blanco Drain diversion because of its multiple water supply and water quality benefits, we cannot make the condition precedent finding at this time because it would conflict with the requirements and associated processes contained in Ag Order 4.0.

Ag Order 4.0 includes a third-party process, in lieu of the induvial discharger compliance option, by which a compliance pathway consistent with the condition precedent may be developed and approved. Monitoring and reporting requirements in Ag Order 4.0 paragraphs 18 and 19 of Part 2, Section C.3. Surface Water Protection, describe a third-party program process to develop and implement surface receiving water monitoring and reporting work plans and follow-up surface receiving water implementation work plans on behalf of participating dischargers to comply with water quality requirements, including those specified in Ag Order 4.0 for the Blanco Drain to implement the Basin Plan TMDLs and non-TMDL water quality limits. Ag Order 4.0 identifies the Blanco Drain as a third-party program surface water medium priority area subject to a follow-up surface receiving water implementation work plan March 1, 2026 due date. The follow-up surface receiving water implementation work plan along with the supporting surface receiving water monitoring and reporting work plan are subject to Executive Officer review, and interested persons may seek discretionary review by the Central Coast Water Board of the Executive Officer's approval or denial of the work plans.

Please note the surface water monitoring and follow-up surface receiving water implementation work plans will also need to address wet weather flows and un-diverted dry weather flows.

We look forward to continuing to work with M1W, MCWRA, and the agricultural community to continue to make progress on resolving this long-standing water-quality problem.

If you have any questions, please contact Harvey Packard at (805) 235-8435 or Harvey.packard@waterboards.ca.gov.

Sincerely,

Matthew T. Keeling

Digitally signed by Matthew T. Keeling
Date: 2021.06.30 15:51:32 -07'00'

Matthew T. Keeling
Executive Officer

cc:

David Stoldt, Monterey Peninsula Water Management District, dstoldt@mpwmd.net
Justine Herrig, SWRCB Division of Water Rights, Justine.herrig@waterboards.ca.gov

Annette Tenneboe, CDFW, Annette.Tenneboe@wildlife.ca.gov
Joel Casagrande, NMFS, joel.casagrande@noaa.gov
William Stevens, NMFS, william.stevens@noaa.gov
Elizabeth Krafft, MCWRA, krafftea@co.monterey.ca.us
Shaunna Murray, MCWRA, murrarysl@co.monterey.ca.us
Stephanie Yu, SWRCB Office of Chief Counsel, stephanie.yu@waterboards.ca.gov

ATTACHMENT V

Appendix Q

Blanco Drain Yield Study

BLANCO DRAIN YIELD STUDY

Prepared for

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT

Prepared by

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS
3 QUAIL RUN CIRCLE, SUITE 101
SALINAS, CA 93907

December 2014

Table of Contents

List of Tables

List of Figures

Table i. Acronyms Used in this Report

Acronym	Description
AFY, ac-ft/yr	Acre-feet/year
cfs	Cubic foot per second
gpd	Gallons per day
mgd	Million gallons per day
mg/L	Milligrams per liter
µg/L	Micrograms per liter
MPN	Most Probable Number
ng/L	Nanogram per liter
ppb	Parts per billion
ppm	Parts per million
ASBS	Areas of Special Biological Significance
ASR	Aquifer Storage and Recovery
BMP	Best management practice
CAW, CalAm	California American Water Company
CCAMP	Central Coast Ambient Monitoring Program
CCoWS	Central Coast Watershed Studies Program
CCR	California Code of Regulations
CCRWQCB	Central Coast Regional Water Quality Control Board
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CSIP	Castroville Seawater Intrusion Project
CWC	California Water Code
DWR	California Department of Water Resources
GWR	Groundwater Replenishment
MCWRA	Monterey County Water Resources Agency
MPWMD	Monterey Peninsula Water Management District
MRSWMP	Monterey Regional Stormwater Management Program
MRWPCA	Monterey Regional Water Pollution Control Agency
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NRCS	USDA Natural Resources Conservation Service
RTP	Regional Treatment Plant
SIWTF	Salinas Industrial Wastewater Treatment Facility
SRDF	Salinas River Diversion Facility
SRDP	Salinas River Diversion Project
SVRP	Salinas Valley Reclamation Plant
SVWP	Salinas Valley Water Project
SVGB	Salinas Valley Groundwater Basin
SWRCB	California State Water Resources Control Board
USACE	U.S. Army Corps of Engineers
USBR	U.S. Bureau of Reclamation
USGS	U.S. Geologic Survey

Table ii. Units of Measure Used in this Report

Unit	Equals
1 acre-foot	= 43,560 cubic feet = 325,851 gallons
1 cubic foot	= 7.48 gallons
1 cfs	= 448.8 gallons per minute
1 MGD	= 1,000,000 gallons/day = 1,120 acre-feet / year
1 mg/L	= 1 ppm = $1 / 10^6$
1 µg/L	= 0.001 mg/L = 1 ppb = $1 / 10^9$
1 ng/L	= 0.001 µg/L = 1 part per trillion = $1 / 10^{12}$

Section 2 - Yield Estimation

2.1 Methodology

Estimates of stream flow capture from the Blanco Drain system were made, assuming diversion would occur at the existing MCWRA Blanco Drain pump station. Limited seasonal flow data was available for this location and was used as the basis of this analysis. The Blanco Drain is an 8-mile long channel that drains approximately 6,000 acres of irrigated agricultural land west of Salinas, CA. The terrain is generally flat with type C and D clay soils. Flows are primarily agricultural tile drainage.

The Blanco Drain connects to the Salinas River through a 60-inch pipe culvert with a flap gate. To facilitate drainage, MCWRA historically operated a pump station approximately 2-miles upstream of the pipe culvert, from the drain channel (parallel to the Salinas River) to the connecting channel. This pump station was replaced as part of the Salinas River Diversion Facility (SRDF) project. The current pump station is located at the upstream end of the 60-inch pipe culvert, and includes a slide gate which is closed when the SRDF rubber dam is inflated, and a by-pass pump station which lifts Blanco Drain flows past the gate structure.

Limited flow data is available for the Blanco Drain. A weir gage was installed in 2007 to record flows used in sizing the current pump station, and operational records for the pump station were obtained for 2010 through 2013 and used in this analysis. Because the SRDF only operates during the peak irrigation season (April to October), flow data was not recorded for the rest of the year.

Approximately one third of the area tributary to the Blanco Drain is within the Castroville Seawater Intrusion Project (CSIP) service area. The MCWRA publishes monthly records of the total CSIP water deliveries, which can be used to estimate applied irrigation per acre (= total deliveries ÷ 12,000 acre service area). Similar crops and irrigation methods are used throughout the Blanco Drain tributary areas, so it was assumed that the CSIP irrigation rates applied to the full area.

Flows from the Blanco Drain were estimated as return flows from applied irrigation and natural precipitation. For the months with recorded Blanco Drain flow data, the source flows were calculated as:

(CSIP Irrigation) + (Precipitation at Salinas) x 6,000 acres = total acre-feet/month

Return Rate = (Blanco Drain Flow) / (total ac-ft/mo)

The calculated return rates ranged from 3% to 25%, with an average return of 17.3% (see Table B-2: Blanco Drain Flows as Return Flows). The period with the most complete flow data for the Blanco Drain was August to October 2013, with an average return rate of 16.9%. For this estimate, we assumed a flat 17% return rate. The MCWRA CSIP records were combined with

the Salinas rainfall records to calculate the total estimated source flows (Table B-4: Applied Irrigation and Recorded Precipitation in the CSIP Service Area). The return flows were estimated by month as shown below.

Table 2-1: Estimated Return Flows into Blanco Drain

Month	Applied Irrig + Precip	17% return	Avg Return Flow Rate
	AF	AF	cfs
January	1,229	209	3.4
February	1,314	223	4.0
March	1,446	246	4.0
April	1,481	252	4.2
May	1,323	225	3.7
June	1,613	274	4.6
July	1,629	277	4.5
August	1,436	244	4.0
September	1,080	184	3.1
October	989	168	2.7
November	782	133	2.2
December	1,088	185	3.0
Totals	**15,410**	**2,620**	

The values shown in Table 2-1 are monthly average values. Although the average monthly return flow rates range from 2.2 to 4.6 cfs, daily flows rates over 6 cfs have been recorded during the four years the Blanco Drain pump station has been in operation. To achieve an annual average diversion of 2,620 AFY, a peak diversion rate of 6 cfs is therefore required. Yields applying lower average station capacities are shown in Table 2-2. If excess flows on peak days may be stored in-channel behind the slide gate and held until the following day, diverting at a lower rate may be feasible. However, the current pump station configuration and operating regimen is designed to drain the channel to facilitate tile drainage, so the use of in-channel storage should not be assumed.

Table 2-2: Estimated Yields based on Pump Capacity

Station Capacity	Yield
cfs	AFY
2.9	2,050
2.99	2,104
3.0	2,110
3.5	2,350
4.0	2,538
4.5	2,613
4.6	2,619

The permitting process for a water right diversion rate less than 3 cfs is shorter than for a larger diversion rate, so the proposed project assumes an initial water right diversion at 2.99 cfs, and an ultimate water right allowing diversions at up to 6 cfs. Both capacities are considered in Section 3, Facility Requirements.

ATTACHMENT W

Hand-Delivered to Andy Sawyer

PETITION
TO MODIFY SWRCB RESOLUTION 2016-0040
May 9, 2018

The Planning and Conservation League, Monterey One Water (formerly the Monterey Regional Water Pollution Control Agency), the Monterey Peninsula Water Management District, the Monterey Regional Water Authority, the Marina Coast Water District, Land Watch Monterey, the Sierra Club, Citizens for Just Water, the Public Trust Alliance, and Public Water Now ("Moving Parties") hereby petition the State Water Resources Control Board ("Board") to modify the ordering paragraphs of Cease and Desist Order ("CDO") (STATE WATER RESOURCES CONTROL BOARD RESOLUTION NO. 2016-0040) for the purpose of adding parallel milestones relating to the potential expansion of the Pure Water Monterey ("PWM") project.

Satisfaction of the proposed parallel (not substitute) milestones by the Board would allow California American Water Company ("Cal-Am") to eliminate diversions of Carmel River water without valid basis of right by the existing CDO deadline of December 31, 2021.

I. Background

The compliance milestones in the CDO were adopted by the Board with the expectation that the desalination project would be approved and constructed in time to meet the December 31, 2021 deadline for Cal-Am to cease all unauthorized diversions from the Carmel River.

The next milestone is California Public Utilities Commission approval of a Certificate of Public Necessity and Convenience (CPCN) for the desalination project by September 30th of this year. The September, 2019 milestone is the commencement of construction of the desalination project.

For a variety of reasons it is possible that the desalination project will not meet those milestones and potentially fail to afford a replacement water supply to Cal-Am to substitute for ongoing unauthorized diversions from the Carmel River by the CDO's final 2021 deadline.

By adding the requested parallel milestones related to expansion of PWM, the Board would establish an alternative option for Cal-Am to cease all unauthorized diversions by the 2021 deadline. The Board added a similar parallel milestone related to the initial PWM project in RESOLUTION NO. 2016-0040 which amended the original CDO as follows:

2015-2016 CPUC approval of (1) the Water Purchase Agreement for Cal-Am's purchase of Pure Water Monterey water, and of (2) construction of the Cal-Am components of the Pure Water Monterey conveyance facilities, including the Monterey Pipeline and pump station. December 31, 2016

2016-2017 Start of construction of the Cal-Am components of the Pure Water Monterey project, meaning commencement of physical work after issuance of required regulatory permits and authorizations to begin work. September 30, 2017

Those milestones were met, the PWM construction is well underway and it will provide Cal-Am with 3,500 acre feet per year ("AFY") before the December, 2021 deadline.

