MONTEREY DISTRICT
URBAN WATER MANAGEMENT
AND
WATER SHORTAGE CONTINGENCY PLAN

2006 - 2010

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I. INTRODUCTION

This report has been prepared in compliance with the Urban Water Management Planning Act, as amended.¹ It is an update of previous Urban Water Management Plans for the Monterey District of the California American Water Company, the first was adopted in 1990, followed by two updated Plans, one adopted in 1996 and another in 2000.²

This Urban Water Management Plan has been prepared for the Monterey District of the California American Water under the terms of AB 797 (1983) and subsequent amending legislation. It incorporates the water conservation initiatives that the District has adopted under the terms of the Memorandum of Understanding Regarding Urban Water Conservation in California (MOU), to which the District is a signatory. This Plan also includes a Water Shortage Contingency Plan as required under the provisions of AB 11X of (1991) and addresses changes required by subsequent legislation including AB 892 (1993), SB 1017 (1994), AB 2853 (1994), SB 901 (1995), SB 610 (2001), SB 221 (2001) and AB 105 (2004).

This update to the Urban Water Management Plan will also fulfill a requirement imposed upon the Company by the Monterey Peninsula Water Management District (MPWMD) in Ordinance 92 adopted on January 28, 1999.

Upon adoption, the Plan will be filed with the Monterey Peninsula Water Management District, the Office of Water Use Efficiency in the Department of Water Resources and the California Public Utilities Commission. A public hearing will be held in Monterey to provide an opportunity for public comment prior to final adoption.

¹California Water Code, District 6, Part 2.6; §10610, et. seq. Established by Assembly Bill 797 (1983),

This Plan describes the on-going and programmed water conservation efforts to be implemented and supported by the Company within the Monterey District and the plan of action in the event of water supply shortages for the 2006 to 2010 planning period.

### TABLE 1

**ACRONYMS AND ABBREVIATIONS USED IN THIS REPORT**

- AF - Acre Feet
- AFY - Acre Feet per Year
- BMP - Best Management Practice
- ccf unit - A billing unit of 100 cubic feet or 748 gallons
- CDSOD - California Division of Safety of Dams
- CPUC - California Public Utilities Commission
- CRLF – California red-legged frog
- CUWCC - Calif. Urban Water Conservation Council
- ESA – Endangered Species Act
- gpcpd - gallons per capita per day
- gpd - gallons per day
- gpm - gallons per minute
- HCP – Habitat Conservation Plan
- mg - million gallons
- mgd - million gallons per day
- MPWMD - Monterey Peninsula Water Management District
- MOU - Memorandum of Understanding
- NOAA – National Oceanic and Atmospheric Administration
- PBCSD – Pebble Beach Community Services District
- SWRCB - State Water Resources Control Board
- ULF – Ultra Low Flush
- USFWS – United States Fish and Wildlife Service
- UWMP - Urban Water Management Plan
II. DESCRIPTION OF THE MONTEREY DISTRICT

A. CALIFORNIA AMERICAN WATER

California American Water is a public utility company, operated as a subsidiary of American Water, headquartered in Voorhees, New Jersey. American Water, in turn, was acquired by RWE, Thames Water Holdings GmbH in 2003. California American Water was incorporated under California law in 1966 when American Water Works acquired the water system from California Water and Telephone. The Company operates seven separate water Districts in California, which are, from north to south, Sacramento, Larkfield, Felton, Monterey (comprising systems in Monterey, Ryan Ranch, Hidden Hills, Bishop, Ambler Park, Chualar and Ralph Lane), Village, Los Angeles (comprising systems in Baldwin Hills, San Marino and Duarte), and Coronado. The Sacramento, Larkfield and Felton systems were acquired by the Company in January 2002, when California American Water purchased all of the assets of the Citizen’s Utilities Company of California. American Water Works provides many of the senior management, financial, operations, personnel and customer services for California American Water from the corporate office in Voorhees, NJ and administrative offices in Chula Vista, CA, Sacramento, CA and Phoenix, AZ. Water quality testing and research is undertaken at the American Water laboratory in Belleville, IL, while bacteriological monitoring is conducted locally in Monterey’s state certified laboratory.

The operations of California American Water in California are regulated by the California Public Utilities Commission (CPUC). The Company must comply with the rules, regulations and decisions of the CPUC. Other State agencies with regulatory oversight of specific aspects of the Company’s operations include the Department of Health, the Department of Water Resources, the State Water Resources Control Board, and the Department of Fish and Game.

In addition, aspects of the Company’s operations in the Monterey District are regulated by the Monterey Peninsula Water Management District (MPWMD), which was chartered by the State Legislature in 1977. The MPWMD is empowered to manage available surface and groundwater
supplies for the Monterey Peninsula and to develop a plan to augment those supplies. Figure 1 illustrates the Monterey Peninsula Water Resources System, which is managed by the MPWMD and from which the Monterey District of California American Water takes about 95% of its water.

Figure 1: Monterey Peninsula Water Resources System

B. MONTEREY SERVICE AREA

California American Water’s Monterey District serves the areas of the Monterey Peninsula, from Sand City and Seaside in the north, to Carmel Highlands in the south. The Company also serves the Carmel Valley area southeast of Carmel Bay. The Monterey Peninsula is reached from Highway 1, which extends along the entire Pacific Coast of California. State Route 68 provides access to Salinas and points south on Route 101, while State Route 156 provides access to Route 101 and points north, including San Jose and San Francisco.
Communities served by the Monterey District include the Cities of Monterey, Carmel-by-the-Sea, Del Rey Oaks, Pacific Grove, Sand City, portions of Seaside and the unincorporated communities of Carmel Valley, Pebble Beach, Del Monte Forest, Carmel Highlands, Robles Del Rio, Rancho Fiesta, Ryan Ranch, and Hidden Hills/Bay Ridge, Bishop Ranch and Ambler Park/Rim Rock, Rancho El Toro Country Club, Laguna Seca Ranch Estates. See Figure 2.

California American Water’s Monterey District serves approximately 125,000 people, providing over 85 percent of the urban water supplies for the Monterey Peninsula.¹

C. CLIMATE

The Monterey Bay area has a semi-arid Mediterranean climate typified by moderate to warm summers and mild winters. The combined effects of topography and marine influence result in substantial variations in climate between coastal and inland areas only a few miles apart. The average annual maximum temperature in Monterey is 5.4° lower than in Carmel Valley while average minimum temperature in Carmel Valley is 3.9° lower than in Monterey. The warmest months of the year in Monterey are September and October, while the warmest months of the year in Carmel Valley are August and September. December and January are the coldest months in both locations. As shown in Table 2, the average daily maximum temperature in September in Monterey is 71.9° while in Carmel Valley it is 79.5°. In January, the average minimum temperature in Monterey is 43.3°, while Carmel Valley is cooler, at 38.8°.

The average annual precipitation is 19.72 inches in Monterey, while it is 12% lower, at 17.39 inches in Carmel Valley. Virtually all of the precipitation is rainfall, with about 90 percent falling between November and April. Rainfall amounts vary widely from year to year, and from one location to another. Precipitation records for Monterey show a low of 8.95 inches in 1953 and a high of 41.01 inches in 1998; while in Carmel Valley the record low year was 1961, with 8.88 inches and the record high was 28.42 inches in 1969.

¹ The population is estimated by Cal Am. The service area boundaries are not contiguous with boundaries of political jurisdictions or census tract boundaries, and the actual population served has not been tabulated by any State or local governmental entities.
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Eto (EvapoTranspiration) rates in inches/month from California Irrigation Management System (CIMIS) reference Evapotranspiration Zones Map; averaged for Zones 2 & 3.

Rainfall and temperature data for Monterey (1949-2004) and Carmel Valley (1959-2004) monitoring stations, from Western Regional Climate Center.
The Monterey District serves customers located on the coastal plain, the eastern and western slopes of the coastal mountains and the some inland valleys. Elevations range from sea level to over 900 feet. As a result, the service area is located where three or four reference evapo-transpiration zones blend together. Pacific Grove, Carmel and parts of Monterey are in the Coastal Plain, Heavy Fog Belt Zone (Zone 1); while portions of Monterey, Del Rey Oaks and other areas are in Zones 2 and 3 (Coastal Plains and Valleys), while Carmel Valley and locations along the Highway 68 corridor are in the Upland Central Coast evapo-transpiration zone (Zone 6). The Eto Rates for Zones 1, 2 and 3(averaged) and 6 are shown in Table 2.

D. WATER SUPPLY AND FACILITIES

The Monterey District is California American Water’s largest and most diverse operation. Unlike California American Water’s other systems, and most areas in California, Monterey is totally dependent on local rainfall and groundwater supplies to meet the needs of its customers. San Clemente and Los Padres Dams, located some 18 and 25 miles inland, capture rainfall and watershed runoff. The Carmel River is an additional source of supply as are thirty-nine wells, which draw from the Carmel Valley and Seaside Aquifers. These sources of supply are described in greater detail below.

1. SURFACE WATER SOURCES

The Carmel River receives runoff from the northern and western slopes of the Santa Lucia Range and the Sierra de Salinas Mountains. The watershed area is approximately 255 square miles. The Carmel River and its tributaries flow through the upper watershed and through the Carmel Valley. The river, which is about 35 miles long, drains into the Pacific Ocean in Carmel Bay.

Los Padres Reservoir is located on the upper reaches of the Carmel River. Constructed in 1949, the reservoir originally had a capacity of 3,030 acre-feet (987.3 mg). However, heavy storms and high river flows, particularly following the Marble Cone Fire (1977) have carried large volumes of silt and sedimentation from erosion into the Reservoir, diminishing its capacity. In 1999 the
System Description

storage capacity of this reservoir was estimated at 1,569 AF (511 mg). It has since dropped somewhat due to continuing sedimentation.

In the early 1990s, the MPWMD developed plans for a New Los Padres Dam, designed to replace the existing facility with a larger downstream dam. The project received necessary state and federal permits, but Peninsula voters rejected bonds to finance construction of the project in 1995. California American Water subsequently attempted to build the project privately, but in September 2003, the CPUC dismissed California American Water’s application for the proposed Carmel River Dam without prejudice and directed California American Water to file a new application to seek CPUC authorization to pursue the proposed Coastal Water Project.

San Clemente Reservoir is located downstream of Los Padres Reservoir. Constructed in 1920, the original capacity was 1,425 acre-feet (464 mg) at the spillway and 2,140 AF (607 mg) at the dam crest. Studies performed by California American Water in the 1990's indicated that the reservoir capacity had been reduced more than 90% due to sedimentation.

In 2002, the California Division of Safety of Dams (CDSOD) notified California American Water that as an interim safety measure to reduce the risk of downstream flooding in the event of a significant earthquake, the water level in the reservoir had to be dropped from a spillway elevation of 525 feet to 515 feet. At that level, the reservoir cannot store more than 140 AF. And the capacity continues to be reduced by sedimentation. In January 2004, the MPWMD reported that the sediment plume had reached the face of the dam. As a result of these factors, San Clemente Dam has minimal value as a water supply reservoir. The CDSOD, Army Corps of Engineers and NOAA Fisheries all have jurisdiction and could potentially order the dam, and the silt behind it, removed.