This petition requests similar parallel milestones for the PWM expansion opportunity. This would facilitate the option of Cal-Am completing the substitution of all unauthorized Carmel River diversions as a result of water developed by the PWM expansion project, inclusive of the initial 3,500 AFY project plus the 2,250 AFY (minimum) expansion.

A. Source Water Availability

Monterey One Water (M1W) and the Monterey Peninsula Water Management District recently completed an extensive feasibility study concerning the potential for expansion of the PWM project, the "Preliminary Progress Report on Pure Water Monterey Expansion," May 7, 2018 ("Report"). https://mrwpca1-my.sharepoint.com/:f:/g/personal/alison_mrwpca_com/EowyMUurrutKg7Hf-ly5BfIBifvfib0ecpw3I05s-K3e9Q?e=2klLwo

A copy of the Report is attached. The Report analyzed key issues including source water, financial feasibility, the necessary level of environmental review, permitting requirements relating to the potential project expansion, and the estimated schedule for PWM expansion.

The Report identifies water sources for Pure Water Monterey expansion:

Winter Wastewater (Winter Water). On November 3, 2015 M1W entered into a contract titled the Amended and Restated Water Recycling Agreement ("ARWRA") with the Monterey County Water Resources Agency (MCWRA). Per Section 4.01(c) of that Agreement, M1W has the right to use any wastewater that is not used for irrigation through MCWRA's Castroville Seawater Intrusion Project (CSIP). For the 20 years of operation of the Salinas Valley Reclamation Plant, there has consistently been 6,000 to 8,000 AF of water discharged through the outfall to the ocean every year in the winter months. (Report, p. 27.)

Approximately 47% to 69% of the feed water needed for expansion would come from the excess winter wastewater currently being discharged to the ocean. (Report, p. 26.) As discussed in the Report, M1W modeled the availability of this winter wastewater even assuming a substantial increase in agricultural use of this supply and found that there still sufficient supply availability for PWM expansion. (Report, pp. 27-28.)

Winter Industrial Wastewater and Storm Water (Pond Return). Per the ARWRA Section 4.01(c), M1W has the right to use any wastewater that is not used for irrigation through MCWRA's CSIP system. The Industrial Wastewater is not required to meet MCWRA demands during the winter. Thus, it would not be diverted to the M1W Salinas Pump Station but instead, flow to the Salinas Industrial Wastewater Treatment Facility (SIWTF). Similarly, the storm water from the City of Salinas that is received during the winter would be diverted to the SIWTF. The combined waters at the ponds would be returned to M1W in the summer using a new return pump station and pipeline to be

constructed in 2018-2020 under a storm water grant. (Report, Attachment B.) M1W is currently negotiating an agreement with the City of Salinas to define how the storage ponds will be operated and maintained. It is anticipated that M1W and the City of Salinas will have a Memorandum of Understanding by the end of June 2018 and a full agreement by the end of September 2018. An important consideration is whether one or more of the SIWTF ponds would be lined. Depending on the number of ponds lined, approximately 23% to 40% of the feed water needed for expansion would come from the returned industrial wastewater and storm water. (Report, Attachment B.) If no ponds are lined, the PWM Expansion Project could still provide up to 2,331AFY and would be expected to meet the proposed yield of 2,250 AFY. (Report, p. 26.)

Dry Season Allocations of 650 AFY in the months of May through August from MCWRA (Summer Water). Per the ARWRA Section 4.01.1(d), M1W has the right to 650 AF of water during May through August as shown in the ARWRA Table 2. This water, like MCWD's summer allocation of 300 AFY, is available even if there is not enough wastewater to meet CSIP irrigation demands. (Report, p. 26.) This water is the water to be utilized for MCWD's Phase 1 and Phase 2 landscape irrigation projects, but until build out of MCWD's Phase 2 project, it would be available to meet expansion influent water needs. (*Id.*)

M1W evaluated the availability of all of its presently available sources of supply for PWM expansion during each month and found that, even assuming substantial expansion of agricultural use of winter wastewater, there is sufficient source water for PWM expansion to produce greater than 2,250 AFY. (See Attachment 1 to this Petition.)

The report only considers existing water to confirm the availability of source water for the PWM expansion. However, additional new supplies may be available in the future as well. Per the ARWRA Section 4.01.2, M1W is entitled to one-half the volume of wastewater flows from areas outside of the M1W's 2001 boundary provided that M1W passes those waters through the SVRP or the PWM facilities. M1W is pursuing expansion of its service area to bring in additional waters in the future.

B. PWM Expansion Schedule

The Report projects that before September 30, 2020 all civil site work can be complete and all equipment required to expand PWM Facility can be delivered and on-site. Further, the schedule demonstrates that before September 30, 2021 all construction can be complete. In fact, the schedule shows completion and start-up of all the increased capacity facilities much earlier on January 27, 2021.

The Report found that it is feasible to expand the PWM project by an additional 2,250 AFY. Engineering design is already 30% complete and the expansion can be developed along with the already-approved 3,500 PWM project affording up to 5,750 AFY for Cal-Am ahead of the end of 2021.

This would allow Cal-Am to terminate all unauthorized diversions from the Carmel River by the CDO deadline of December 31, 2021. Such option could prove essential if the desalination project is delayed or not approved.

Therefore, this petition seeks to amend the CDO to add parallel (not substitute) milestones correlated to progress on expansion of PWM as shown below. These specific

and readily verifiable alternative milestones would not change the requirement for Cal-Am to eliminate further diversions of Carmel River water without valid basis of right by December 31, 2021.

II. Requested Modifications to the CDO Milestones Shown in Underline

Moving Parties respectfully urge that the milestones set forth in Section 3(b)(v) of the ordering section of the CDO be amended as follows:

Start of construction of any of the Cal-Am Components of the MSWSP Desalination Plant, meaning commencement of physical work after issuance of required regulatory permits and authorization to begin work; or, alternatively, CPUC approval of a Water Purchase Agreement (or amendment of the existing Water Purchase Agreement applicable to the PWM Project) for the PWM expansion project (minimum of 2,250 AFY) including information demonstrating availability of source water for the Pure Water Monterey expansion project to the satisfaction of the CPUC; September, 30, 2019

(1) Drilling activity for at least one MPWSP Desalination Plant source water production well complete; (2) foundation and structural framing complete for MPWSP Desalination Plant pretreatment seawater reverse osmosis, and administration buildings at desalination plant; (3) excavation complete for MPWSP Desalination Plant brine and backwash storage basins; and (4) 25% of MPWSP Desalination Plant transmission pipelines installed based on total length, including 100% installation of the "Monterey Pipeline and other ASR related improvements"; or, alternatively, all civil site work, including concrete work, underground piping, and site drainage will be complete and all equipment required for the PWM expansion project will have been delivered and on-site; September 30, 2020

For MPWSP Desalination Plant: (1) 50% of drilling activity complete for source water production wells based on total number of wells required; (2) mechanical systems for brine and backwash storage basins complete; (3) construction of filtered water tanks and finished water tanks complete; (4) 50% of transmission pipelines installed based on total length; or, alternatively, all construction for PWM expansion project will be complete; September 30, 2021

Substantial completion of the Cal-Am Components of the MPWSP Desalination Plant, meaning the Cal-Am Components are sufficiently complete and appropriately permitted to allow delivery of MPWSP Desalination Plant produced potable water to Cal-Am's Monterey Main system, eliminating further Cal-Am diversions of Carmel River water without valid basis of right; or, alternatively, completion of the PWM Project (including PWM expansion) eliminating further Cal-Am diversions of Carmel River water without valid basis of right; December 31, 2021

Contact for the petitioners:

Jonas Minton

Senior Water Policy Advisor

Planning and Conservation League

DESCRIPTION OF PWM PROJECT AND OVERVIEW OF PWM EXPANSION

Previously-Approved PWM Project

On October 8, 2015, the Board of Directors of Monterey One Water (M1W) approved the PWM Project as modified by the Alternative Monterey Pipeline and the Regional Urban Water Augmentation Project (RUWAP) alignment for the product water conveyance system and certified the Environmental Impact Report (PWM EIR) (State Clearinghouse No. 2013051094). The primary objective of the PWM Project was to replenish the Seaside Groundwater Basin (Basin) with 3,500 acre-feet per year (AFY) of purified recycled water to replace a portion of California American Water Company's (CalAm) water supply as required by State Water Resources Control Board (State Water Board or SWRCB) orders.

The PWM Project as initially approved included a 4 million gallon per day (mgd) capacity Advanced Water Purification Facility (AWPF) for treatment and production of purified recycled water that will be conveyed for injection into the Basin using a series of shallow and deep injection wells. Project conveyance facilities include ten miles of pipeline from the AWPF to injection wells in the Basin. Once injected, the purified recycled water will augment existing groundwater supplies and provide 3,500 AFY of water for extraction via existing CalAm wells. The extracted water will be delivered to CalAm customers to offset use of water from the Carmel River system. The project also provides additional recycled water for crop irrigation by the existing Castroville Seawater Intrusion Project.

Initial Expansion of the PWM Project

On October 30, 2017, the Board of Directors of M1W approved modifications to the PWM Project to increase the operational capacity (peak or maximum product water flowrate) of the approved AWPF from 4.0 mgd to 5.0 mgd. This expanded capacity is achieved by using redundancies in the AWPF design and the stated purpose of the expansion is to enable delivery of 600 AFY of purified recycled water to Marina Coast Water District (MCWD) for urban landscape irrigation by MCWD customers. The additional recycled water delivery is a component of the approved Regional Urban Water Augmentation Project (RUWAP), an urban recycled water project developed by MCWD.[1] The source water for this expansion of the PWM Project is entirely from MCWD's rights to the return of its municipal wastewater. In April 2016 (amended in October 2017), M1W Board of Directors approved joint (shared) use of product water

[1] The RUWAP is a recycled water project developed by MCWD in cooperation with M1W. RUWAP was originally developed to help MCWD meet the overall needs of its service area, delivering tertiary-treated and disinfected recycled water produced at the existing Salinas Valley Reclamation Plant ("SVRP") to urban users in the MCWD service area and former Fort Ord. MCWD and M1W have agreed to jointly implement a project to convey advanced-treated (purified recycled water) through a shared pipeline for PWM Project and MCWD's initial 600 AFY of recycled water irrigation demands at the former Fort Ord (referred to as RUWAP Phase 1). Phase 1 is currently under construction. Phase 2 would include an additional 827 AFY of recycled water use for a total of 1,427 after completion of recycled water lateral pipelines to irrigation sites.

ATTACHMENT X

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Attachment A

Amended Water Purchase Agreement

AMENDED AND RESTATED
WATER PURCHASE AGREEMENT FOR
PURE WATER MONTEREY PROJECT

THIS AMENDED AND RESTATED WATER PURCHASE AGREEMENT ("Agreement") is made this ____ day of _____, 2021 (the "Effective Date") by and between California-American Water Company, a California corporation, hereinafter referred to as the "Company," Monterey One Water (formerly the Monterey Regional Water Pollution Control Agency), hereinafter referred to as the "Agency," and Monterey Peninsula Water Management District, hereinafter referred to as the "District." The Company, the Agency, and the District are hereinafter referred to individually as a "Party" and collectively as the "Parties."

RECITALS

A. The Company has a statutory duty to serve water in certain cities on the Monterey Peninsula and in a portion of Monterey County for its service area, the boundaries of which are shown in Exhibit A attached hereto and incorporated herein.

B. The Company has been ordered by the State Water Resources Control Board in orders WR 95-10, WR 2009-0060, and WR 2016-0016 to find alternatives to the Carmel River to fulfill its duty to serve, and to reduce Carmel River diversions to authorized limits by December 31, 2021.

C. In 2012, the Company filed application 12-04-019 with the California Public Utilities Commission ("CPUC"), seeking an order issuing a Certificate of Public Convenience and Necessity ("CPCN") for the construction of the Monterey Peninsula Water Supply Project ("MPWSP") and authorizing the recovery of the costs for such construction in rates. The Company proposed the MPWSP as either a 9.6 million gallons per day ("mgd") production capacity desalination plant or a reduced capacity 6.4 mgd production capacity desalination plant combined with a water purchase agreement for 3,500 acre-feet per year of product water from the Agency's Groundwater Replenishment Project (also known as the Pure Water Monterey Project).

D. In 2013, multiple parties, including the Company, the Agency, and the District, entered into a Comprehensive Settlement Agreement, providing for the development, construction, operation and financing of the MPWSP, and recovery of costs in rates for a desalination plant sized at either 9.6 mgd or 6.4 mgd.

E. In 2016, in Decision 16-09-021, the CPUC authorized a water purchase agreement for the 3,500 acre-feet per year of product water from the Pure Water Monterey Project to be delivered to the Company.

F. On September 20, 2018, the CPUC issued Decision 18-09-017, certifying the combined Final Environmental Impact Report/Environmental Impact Statement for the MPWSP and authorizing a CPCN for the MPWSP at a desalination plant size of 6.4 mgd. The Decision declined to adopt the Comprehensive Settlement Agreement, but adopted the framework set forth therein, including a cost cap, operations and maintenance financing provisions, ratemaking provisions, and contingency provisions.

G. Between 2012 and the present, the Company incurred costs, including environmental review, permitting, and other costs, in proceeding with development of the MPWSP to provide a permanent, reliable water supply and allow reduction of unauthorized Carmel River and Seaside Basin diversions. Many of these costs were reviewed and discussed among the parties Since July 2013, the Company has provided these incurred costs as part of its quarterly newsletter filings that are served on all parties in the CPUC proceeding.

H. In September 2017, at the CPUC's request the Agency proposed expansion of the Pure Water Monterey Project to provide an additional incremental supply of 2,250 acre-feet per year of product water to be made available to the Company for delivery to its customers.

I. In Decision 18-09-017, the CPUC required the Company to file an application if it sought to enter into a water purchase agreement for additional water supply to be provided by an expansion of the Pure Water Monterey Project.

J. In Decision 18-09-017, the CPUC set forth the requirements for any water purchase agreement application to be filed with the CPUC for acquiring water from the Pure Water Monterey Expansion Project if the MPWSP desalination plant was delayed beyond December 31, 2021, stating: "To the extent Cal-Am files (or the Commission directs Cal-Am to file) an application seeking approval of a PWM expansion WPA, the application shall include sources of supply water, development costs, prices for sales of the developed water, contractual details, environmental effects, potential to obtain necessary permits, water quality, sources of funding, possible related facilities (e.g., additional pipelines or pump stations), and any other information relevant and necessary for the Commission to make an informed, just and reasonable decision including details as to supply and production including not only during average rainfall years but also during a multi-year drought and the timing of expanded production. The application will be considered only to the extent the desalination plant authorized in this decision (i.e., 6.4 million gallons per day) is delayed to the point that sufficient source water capacity is more likely than not to be unavailable after the December 31, 2021, deadline set by the State Water Resources Control Board in its amended CDO."

K. Approval by the California Coastal Commission of a coastal development permit necessary for the MPWSP desalination plant slant wells was delayed, such that the desalination plant authorized by the CPUC will not be operational by December 31, 2021.

L. At this time, the Company desires to buy advanced treated recycled water from the Pure Water Monterey Project, and the Pure Water Monterey Expansion project, from the District for the purpose of fulfilling its duty to serve its customers within its service area and the District is willing to sell advanced treated recycled water to the Company for this purpose on the terms and conditions provided for herein.

M. The Company believes, based on expert advice, that the water available from the Pure Water Monterey Project and the Pure Water Monterey Expansion Project provides insufficient supplies to meet customer demand without the desalination component of the MPWSP and, therefore, intends to continue to seek all necessary approvals for development, construction and operation of the MPWSP desalination plant. Nevertheless, water supplied by the Pure Water Monterey Expansion Project will likely be available before the desalination plant is operational and would help meet current demand after December 31, 2021.

N. The District believes, also based on expert advice and peer review, that supplies without the desalination plant are sufficient to satisfy customer demand for a couple decades if the Pure Water Monterey Expansion Project is built, and, therefore, supports entering into an agreement with the Company for water purchases from the Pure Water Monterey Expansion Project.

O. The Agency will be responsible for the design, construction, operation, and ownership of facilities for the production, delivery, and injection of advanced treated recycled water into the Seaside Groundwater Basin, such facilities to be part of the Pure Water Monterey groundwater replenishment project.

P. The District will buy advanced treated recycled water from the Agency for purpose of securing the financing of and paying the operating costs of the project. The District will sell the advanced treated recycled water to the Company subject to the terms of this Agreement.

Q. The Company desires to buy advanced treated recycled water from the District for the purpose of fulfilling its duty to serve its customers within its service area and the District is willing to sell advanced treated recycled water to the Company for this purpose on the terms and conditions provided for herein.

R. The Agency contends, and has so advised the District and the Company, that based on advice of counsel, (1) Agency assets and revenue derived from Agency ratepayers are not available for satisfying claims and judgments for any liability arising from this water project Agreement, and (2) therefore, the single source for so satisfying is insurance coverage described as Required Insurance in this Agreement.

S. The Agency has separately entered into an agreement with the Monterey County Water

Resources Agency in Section 4.05 of which, the Monterey County Water Resources Agency may request additional irrigation water from Agency sources. Pursuant to that agreement the Agency has committed to produce no more than 200 acre-feet per year, up to a total quantity of 1,000 acre-feet, for delivery to the District as a drought reserve. When such a request is made, the District may make available to the Company Drought Reserve Water in order to satisfy the Company Allotment. Additionally, in order to ensure delivery of the Company Allotment in the event of an interruption in project operations, the District has established an Operating Reserve. Together the two reserves are called the Reserve Account and will be paid for by the District until deemed delivered to the Company if needed at a future date.

NOW, THEREFORE, the Parties agree as follows:

1. Purpose of Agreement.

The purpose of this Agreement is to provide for the sale of advanced treated recycled water from the Agency to the District and from the District to the Company derived from the Pure Water Monterey groundwater replenishment project owned and operated by the Agency, and to serve the Company's customers within its service area. The Parties confirm that this Agreement constitutes a contractual right to purchase advanced treated recycled water, that no water right is conferred to the Company, and that no additional rights in the Seaside Groundwater Basin are conferred to the District or the Agency.

2. Definitions

The following terms shall, for all purposes of this Agreement have the following meanings:

"Additional Project Participant" means any public district, agency, or entity, or any private water company, other than the Company, that executes a water purchase agreement in accordance with Section 19 hereof, together with its respective successors or assigns.

"Affected Party" means a Party claiming the occurrence of a Force Majeure Event and seeking relief under this Agreement as a result thereof.

"Agreement" means this Amended and Restated Water Purchase Agreement, as the same may be amended from time to time.

"Applicable Law" means any federal, state or local statute, local charter provision, regulation, ordinance, rule, mandate, order, decree, permit, code or license requirement or other governmental requirement or restriction, or any interpretation or administration of any of the foregoing by any governmental authority, which applies to the services or obligations of any of the Parties under this Agreement.

"AWT Facilities" means the advanced water treatment facilities portion of the Project that provides advanced treatment to source water that has undergone secondary treatment at the

Regional Treatment Plant, including any advanced water treatment facilities constructed as part of the Expansion.

"AWT Water" means advanced treated recycled water produced by the AWT Facilities. "Company Account" means the account managed by the District and the Company that tracks and records the quantity of Company Water delivered to the Delivery Point.

"Company Allotment" means 3,500 acre-feet of AWT Water until the Expansion Performance Start Date, after which it shall mean 5,750 acre-feet, or another quantity of AWT Water as agreed to, in writing, by the Parties.

"Company Facilities" means the necessary facilities funded and constructed by the Company for purposes of supporting water deliveries from the Project and other Company water supplies, including (a) injection/extraction wells and related appurtenances, (b) pipelines and transmission mains, and (c) real property, all as additionally described in Exhibit B.

"Company Water" means the AWT Water delivered to the Delivery Point to be used and owned by the Company and will be counted toward the Company Allotment.

"Company Water Payments" means payments made by the Company to the District pursuant to Section 16 hereof for the furnishing of Company Water.

"Company Water Rate" means the dollar amount per acre-foot of Company Water that the Company pays the District for delivery of Company Water, as calculated pursuant to Section 16.

"Company Water Shortfall" is measured in acre-feet and, for each Fiscal Year, means the Company Allotment (with respect to Section 20(c)(5)) or the Minimum Allotment (with respect to Section 20(c)(6)), as applicable, minus the quantity of Company Water delivered by the Agency or the District to the Delivery Point in the applicable Fiscal Year. With respect to an Event of Default under Section 20(c)(5), the Company Water Shortfall shall be an amount equal to the cumulative sum of the shortfall in each of the three consecutive Fiscal Years. With respect to an Event of Default under Section 20(c)(6), the Company Water Shortfall shall be an amount equal to the cumulative sum of the shortfall in each of the two consecutive Fiscal Years.

"CPUC" means the California Public Utilities Commission.

"Delivery Point" means any of the metered points of delivery identified in Exhibit C.

"Delivery Start Date" means the date that the District commences delivery of AWT Water to the Delivery Point.

"District Shortfall Payment" means a payment made by the District to the Company pursuant to Section 16 hereof.

"Drought Reserve" means one of the two sub-accounts that comprise the Reserve Account.

"Drought Reserve Minimum" means 1,000 acre-feet of Drought Reserve Water in the Drought Reserve.

"Drought Reserve Water" means Excess Water in the Drought Reserve Account at any given time.

"Event of Default" means each of the items specified in Section 20 which may lead to termination of this Agreement upon election by a non-defaulting Party.

"Excess Water" means a quantity of AWT Water in excess of the Company Allotment delivered by the District to the Delivery Point in any given Fiscal Year.

"Expansion" means the Pure Water Monterey groundwater replenishment project expansion, including (a) expansion to AWT Facilities, (b) additional Product Water Facilities, and (c) additional Injection Facilities, all as additionally described in Exhibit B.

"Expansion Delivery Start Date" means the date that the District commences delivery of AWT Water from the Expansion to the Delivery Point.

"Expansion Performance Start Date" means the date set forth in a written notice provided by the District to the Company upon which the District's performance obligations with respect to the Water Availability Guarantee, the Water Delivery Guarantee, and the Water Treatment Guarantee shall commence with respect to the Expansion, such date not to be more than twelve months following the Expansion Delivery Start Date.

"Fiscal Year" means a twelve-month period from July 1 through June 30. Any computation made on the basis of a Fiscal Year shall be adjusted on a pro rata basis to take into account any Fiscal Year of less than 365 or 366 days, whichever is applicable.

"Fixed Project Costs" means all pre-construction, development, and capital costs of the Project, including debt service and reserves for the payment of debt service, incurred by the Agency or District in accordance with Section 6 hereof; provided, however, Fixed Project Costs shall not include any damages or other amounts paid by the Agency or the District to the Company as indemnification payments pursuant to Section 22 of this Agreement.

"Force Majeure Event" means any act, event, condition or circumstance that (1) is beyond the reasonable control of the Affected Party, (2) by itself or in combination with other acts, events, conditions or circumstances adversely affects, interferes with or delays the Affected Party's ability to perform its obligations under this Agreement, and (3) is not the fault of, or the direct result of the willful or negligent act, intentional misconduct, or breach of this Agreement by, the Affected Party.

"Injection Facilities" means the injection wells and appurtenant facilities portion of the Project used to inject AWT Water into the Seaside Basin.