California American Water’s operations of these reservoirs has always been regulated and restricted pursuant to a variety of governmental rules, regulations and orders. In the past decade they have become increasingly restrictive, first due limitations imposed by the MPWMD and the State Water Resources Control Board (in Decision WR 95-10, which is discussed in the next section) and more recently by the CDSOD order noted above, and by United States Fish and Wildlife Service and NOAA Fisheries rulings designed to support the recovery of red-legged frogs and steelhead trout in the Carmel River, both of which have been classified as Threatened Species under the Federal Endangered Species Act. (Discussed in Subsection D, 3,
Fold out goes here
System Description

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Actual surface water diversions have dropped from 29% of total supply in 1995 (4,422 AF) to a low of 0.0% of total supply (0 AF) in water years 2004 and 2005.

2. GROUND WATER SOURCES

a. Carmel Valley Subsurface Water

The Carmel Valley geology features a water-bearing formation of boulders, gravel and alluvium, deposited over the last 10,000 years by the Carmel River. The alluvium ranges in thickness from about 3 feet in the upper part of the valley to about 180 feet near the mouth of the river. This formation is considered highly permeable because of its ability to recharge rapidly after extended dry periods, and has been used by California American Water and its predecessors as an important source of groundwater for many decades.

On July 6, 1995, following hearings that began in 1992, the State Water Resources Control Board determined that the ground water in the Carmel Valley Aquifer would now be considered water flowing in a subterranean stream from the Carmel River and that pumping from this aquifer would no longer be considered extraction from percolating ground water, but rather a surface water appropriation subject to the jurisdiction of the State Water Resources Control Board. The Board determined that, based on historical pumping rates, California American Water had pumped 10,730 AF (3,496 mg) annually without a valid basis of right. Beginning October 1, 1996, California American Water was restricted to pumping no more than 11,285 AF (3,677.2 mg) annually from the combined sources of Carmel River surface diversions and Carmel Valley wells, except during emergencies.1 That amount could be materially reduced by future SWRCB orders if a substitute supply of 10,730 AFY is not obtained in a timely manner.

California American Water maintains two systems of well fields in the Carmel Valley. The Upper Carmel Valley system consists of five active wells while the Company has eight active wells in the Lower Carmel Valley Project area. The wells and their pumping capacity are listed in Table 3. The listed pumping capacities represent current maximum estimated pumping capacities and include reductions from name plate capacities that have resulted from usage over

1State Water Resources Control Board, Order WR95-10
System Description

time. While the combined capacity of the Carmel Valley Well systems is estimated at 19,000 AFY, these well systems are not used to capacity due to the SWRCB Order 95-10 limitation of 11,285 AFY for diversions from all Carmel River/Carmel Valley sources, combined with the need to limit pumping from the aquifer to protect steelhead in the stream.

As a practical matter, the Upper Carmel Valley wells are used only in emergencies and not for baseload. In the Lower Aquifer, MPWMD and SWRCB rules require California American Water to maximize use of its most downstream wells for summertime supply purposes in order to maximize in-stream flow in the Carmel River for the benefit of the steelhead fishery and river habitat. Quarterly, the Company and the MPWMD establish a water budget to govern California American Water’s operations of its various sources of supply to maximize environmental protection while meeting the needs of California American Water’s customers.

Seven of the nine wells that draw water from the Lower Carmel Valley Aquifer are treated for iron and manganese at the Begonia Iron Removal Plant. This plant has a capacity of 18 mgd. One well, Scarlett Well 08, provides water of excellent quality. Water from this well is pumped directly into the system following chlorination.

b. Seaside Basin

The Seaside ground water basin encompasses a 24-square mile area and is subdivided into a number of sub-basins. These include an inland sub-basin underlying Fort Ord, the Laguna Seca sub-basin, and a coastal sub-basin underlying Seaside.

In Order 95-10 the State Water Resources Control Board instructed California American Water to limit surface diversions and pumping on the Carmel River side to 11,285 AFY, and to take the difference from the Seaside Basin. Since 1996, California American Water has pumped more than 3,500 AF a year from the Seaside Basin in all but one year. The MPWMD has limited California American Water pumping from the Seaside Basin to 4,000 AF annually.

Recognizing that the combined demands of all pumpers appears to be greater than the sustainable yield of the Seaside Basin, California American Water filed a lawsuit, on August 14, 2003, to adjudicate the rights of the various pumpers to groundwater in the aquifer. In a Tentative Decision dated January 12, 2006, the Court determined that the Natural Safe Yield of
### TABLE 3
CARMEL VALLEY AQUIFER WELLS

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<th>NAME</th>
<th>YEAR DRILLED</th>
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<th>DIAMETER (in)</th>
<th>MAXIMUM PUMPING CAPACITY (gallons/minute)¹</th>
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<td>4. Garzas Well 03</td>
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<td>46</td>
<td>12</td>
<td>296</td>
</tr>
<tr>
<td>5. Garzas Well 04</td>
<td>1989</td>
<td>44</td>
<td>12</td>
<td>233</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>1,712</strong></td>
</tr>
<tr>
<td>B. Lower Aquifer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Scarlett Well 08</td>
<td>1989</td>
<td>102</td>
<td>16</td>
<td>1,256</td>
</tr>
<tr>
<td>2. Berwick Well 08</td>
<td>1986</td>
<td>4016</td>
<td>16</td>
<td>695</td>
</tr>
<tr>
<td>3. Begonia Well 02</td>
<td>1990</td>
<td>127</td>
<td>16</td>
<td>1,481</td>
</tr>
<tr>
<td>4. Manor Well 02</td>
<td>1989</td>
<td>140</td>
<td>16</td>
<td>269</td>
</tr>
<tr>
<td>5. Schulte Well 02</td>
<td>1996</td>
<td>127</td>
<td>16</td>
<td>1,535</td>
</tr>
<tr>
<td>6. Pearce</td>
<td>1981</td>
<td>160</td>
<td>18</td>
<td>1,701</td>
</tr>
<tr>
<td>7. Cypress</td>
<td>1981</td>
<td>122</td>
<td>18</td>
<td>1,224</td>
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<tr>
<td>8. San Carlos Well 02</td>
<td>1982</td>
<td>95</td>
<td>16</td>
<td>Out of service</td>
</tr>
<tr>
<td>9. Rancho Cañada</td>
<td>1981</td>
<td>148</td>
<td>18</td>
<td>2,500</td>
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<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>10,661</strong></td>
</tr>
<tr>
<td><strong>Total: Upper and Lower Aquifers</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>12,373</strong></td>
</tr>
</tbody>
</table>

the Seaside Basin is between 2,581 AFY and 2,913 AFY. The Court also found that the public interest would be served by augmenting the total yield of the basin through artificial groundwater recharge. For an initial three-year period (2006 through 2008) the Court is permitting an annual withdrawal of groundwater from the basin of up to 5,600 AFY (4,611 AFY for the Coastal sub area and 989 AFY for the Laguna Seca sub area.) This interim “operating yield” will be reduced by 10% in years 4 through 6 (2009 through 2011). Additional 10% reductions will be required for consecutive 3-year periods until production reaches the Perennial Safe Yield. A Watermaster organization will be created to administer the adjudication and establish rules and regulations consistent with the terms of the adjudication.

The Court determined that California American Water’s production allocation would be 77.55% of the operating yield of the Coastal sub basin and 45.13% of the operating yield of the Laguna Seca sub-basin. Accordingly, the Company will have the right to pump 3,575.8 AFY from the Coastal sub-basin and 446.3 AFY from the Laguna Seca sub-basin during the initial 3-year period.

California American Water operates nine wells in the Coastal sub-area of the Seaside Basin. The wells and their pumping capacities are listed in Table 4.

California American Water and MPWMD are jointly operating a pilot project involving the injection of surface water (surplus winter flows) into the Seaside aquifer for recovery in summer months. The Seaside Basin Aquifer Storage and Recovery (ASR) Project has been operating for several seasons. The SWRCB has granted temporary permits to allow diversion of water from the Carmel River between December and May. The water is piped to a test well on former Fort Ord property where it is injected deep into the Santa Margarita Sandstone for storage and subsequent extraction.

In 2003 test year 165 acre-feet of Carmel River water was injected into the ground and twice that amount was extracted in order to evaluate the water quality effects on the aquifer.1 Larger quantities were injected and extracted in subsequent years and California American Water believes the ASR test project is going well.

______________________________

### TABLE 4
SEASIDE BASIN WELLS

| NAME                        | YEAR DRILLED | DEPTH (ft) | DIAMETER (in) | MAXIMUM PUMPING CAPACITY (gallons/minute)
|-----------------------------|--------------|------------|---------------|-----------------------------------------------
| 1. Darwin                   | 1954         | 228        | 14            | 85                                            |
| 2. LaSalle Well 02          | 1959         | 331        | 18 & 20       | 250                                           |
| 3. Luzern                   | 1997         | 290        | 12            | 551                                           |
| 4. Military                 | 1963         | 268        | 14            | 82                                            |
| 5. Ord Grove Well 02        | 1984         | 481        | 16            | 1,254                                         |
| 6. Playa Well 03            | 1966         | 228        | 12            | 370                                           |
| 7. Plumas Well 04           | 1998         | 290        | 12            | 204                                           |
| 8. Paralta                  | 1991         | 820        | 16            | 1,730                                         |
| 9. Santa Margarita Test Injection Well (owned by MPWMD) | 2001 | 720 | 18 | 1,000 gpm (injection) 2,500 gpm (extraction) |
| **Total**                   |              |            |               | **7,026**                                     |


\(b\) Test well for the Seaside Basin ASR Project. Operated jointly with MPWMD.

c. Highway 68 Corridor

California American Water operates six small, independent, water systems located along the Highway 68 corridor east of Monterey. The Ryan Ranch Business Park and Hidden Hills areas
have been served by California American Water for a decade or longer.¹ The Bishop Water Company and Ambler Park Water Company were acquired in 1999, and in 2001 California American Water acquired two small water systems from Monterey County known as Chualar and Ralph Lane. Ryan Ranch and Hidden Hills are supplied with water from eight wells, Bishop and Ambler are served by five wells, Chualar has two wells and Ralph Lane has one. The Ryan Ranch, Hidden Hills and Bishop systems wells draw from the Laguna Seca sub-basin.

All six of these water systems are managed independently of each other and the Carmel Valley system and Coastal sub-basin of the Seaside Basin. The Highway 68 Corridor wells and their pumping capacities are listed in Table 5. In 2005, California American Water acquired another small system along the Highway 68 corridor, the Toro system. It is supplied with groundwater that is not a part of the Seaside Basin.

3. TREATED WATER STORAGE

California American Water operates a total of 96 treated water storage tanks, of varying sizes, in the Monterey District. The aggregate storage capacity of these tanks is approximately 27.1 mg.

E. ENDANGERED SPECIES ACT COMPLIANCE

The federal Endangered Species Act (ESA) affects California American Water’s Monterey operations in a number of ways. Under the ESA, all persons are prohibited from importing, exporting, taking, transporting, or selling fish and wildlife species listed as endangered under the federal ESA. This protection has been extended to threatened species unless they are specifically excluded. "Take" is defined very broadly and includes adverse modification of habitat.

¹Ryan Ranch, Bishop and Hidden Hills are within the boundaries of the MPWMD, but do not receive water from the Carmel River System and are not subject to the rules and regulations stemming from Order 95-10. The other small systems are outside the MPWMD jurisdiction.
These wells draw from the Laguna Seca sub-basin of the Seaside Groundwater Basin.

Capacities of individual wells vary due to water table levels, system pressures, condition of equipment and other factors and may be reported differently in other documents. The source of this data is: California American Water Company, Report on Results of Operations and Revenue Requirements, April 15, 2002 and Annual Report of District Water System Operations, March 30, 2004.

Depth to water on 12/31/02. Well depths not reported.