"Minimum Allotment" means 2,800 acre-feet of AWT Water until the Expansion Performance Start Date, after which it shall mean 4,600 acre-feet.

"Operating Reserve" means one of the two sub-accounts that comprise the Reserve Account.

"Operating Reserve Minimum" means (a) 1,000 acre-feet of Operating Reserve Water in the Operating Reserve prior to the date that is three (3) years following the Performance Start Date, (b) 1,750 acre-feet of Operating Reserve Water in the Operating Reserve after the date that is three (3) years following the Performance Start Date but prior to the Expansion Performance Start Date, and (c) 2,875 acre-feet of Operating Reserve Water in the Operating Reserve after the date that is three (3) years following the Expansion Performance Start Date.

"Operating Reserve Water" means Excess Water in the Operating Reserve at any given time.

"Performance Start Date" means the date set forth in a written notice provided by the District to the Company upon which the District's performance obligations with respect to the Water Availability Guarantee, the Water Delivery Guarantee, and the Water Treatment Guarantee shall commence, such date not to be more than six months following the Delivery Start Date.

"Product Water Facilities" means the product water conveyance facilities portion of the Project used to transport the AWT Water from the AWT Facilities to the Injection Facilities.

"Project" means the Pure Water Monterey groundwater replenishment project, including (a) Source Water Facilities, (b) AWT Facilities, (c) Product Water Facilities, and (d) Injection Facilities, all as additionally described in Exhibit B. The Project also includes the Expansion beginning on the Expansion Delivery Start Date.

"Project Operation and Maintenance Expenses" means all expenses and costs of management, operation, maintenance, repair, replacement, renovation, or improvement of the Project incurred by the Agency and the District, including overhead costs, and properly chargeable to the Project in accordance with generally accepted accounting principles, including, without limitation (a) salaries, wages, and benefits of employees, contracts for professional services, power, chemicals, supplies, insurance, and taxes; (b) an allowance for depreciation, amortization, and obsolescence; (c) all administrative expenses; and (d) a reserve for contingencies, in each case incurred by the Agency or District with respect to the Project; provided, however, Project Operation and Maintenance Expenses shall not include any damages or other amounts paid by the Agency or the District to the Company as indemnification payments pursuant to Section 22 of this Agreement.

"Regional Treatment Plant" means the Agency's Regional Wastewater Treatment Plant.

"Replenishment Assessment Rate" means a dollar value equal to the greater of (1) the

Replenishment Assessment amount, as defined in the Seaside Basin Amended Decision, as of the last day of the Fiscal Year for which a District Shortfall Payment becomes due, or (2) $3,500 per acre-foot.

"Required Insurance" means, with respect to the Agency and the District, the insurance each Party is required to obtain and maintain during the term of this Agreement as set forth in Exhibit D.

"Reserve Account" means the account managed by the District that tracks and records (a) quantities of Excess Water delivered to the Delivery Point, and (b) quantities of Reserve Water debited from the Reserve Account to satisfy the Company Allotment.

"Seaside Basin" means the Seaside Groundwater Basin.

"Seaside Basin Amended Decision" means the Amended Decision of the Superior Court of the State of California in and for the County of Monterey, Case No. M66343, dated February 9, 2007.

"Service Area" means the Company's service area as of the Effective Date of this Agreement, as shown in Exhibit A, and as amended from time-to-time by the CPUC.

"Storage and Recovery Agreement" means the storage and recovery agreement among the Company, the District and the Watermaster that allows for injection of AWT Water into the Seaside Basin for purposes of continued storage or withdrawal.

"Source Water Facilities" means the source water diversion and conveyance facilities portion of the Project used to divert and convey new source waters to the Regional Treatment Plant.

"Watermaster" means the Seaside Groundwater Basin Watermaster.

"Water Availability Guarantee" means the water availability guarantee set forth in Section 13.

"Water Delivery Guarantee" means the water delivery guarantee set forth in Section 12.

"Water Treatment Guarantee" means the water treatment guarantee set forth in Section 14.

OPERATIVE PROVISIONS

3. Commencement of Service.

The Performance Start Date occurred on September 1, 2020. The Expansion Delivery Start Date shall be no later than February 1, 2025, or other date as agreed to in writing by the Parties. Failure of the Agency and the District to meet this deadline shall constitute an Event of Default upon which the Company may terminate this Agreement in accordance with Section 20. The Company shall not incur anycosts or be responsible for any payments under this Agreement prior to the Performance Start Date. The Company shall not incur any costs or be responsible for any payments under this Agreement relating to the Expansion prior to the Expansion Delivery Start

Date.

4. Term of Agreement.

This Agreement shall be effective as of the Effective Date and shall remain in effect until the date that is thirty (30) years after the Expansion Performance Start Date (the "Expiration Date"), unless earlier terminated as provided in this Agreement.

5. Option for Continued Service.

The Company may extend the Expiration Date of this Agreement for one or more periods not to exceed ten (10) years, in total. The Company shall notify the Agency and the District, in writing at least 365 days prior to the then-applicable Expiration Date, of its intent to extend the Expiration Date and such notice shall indicate the new Expiration Date. At the election of any Party, the Parties will meet and confer to consider the Parties' interest in any additional extension or renewal of an arrangement similar to this Agreement. Such meet-and-confer sessions should take place approximately five (5) years prior to the then-applicable Expiration Date; provided, however, if pursuant to an extension under this Section 5 the new Expiration Date is less than five (5) years following the Company's notification of the extension, the Parties will meet and confer within a reasonable time prior to the new Expiration Date.

6. Agency and District to Develop Project and Expansion.

Subject to all terms and conditions of the Agency's water rights, permits and licenses, and all agreements relating thereto, the Agency and District will cause and complete the design, construction, operation, and financing of the Project and the Expansion, the production and delivery of AWT Water, the obtaining of all necessary authority and rights, consents, and approvals, and the performance of all things necessary and convenient therefor. The Agency will own and operate the Project and the Expansion.

As consideration for funding environmental, permitting, design, and other pre-construction costs, as well as for pledging revenues for repayment of future costs under this Agreement in the event Company Water Payments are insufficient, the District shall (i) own AWT Water for sale and delivery to the Company, (ii) have the right to sell AWT Water to the Company or any Additional Project Participant (if approved by the Company pursuant to Section 19), (iii) have the right to bill the Company for Company Water Payments or to bill any Additional Project Participant for AWT Water, and (iv) have the right to apply all Company Water Payments to payment of Fixed Project Costs and Project Operation and Maintenance Expenses.

7. Obligation to Pay Design and Construction Costs.

The Agency shall be solely responsible for the design, construction, implementation and performance of the Project, and shall bear all costs associated with such design, construction,

implementation and performance. Title to the structures, improvements, fixtures, machinery, equipment, materials, and pipeline capacity rights constituting the Project and the Expansion shall remain with the Agency as described in Exhibit B. The Agency shall bear all risk of loss concerning such structures, improvements, fixtures, machinery, equipment, and materials.

At the request of the Agency, the Company may assist the Agency in obtaining financing for Fixed Project Costs for the Project. Any such assistance will be evidenced in a writing agreed to by the Company and the Agency.

8. Obligation to Pay Operation and Maintenance Costs.

The Agency shall be solely responsible for the operation, maintenance, repair and replacement of the Project, and shall bear all costs associated with such operation, maintenance, repair and replacement.

9. Point of Delivery and Ownership of AWT Water.

All AWT Water shall be delivered to the Delivery Point. Water utilized to backflush an injection well that percolates into the ground is considered delivered AWT Water.

The Agency shall own the AWT Water until the point it leaves the AWT Facilities. The District shall own the AWT Water from the point it leaves the AWT Facilities to the Delivery Point. After the Delivery Point, if the water is Company Water, it will be owned by the Company. If, however, the water is Excess Water after the Delivery Point, then ownership of such water shall remain with the District. The District shall own any water in the Reserve Account, until such time as Operating Reserve Water or Drought Reserve Water is used to satisfy the Water Availability Guarantee at which point it shall become Company Water and beowned by the Company.

The Company recognizes and agrees that it acquires no interest in or to any portion of the District's system or any Agency facilities.

Delivery by the District and withdrawal by the Company shall be governed by the Storage and Recovery Agreement.

10. Points of Withdrawal.

All AWT Water furnished pursuant to this Agreement shall be taken from storage by the Company at the points of withdrawal controlled by the Company and permitted by the California Department of Public Health. The Company shall be solely responsible for operating and maintaining all of its facilities for withdrawal of water.

11. Measurement.

All AWT Water furnished pursuant to this Agreement shall be measured by the Agency at the

Delivery Point. Such measurement shall be with equipment chosen by the Agency, installed by the Agency on Agency facilities, and approved by the District and Company in writing. All measuring equipment shall be installed, maintained, repaired and replaced by the Agency. The Agency will provide annual meter calibration by an outside contractor and provide a copy of results of such calibrations to District and Company. The Agency shall have the primary obligation to measure the quantity of AWT Water delivered to the Delivery Point. The Company may request, at any time, investigation and confirmation by the District or Agency of the measurement being made as well as the charges associated with those measurements. Errors in measurement and charges discovered by the investigation will be corrected in a timely manner by the Agency and the District. The Company may, at its own expense, at any time, inspect the measuring equipment and the record of such measurements for the purpose of determining the accuracy of the equipment and measurements.

12. Water Delivery Guarantee.

(a) Beginning on the Performance Start Date and in every Fiscal Year throughout the term of this Agreement, the Agency shall use its best efforts to deliver AWT Water to the District in quantities at least equal to the Company Allotment.

(b) Beginning on the Performance Start Date and in every Fiscal Year throughout the term of this Agreement, the District shall use its best efforts to deliver Company Water to the Delivery Point in quantities at least equal to the Company Allotment.

(c) Beginning on the Performance Start Date and in every Fiscal Year throughout the term of this Agreement, the Agency shall deliver AWT Water to the District in quantities at least equal to the Minimum Allotment (the "Water Delivery Guarantee").

(d) Beginning on the Performance Start Date and in every Fiscal Year throughout the term of this Agreement, the District shall deliver Company Water to the Delivery Point in quantities at least equal to the Minimum Allotment (also, the "Water Delivery Guarantee").

(e) All AWT Water delivered by the District to the Delivery Point between the Delivery Start Date and the Performance Start Date shall be deemed Operating Reserve Water and allocated to the Operating Reserve. The Performance Start Date shall not occur until the Operating Reserve Minimum has been allocated to the Operating Reserve. Beginning on the Performance Start Date and in every Fiscal Year throughout the term of this Agreement, all AWT Water delivered to the Delivery Point each Fiscal Year shall be Company Water until an amount equal to the Company Allotment has been delivered.

13. Water Availability Guarantee.

(a) Beginning on the Performance Start Date and throughout the term of this Agreement, the

Agency must deliver enough AWT Water to the District so that the Company may draw AWT Water (including Company Water, Operating Reserve Water, and Drought Reserve Water released by the District to the Company) from the Seaside Basin every Fiscal Year in an amount at least equal to the Company Allotment (the "Water Availability Guarantee").

(b) Beginning on the Performance Start Date and throughout the term of this Agreement, the District must deliver enough AWT Water to the Delivery Point so that the Company may draw AWT Water (including Company Water, Operating Reserve Water, and Drought Reserve Water released by the District to the Company) from the Seaside Basin every Fiscal Year in an amount at least equal to the Company Allotment (also, the "Water Availability Guarantee").

(c) If in any Fiscal Year the District delivers Excess Water, any such amount shall be credited to the Reserve Account. The Reserve Account will have two sub-accounts: the Operating Reserve and the Drought Reserve. The District will allocate all Excess Water into either the Operating Reserve or the Drought Reserve as it shall determine in its sole discretion.

(d) If the amount of Operating Reserve Water in the Operating Reserve at any time is less than the Operating Reserve Minimum, then all Excess Water in a Fiscal Year must be allocated to the Operating Reserve until the Operating Reserve Minimum is achieved, except for up to 200 acre-feet of Excess Water that may, at the District's election, be allocated to the Drought Reserve but only if the balance in the Drought Reserve is lessthan the Drought Reserve Minimum. In no instance shall the District reduce CompanyWater deliveries to make available additional irrigation water to the Monterey County Water Resources Agency from Agency sources in an amount exceeding the balance available in the Drought Reserve.

(e) If in any Fiscal Year the District delivers Company Water to the Delivery Point in quantities less than the Company Allotment, the Company shall have the right, but not the obligation, to draw Operating Reserve Water from the Operating Reserve to make up for any such shortfall in Company Water. In addition, if a shortfall still exists after Operating Reserve Water is drawn by the Company, the District may, in its sole discretion, use Drought Reserve Water available in the Drought Reserve to satisfy the Water Availability Guarantee.Upon the occurrence of the Expiration Date, or the earlier termination of this Agreement as contemplated herein, the Company shall have the right to draw Drought Reserve Water from the Drought Reserve.

(f) At least every three (3) months during the term of this Agreement, beginning on the Performance Start Date, the District will report to the Company the balances and activity in the OperatingReserve and Drought Reserve. In addition, the District shall, with ten (10) days following the Company's request, provide to the Company the balances and activity in the Operating Reserve and Drought Reserve.

14. Water Treatment Guarantee.

All AWT Water delivered by the Agency to the District and by the District to the Delivery Point must meet the water quality requirements set forth in Applicable Law (the "Water Treatment Guarantee"). If at any time the Agency or the District fails to meet the Water Treatment Guarantee, the Agency or the District shall give the Company immediate notice thereof and shall promptly meet with the Company to discuss the circumstances of such failure and the District's and the Agency's proposed action plan for remediation so that the Water Treatment Guarantee will be met. AWT Water delivered by the Agency to the District or by the District to the Delivery Point that does not meet the Water Treatment Guarantee shall not be considered Company Water or Excess Water.

15. Budgeting.

Not later than May 1 each year, the Fixed Project Costs and Project Operation and Maintenance Expenses shall be estimated by the Agency and the District for the following Fiscal Year. Such estimates shall be made available for review by the Parties at least fifteen (15) days prior to adoption by the Agency's or District's respective boards.

16. Rate of Payment for Company Water.

For Company Water furnished to the Company under this Agreement, the Company shall pay Company Water Payments to the District on a monthly basis determined as the Company Water Rate multiplied by the quantity of Company Water delivered the previous month. The Company shall not pay for deliveries to the Operating Reserve and the Drought Reserve until such reserves are designated by the Company or the District, as applicable, as Company Water.

The Company Water Rate in each Fiscal Year of the Agreement shall be the sum of the Fixed Project Costs and Project Operation and Maintenance Expenses budgeted for production and delivery of AWT Water in such Fiscal Year, divided by the amount of AWT Water expected to be produced during such Fiscal Year. The Parties agree that the fundamental rate-setting principles of this Agreement shall be (a) the Company does not pay for water it does not receive, (b) the cost of water shall only reflect the true cost of service consistent with California public agency laws and regulations, and (c) the Company shall pay only its proportionate share of the costs of the Agency and the District producing AWT Water.

In the first year following the Performance Start Date, the Company Water Rate shall not exceed $1,720 per acre foot (the "Soft Cap"). Prior to the Performance Start Date, if the first-year Company Water Rate as calculated is expected to exceed the Soft Cap, the Company shall apply to the CPUC through a Tier 2 advice letter for approval of such rate before the Company shall be required under this Agreement to pay an amount greater than the Soft Cap as the Company Water Rate. Unless and until the CPUC approves a Company Water Rate in an amount greater than the

Soft Cap, the Company shall only be required to pay an amount equal to the Soft Cap as the Company Water Rate. In no circumstance shall the District's or the Agency's obligations under this Agreement to deliver Company Water to the Company be affected by the pendency of the Company's application to the CPUC for approval of a rate greater than the Soft Cap or a decision by the CPUC to deny any such application.

As Project Operation and Maintenance Expenses are projected or budgeted for an upcoming Fiscal Year, the Parties agree there will be a "true-up" or reconciliation at the end of every Fiscal Year following the Performance Start Date to ensure the principles set forth in this section are met. Such "true-up" shall mean: if actual Project Operation and Maintenance Expenses are more or less than budgeted Project Operation and Maintenance Expenses used to calculate the Company Water Rate paid during the Fiscal Year, a corresponding adjustment (up or down) will be provided against the subsequent Fiscal Year budget and computed Company Water Rate for that Fiscal Year.

The Parties agree that, given the status of the Agency and the District as governmental agencies and the requirements under law that they incur only reasonable and prudent costs and expenses for purposes related to their governmental duties and the fact that such costs and expenses are subject to public review and scrutiny, all Fixed Project Costs and Project Operation and Maintenance Expenses incurred by the Agency and/or the District in compliance with the terms of this Agreement shall reflect only the actual cost of service consistent with California public agency laws and regulations and shall be subject to CPUC review consistent with that used for existing water purchase agreements by CPUC-regulated Class A investor-owned water utilities.

The District covenants and agrees to pay to the Agency the revenues received from the Company from the Company Water Payments provided, however, it will reduce the payment amount by any portion of the Fixed Project Costs and Project Operation and Maintenance Expenses directly paid or incurred by the District.

In addition to any other right or remedy available pursuant to this Agreement, if an Event of Default should occur under Section 20(c)(5) or Section 20(c)(6) at any time after the Expansion Performance Start Date, then the District shall pay a District Shortfall Payment to the Company determined as the Replenishment Assessment Rate multiplied by the cumulative Company Water Shortfall for each applicable Fiscal Year. The District shall pay the District Shortfall Payment to the Company within sixty days following last day of the Fiscal Year for which such payment becomes due. The Company, in its sole discretion, may elect any District Shortfall Payment to be credited against any Company Water Payment payable to the District pursuant to Section 17.

17. Time and Method of Payments.

The District shall send the Company a detailed monthly statement of charges due for all Company Water delivered to the Delivery Point during the preceding month as measured by the Agency meters, which shall be read on a monthly basis, and all Operating Reserve Water and Drought Reserve Water used to satisfy the Water Availability Guarantee, The Company shall not

be billed for Excess Water that goes into the Reserve Account.

The Company shall pay to the District all undisputed portions of statements, within forty-five (45) days after receipt. Statements shall be mailed to the Company at the following address:

California American Water Company
Director of Operations
511 Forest Lodge Rd # 100
Pacific Grove, CA 93950

The Agency shall send the District a monthly statement of charges due for all AWT Water actually delivered to the District during the preceding month as measured by the meters, which shall be read on a monthly basis. The District shall pay all statements within forty-five (45) days after receipt. Statements shall be mailed to the District at the following address:

Monterey Peninsula Water Management District
Administrative Services Division Manager
5 Harris Court, Building G
Monterey, CA 93940

If payment of any amount due hereunder is not made when due, excluding disputed amounts, simple interest will be payable on such undisputed amount at the legal rate of interest charged on California judgments, as provided in California Code of Civil Procedure Section 685.010, and shall be calculated on the basis of a 365-day year from the date such payment is due under this Agreement until paid.

The Company is obligated to pay to the District the undisputed amounts becoming due under this Agreement, notwithstanding any individual default by its water users or others in the payment to the Company of assessments or other charges levied by the Company.

GENERAL PROVISIONS

18. CPUC Rate Recovery Process.

All costs that the Company pays to the District pursuant to this Agreement shall be considered purchased water costs that are a pass-through to customers to be recovered via the Modified Cost Balancing Account ("MCBA") mechanism.

At least six (6) months prior to the Performance Start Date, at least one time between May 1 and June 1 of every year thereafter, and at any time throughout the term of this Agreement the District deems necessary, the District shall provide the Company with written notice of the Company Water Rate, supported by detailed information relating to the Fixed Project Costs and the estimated Operation and Maintenance Expenses to be incurred in the upcoming Fiscal Year that were used to determine the Company Water Rate. Within sixty (60) days following receipt of the written

notice containing the Company Water Rate, the Company shall file a Tier 1 advice letter for rate recovery with the CPUC to update its rates and tariffs, and in doing so establish a surcharge rate to reflect the Company Water Rate.

All changes to the Company Water Rate resulting from annual increases or decreases to the FixedProject Costs or Project Operation and Maintenance Expenses, as reflected in the Company WaterRate, shall be requested for rate recovery through a Tier 1 advice letter in accordance with Section 3.2 of Water Industry Rules in General Order 96-B, as amended from time to time, for processingexpense offset rate changes. The rate change will be applied to the surcharge to ensure that the Company's customer rates remain aligned with the Company Water Rate under the Agreement.

The Company shall have no obligation to make Company Water Payments unless and until the CPUC approves payment and recovery of those payments in rates through the process set forth in General Order 96-B, including a Tier 1 advice letter, which is effective upon filing pending CPUC approval, or another process resulting in CPUC approval of such costs, which shall be diligently pursued by the Company. Failure of the Company to pay amounts in excess of the amount approved by the CPUC shall not constitute a breach, and the District and Agency shall not be relieved of any obligations hereunder as a result thereof.

Access to the books and records of the Agency and the District will be made available to the Company for purposes of reviewing the accuracy and reasonableness of all costs relating to the Project and determination of the Company Water Rate.

Notwithstanding the Company's commitments under this Agreement, the Company intends to implement the MPWSP as authorized by the CPUC. Neither the District nor the Agency shall oppose the Company's efforts to obtain CPUC approval to recover in rates the Company's costs incurred relating to the MPWSP on or prior to August 31, 2019. Neither the District nor the Agency is currently taking a position relating to the Company's efforts to obtain CPUC approval to recover in rates the Company's costs incurred relating to the MPWSP after August 31, 2019.

19. Additional Project Participants.

After giving sixty (60) days' prior written notice to the Company, the District and Agency may enter into water purchase agreements for AWT Water with Additional Project Participants subsequent to the Effective Date of this Agreement to the extent the District determines sufficient capacity exists (after accounting for the need to maintain the Operating Reserve Minimum and the Drought Reserve Minimum), to the extent there is no additional cost to the Company as a result of any such agreement, and to the extent any such agreement does not adversely affect the Agency's or the District's ability to meet their performance obligations under this Agreement.

In order to not diminish the source waters available to produce AWT Water under this Agreement, the Company shall have the right, prior to the District or the Agency entering into any

water purchase agreement for AWT Water and in the Company's sole discretion, to approve or not approve in writing any Additional Project Participants deriving water from the water sources identified for the Project, specifically source waters identified in Sections 1.04 and 2.02 of the Amended and Restated Water Recycling Agreement between the Agency and Monterey County Water Resources Agency, dated November 3, 2015.

The Company shall not have the right to approve Additional Project Participants deriving water from prior existing rights to wastewater flows to the Regional Treatment Plant pursuant to Section 4.01 of the Agency's agreement with Monterey County Water Resources Agency or from future additional sources, as yet unidentified, such as wastewater systems annexed to the Agency's service area.

Any Additional Project Participant will pay for all additional capital costs necessitated by existence of the new water purchase agreement, its proportionate share of both the unamortized capital costs of the Project, and its proportionate share of future operation and maintenance expenses of the Project. The District and Agency will provide supporting documentation to the Company to ensure the Company Water Payments do not include any costs properly allocable to an Additional Project Participant.