<table>
<thead>
<tr>
<th>TABLE 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>HIGHWAY 68 WELLS</strong></td>
</tr>
<tr>
<td><strong>NAME</strong></td>
</tr>
<tr>
<td>1. Ryan Ranch Well 02 (Standby)</td>
</tr>
<tr>
<td>2. Ryan Ranch Well 07</td>
</tr>
<tr>
<td>3. Ryan Ranch Well 08</td>
</tr>
<tr>
<td>4. Ryan Ranch Well 09 (Standby)</td>
</tr>
<tr>
<td>5. Ryan Ranch Well 11</td>
</tr>
<tr>
<td>6. Standex (Hidden Hills) (Standby)</td>
</tr>
<tr>
<td>7. Bay Ridge (Hidden Hills)</td>
</tr>
<tr>
<td>8. Bishop Well 01</td>
</tr>
<tr>
<td>9. Bishop Well 02</td>
</tr>
<tr>
<td>10. Ambler Well 04</td>
</tr>
<tr>
<td>11. Ambler Well 05</td>
</tr>
<tr>
<td>12. Ambler Well 06</td>
</tr>
<tr>
<td>13. Chular Well 03</td>
</tr>
<tr>
<td>14. Chular Well 04</td>
</tr>
<tr>
<td>15. Ralph Lane</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
Under Section 7 of the ESA, all federal agencies must, in consultation with the U.S. Fish & Wildlife Service (USFWS) or the National Oceanic and Atmospheric Administration, Fisheries (NOAA), ensure that the agency's actions do not jeopardize the continued existence of a listed species, or destroy or adversely modify the listed species' critical habitat. Agency "action" includes issuing a permit so that any federal agency issuing a permit to the Company for construction or operations must comply with the ESA consultation process. As a result of such consultations, federal permits frequently contain mitigation measures for the protection of listed species and their habitats.

If no federal agency action is involved in a project that may impact a listed species, the project proponent may prepare a Habitat Conservation Plan (HCP), which must include discussion of impacts of the proposed actions on listed species, mitigation measures, alternatives, and funding assurances. USFWS and NOAA are each authorized to issue "Incidental Take Permits" for listed species under Sections 7 and 10 if the "take" will not jeopardize the listed species and the "take" is incidental to an otherwise lawful activity.

The water system in Monterey depends upon the limited natural resources of the Carmel Valley Aquifer. In 1996 and 1997, respectively, the California Red-legged Frog (CRLF) and steelhead trout were listed as "threatened" species under the ESA. Both species are found within the bounds of the Carmel River System.

Both USFWS and NOAA took the position that the Company's pumping operations adversely affects the habitat for steelhead and CRLF and therefore constitutes a "take." In September, 1997, USFWS threatened to prosecute the Company for an alleged take of CRLF tadpoles due to pumping. In June, 2001, NOAA sent a letter to the Company in which it threatened to prosecute the Company if it did not take immediate steps to protect the steelhead trout and its habitat. NOAA has chosen the Carmel River as the most likely river for the recovery of the steelhead trout. It has therefore focused on the Carmel River to an unprecedented degree. Until the Company can obtain an Incidental Take Permit (which can only be issued after completion of a HCP), it is vulnerable to civil or criminal prosecution should further incidents occur that USFWS believes are harmful to the CRLF or that NOAA believes are harmful to the steelhead and are caused by California American Water's operations.
In order to protect the Company with respect to CRLF pending the preparation of a HCP, California American Water negotiated an Agreement with USFWS that covers the Monterey Division’s Carmel River operations with respect to the CRLF pending the creation and implementation of a HCP. The initial 1998 agreement required California American Water to:

- implement certain mitigation measures in its operations;
- create and distribute educational flyers regarding listed species;
- implement an educational program on the ESA and California red-legged frog for California American Water employees and contractors; and
- work with other pumpers on the Carmel River to prepare a joint HCP.

The Agreement has been renewed several times and is in effect through December 2005. The Company has fully satisfied all the requirements of the USFWS Agreement except the completion of the joint HCP, because NOAA will not actively participate in the joint HCP process unless the geographic area covered by the HCP includes the operations of both San Clemente and Los Padres Dams. Since the fate of both of those dams was uncertain at the time that NOAA communicated its position, the joint HCP process was placed on hold in the Summer of 2001.

Because diversions at San Clemente and the upper reaches of the Carmel River are of great import to steelhead and consequently of great interest to NOAA, the Company and NOAA executed a bilateral Conservation Agreement in September 2001. It states the goals of NOAA and California American Water and sets forth a two-phase program of system operational changes and construction projects to address NOAA’ concerns about the steelhead. The goal is to keep greater stretches of the upper river wetted for longer periods to improve habitat for juvenile steelhead. Phase 1 comprised interim operational constraints and capital projects, while Phase 2 focused on the development of a reliable long-term water supply that is compatible with the constraints of the ESA.

Since 2001, pursuant to the Conservation Agreement with NOAA, the Company:

- funded and implemented capital projects;
- modified well operations;
- modified surface diversions from San Clemente Reservoir; and
- funded various studies to determine the efficacy of proposed changes to the physical system and its operations.
System Description

The Company has also continued its obligations under its Agreement with USFWS to conduct CRLF surveys and rescues.

The Company continues to pursue a long-term water supply that will allow it to substantially reduce its diversions from the Carmel Aquifer. Since 2001, the Company has determined that, due to political and community opposition, the Carmel River Dam and Reservoir Project is unlikely to obtain all the required federal and state local permits. The Company evaluated the Plan B Project developed under the supervision of the California Public Utilities Commission and determined that a project comprising desalination and aquifer storage and recovery is feasible (see Coastal Water Project discussion, below) and would enable the Company to substantially reduce its diversions from the Carmel Valley Aquifer, thus improving conditions for CRLF and steelhead trout and satisfying the requirements of the State Water Resources Control Board Order 95-10.

In late 2002, the California Division of Safety of Dams (CDSOD) ordered the Company to institute interim safety measures at San Clemente Dam. The Company installed sensing and warning devices at the dam. The CDSOD also required that the Company reduce the level of water in the reservoir, which would adversely affect CRLF and steelhead trout. The reservoir provides habitat for CRLF. Lowering the water level prevents the fish ladder from operating during the key migratory times of the year.

After negotiation among the CDSOD, NOAA, USFWS, the California Department of Fish and Game, and the Company, it was agreed that reservoir drawdown would only occur when flows in the river drop to a certain level. The agreement requires mitigation for CRLF and steelhead during the annual drawdown, including rescues and translocation of the CRLF and steelhead trout. The Company must pay the cost of the permitting process and mitigation. Drawdowns have been implemented under these procedures since Spring 2003 and will continue each year until a permanent seismic safety project for the San Clemente Dam is implemented.

ESA compliance for CRLF will continue consistent with the Agreement with USFWS, including annual CRLF surveys and rescues of tadpoles during the dry season.

Future ESA compliance for steelhead trout is less certain. The Company will continue with the restrictions on its diversions from San Clemente Reservoir and restrictions on its pumping from the Carmel Valley Aquifer. The Company has been unable to increase net well capacity in the
lower Carmel Valley Aquifer as specified in the Conservation Agreement with NOAA. NOAA has asked the Company to provide alternative, additional, mitigation for steelhead. Suggested new mitigation projects include funding management of conditions in the Carmel River Lagoon to better support the steelhead life cycle, funding a genetic study to determine whether steelhead rescued from the Carmel River can be translocated to the Salinas River, improving operations at the Sleepy Hollow Rearing Facility, and others. The Company will continue to meet with NOAA to try to resolve this issue.

F. WATER QUALITY

The quality of water delivered to customers throughout the Monterey District meets or exceeds all State and Federal drinking water requirements. Groundwater pumped by many of the system’s wells is of high quality, and requires no treatment other than disinfection, which is accomplished by chlorination. Raw water from as many as 12 wells contains iron and manganese at levels exceeding secondary water quality standards. Treatment for water from eight of these wells is provided at the Begonia Iron Removal Plant. Water from wells serving Bishop, Ambler Park, and Ryan Ranch is also high in iron and manganese, and water from the Ambler Park wells contains arsenic at levels slightly in excess of maximum allowable levels. The Company operates separate facilities for treating and filtering the raw groundwater from these wells prior to distribution. Perchlorate contamination has been identified in one well in the Upper Carmel Valley Aquifer. The concentrations are low but exceed the California Public Health Goal. Accordingly, this well is used only in an emergency situation, and is diluted with water from other wells. Water from wells in the Carmel Valley area, as well as San Clemente surface water (when available) is treated at the Carmel Valley treatment plant. Water from the Seaside Basin wells does not require treatment other than disinfection.

G. SUPPLY MANAGEMENT

In the Monterey service area, California American Water’s least costly supply comes from the Los Padres and San Clemente Reservoirs. This water requires conventional surface water treatment and can be delivered to the distribution system by gravity under most demand conditions. However, due to substantial production and diversion limitations, the water take from diversion, impounding and treatment of runoff from the Carmel River watershed has
dropped from about 25% of the Monterey District’s requirements prior to 1996 to less than 1% of total water requirements in the past four years.

The bulk of the Monterey District’s production needs, approximately 71% on average, have come from the Carmel Valley well systems. However, California American Water is restricted by SWRCB Order 95-10 to take no more than 11,285 AFY from the Carmel River surface diversions and the Carmel Valley wells, combined. In Water Year 1996-97 demand from the Carmel River system exceeded this limit and a fine of $168,000 was imposed on the Company and ratepayers. In lieu of paying this civil liability, California American Water agreed to sell its Forest Lake Reservoir to Pebble Beach Community Service District (PBCSD) and use the proceeds to provide improved fire protection with in PBCSD. The Order 95-10 limit has not been exceeded since, and withdrawals from the Carmel River system are closely monitored to ensure the limits are not exceeded. In Water Year 2000-01, production was 11,179 AF; in 2001-02, it was 10,721 AF and in 2002-03, it was 11,089 AF.

Groundwater supplies from the Seaside Basin have been averaging about 3,700 AF a year since 2000, providing approximately 24% of the total water supply requirement. When it became apparent that groundwater in the Seaside Groundwater Basin was also a constrained resource, California American Water filed lawsuit to adjudicate the groundwater rights in the basin. Based on the Court decision issued in January 2006, California American Water will be limited to withdrawals of 3,575.8 AFY from the Coastal sub-basin and 446.3 AFY from the Laguna Seca sub-basin through 2008, after which time withdrawals will decline (by 10% every subsequent 3-year period) until they are between 1,530 and 1,786 AFY for the Coastal sub-basin and 274 AFY for the Laguna Seca sub-basin. The ultimate supplies could change depending upon future determinations of the Perennial Safe Yield by the Watermaster, with Court concurrence.

The production from the Highway 68 corridor wells supply all the requirements of the Ryan Ranch, Hidden Hills, Bishop, Ambler Park and several other small unincorporated areas. The water demand from the Highway 68 corridor has increased from less than 1.5% of total consumption, when the previous UWMP was prepared, to almost 5% of production today. This is primarily the result of residential growth, which is permitted because this area has not been subject to the same water supply constraints as areas served by the Carmel River system. Production from wells serving the Ryan Ranch/Hidden Hills areas, which draw from the Laguna Seca sub-basin, has been averaging about 450 AFY in recent years.
The 11,285 AF a year limitation on the Carmel River system water supply represents a 20% reduction from the average amount of 14,106 AFY taken from the river system in the non-drought years immediately prior to SWRCB Order 95-10. The reduction is attributable to two primary factors: conservation and increased pumping from the Seaside Basin.