20. Breach, Event of Default and Termination.

(a) Remedies for Breach – The Parties agree that, except as otherwise provided in this section with respect to termination rights, if any Party breaches this Agreement, any other Party may exercise any legal rights it may have under this Agreement and under Applicable Law to recover damages or to secure specific performance. No Party shall have the right to terminate this Agreement for cause except upon the occurrence of an Event of Default. If a Party exercises its rights to recover damages upon a breach of this Agreement or upon a termination due to an Event of Default, such Party shall use all reasonable efforts to mitigate damages. If a Force Majeure Event occurs, the Affected Party shall be entitled to relief from determination of a breach pursuant to Section 23 of this Agreement.

(b) If the District fails to exercise, and diligently pursue, any legal rights it may have against the Agency pursuant to subsection (a) of this section 20 within forty-five (45) days after the Company's written request that the District do so, the District shall be deemed to have assigned to the Company all such legal rights. The Agency shall not object to any such assignment, but shall not waive any defense it may otherwise assert to any claim brought by the Company.

(c) Event of Default – The following shall each constitute an "Event of Default" under this Agreement:

(1) The Delivery Start Date does not occur on or before July 1, 2019[1];

(2) The Performance Start Date does not occur on or before January 1, 2020[2];

(3) The Expansion Delivery Start Date does not occur on or before February 1, 2025;

(4) The Expansion Performance Start Date does not occur on or before February 1, 2026;

(5) The failure of the Agency or the District to deliver Company Water to the Delivery Point in quantities at least equal to the Company Allotment in each of three consecutive Fiscal Years;

(6) The failure of the Agency or the District to meet the Water Delivery Guarantee in each of two consecutive Fiscal Years;

(7) The failure of the Agency or the District to deliver Company Water to the Delivery Point in quantities at least equal to 2,960 acre-feet in any Fiscal Year;

(8) The failure of the Agency or the District to meet the Water Availability Guarantee in any Fiscal Year;

(9) The failure of any Party to perform any material term, covenant, or condition of this Agreement, and the failure continues for more than thirty (30) days following the defaulting Party's receipt of written notice of such default from a non-defaulting Party; provided, however, that if and to the extent such default cannot reasonably be cured with such thirty (30) day period, and if the defaulting Party has diligently attempted to cure the same within such thirty (30) period and thereafter continues to diligently attempt to cure the same, then the cure period provided for herein shall be extended from thirty (30) days to one-hundred twenty (120) days;

(10) The failure of the Agency or the District to meet the Water Treatment Guarantee on a repeated basis; and

(11) The Company no longer has a statutory duty to serve water in the Service Area.

(d) Termination for Event of Default – If an Event of Default occurs, any non-defaulting Party may terminate this Agreement immediately upon written notice to the other Parties. A non-

[1] This Event of Default occurred prior to execution of this Amended and Restated Agreement and shall no longer be a basis for termination under Section 20(d).

[2] This Event of Default occurred prior to execution of this Amended and Restated Agreement and shall no longer be a basis for termination under Section 20(d).

defaulting Party may enforce any and all rights and remedies it may have against a defaulting Party under Applicable Law.

21. Dispute Resolution.

Representatives from each Party shall meet and use reasonable efforts to settle any dispute, claim, question or disagreement (a "Dispute") arising from or relating to this Agreement. To that end, the Parties' representatives shall consult and negotiate with each other in good faith and, recognizing their mutual interests, attempt to reach a just and equitable solution satisfactory to the Parties. If the Parties do not reach such a solution within a period of thirty (30) days after the first notice of the Dispute is received by the non-disputing Parties, then the Parties shall pursue non-binding mediation to be completed within one-hundred twenty (120) days after the notice of the Dispute is received by the non-disputing Parties. If the Parties do not settle the Dispute within the one-hundred twenty (120) day period, any Party may pursue any and all available legal and equitable remedies.

22. Indemnification.

Each Party (an "Indemnifying Party") shall fully indemnify the other Parties and their respective officers, directors, employees, consultants, contractors, representatives and agents (the "Indemnified Persons") against, and hold completely free and harmless from, all liability and damages including any cost, expense, fine, penalty, claim, demand, judgment, loss, injury and/or other liability of any kind or nature, including personal or bodily injury, death or property damage, that are incurred by or assessed against the Indemnified Persons and directly or indirectly caused by, resulting from, or attributable to the fault, failure, breach, error, omission, negligent or wrongful act of the Indemnifying Party, or its officers, directors, employees, consultants, contractors, representatives and agents, in the performance or purported performance of the Indemnifying Party's obligations under this Agreement, but only to the extent of and in proportion to the degree of fault, failure, breach, error, omission, negligent or wrongful act of the Indemnifying Party, or its officers, directors, employees, consultants, contractors, representatives and agents.

23. Force Majeure Event Relief.

(a) If a Force Majeure Event occurs, the Affected Party shall be entitled to (1) relief from its performance obligations under this Agreement to the extent the occurrence of the Force Majeure Event prevents or adversely affects Affected Party's performance of such obligations, and (2) an extension of schedule to perform its obligations under this Agreement to the extent the occurrence of the Force Majeure Event prevents or adversely affects Affected Party's ability to perform such obligations in the time specified in this Agreement. The occurrence of a Force Majeure Event shall not, however, excuse or delay the other Parties' obligation to pay monies previously accrued and owing to Affected Party

under this Agreement, or for Affected Party to perform any obligation under this Agreement not affected by the occurrence of the Force Majeure Event.

(b) Upon the occurrence of a Force Majeure Event, Affected Party shall notify the other Parties in accordance with the notice provisions set forth herein promptly after Affected Party first knew of the occurrence thereof, followed within fifteen (15) days by a written description of the Force Majeure Event, the cause thereof (to the extent known), the date the Force Majeure Event began, its expected duration and an estimate of the specific relief requested or to be requested by the Affected Party. Affected Party shall use commercially reasonable efforts to reduce costs resulting from the occurrence of the Force Majeure Event, fulfill its performance obligations under the Agreement and otherwise mitigate the adverse effects ofthe Force Majeure Event. While the Force Majeure Event continues, the Affected Party shall give the other Parties a monthly update of the information previously submitted. TheAffected Party shall also provide prompt written notice to the other Parties of the cessationof the Force Majeure Event.

24. Amendments.

No change, alteration, revision or modification of the terms and conditions of this Agreement shall be made, and no verbal understanding of the Parties, their officers, agents or employees shall be valid, except through a written amendment to this Agreement duly authorized and executed by the Parties.

25. Remedies Not Exclusive.

The use by any Party of any remedy for the enforcement of this Agreement is not exclusive and shall not deprive the Party using such remedy of, or limit the application of, any other remedy provided by law.

26. Mitigation of Damages.

In all situations arising out of this Agreement, the Parties shall attempt to avoid and minimize the damages resulting from the conduct of another Party.

27. Failure of CPUC Approval.

If this Agreement is not approved by the CPUC in a manner acceptable to the Parties, any Party may, within sixty (60) days after the effective date of the decision or order of the CPUC relating to the approval of this Agreement, give written notice to the other Parties that the Agreement will terminate ten (10) days after receipt of such notice. Those acts and obligations that are to be performed on or after the Execution Date shall be discharged and no Party shall thereafter be obligated to continue to perform this Agreement or any provision hereof. Whether this Agreement is approved by the CPUC in a manner acceptable to the Parties or not, those acts and obligations

performed prior to the date of termination shall be final and no party shall have any claim to be restored to its pre-Execution Date status with regard to any of those acts or obligations.

28. Insurance.

The Agency and District will each obtain the applicable Required Insurance, as set forth in Exhibit D. If insurance proceeds fail to satisfy the obligations of the Agency or the District under this Agreement, the District and the Agency will utilize their own resources, including Prop 218 revenue raising capacity, to the extent allowable by law, to satisfy their obligations.

29. No Waiver.

Failure by a Party to insist upon the strict performance of any of the provisions of this Agreement by another Party, irrespective of the length of time for which such failure continues, shall not constitute a waiver of such Party's right to demand strict compliance by such other Party in the future. No waiver by a Party of any default or breach shall affect or alter this Agreement, and each and every covenant, term, and condition hereof shall continue in full force and effect to any existing or subsequent default or breach.

30. Successors in Interest, Transferees, and Assignees.

(a) This Agreement and all the rights and obligations created by this Agreement shall be in full force and effect whether or not any of the Parties to this Agreement have been succeeded by another entity, or had their interests transferred or assigned to another entity, and all rights and obligations created by this Agreement shall be vested and binding on any Party's successor in interest, transferee, or assignee. If the Company, the Agency or the District is succeeded by another entity, it shall assign this Agreement to its successor. If the District ceases to exist, the Agency and the Company shall continue their obligations hereunder in a manner that will substantively comply with the intent of this Agreement. Except as provided in subsection (b) of this Section 30, no succession, assignment or transfer of this Agreement, or any part hereof or interest herein, by a Party shall be valid without the prior written consent of the other Parties, such consent not to be unreasonably withheld.

(b) In the event of the creation of a local governmental agency duly established for the sole purpose of succeeding to, assuming, and performing all obligations and rights of Agency or District created by this Agreement, Agency or District may assign this Agreement and all those obligations and rights to such local governmental agency without consent, written or otherwise, of any other Party.

31. Covenants and Conditions.

All provisions of this Agreement expressed either as covenants or conditions on the part of the

District, Agency, or the Company shall be deemed to be both covenants and conditions.

32. Governing Law.

This Agreement and the rights and obligations of the Parties shall be governed, controlled and interpreted in accordance with the laws of the State of California.

33. Headings.

All headings are for convenience only and shall not affect the interpretation of this Agreement.

34. Construction of Agreement Language.

The provisions of this Agreement shall be construed as a whole according to its common meaning and purpose of providing a public benefit and not strictly for or against any Party. The Agreement shall be construed consistent with the provisions hereof, in order to achieve the objectives and purposes of the Parties. Wherever required by the context, the singular shall include the plural and vice versa, and the masculine gender shall include the feminine or neutral genders or vice versa.

35. Drafting Ambiguities.

This Agreement is the product of negotiation and preparation between the Parties. The Parties and their counsel have had the opportunity to review and revise this Agreement. The Parties waive the provisions of Section 1654 of the Civil Code of California and any other rule of construction to the effect that ambiguities are to be resolved against the drafting Party, and the Parties warrant and agree that the language of this Agreement shall neither be construed against nor in favor of any Party unless otherwise specifically indicated.

36. Partial Invalidity; Severability.

If any provision of this Agreement is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining provisions will nevertheless continue in full force without being impaired or invalidated in any way.

37. No Third Party Beneficiaries.

Nothing in this Agreement is intended to create any third Party beneficiaries to the Agreement, and no person or entity other than the Parties and the permitted successors, transferees and assignees of either of them shall be authorized to enforce the provisions of this Agreement.

38. Relationship of the Parties.

The relationship of the Parties to this Agreement shall be that of independent contractors. Each Party shall be solely responsible for any workers compensation, withholding taxes, unemployment insurance, and any other employer obligations associated with the described work or obligations

assigned to them under this Agreement.

39. Signing Authority.

The representative of each Party signing this Agreement hereby declares that authority has been obtained to sign on behalf of the Party such person is representing.

40. Further Acts and Assurances.

The Parties agree to execute, acknowledge and deliver any and all additional papers, documents and other assurances, and shall perform any and all acts and things reasonably necessary in connection with the performance of the obligations hereunder and to carry out the intent of the Parties.

41. Opinions and Determinations.

Where the terms of this Agreement provide for action to be based upon opinion, judgment, approval, review or determination of any Party hereto, such terms are not intended to be and shall never be construed as permitting such opinion, judgment, approval, review or determination to be arbitrary, capricious or unreasonable.

42. Interpretation of Conflicting Provisions.

If there is any conflict, discrepancy or inconsistency between the provisions of this Agreement and the provisions of any exhibit or attachment to this Agreement, the provisions of this Agreement shall prevail and control.