In 1996 and 1997, total production averaged 16,640 AFY. In 2000-2002 production was about 8% less, averaging 15,410 AFY. Considering that demand from Ryan Ranch/Hidden Hills and other areas served by the Highway 68 wells increased by almost 120 AFY in the same period, the reduction in demand from customers served by the Carmel River system was actually over 9%.

Because of the intense regulation of the Monterey District, supply management occupies a great deal of staff time and effort. All wells and diversions are metered and records are meticulously gathered. Daily production reports are prepared for the MPWMD and cumulative withdrawals from the Carmel River System sources are tabulated and monitored to ensure that all feasible actions are taken to maintain production within the Order 95-10 limits. The Monterey District faces severe supply constraints, even in years of normal or above-average precipitation, and all sources of supply must be carefully and continuously monitored and managed.

H. PROPOSED NEW SOURCES OF SUPPLY

The July 6, 1995 order by the State Water Resources Control Board (Order WR 95-10) determined that California American Water was pumping 10,730 AFY from the Carmel River system without a valid right of permit. At the same time, the SWRCB granted a permit to the MPWMD to obtain up to 42 cubic feet per second by direct diversion and up to 24,000 AFY per year by storage from November 1 through June 30 through development of a New Los Padres Reservoir. The MPWMD went to the voters in November 1995 to gain approval for a bond issue to finance construction of the new reservoir. The ballot measure was rejected by 57% of the voters, preventing the MPWMD from financing and constructing the project.

In 1996, California American Water requested authorization to use the water rights and other State and Federal permits obtained by MPWMD for this project. The Company also filed an application with the California Public Utilities Commission (CPUC) for authority to build, finance and operate the project, called the Carmel River Dam and Reservoir. A Supplemental EIR was released in December 1998, but was not certified, due to water allocation questions and
additional environmental issues raised by the listing of the California red legged frog and Central Coast steelhead trout as threatened species under the Endangered Species Act. In May 2001, the National Marine Fisheries Service (NOAA Fisheries) indicated that Federal approval of the reservoir would be unlikely, and California American Water began to focus on a “Plan B” long-term water supply alternative for the Monterey Peninsula.1 (The reservoir project was “Plan A”.) As the planning, design and environmental studies have progressed over the past five years, Plan B has evolved into the Coastal Water Project, which is described below.

a. Coastal Water Project

The proposed Coastal Water Project consists of two components, which, together are intended to replace a) 10,730 AFY of water from the Carmel Valley Aquifer and b) a minimum of 1,000 AFY from the Seaside Basin groundwater basin, which is being overpumped.

Facilities for the proposed project include a desalination plant and treatment facilities in the Moss Landing area approximately 19 miles north of the Monterey Peninsula, conveyance pipelines to transport the desalinated water south, terminal reservoirs and a pump station to distribute the water to the Company’s existing system, plus facilities for the Seaside Basin Aquifer Storage and Recovery (ASR) project. The components of the proposed Coastal Water Project are described in detail in the Proponents Environmental Assessment prepared by California American Water and submitted to the CPUC in 2005, and listed in Table 6, below.2

The proposed desalination plant would be located near the Moss Landing Power Plant currently owned and operated by Duke Energy Company. The power plant, which is the largest in California, is a 2,570-megawatt capacity, natural gas fired, combined cycle facility. It has been operating in this location since 1951, but was recently upgraded and modernized. The plant draws as much as 1.2 billion gallons per day of seawater from the ocean for cooling and discharges it back into Monterey Bay. A very small portion of the water (0.37 mgd) is currently desalinated for use in the plant boilers.

1 “Plan B” is a term first used by the CPUC in referring to a contingency plan developed pursuant to AB 1182.
2 The Proponents Environmental Assessment evaluates 5 options. The Coastal Water Project described in Table 6 is California American Water’s preferred project, although other options have not been rejected.
### TABLE 6
PROPOSED COASTAL WATER PROJECT
FACILITIES SUMMARY

<table>
<thead>
<tr>
<th>FACILITY</th>
<th>QUANTITY</th>
<th>SIZE AND CHARACTERISTICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desalination Plant:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Source Water Pipeline</td>
<td>7,000 LF</td>
<td>54-inch diameter</td>
</tr>
<tr>
<td>Return Flow Pipeline</td>
<td>8,000 LF</td>
<td>24-inch diameter</td>
</tr>
<tr>
<td>Equalization Basin</td>
<td>1</td>
<td>4.8 mg</td>
</tr>
<tr>
<td>Plant Inlet Pump Station</td>
<td>1</td>
<td>13.5 mgd, 200 HP</td>
</tr>
<tr>
<td>Pretreatment System</td>
<td>1</td>
<td>22 mgd, submerged media membrane filter</td>
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<tr>
<td>Reverse Osmosis System</td>
<td>1</td>
<td>10 mgd membranes</td>
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<tr>
<td>Post Treatment System</td>
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<td>Lime and carbon dioxide</td>
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<td>Desalinated Water Conveyance System</td>
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<td></td>
</tr>
<tr>
<td>Clear Well</td>
<td>2</td>
<td>1.5 mg (each)</td>
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<td>Desalinated Water Pump Station</td>
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<td>7,000 gpm, 1,200 HP</td>
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<td>Terminal Reservoir</td>
<td>2</td>
<td>3 mg (each)</td>
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<tr>
<td>Tarpy Flats Pump Station</td>
<td>1</td>
<td>10,200 gpm, 1,200 HP</td>
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<tr>
<td>Aquifer Storage and Recovery (ASR) Systems</td>
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</tr>
<tr>
<td>ASR Pipeline</td>
<td>10,000 LF</td>
<td>30-inch diameter</td>
</tr>
<tr>
<td>ASR Pump Station</td>
<td>1</td>
<td>4,400 gpm, 150 HP</td>
</tr>
<tr>
<td>ASR Wells</td>
<td>3</td>
<td>800-foot depth; 2.1 mgd injection/4.3 mgd extraction</td>
</tr>
<tr>
<td>Segunda Standby Pump</td>
<td>1</td>
<td>2,300 gpm, 200 HP</td>
</tr>
<tr>
<td>Segunda Pipelines</td>
<td>28,000 LF</td>
<td>30-inch and 36-inch diameters</td>
</tr>
</tbody>
</table>

LF = linear feet; mg = million gallons; mgd = mg per day; HP = horsepower; gpm = gallons per minute

The proposed Coastal Water Project desalination plant would take seawater from the cooling system for the Moss Landing Power Plant, and desalinate it with a reverse osmosis process using semi-permeable membranes to separate fresh water from salts in seawater. With this process,
System Description

Seawater is forced at very high pressures through tightly wrapped membranes. Water molecules, which are smaller than almost all impurities, including salts, pass through while the separated impurities and remaining water is discharged as brine.

The proposed desalination plant would have a feed stream of up to 24 mgd and would produce up to 10 mgd of desalinated water. The desalination plant would be located east of the Moss Landing Power Plant at a site along Dolan Road. Facilities associated with the plant would include, (1) a source water pipeline, (2) a return flow pipeline to the Power Plant cooling water discharge stream, (3) an equalization basin to receive and store incoming water, (4) an inlet pump station, (5) a pre-treatment system, (6) the reverse osmosis system, (7) a post-treatment system, (8) a clear well and (9) a desalinated water pump station. The desalinated water conveyance system would transport the fresh, desalinated water south from Moss Landing to Seaside and beyond to the Tarpy Flats pump station near Highway 68. The main transmission pipeline would be 30 inches in diameter, buried, and generally following existing public rights-of-way, railroad corridors and/or agricultural roads.

The main conveyance pipeline would end at a Terminal Reservoir to be constructed east of General Jim Moore Boulevard in Seaside. It would receive water from the desalination plant throughout the year and serve as a part time distribution/receiving station for water from the nearby ASR project. From the Terminal Reservoir, water would flow to the Tarpey Flats Pump Station, where it could be pumped to the Crest Tank, which is the highest tank in the system.

The proposed Aquifer Storage and Recovery (ASR) project would operate by injecting water from the Carmel River into the Seaside aquifer in the winter when natural flows are high and demand is low, and then extracting groundwater in the summer, when water demand is high but river flows are low. The proposed Coastal Water Project includes an ASR system with a minimum capacity of 1,300 AFY. Three injection and recover wells are proposed, each with an injection capacity of 2.1 mgd and a recovery capacity of 4.3 mgd. Implementation of the ASR component would require a specific permit from the State Water Resources Control Board to divert Carmel River water during the winter.

The MPWMD is pursuing separate and independent ASR system in the same general location. California American Water and MPWMD are coordinating design of their ASR projects, and since it is not yet known how much water can be effectively stored and removed from the
Seaside Basin it is possible that California American Water’s ASR component will not be needed, assuming the MPWMD ASR project is available in a suitable and timely fashion.

In order to supply the proposed ASR system with water from Carmel River sources, the existing Segunda pump station would have to be outfitted with a standby pump, as operation of the ASR system would fully utilize its existing capacity. However, an additional pipeline would have to be installed to transport water from the Segunda Reservoir to the Crest Tank and another pipeline would be required to transport water from the Crest Tank to the ASR system.

California American Water has completed the conceptual design and engineering studies for the Coastal Water Project, as well as the *Proponents Environmental Assessment*. However, the approval process for a project of this magnitude is lengthy, and it is not expected that construction could begin before 2007. It is not expected that water from the Coastal Water Project will be available until the end of the term of this UWMP (2006-2010), at the earliest.

**b. Recycled Water Projects**

*Pebble Beach.* The existing recycled water project that has been supplying golf courses and other users in the Pebble Beach area with irrigation water from the Carmel Area Wastewater District tertiary treatment plant is being expanded by the MPWMD. Since 1995 the facility has been supplying an average of 664 AFY. With additional storage (in Forest Lake Reservoir) and other changes, it is expected that the project’s original goal of supplying at least 800 AFY can be achieved. The area served will be expanded to include some residential properties in the Del Monte Forest that currently use potable water from California American Water for landscape irrigation.

*Seaside.* The Monterey Regional Pollution Control Agency and the Marina Coast Water District have completed preliminary design, environmental review and obtained a Coastal Development Permit for a reclaimed water project (Regional Water Augmentation Project) to supply reclaimed water and potentially desalinated water to some areas of Seaside, Del Rey Oaks and Monterey that are within the California American Water service area. A pilot project using reclaimed water is in progress at the Bayonet and Blackhorse golf courses in Seaside, and it is expected that about 300 AFY will be available by 2007, offsetting demand for California American Water by an equivalent amount.
Future phases of the Regional Water Augmentation Project are being planned, initially with an expansion of up to 1,400AFY, and potentially 2,800 AFY that could offset demand in Seaside, Del Rey Oaks and Monterey that is now met by California American Water. More detailed information on the potential additional supply that may become available within California American Water's service area will be included in future plan updates.

c. Other Potential Projects

Besides the Coastal Water Project (including the ASR development) and smaller recycled water projects described above, a variety of other potential projects that could augment the future water supply of the Monterey Peninsula, are currently being discussed, debated and reviewed by a variety of agencies and proponents. While these proposals generally exhibit significant uncertainties as to timing, quantities of water supplied and permitting/construction feasibility, any discussion of future water supply alternatives would be incomplete without their mention. They include:

1. Coastal Water Project Alternatives. The Environmental Impact Report for the Coastal Water Project includes Alternatives that could provide more water that would be distributed over a larger area of Monterey County. The total project capacity would be 20,272 AFY, as compared to 11,730 AFY for the preferred project. An estimated 3,572 AFY of this additional capacity would be available to serve customers within the California American Water service area.