43. Integration.

This Agreement, including the exhibits, represent the entire Agreement between the Parties with respect to the subject matter of this Agreement and shall supersede all prior negotiations, representations, or agreements, either written or oral, between the Parties as of the Effective Date.

44. Counterparts.

All signatures need not appear on the same counterpart of this Agreement and all counterparts of this Agreement shall constitute one and the same instrument.

45. Notices.

All notices to a Party required or permitted under this Agreement shall be in writing and shall be deemed delivered (i) when delivered in person; (ii) on the third day after mailing, if mailed, postage prepaid, by registered or certified mail (return receipt requested); or (iii) on the day after mailing if sent by a nationally recognized overnight delivery service which maintains records of

the time, place, and recipient of delivery. Notices to the Parties shall be sent to the following addresses or to other such addresses as may be furnished in writing by one Party to the other Parties:

Monterey Peninsula Water Management District
5 Harris Court, Building G
Monterey, CA 93940
Attention: General Manager

Monterey One Water
5 Harris Court, Building D
Monterey, CA 93940
Attention: General Manager

California American Water
Attn: President
655 W. Broadway, Suite 1410
San Diego, CA 92101

SIGNATURE PAGE FOLLOWS

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement as of the date first above written.

MONTEREY ONE WATER,

By: _____

Printed Name: _____

Board Chair, Agency Board of Directors

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT,

By: _____

Printed Name: _____

Chair, District Board of Directors

CALIFORNIA-AMERICAN WATER COMPANY,

By: _____

Printed Name: _____

President

EXHIBIT A

Service Area

EXHIBIT B

Description of Project

Source Water Facilities – facilities to enable diversion of new source waters to the existing municipal wastewater collection system and conveyance of those waters as municipal wastewater to the Regional Treatment Plant to increase availability of wastewater for recycling. Modifications would also be made to the existing Salinas Industrial Wastewater Treatment Facility to allow the use of the existing treatment ponds for storage of excess winter source water flows and later delivery to the Regional Treatment Plant for recycling.

AWT Facilities – use of existing primary and secondary treatment facilities at the Regional Treatment Plant, as well as new pre-treatment, advanced water treatment (AWT), product water stabilization, product water pump station, and concentrate disposal facilities.

Product Water Facilities – new pipelines, pipeline capacity rights, booster pump station(s), appurtenant facilities along one of two optional pipeline alignments to move the product water from the Regional Treatment Plant to the Seaside Groundwater Basin injection well facilities.

Injection Facilities – new deep and vadose zone wells to inject Proposed Project product waterinto the Seaside Groundwater Basin, along with associated back-flush facilities, pipelines, electricity/ power distribution facilities, and electrical/motor control buildings.

Description of Expansion

"Expansion" means the Pure Water Monterey groundwater replenishment project expansion, including (a) expansion to AWT Facilities, (b) additional Product Water Facilities, and (c) additional Injection Facilities. The proposed expansion to AWT Facilities will include additions of equipment, pipelines, and appurtenances to the approved and existing buildings and concrete/asphalt areas at the Advanced Water Purification Facility (also referred to herein as AWT Facilities).

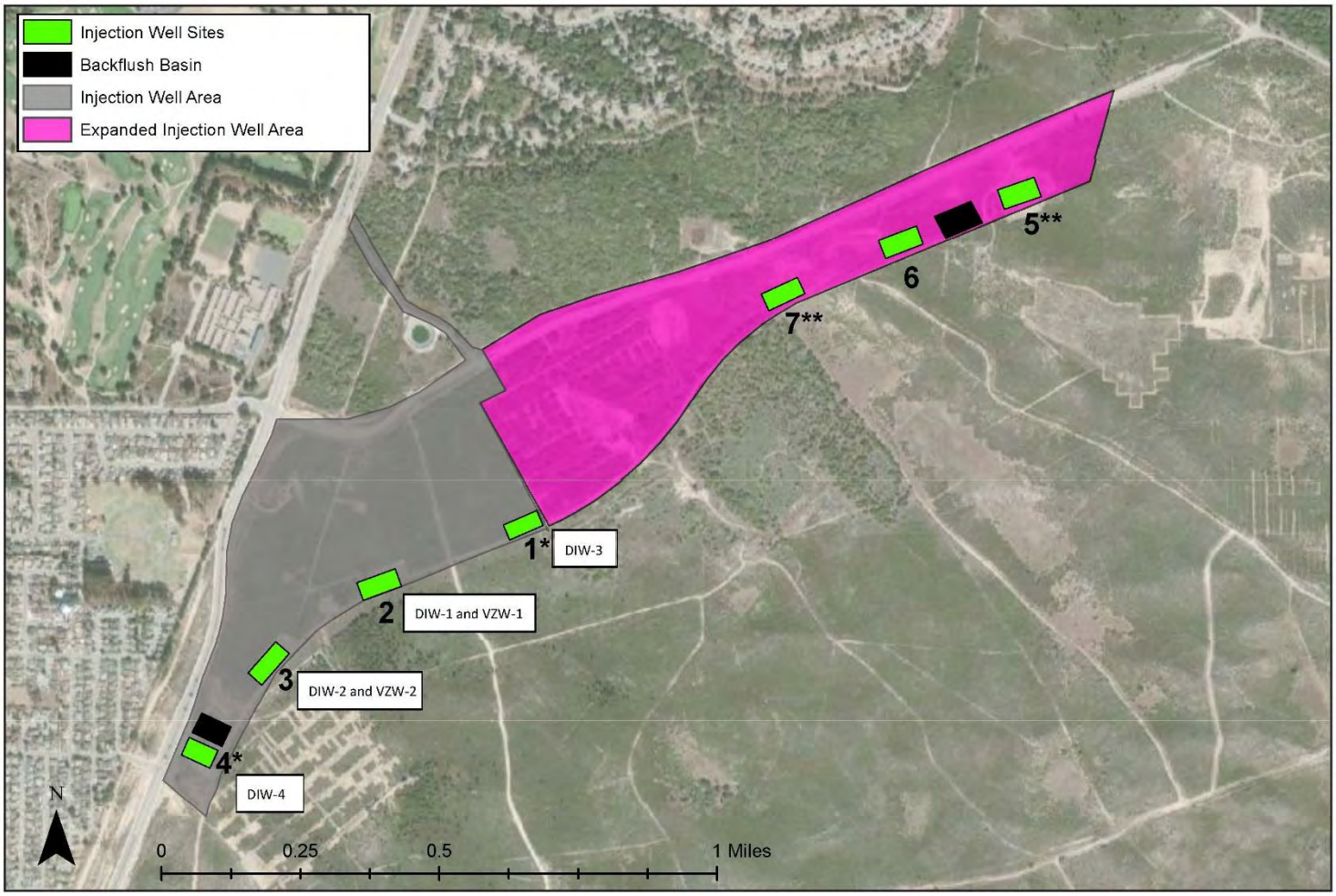
Description of Company Facilities

"Company Facilities" means the necessary facilities funded and constructed by the Company for purposes of supporting water deliveries from the Project and other Company water supplies, including (a) injection/extraction wells and related appurtenances, (b) pipelines and transmission mains, and (c) real property, including up to two extraction wells near Fitch Park on Presidio of Monterey property and two extraction wells just north of the Seaside Middle School, in the City of Seaside, conveyance pipelines serving the extraction wells and interconnecting with the Company distribution system in General Jim Moore Boulevard, and potential treatment facilities.

EXHIBIT C

Delivery Point

AWT Water will be injected into the Seaside Groundwater Basin using existing and new injection wells. Theproposed Injection Well Facilities will be located east of General Jim Moore Boulevard, south of Eucalyptus Road in the City of Seaside, including injection wells (deep injection wells, vadose zone wells, as identified in the figure below), plus monitoring wells, and back-flush facilities.



Well sites 1-4 have been approved and constructed. Well site 6 is the primary site for expansion, but sites 5 and 7 may be made available for redundancy or future replacement.

EXHIBIT D

Required Insurance

As provided in Section 28 of this Agreement, Agency and District shall, to the extent it continues to be available and applicable to the insured risk, obtain and keep in force during the term of this Agreement the following minimum insurance limits and coverage (or greater where required by Applicable Law). Such coverage will be in place not later than the inception of the covered activity, or such time as the Agency's and the District's insurable interest exists.

The cost of Project insurance obtained pursuant to this Exhibit is a Project Operation and Maintenance Expense as defined in Section 2 of this Agreement.

Upon request, Agency and District will provide Company with a certificate of insurance or memorandum of coverage as to any Project insurance and/or complete copies of policies.

Company shall be provided at least 30 days' written notification of cancellation, material reduction in coverage or reduction in limits.

Project insurance may be issued by a public agency Joint Powers Authority Program or insurance companies authorized to do business in California with a current A. M. Best rating of A or better.

All commercial general liability insurance, including completed operations-products liability, automobile liability, and pollution liability insurance obtained pursuant to this Agreement shall designate Company, its parent and affiliates, their respective directors, officers, employees and agents, as additional covered parties. All such insurance should be primary and non-contributory, and is required to respond and pay prior to any other insurance or self-insurance available to Company. In addition to the liability limits available, such insurance will pay on behalf or will indemnify Company for defense costs. Any other coverage available to Companyapplies on a contingent and excess basis. All such insurance shall include appropriate clauses pursuant to which the insurance companies shall waive their rights of subrogation against Company, its parent and affiliates, their respective directors, officers, employees and agents.

Agency shall require that the contractors and subcontractors of all tiers as appropriate provide insurance during the pre-construction and construction (as covered activities begin) of the AWT Facilities as described in "Pure Water Monterey – Insurance Requirements for Construction and Design Professional Contracts," attached to this Exhibit D as Attachment 1. Approval of any deviation or exception from these insurance requirements resides solely with the Agency.

Coverages:

i. The Agency will provide coverage as follows:

(a) General liability insurance, including coverage for auto, errors and omissions and employment practices, and for the Water Delivery Guarantee, Water Availability Guarantee, and Water Treatment Guarantee at Sections 12, 13, and 14, respectively, of this Agreement. Total general and excess liability coverage limits shall be no less than $15,000,000 per occurrence.

(b) "All Risk" Property Insurance (including coverage for Builders' Risk, with additional coverage for loss or damage by water, earthquake, flood, collapse, and subsidence) with a total insured value equal to replacement cost of the AWT Facilities during the term of this Agreement

(c) Cyber Liability Insurance with $2,000,000 coverage limits for first and third party limits.

(d) (1) Public Entity Pollution Liability (claims made and reported) with coverage limits in the amounts of $25,000,000 policy aggregate and $2,000,000 per pollution condition with a $75,000 per pollution condition retention; (2) Pollution & Remediation Legal Liability with coverage limits in the amounts of $1,000,000 each pollution condition and $5,000,000 aggregate liability limits including a self-insured retention not to exceed $25,000 each pollution condition; and (3) TankAdvantage Pollution Liability with coverage limits in the amounts of $1,000,000 each claim and $2,000,000 aggregate.

(e) Workers' Compensation/Employers' Liability. Workers' Compensation and Employer's Liability insurance and excess insurance policy(s) shall be written on a policy form providing workers' compensation statutory benefits as required by California law. Employers' liability limits shall be no less than one million dollars ($1,000,000) per accident or disease.

ii. The District will provide coverage as follows:

(a) General Liability Coverage: $10,000,000 per Occurrence
Personal injury and Property Damage Coverage

(b) Automobile Liability Coverage: $10,000,000 per Occurrence
Personal Injury and Property Damage Coverage

(c) Workers' Compensation Coverage
A. Statutory Workers Compensation Coverage;
B. Employers' Liability Coverage: $5,000,000 each Occurrence

(d) Public Officials' and Employees Errors and Omissions: $10,000,000 per Occurrence

(e) Property Coverage: $1,000,000,000 (pooled limit)
Includes Fire, Theft and Flood Coverage with property replacement values

(f) Public Entity Pollution Liability with coverage limits in the amounts of $10,000,000 per occurrence with a not-to-exceed $75,000 per-pollution-condition retention; and (2) Pollution & Remediation Legal Liability with coverage limits in the amounts of $10,000,000 per occurrence including a self-insured retention not to exceed $25,000 each pollution condition.