Another Alternative considered in the Coastal Water Project EIR calls for building oversized infrastructure pipelines (for transporting raw water, processed water, and brine return) in order facilitate more cost effective expansion of the desalination plant to accommodate potential future needs.

2. Sand City Desalination. The City of Sand City has procured a Coastal Development permit for a brackish water desalination plant that would produce 300 AFY. California American Water has signed a Letter of Intent with the City to design, build and operate the facility. At this stage in the planning, it is expected that California American Water would purchase the desalinated water from the Sand City plant and deliver it to customers within Sand City. However, until the
System Description

City’s build out is complete, the amount of desalinated water not being used by the City could be distributed by the Company, offsetting some demands on the Seaside Basin and Carmel River system. The State Water Resources Control Board is currently engaged in a review of this arrangement. It is feasible the plant could be in operation before 2010.

3. Seaside Basin Groundwater Replenishment. The Monterey Regional Water Pollution Control Agency is investigating the potential for recharging the Seaside Groundwater Basin with recycled water that it would process and inject. The project has the potential to recharge up to 2,800 AFY, and would be potentially expandable.2

4. Additional Water Rights. California American Water has submitted a series of applications to the State Water Resources Control Board requesting additional rights to Carmel River underflow. These applications are currently under review and may result in an augmentation of varying degrees to California American Water’s supply. Resolution of these requests may occur during the period examined by this plan.

As it is difficult to predict with any surety the timing and ultimate combined result of the above initiatives, California American Water’s Monterey District Urban Water Management Plan has taken the conservative approach of analyzing future supply and management solutions based only on resources that are currently available or have been adequately advanced through the permitting and approval process. While implementation of the Coastal Water Project is uncertain due to the detailed public involvement process and agency review that water projects of this magnitude are subject to, it remains California American Water’s primary proposal to augment water supply on the Monterey Peninsula and is therefore considered in the report. California American Water is not relying on any of the above proposals to meet the requirements of State Order 95-10 and will continue its ambitious conservation efforts with diligence.

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1 Information summarized from, MPWMD Comparative Matrix, Part II, Other Projects, for September 8, 2005 Board Meeting.
2 Ibid.
III. PAST AND CURRENT WATER USE

A. WATER PRODUCTION

The Monterey District’s total annual production from 1987 through 2005 is summarized in Table 7 and Figure 3. These data show that most of the District’s supply comes from wells, while the Carmel River surface diversions have greatly declined. The first drop occurred in 1990-’91 when drought conditions significantly reduced flows in the river system. The second drop followed the July 1995 State Water Resources Control Board Decision which said that California American Water was only entitled to divert 3,476 AFY from the Carmel River flows, and no more than 11,285 AF a year from the river system. The third drop occurred after 1996 when the red-legged frog and the Central Coast steelhead trout were declared threatened species (1996 and 1999, respectively), requiring the maintenance of higher instream flows. The Company’s surface water diversions from the river system were 5,668 AF in 1987, dropping to 3,052 AF in 1992 and 1993, 3,436 AF in 1996, 92 AF in 2001 and 2002, and 0 AF in 2004 and 2004.

Data developed from California American Water records shows how water production is typically distributed between customer classes. The largest demand is generated by the residential sector with 46% of production going to single-family homes and 10% going to multi-family units. Demand from the commercial/industrial sector accounts for 24% of production, while about 12% of the District’s water has been sold to public authorities and golf courses, mostly for irrigation. Unaccounted-for water averaged 8% of production. Reduction in unaccounted-for water is currently a major priority for the Company. The distribution of water production by type of use, averaged over the past 3 years, is shown on Figure 4.
Past and Current Water Use

**FIGURE 3**

WATER PRODUCTION

**FIGURE 4**

PRODUCTION CATEGORIES

2000-2002

- SF Residential: 46%
- MF Residential: 10%
- Commercial: 23%
- Industrial: 1%
- Golf Courses: 4%
- Public Authorities: 8%
- Other Metered: 0.2%
- Non-Revenue: 0.4%
- Unaccounted-for: 8%
# TABLE 7
## WATER PRODUCTION
### 1987 - 2005

<table>
<thead>
<tr>
<th>Year</th>
<th>CARMEL RIVER DIVERSIONS</th>
<th>WELL PRODUCTION</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount (AF)</td>
<td>Percent</td>
<td>Amount (AF)</td>
</tr>
<tr>
<td>1987</td>
<td>5,668.5</td>
<td>32%</td>
<td>12,217.41</td>
</tr>
<tr>
<td>1988</td>
<td>4,266.13</td>
<td>25%</td>
<td>12,828.65</td>
</tr>
<tr>
<td>1989</td>
<td>3,877.5</td>
<td>30%</td>
<td>8,937.6</td>
</tr>
<tr>
<td>1990</td>
<td>2,641.6</td>
<td>21%</td>
<td>9,941.2</td>
</tr>
<tr>
<td>1991</td>
<td>2,477.1</td>
<td>23%</td>
<td>8,289.3</td>
</tr>
<tr>
<td>1992</td>
<td>3,051.5</td>
<td>22%</td>
<td>11,068.9</td>
</tr>
<tr>
<td>1993</td>
<td>3,051.5</td>
<td>24%</td>
<td>9,900.5</td>
</tr>
<tr>
<td>1994</td>
<td>2,706.0</td>
<td>18%</td>
<td>12,526.9</td>
</tr>
<tr>
<td>1995</td>
<td>4,423.1</td>
<td>29%</td>
<td>10,351.9</td>
</tr>
<tr>
<td>1996</td>
<td>3,456.0</td>
<td>21%</td>
<td>12,776.0</td>
</tr>
<tr>
<td>1997</td>
<td>2,840.0</td>
<td>17%</td>
<td>14,208.4</td>
</tr>
<tr>
<td>1998</td>
<td>1,769.0</td>
<td>13%</td>
<td>12,301.0</td>
</tr>
<tr>
<td>1999</td>
<td>9,450.0</td>
<td>6.2%</td>
<td>14,275.9</td>
</tr>
<tr>
<td>2000</td>
<td>210.0</td>
<td>1.4%</td>
<td>14,829.4</td>
</tr>
<tr>
<td>2001</td>
<td>92.0</td>
<td>0.6%</td>
<td>15,562.5</td>
</tr>
<tr>
<td>2002</td>
<td>92.0</td>
<td>0.6%</td>
<td>5,029.1</td>
</tr>
<tr>
<td>2003</td>
<td>241.0</td>
<td>1.5%</td>
<td>14,922.9</td>
</tr>
<tr>
<td>2004</td>
<td>0</td>
<td>0%</td>
<td>15,792.7</td>
</tr>
<tr>
<td>2005</td>
<td>0</td>
<td>0%</td>
<td>15,184.7</td>
</tr>
</tbody>
</table>

B. WATER SALES

Water sales for the past 19 years are summarized in Table 8, in terms of total sales, sales per connection and sales per capita. Figure 5 depicts total sales for each year, while the District’s estimated per capita water consumption is shown in Figure 6.
### TABLE 8
**WATER SALES**
1987 - 2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Sales: Annual (AFY)</th>
<th>Total Sales: Daily (mgd)</th>
<th>Number of Connections</th>
<th>Sales per Day per Connection (gal/day/conn.)</th>
<th>Sales per Capita per Day (gpcd)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>17,092.0</td>
<td>15.25</td>
<td>33,661</td>
<td>452.9</td>
<td>148.1</td>
</tr>
<tr>
<td>1988</td>
<td>16,362.4</td>
<td>14.61</td>
<td>34,303</td>
<td>425.4</td>
<td>137.8</td>
</tr>
<tr>
<td>1989*</td>
<td>12,051.4</td>
<td>10.76</td>
<td>35,417</td>
<td>303.4</td>
<td>98.5</td>
</tr>
<tr>
<td>1990*</td>
<td>11,644.1</td>
<td>10.4</td>
<td>36,303</td>
<td>290.7</td>
<td>92.4</td>
</tr>
<tr>
<td>1991*</td>
<td>11,562.1</td>
<td>10.32</td>
<td>36,471</td>
<td>286.9</td>
<td>89.1</td>
</tr>
<tr>
<td>1992</td>
<td>9,751.6</td>
<td>8.71</td>
<td>36,531</td>
<td>241.6</td>
<td>74.7</td>
</tr>
<tr>
<td>1993</td>
<td>13,515.6</td>
<td>12.07</td>
<td>36,571</td>
<td>335.7</td>
<td>100.5</td>
</tr>
<tr>
<td>1994</td>
<td>14,098.6</td>
<td>12.59</td>
<td>37,302</td>
<td>345.9</td>
<td>103.9</td>
</tr>
<tr>
<td>1995</td>
<td>13,994.0</td>
<td>12.49</td>
<td>37,223</td>
<td>334.7</td>
<td>103.0</td>
</tr>
<tr>
<td>1996</td>
<td>14,430.8</td>
<td>12.88</td>
<td>37,387</td>
<td>344.6</td>
<td>120.5</td>
</tr>
<tr>
<td>1997*</td>
<td>15,576.9</td>
<td>13.90</td>
<td>37,554</td>
<td>370.3</td>
<td>131.0</td>
</tr>
<tr>
<td>1998*</td>
<td>12,432.1</td>
<td>11.10</td>
<td>37,696</td>
<td>294.4</td>
<td>101.2</td>
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<tr>
<td>1999</td>
<td>12,366.6</td>
<td>11.04</td>
<td>37,673</td>
<td>293.0</td>
<td>90.4</td>
</tr>
<tr>
<td>2000</td>
<td>13,694.0</td>
<td>12.23</td>
<td>38,480</td>
<td>317.7</td>
<td>100.1</td>
</tr>
<tr>
<td>2001</td>
<td>13,807.1</td>
<td>12.33</td>
<td>38,528</td>
<td>319.0</td>
<td>99.4</td>
</tr>
<tr>
<td>2002</td>
<td>13,727.0</td>
<td>12.25</td>
<td>38,627</td>
<td>317.1</td>
<td>97.6</td>
</tr>
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<td>2003</td>
<td>12,922.2</td>
<td>11.53</td>
<td>39,677</td>
<td>290.8</td>
<td>92.7</td>
</tr>
<tr>
<td>2004</td>
<td>13,808</td>
<td>12.32</td>
<td>39,813</td>
<td>309.6</td>
<td>98.6</td>
</tr>
<tr>
<td>2005</td>
<td>13,009</td>
<td>11.61</td>
<td>38,357</td>
<td>302.7</td>
<td>92.9</td>
</tr>
</tbody>
</table>

Source: California American Water, Monterey District; Donaldson Associates
*20% mandatory water rationing from Jan. 1, 1989 to April 30, 1991; 10% from May 1 to December 31, 1991; Fines were levied on the Company by the SWRCB for overdraws from the Carmel River System in water year 1997. A 4-tier, per-capita rate structure, and Stage 1 voluntary conservation remain in effect in all areas served from the Carmel River system.
As can be seen in Figures 5 and 6, the Monterey District’s customers responded very well to the water rationing programs that were in effect during the very dry years of 1989 - 1992 and the regulatory drought that became serious after 1998, following the imposition of fines by the SWRQCB and reduction of Carmel River System withdrawals to protect endangered species. Compared to 1987, consumption on a per connection basis was 46.7% lower in 1992 and 35.8% lower in 2003. Per capita use in the District is among the lowest in urban areas of the State.1 In the very dry year of 1992, conservation efforts held water consumption to less than 75 gallons per capita per day. Although 2001 through 2005 were years of average to above average rainfall, the on-going public education programs, conservation incentives, and aggressive conservation rate structure have consistently kept consumption below 100 gallons per person per day.

1For purposes of comparison, per capita consumption in the other Cal Am districts in California (Los Angeles, Village, and Coronado) between 1995 and 2000 averaged 177 gpcpd as compared to Monterey’s 107 gpcpd. Consumption in the Orange County Water District, with 2.62 million people, was 208 gpcpd.
IV. PROJECTED DEMAND

A. EXISTING CONDITIONS/YEARS OF NORMAL PRECIPITATION

Unlike the vast majority of areas in California, water demand projections for the Monterey Peninsula area are not presently being driven by land use plans and population and employment projections. Rather, the Monterey District’s current supplies are legally insufficient to meet existing needs. To be specific, the SWRCB, in Order 95-10, determined that California American Water has legal water rights to 3,376 AFY from the Carmel River and ordered the Company to develop and implement a plan to replace 10,730 AFY from the Carmel River that it had been taking without a valid right. California American Water has been able to meet the SWRCB imposed interim production limit of 11,285 AFY in all but one year, partly through conservation and partly with increased pumping from the Seaside groundwater basin.

Concerned the aggregate demands on the Seaside Basin may be exceeding the safe yield, the Company, in 2003, filed suit to have the groundwater rights adjudicated for the entire Seaside Basin. In a tentative decision issued in January 2006, the Court determined that the Natural Safe Yield of the Seaside Basin is between 2,581 AFY and 2,913 AFY. California American Water will have the right to pump 3,575.8 AFY from the Coastal sub-basin and 446.3 AFY from the Laguna Seca sub-basin during the initial 3-year period, dropping 10% in subsequent 3 year periods until the Company’s withdrawals drop to between 1,530 AFY and 1,786 AFY for the Coastal sub-basin and 274 AFY for the Laguna Seca sub-basin.

Accordingly, the Company’s Monterey District has interim rights to about 15,307 AFY through 2009. Water demand on the Carmel River and Seaside Basin must be reduced over time, and alternative sources of water must be developed, in order to comply with the SWRCB and Seaside Basin adjudication decrees. The Company’s long term, sustainable rights to water from these sources totals between 5,180 and 5,436 AFY, enough to supply only about one-third of the average annual production requirement of 15,500 AFY since 1995.

In the early 1990’s, the MPWMD evaluated the potential maximum build out in the Monterey Peninsula based on the planning and zoning designations that were in effect in 1988. These studies concluded that there was a potential for 14,950 additional residential units and 34,721 new jobs within the California American Water service area, with a corresponding total water demand of approximately 26,450 AFY (23.6 mgd), or approximately 70% more than the
Projected Demand

California American Water's current production. A study conducted in conjunction with the EIR on the proposed New Los Padres Dam and Reservoir project indicated that there would be an aggregate additional water demand of 3,570 AFY by 2020. This was based on estimates from each affected jurisdiction. More recently, in 2001, an analysis by the MPWMD staff projected an additional California American Water demand of 1,181 AFY, based on a review of vacant legal buildable lots of record.

While the numbers vary depending upon the planning assumptions used, it is clear that there is a strong demand for additional water, over and above the new sources of supply that must be developed to replace Carmel River system withdrawals pursuant to WR 95-10.

In 1995, the MPWMD went to the voters to gain approval for the issuance of bonds for the District's New Los Padres Dam. The project was designed to meet current needs and provide additional supplies to accommodate about 325 new connections per year for 25 years. However, the ballot measure failed to gain the simple majority needed to issue construction bonds, and the MPWMD could not build the New Los Padres Dam.

In March 1996, after the voters had failed to approve the bonds for the New Los Padres Dam project, California American Water filed an application with the CPUC to build the proposed dam, with a modification providing that the project would not supply any water for new development. Environmental studies were commissioned and a Draft Supplemental EIR was released in December 1998. However, it was not certified, due to water allocation questions and additional environmental issues raised by the listing of the California red legged frog and Central Coast steelhead trout as threatened species under the Endangered Species Act. In May 2001, the National Marine Fisheries Service indicated that Federal approval of the reservoir would be unlikely, and the Company stopped work on the project. California American Water has since turned its focus on the Coastal Water Project, a combination of the Moss Landing Desalination Plant and the ASR project as a new source of supply. The Coastal Water Project is described above, in Section II, G.

If the proposed Coastal Water Project is approved and constructed, California American Water would have the ability to meet the SWRCB Order 95-10 requirement for replacement of Carmel River water, while also reducing demand on the Seaside Basin. Because of the long lead-time for environmental studies, permits, design, financing and construction, it is not expected that any desalinated water will be available before the end of the term of this Urban Water Management Plan (2010). Moreover, the Coastal Water Project, as currently conceived, does not include an
expansion of the overall supply to meet latent demands for water to supply residential and employment growth. Although the Company has seen an increase in new connections from development along the Highway 68 corridor (which is not served by the Carmel River system and accounts for only about 5% of the total demand), this trend may slow as a result of the groundwater basin adjudication action, because the Company’s share of the groundwater in the Laguna Seca sub-basin of the Seaside Basin, will drop to 274 AFY, compared to recent withdrawals of 500AF in 2003 and 478 AF in 2004.

In the 1995 Urban Water Management Plan it was concluded that, “For the foreseeable future, the Monterey District must be considered a permanent water restricted area.” Today, the Monterey District has legal rights to much less Carmel River water than it had in 1995, has virtually no low cost surface water and is drawing from a groundwater basin that is not self-sustaining. Accordingly, the District must be classified as being severely short of water, even in years of normal precipitation. The Stage 1 Water Conservation program implemented by MPWMD in March 1999 continues and is expected to remain in effect until additional supplies are developed. This may not occur until 2010, or possibly later. The projected demand and sources of supply are summarized in Table 9, below in 5-year intervals to 2025.

As can be seen in Table 9, the Coastal Water Project would provide sufficient water to bring the Company into compliance with WR 95-10, and provide for the long-term sustainability of the Seaside Basin. Although it would provide limited water for new land development, population and commercial growth, the supply would not be dependent on year-to-year variations in rainfall, eliminating the potential need for water rationing in dry years.
## TABLE 9
PROJECTED DEMAND AND SUPPLY SCENARIOS
AVERAGE AND WET YEARS (AFY)
2005 – 2025

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2005</th>
<th>2010a</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projected Demand (Stage 1 Conservation in effect.)</td>
<td>15,550</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Projected Demand per General Plans</td>
<td>-</td>
<td>17,900b</td>
<td>20,750c</td>
<td>23,600c</td>
<td>26,450c</td>
</tr>
</tbody>
</table>

**Projected Supply by Source:**

- **Carmel River System – Firm Water Rights**d
  - 3,376 3,376 3,376 3,376 3,376
- **Carmel River System - Interim Supply**d
  - 7,909 0 0 0 0

**Groundwater:**

- **Seaside Basin, Coastal sub-basin**
  - 3,576e 2,218f 1,607f 1,607f 1,607f
- **Seaside Basin, Laguna Seca sub-basin**
  - 446e 401 325 325 325
- **ASR Project Water**
  - 500 1,300 1,300 1,300 1,300

**Desalination:**

- **Coastal Water Project Moss Landing Plant**
  - 0 11,730 11,730 11,730 11,730

**Recycled Water:**

- **Pebble Beach augmentation**
  - N.A.g 136 136 136 136
- **Regional Water Augmentation Project**
  - 0 300 1,400 1,400 1,400
- **Total Water Supply**
  - 15,807 19,461 19,874 19,874 19,874
- **Difference: Surplus/(Shortage)**
  - 257 1,561 (876)h (3,726)h (6,576)h

---

*a The 2010 scenario assumes that the Coastal Water Project is completed and in operation.

*b Assumes water consumption increases to about 107 gpcpd (15% increase) when the Coastal Water Project becomes operational, ending the “regulatory drought.” No significant growth in population or connections is assumed between 2005 and 2010.

*c Prorates potential General Plan build out between 2010 and 2025. Because of water supply deficits (bottom row) not all planned growth may occur. Also, applicable General Plans may be revised.

*d Per SWRCB Decision WR 95-10.

*e California American Water’s share of the adjudicated allocations for 2006 through 2008.

*f Assumes California American Water applies 1,000 AFY from the Coastal Water Project to offset a portion of its maximum pumping allocation.

*g Recycled water demand is supplied by others and not included above. The existing supplies are about 660 AFY.

*h Not all growth anticipated by current General Plans can be accommodated. Additional supplies would have to be developed, and/or water conservation programs and General Plan revisions would have to be implemented to reduce demand and offset these deficits.
B. DRY YEARS

As noted, Table 9 presents demand and supply scenarios for years of normal or above average precipitation over the coming 20 years. Table 10, below, presents drought response scenarios for the coming five years based on current sources of supply. The Monterey District’s drought response would be governed by the MPWMD’s *Expanded Water Conservation and Water Rationing Plan* which provides for seven stages of increasingly stringent water conservation or rationing programs depending upon how much water is available in the Monterey Peninsula Water Resources System (Figure 1) in May of any given year. The ordinance is geared toward balancing water demands with supplies. The production levels listed in Table 10 are based on assumed reductions called for in the ordinance.

<table>
<thead>
<tr>
<th>MPWMD Rationing Stage</th>
<th>Current Supply</th>
<th>Single Dry Year</th>
<th>Multiple Dry Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Year 1</td>
<td>Year 2</td>
</tr>
<tr>
<td>MPWMD Rationing Stage</td>
<td></td>
<td>Stage 1</td>
<td>Stage 4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stage 5</td>
<td>Stage 5</td>
</tr>
<tr>
<td>Production</td>
<td></td>
<td>16,250 AF(^b)</td>
<td>13,000 AF</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14.51 mgd</td>
<td>11.6 mgd</td>
</tr>
<tr>
<td>Monterey District Reduction (%)</td>
<td>0%</td>
<td>20%</td>
<td>15%</td>
</tr>
</tbody>
</table>

\(^a\) Completion projected by about 2010.  
\(^b\) Assumes Carmel River, 11,285 AF; Coastal sub-basin, 3,576 AF; Laguna Seca sub-basin, 446 AF; ASR, 500 AF; Other (Ambler, Chualar), 443 AF.  
\(^c\) Because of the existing level of conservation and “demand hardening” it is not likely that the Stage 6 or Stage 7 goals could be achieved. The levels of supply are based solely on the reductions mandated by MPWMD ordinances.
Projected Demand

The MPWMD’s drought response plan is described in greater detail in Chapter VI, below. Currently, the Monterey District is in a Stage 1 water conservation program, and has been since 1999. Stage 1 will remain in effect until the Coastal Water Project is operational, whether or not precipitation levels are below average.

As can be seen in Table 10, the Company’s Monterey customers would be required to make very significant sacrifices in order to meet the water rationing requirements that would be imposed by the MPWMD in the event there is a severe drought in the next 5 years. A Stage 5 water rationing program would require water use of approximately 84 gpdpc; a Stage 6 program would allow about 68 gpdpc; and a Stage 7 program would allow only about 52 gpdpc. Although the Company’s Monterey District customers have responded very well to past water shortage emergencies, normal year water use is currently low, and water use efficiency is high. It is likely that the implementation of a Stage 6 or 7, and possibly a Stage 5, rationing program will exhibit the effects of “demand hardening” because there are so few remaining options for easily reducing water use to the extent that would be required.