Attachment 1

Pure Water Monterey
Proposed Insurance Requirements for Construction
and Design Professional Contracts

Contractors and design professionals (as that term is used in California Civil Code §2782.8) shall procure and maintain for the duration of the contract, and for twelve (12) years thereafter, insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the contractor or design professional,his/her agents, representatives, employees, or subcontractors.[1]

MINIMUM SCOPE AND LIMIT OF INSURANCE

Coverage shall be at least as broad as:

1. **Commercial General Liability (CGL):** Insurance Services Office Form CG 00 01 covering CGL on an "occurrence" basis, including products and completed operations, property damage, bodily injury and personal & advertising injury with limits no less than $5,000,000 per occurrence. If a general aggregate limit applies, either the general aggregatelimit shall apply separately to this project/location or the general aggregate limit shall be twice the required occurrence limit.

2. **Automobile Liability:** Insurance Services Office Form Number CA 0001 covering Code 1 (any auto), with limits no less than $5,000,000 per accident for bodily injury and property damage.

3. **Workers' Compensation** insurance as required by the State of California, with Statutory Limits, and Employers' Liability insurance with a limit of no less than $1,000,000 per accident for bodily injury or disease.

4. **Builder's Risk (Course of Construction)** insurance utilizing an "All Risk" (Special Perils) coverage form, with limits equal to the completed value of the project and no coinsurance penalty provisions.

5. **Surety Bonds** as described below.

[1] The coverages herein are understood to be representative only and the Agency and District retain the right to modify the insurance and indemnity requirements based upon the scope of services for any engagement.

6. **Professional Liability** (for all design professionals and contractors for design/build projects), with limits no less than $2,000,000 per occurrence or claim, and $4,000,000 policy aggregate.

7. **Contractors' Pollution Legal Liability and Errors and Omissions** (if project involves environmental hazards) with limits no less than $2,000,000 per occurrence or claim, and $4,000,000 policy aggregate.

If the contractor or design professional maintains higher limits than the minimums shown above, the Entity[2] requires and shall be entitled to coverage for the higher limits maintained by the contractor or design professional. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the Entity.

Deductibles and Self-Insured Retentions

Any deductibles or self-insured retentions must be declared to and approved by the Entity. At the option of the Entity, either: the contractor shall cause the insurer to reduce or eliminate such deductibles or self-insured retentions as respects the Entity, its officers, officials, employees, and volunteers; or the contractor or design professional shall provide a financial guarantee satisfactory to the Entity guaranteeing payment of losses and related investigations, claim administration, and defense expenses.

The insurance policies are to contain, or be endorsed to contain, the following provisions[3]:

1. The Entity, its officers, officials, employees, and volunteers are to be covered as additional insureds on the CGL policy with respect to liability arising out of with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations and automobiles owned, leased, hired, or borrowed by or on behalf of the Contractor. General liability coverage can be provided in the form of an endorsement to the Contractor's insurance (at least as broad as ISO Form CG 20 10 10 93, CG 00 01 11 85 or both CG 20 10 10 01 and CG 20 37 10 01 forms if later revisions used).

2. For any claims related to this project, the Contractor's insurance coverage shall be primary insurance as respects the Entity, its officers, officials, employees, and volunteers. Any insurance or self-insurance maintained by the Entity, its officers, officials, employees, or volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

[2] The term "Entity" as used herein means the Agency or the District.

[3] The term "Contractor" as used herein also means Design Professional in context of an agreement for services by a design professional as that term is used in CA CC 2782.8.

3. Each insurance policy required by this clause shall provide at least thirty (30) days' written notification of cancellation, material reduction in coverage or reduction in available limits.

Builder's Risk (Course of Construction) Insurance

Contractor may submit evidence of Builder's Risk insurance in the form of Course of Construction coverage. Such coverage shall name the Entity as a loss payee as their interest may appear.

If the project does not involve new or major reconstruction, at the option of the Entity, an Installation Floater may be acceptable. For such projects, a Property Installation Floater shall be obtained that provides for the improvement, remodel, modification, alteration, conversion or adjustment to existing buildings, structures, processes, machinery and equipment. The Property Installation Floater shall provide property damage coverage for any building, structure, machinery or equipment damaged, impaired, broken, or destroyed during the performance of the Work, including during transit, installation, and testing at the Entity's site.

Claims Made Policies

If any coverage required is written on a claims-made coverage form:

1. The retroactive date must be shown, and this date must be before the execution date of the contract or the beginning of contract work.

2. Insurance must be maintained and evidence of insurance must be provided for at least twelve (12) years after completion of contract work.

3. If coverage is canceled or non-renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective, or start of work date, the Contractor must purchase extended reporting period coverage for a minimum of five (5) years after completion of contract work.

4. A copy of the claims reporting requirements must be submitted to the Entity for review.

5. If the services involve lead-based paint or asbestos identification/remediation, the Contractors Pollution Liability policy shall not contain lead-based paint or asbestos exclusions. If the services involve mold identification/remediation, the Contractors Pollution Liability policy shall not contain a mold exclusion, and the definition of Pollution shall include microbial matter, including mold.

Acceptability of Insurers

Insurance is to be placed with insurers authorized to do business in California with a current A.M. Best rating of no less than A: VII, unless otherwise acceptable to the Entity.

Waiver of Subrogation

Contractor hereby agrees to waive rights of subrogation which any insurer of Contractor may acquire from Contractor by virtue of the payment of any loss. Contractor agrees to obtain any endorsement that may be necessary to affect this waiver of subrogation. The Workers' Compensation policy shall be endorsed with a waiver of subrogation in favor of the Entity for all work performed by the Contractor, its employees, agents and subcontractors.

Verification of Coverage

Contractor shall furnish the Entity with original certificates and amendatory endorsements, or copies of the applicable insurance language, effecting coverage required by this contract. All certificates and endorsements are to be received and approved by the Entity before work commences. However, failure to obtain the required documents prior to the work beginning shall not waive the Contractor's obligation to provide them. The Entity reserves the right to require complete, certified copies of all required insurance policies, including endorsements, required by these specifications, at any time.

Subcontractors

Contractor shall require and verify that all subcontractors maintain insurance meeting all the requirements stated herein, and Contractor shall ensure that Entity is an additional insured on insurance required from subcontractors. For CGL coverage subcontractors shall provide coverage with a format least as broad as CG 20 38 04 13.

Surety Bonds

Contractor shall provide the following Surety Bonds:

1. Bid bond
2. Performance bond
3. Payment bond
4. Maintenance bond

The Payment Bond and the Performance Bond shall be in a sum equal to the contract price. If the Performance Bond provides for a one-year warranty a separate Maintenance Bond is not necessary. If the warranty period specified in the contract is for longer than one year a Maintenance Bond equal to 10% of the contract price is required. Bonds shall be duly executed by a responsible corporate surety, authorized to issue such bonds in the State of California and secured through an authorized agent with an office in California.

Special Risks or Circumstances

Entity reserves the right to modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other circumstances.

Hold Harmless - Contractor

To the fullest extent permitted by law, Contractor shall hold harmless, immediately defend, and indemnify Entity and its officers, officials, employees, and volunteers from and against all claims, damages, losses, and expenses including attorney fees arising out of the performance of the work described herein, caused in whole or in part by any negligent act or omission of the Contractor, any subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of them may be liable, except to the extent caused by the active negligence, sole negligence, or willful misconduct of the Entity.

Hold Harmless – Design Professional

To the fullest extent permitted by law, Design Professional shall hold harmless, immediately defend, and indemnify Entity and its officers, officials, employees, and volunteers from and against all claims, damages, losses, and expenses including attorney fees that arise out of, pertain to, or relate to the negligence, recklessness, or willful misconduct of the Design Professional, or its employees, agents or subcontractors, except to the extent caused by the active negligence, sole negligence, or willful misconduct of the Entity.

ATTACHMENT Y

PEBBLE BEACH
COMPANY

October 18, 2019

Via Email: CalAmMonterey@coastal.ca.gov

Hon. Dayna Bochco, Chair and Commissioners
California Coastal Commission
Attn: Tom Luster
45 Fremont, Suite 2000
San Francisco, CA 94105- 2219

Re: Support for California American Water's Monterey Peninsula Water Supply Project

Dear Madame Chair Bochco and Commissioners:

Pebble Beach Company (PBC) would like to join with the broad coalition of governments, businesses, residents, and environmental organizations in support of the Monterey Peninsula Water Supply Project. We urge you to approve the required Coastal Development Permit for the project.

The Monterey Peninsula community has been at work for more than forty years to develop a long-term, sustainable, drought resistant water supply for the Monterey Peninsula. The comprehensive, six-year environmental review for the Monterey Peninsula Water Supply Project was completed by state and federal agencies and unanimously approved by the California Public Utilities Commission in 2018. Objections raised by project opponents, including groundwater impacts, environmental justice, water rights, and project alternatives - to name a few - were all exhaustively analyzed, and ultimately dismissed. The question of how much water the Monterey Peninsula requires has also been carefully studied, deliberated, and ultimately settled by the California Public Utilities Commission in 2018. The decision before you today is the crucial, final step of approval needed to bring the Water Supply Project to fruition.

PBC has a long history of leading the golf industry and Monterey Peninsula with innovation and responsible water resource management. In the early 1990s, we financed and developed the $70M Del Monte Forest water reclamation project – today this project supplies 100% of the water needed to irrigate all the golf courses in Del Monte Forest. To date, we've saved more

than 6.4 billion gallons of potable water for the Monterey Peninsula. Needless to say, we're staunch supporters of recycled water, and now we have almost three decades of experience relying on recycled water. Importantly, we've learned that the supply of recycled water is dependent upon and proportionate to water use. As residents and businesses use less water, in turn, less waste water is generated for recycling. We know firsthand that the supply of recycled water is not constant or guaranteed over time, and supply shrinks seriously during times of drought. The Cal-Am desalination project before you today is essential because recycled water alone cannot meet the Monterey Peninsula's water supply needs.

PBC would also like to call your attention to the Monterey Peninsula Water Management District's report entitled "Supply and Demand for Water on the Monterey Peninsula" presented to the District board on September 16, 2019. On pages 5 and 9-10, the study falsely assumes that PBC will not use our full water entitlement and, along with other questionable assumptions, erroneously calculates a reduced water demand for the greater Monterey Peninsula. PBC's vested right to use our water entitlement has been consistently upheld by every concerned agency, and we intend to fully utilize the entitlement. In fact, we've already used or allocated for use all but 60 acre-feet (out of our total 365 acre-foot entitlement). We bring this error to your attention for two reasons: (1) false assumptions call into question the overall credibility and integrity of the report, and (2) we sincerely hope that the Coastal Commission will not allow erroneous data and incorrect assumptions to influence your decision-making today. We believe the supply and demand numbers only recently presented by MPWMD are erroneous and fail to take into account the complexity of the water issue here and the long- and short-term needs of the community. Please rely on the much more comprehensive study of our water supply and demand approved by the California Public Utilities Commission with far more rigorous analysis and public review.

PBC strongly believes that we need both desalination and recycled water to provide our community with a long-term, adequate, secure, and flexible water supply. We are approaching the finish line to resolve our community's long-term water supply crisis, after 40 years in pursuit of that goal. We urge you to support the project to the fullest extent of your powers.

Sincerely,

PEBBLE BEACH COMPANY

David L. Stivers, President