Once the Coastal Water Project begins operation, the Monterey District will be much less dependent on fluctuations in rainfall, because desalination, groundwater and ASR supplies will be virtually “drought-proof” and the Company will be able to supply water at levels approximating the current total supplies, even in the third year of a multi-year drought.

Tables 11 and 12 depict the potential single-dry year and multiple-dry year scenarios that can be expected once the Coastal Water Project supplies become available. Table 11 reflects the projected water supply and demand scenario between the completion of the Coastal Water Project and 2014. Table 12 reflects the water supply and demand scenario after 2015, when the annual demand reaches maximum supply currently projected (19,874 AFY). Both Tables 11 and 12 show that no reductions in water use are expected in the event of a drought. This is because desalination, ASR and recycled water yields are not reduced by drought, while the withdrawals from the Carmel River system and the Seaside groundwater basin will be held within their sustainable “safe” yields.
### TABLE 11
DROUGHT SCENARIOS – 2010 to 2014
SINGLE DRY YEAR AND MULTIPLE DRY YEARS
Occurring between Coastal Water Project Completion and 2014 \(^{a,b}\)

<table>
<thead>
<tr>
<th>MPWMD Rationing Stage</th>
<th>Coastal Water Project Supply</th>
<th>Single Dry Year</th>
<th>Multiple Dry Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Production</td>
<td>19,461 AF</td>
<td>19,461 AF(^c)</td>
<td>19,461 AF(^c)</td>
</tr>
<tr>
<td></td>
<td>17.37 mgd</td>
<td>17.37 mgd</td>
<td>17.37 mgd</td>
</tr>
<tr>
<td>Monterey District Reduction (%)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

\(^a\) Assumes Coastal Water Project completion in 2010.
\(^b\) Based on prorated General Plan growth, demand would increase from 17,900 AFY in 2010 to a level approximately equal to the available supply of 19,461 AFY by 2014. See Table 9.
\(^c\) It is projected that full production will be available from all sources in drought years.
TABLE 12

DROUGHT SCENARIOS – 2015 to 2025
SINGLE DRY YEAR AND MULTIPLE DRY YEARS
Occurring between 2015 and 2025 a

<table>
<thead>
<tr>
<th>MPWMD Rationing Stage</th>
<th>Coastal Water Project Supply</th>
<th>Single Dry Year</th>
<th>Multiple Dry Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Year 1</td>
<td>Year 2</td>
</tr>
<tr>
<td>Rationing Stage</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Production</td>
<td>19,874 AF</td>
<td>19,874 AF b</td>
<td>19,874 AF b</td>
</tr>
<tr>
<td></td>
<td>17.74 mgd</td>
<td>17.74 mgd</td>
<td>17.74 mgd</td>
</tr>
<tr>
<td>Monterey District Reduction (%)</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

a Based on prorated General Plan growth, demand would reach a level approximately equal to the available supply of 19,874 AFY by 2015. See Table 9.
b It is projected that full production will be available from all sources in drought years.
V. URBAN WATER MANAGEMENT PLAN (UWMP) PROGRAMS

A. INTRODUCTION

This chapter describes and evaluates California American Water’s Urban Water Management Programs for the 2006 - 2010 period in the Monterey District. It describes the water conservation programs that were in effect prior to preparation of the District’s previous Urban Water Management Plans, programs that are being implemented cooperatively with the MPWMD, and the programs that are being continued and refined in the present Plan.

California American Water is a signatory to the Memorandum of Understanding regarding Urban Water Conservation in California (MOU) and is therefore a member of the California Urban Water Conservation Council (CUWCC). The MOU, as amended, contains 14 Best Management Practices (BMPs). The BMPs are examples of sound water management practices that have been found to be cost effective and practicable in most instances throughout California. The BMPs are generally consistent with the water conservation practices that have been implemented by the Company under the existing Urban Water Management Plan (and in some cases, for much longer). Accordingly, the water conservation programs presented later in this chapter have been organized in a format that is consistent with the list of BMPs contained in the MOU.

B. PREEXISTING WATER CONSERVATION PROGRAMS

The Monterey District, in conjunction with the MPWMD and with the active cooperation of its customers, has one of the most comprehensive and successful water conservation programs in the State of California. The District’s water consumption has dropped from 17,913 AF in 1987 (considered a base year with non-drought conditions) to 13,077 AF in 2003, a total reduction of 26.9 percent. During this same period the number of connections served by the Monterey District increased by 18%. On a per-connection basis, water use was 55% higher in 1987 than in 2005. On a per-capita basis it was 59% higher in 1987 than in 2004. (See Figure 6, above.)

A number of important water conservation policies and practices had been implemented by the District even prior to the preparation of its first Urban Water Management Plan in 1990. The
Monterey Peninsula experienced a severe water shortage in the 1976-77 drought and the Company requested its customers to reduce consumption to 50 gallons per person per day, commencing aggressive water conservation programs by the Company and the creation of a strong water conservation ethic among the District’s customers.

Today, the District’s on-going water conservation measures include the following:

1. **Metering**

All District water connections are metered. Metering is recognized as sound urban water management practice as well as a basic water conservation measure (BMP 4). The District has encouraged multiple users on single meters (usually older apartment buildings) to convert to separate meters as a cost reduction and water conservation measure. In addition, separate irrigation meters are installed for large landscape areas. As of 2005, a total of 402 dedicated irrigation meters are present within the Monterey service area.

The District’s sources of supply are also metered, and the supply meters can be cross-checked against sales data to allow the District to identify water lost in the transmission/distribution system. The District’s supply source meters are calibrated once per year; customer meters are regularly replaced and recycled. Approximately 77% of customer meters are less than 10 years old.

2. **Maintenance of Water Use Records by User Type**

The Monterey District maintains detailed records of production from every source and sales by eight categories of users within each of 19 jurisdictions and geographic areas. While the record keeping itself does not save water, the data it provides is fundamental to evaluating the effectiveness of water conservation programs. Because of the need to comply with Order 95-10, the Monterey District monitors water production on a daily basis. The results are reported to the MPWMD and are summarized in the *Monthly California American Water Company Production Report*, which is available to the public on the MPWMD web site.

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1Items 1 - 6 in this section were being implemented by Cal Am prior to the 1991 adoption of the *MOU Regarding Water Conservation in California* which created the CUWCC and adopted 14 Best Management
3. System Pressure Control Program

The District manages water pressure throughout its system as required by CPUC regulations. The primary purpose of pressure regulation is to ensure that pressures are high enough to meet fire flow needs. However, if water pressure is too high, more water will be lost when fixtures leak or if water is inefficiently applied. The Monterey District has more than 1,000 feet in elevation change requiring a very complex system of storage tanks, booster pumps, and pressure regulation stations. Currently the Company operates 74 booster pumping stations, most with more than one pump and 96 storage tanks. In neighborhoods with high pressure the District has installed pressure reducing devices as part of its pressure management activities.

4. Leak Reduction

Over the past decade, the amount of water lost in the transmission and distribution system has been generally consistent with the industry standard of 10 percent. The MPWMD has been monitoring the Company’s unaccounted-for water numbers on a monthly basis and reported that the 12-month rolling average as of May 2004 was 9.8%. The volume of unaccounted-for water is higher than desired, and is higher than the levels experienced in the previous decade. The Company is actively working to identify the sources of unaccounted-for water and to stem the losses. Ongoing efforts to reduce lost water include:

*Pipeline Replacements.* The Company has an continuing capital investment program for the replacement of old and deteriorated pipelines, which account for most leaks. Between 1999 and 2003 the District spent an average of $1.64 million annually\(^1\) for the replacement of transmission and distribution mains with known leakage problems or which require frequent maintenance.

*Meter Replacements:* Between 1999 and 2001 the District spent an average of $144,000 a year on water meter replacements, continuing a program that started about 1995 involving the replacement of a specific type of water meter that was exhibiting unusually high failure rates. The problem meters have been replaced, while the routine replacement of aging meters continues, with the Company investing over $40,000 a year in new meters.

Practices (BMPs). Items 1, 3, 4, 5, and 6 are generally equivalent to one or more of the BMPs, which are presented, in full, in the next section of this report.
**Urban Water Management Plan Programs**

*Meter Testing and Calibration.* The Company tests the accuracy of larger production meters on a regular basis and recalibrates or replaces any that are determined to be inaccurate. In addition, customer meters are sample tested to identify patterns of inaccuracy and replaced if necessary.

*Use of Leak Detection Equipment.* California American Water has an official water loss control and leak detection program. In the Monterey District, the Company has purchased and operates special equipment designed for leak detection work. The most recent full survey of the transmission and distribution system was completed in 1998. The leak detection van is also available to respond to emergencies and to assist maintenance crews in leak diagnosis and repair work.

*Free Leak Detection Service.* Upon request, California American Water personnel will check for water leakage in a customer’s own plumbing system. The District does not charge for this service. In 1991-92, when mandatory water rationing was in effect, the demand for free in-home water audits was particularly high. The Company also provides customers with (Toilet) leak detection tablets and kits at no cost to the customer. The leak detection kits and packets (with directions in English and Spanish) are provided in the Audit Conservation packets (for customers), and are available at the front desk in the District office, Company booth at community events and upon request.

*Water Pressure Control.* California American Water is initiating a program to identify areas where system pressures exceed 80 psi and plans to lower operating pressures in those areas wherever feasible, so that water losses when lines break or leak will be lower.

5. **Plumbing Fixtures Retrofit Programs**

California American Water has implemented an aggressive program to retrofit residential and commercial facilities with water saving fixtures including showerheads, (kitchen and bathroom) faucet aerators, toilet displacement kits and replacement flappers, as well as ultra low flush toilets (ULF toilets) and high efficiency clothes washers. The Company’s efforts include a combination of direct distribution, rebates, audit installations, and support or retrofit

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urban water management plan programs

ordinances requiring replacement of old high water-using fixtures with low flow models. These efforts by California American Water follow the guidelines to meet the requirements for the CUWCC’s BMPs including:

- BMP 1 (Indoor Audit with Leak Detection and Fixture Replacement),
- BMP 2 (Residential Plumbing Retrofit),
- BMP 5 (Large Landscape Audits and Water Budgets)
- BMP 6 (High Efficiency Clothes Washer Rebates)
- BMP 9 and 14 (ULF Toilet Rebate and Retrofit on Resale and Change in Service for Residential and CII Customers)

1988 Special Program. In 1988 and 1989, more than 42,000 water conservation kits consisting of low-flow shower heads, toilet dams, dye tablets for toilet leak detection, dye kits for toilet leak detection and a list of household conservation ideas were distributed throughout the Monterey District by contractors retained by the MPWMD. The program was aggressively promoted, and in a ten-month period, kits were distributed to residential customers throughout the California American Water service area by a “Water Corps” of contract workers. Typically, kits were hand distributed throughout a neighborhood on a Friday, with personal follow-up visits on Monday to check and/or assist in the installation. The program was supported with good publicity and media coverage, the field workers were well supported and follow-up was persistent. As a result, the devices were installed in 93.2% of the 26,975 households that were contacted in the delivery/canvass effort. The Company estimates that this program resulted in a 9 percent reduction in average consumption per participating residential customer.

Fixture Replacement Programs. Beginning in 1985 the MPWMD began promoting the installation of ULF toilets with a demonstration program and a Board-approved policy to reduce fees for ULF toilet installations on permit applications for new development. The savings in permit fees were substantial, and provided a very strong incentive to use this (then) new technology. In 1992, the Plumbing Codes were updated to require all new toilets installed to use 1.6 gpf or less. As a result of this new policy, California American Water re-focused efforts from toilet displacement kits and replacement flappers to promoting the upgrade to ULF toilets.

Displacements kits and flappers are now only available at the front desk in the District office or upon request.

In 1987, the MPWMD adopted Ordinance 30 (MPWMD Regulation XIV), requiring water conservation retrofits of water using fixtures and appliances upon change of ownership or use, the addition of 25% or more to existing floor area or the addition of a bathroom. The regulation requires 1.6 gallon per flush toilets, showerheads, rain bars, or body sprays designed to emit a maximum of 2.5 gallons per minute of water; and faucet aerators designed to emit a maximum of 2.2 gallons per minute. In addition to the previously listed requirements, new construction is required to install instant-access hot water system and drip irrigation where appropriate. Change of Title Inspections are conducted and a compliance certification must be submitted before change of title. A Water Permit Final Inspection is completed before approving permits and water service changes (or allocation) for any home additions or change in water use. All facilities are tracked for water use changes and followed up 6 months to a year (by MPWMD) after installation or renovation to confirm compliance.

*Inspections and Local Regulations.* Since 1987 the MPWMD has been conducting over 2,000 inspections a year. In 2003, 1,011 Change of Title and 1,581 Water Permit Final Inspections were completed. In 2004, the total number of inspections and required conservation retrofits increased to 2,632 (1,031 Change of Title and 1,601 Water Permit Final Inspections). It is estimated that in the area served by California American Water, more than 13,000 homes and several hundred businesses have been fully retrofit under Ordinance 30. MPWMD reports that through 2004, more than 15,919 ULF toilets were installed under the requirements of Regulation XIV.¹ By 2002 water sales to single family residential connections in the MPWMD area had decreased by 1,302 AFY, even though the number of connections had increased by 10.7%. The aggregate conservation reduction for this sector averaged 24.3% per connection. The retrofit-on-sale and remodel policies remain in place.

*ULFT Rebate Programs.* In 1997, MPWMD and California American Water began a program² to offer up to $100 rebates for the replacement of inefficient toilets with ULF toilets (rebate not to exceed cost of toilet and installation). Any residential customer not previously required to retrofit is eligible, as are nonresidential customers, for up to 20 toilets per property. The

¹Stephanie Pinter, Monterey Peninsula Water Management District, Comments on Draft UWMP, June 26, 2005.
MPWMD reports that 7,622 toilets were replaced under this program as of the Spring of 2003. A total of $1,7655.49 in toilet rebates was distributed to Peninsula residents and a few commercial sites (of which 98 percent were California American Water customers) for the installation of over 177 ULF toilets. In 2004, approximately 195 ULF toilet rebates were distributed to California American Water customers through the MPWMD program for a total of over 8,000 ULF toilets installed by 2005.

6. Rebates for High Efficiency Clothes Washers (HECWs) and Other Appliances
Since 1998, California American Water has offered residential and commercial customers with a $100 rebate for high efficiency clothes washers (HECWs) that are Energy Star rated (approved models in California Energy Commission’s Tiered Efficiency Rating System) under the CUWCC’s BMP 6 requirements. The HECW rebate program is administered by a contracted vendor who processes customer calls and qualified rebate applications, and distributes the rebate checks to the customer. In 2001, the Company processed 175 rebates for HECWs through the program and a total of 607 by the end of 2005. The HECW rebate program was marketed through bill inserts and messages, community event advertisement and customer interaction, and through newspaper and radio articles and advertisements.

Starting in 2003, California American Water customers also received $150 rebates for approved HECW models through the MPWMD rebate program. MPWMD processed rebate applications and distributed rebates checks for California American Water and all the other water purveyors on the Peninsula. California American Water reimbursed the MPWMD for customer rebates and tracked participation through MPWMD quarterly reports. For California American Water customers outside the MPWMD, HECW rebates were available through the Company’s direct program (with contracted vendor) for a $100 rebate.

The expanded MPWMD rebate program also includes rebates for dishwashers, dual-flush ULF toilets, on-demand hot water systems, and rebates of $25 per 100 gallons of cistern storage capacity with a maximum rebate of $750. These rebates provided additional water saving incentives beyond the requirements under the CUWCC’s BMPs and encouraged residents to consider innovative technologies such as the dual flush toilets and on-demand hot water systems.

The rebate program was and continues to be managed and administered by MPWMD and is funded with annual fees from California American Water. Although the program did not achieve anticipated participation levels as a result of minimal promotion, the number of rebates
processed has steadily increased as the program becomes better known and publicized throughout California American Water’s service area. For example, in 2003 only 3 HECW rebates and 2 dishwasher rebates were processed, however participation increased in 2004 with 42 HECW rebates and 23 dishwasher rebates processed. The MPWMD has budgeted funds for FY 2005-2006 to specifically promote the program with a goal of increasing customer participation.

7. Large Landscape Conservation Programs
In 1998, the MPWMD adopted Ordinance No. 92, the Expanded Water Conservation and Standby Rationing Plan as a program to maintain water use within the California American Water system below the limits set by the State on SWRCB Order No 95-10. The program created consists of seven “stages” which encompass:

- Stages 1 – 3 (Respond to the SWRCB limits)
- Stage 4 – 7 (Respond to drought conditions or emergency water supply storages)

During Stage 1, California American Water is required to complete audits of all sites with dedicated irrigation meters, an irrigated area greater than three acres, or is a large residential user (uses more than an average of 32 units per month).

8. Public Education
Since the 1977-78 drought, the District has had an on-going public relations campaign to encourage water conservation. The District takes full advantage of its frequent billing period by providing a brief water conservation message on every bill, as well as a comparison of current consumption to same period, prior year consumption. In order to comply with Order 95-10, and keep the community informed, the Company monitors water production on a daily basis, and continually updates its compliance with monthly targets necessary to meet the Order 95-10 limits. The District’s customers have taken the limits more seriously since 1997 when the SWRCB levied a $168,000 fine for non-compliance, which was shared by customers served from the Carmel River system.

The Company and the MPWMD communicate monthly and year-to-date compliance data to the public through billings, newspapers, and other media. A Stage 2 voluntary water conservation condition is announced whenever California American Water customers exceed the year-to-date targets and a Stage 3 voluntary water conservation condition is announced if the targets are exceeded for a second time in a water year.
Urban Water Management Plan Programs

In addition to the regular and widely disseminated updates on water consumption relative to monthly targets, the Company sponsors television and radio ad programs, a speakers bureau and youth education programs, both directly and in cooperation with other agencies.

The television campaign normally runs for six months, from April through September, the driest and warmest months of the year. In 2002, which was typical, the Company aired about 65 spot ads each month (30 seconds each) and a total of 390 spots in the 6-month period. The television stations also give some complimentary time to water conservation messages.

The TV spots are developed from the American Water Works Association animated film “Water Follies” and promote wise water use in the home and outdoors. The Company also uses a self-developed television ad showing Company personnel using water in a variety of ways.

Radio stations accept and run free public service announcements (PSAs) regarding water conservation and the Company also provides paid radio advertising to the community. Typically, the ad program runs from April through September with approximated 360 30-second spots aired each month by two local radio stations. The ads are professionally narrated and cover topics such as bathroom conservation, outdoor conservation, and so on.

Management personnel frequently speak to local community groups such as neighborhood gatherings, service clubs and professional organizations on water conservation and resource management topics. They also conduct seminars and make presentations at area schools and community organizations.

Each year California American Water sponsors and/or attends numerous community events to promote water conservation and the Company’s various BMP programs. At these events, Company staff set up table or booth displays with educational and promotional displays, and provides event attendees with free literature (including water efficient guidebooks and brochures), useful promotional items and water savings devices. From 2000 to 2005, California American Water has sponsored or participated in the annual Monterey Chamber of Commerce Showcase to target CII customers and community leaders, Wetlands Faire and other local environmentally focused community events and workshops for residents, students and children. Each year, California American Water has been able to reach thousands of residents and local businesses about water use efficiency and conservation through these events. In 2005, California American Water worked closely with the Chamber of Commerce as the key sponsor.
for the Showcase event and provided Chamber members with pre-rinse spray valves and other devices to help their business operations reduce water usage.

California American Water has been an active participant in the Water Awareness Committee of Monterey County since its formation in 1987. This is a non-profit organization of public entities, private companies, and individuals whose focus is to promote knowledge and awareness of water supply issues affecting the County. The Water Awareness Committee’s efforts have covered elements under BMP 7 (Public Information) and BMP 8 (School Education) and the committee has provided active leadership in water education since its formation. Programs implemented in the past under Public Information and Education (BMP 7) have included:

- Bus tours of the local water supply facilities for the public — *From the Watershed to the Tap*;
- The provision of water-related information and books to area libraries;
- The sponsorship of displays and speakers on landscape water conservation at local garden shows;
- The sponsorship of public education seminars including *The Effect of Water Rationing on the Average Household, How To Survive the Drought, Hydrogeology for the Lay Person, Groundwater Protection: Preserving Our Unseen Resource*;
- A tour of cisterns with the theme, *Rainwater: How to Catch, Retain and Preserve on the Monterey Peninsula*.

Finally, the Company distributes “Use Water Wisely” messages on sponges, water conservation books, litter bags, balloons, buttons, etc. as opportunities arise, in order to remind customers of the need to conserve. In 2005, California American Water began providing customers with useful devices to help customers measure and identify water saving opportunities including calculators and measuring tapes for measuring landscape area and irrigation system delivery or toilet flush volumes. These helpful devices and other promotional items are available to customers at the District’s front office desk, the Company table or booth at community events, during an on-site audit, or upon request.

The Company believes that all of these efforts not only improve the effectiveness of water conservation programs, but they also prove beneficial during emergencies, when a more educated public is more understanding and cooperative in complying with any voluntary or
mandatory actions requested by the Water Management District and the Company to restrict their water usage.

9. School Education and Outreach
California American Water has joined with community organizations such as the Water Awareness Committee, MPWMD, the state Water Education Program to offer a comprehensive educational program to schools within the California American Water service area. Programs implemented in the past under Public Education (BMP 8) included:

- Teacher training workshops and materials related to the water education components for the AIMS (Activities to Integrate Mathematics and Science) curriculum. Content ties in math and science and includes information on biology, the hydrologic cycle, conservation, pollution, etc;
- The sponsorship of live theater programs with a water education message (Legend of the Lake and Alice in Waterland, for example) in elementary schools;
- Student bus tours (From the Watershed to the Tap) of the local water supply facilities;
- The sponsorship of a Water Day in elementary schools;
- The sponsorship of public education seminars for local junior and high school level students including The Effect of Water Rationing on the Average Household, How To Survive the Drought, Hydrogeology for the Lay Person, Groundwater Protection: Preserving Our Unseen Resource;
- A school tours of cisterns (Rainwater: How to Catch, Retain and Preserve on the Monterey Peninsula.)

In addition, California American Water’s Management and staff visit local elementary, middle/junior high and high schools in the Peninsula to educate students and faculty on water conservation and the local resources. Each year, California American Water completes presentations to over 100 K through 3rd Grade level students on conservation and key regional environmental issues. In December 2005, California American Water also sponsored and coordinated a field trip with the local elementary schools (3rd and 4th Grades) to the Carmel Valley Ranch Wastewater Facility. California American Water professional wastewater treatment plant operators and management staff also visited the local high school to educate over 300 students on water treatment, run-off issues and conservation. Each year, California American Water contacts and actively markets the schools within the California American Water service area to participate in the various education programs.
10. Commercial, Industrial and Institutional (CII) Conservation Efforts
Since 1997, all commercial facilities are required to be retrofitted with ULF Toilets and low flow faucet and shower fixtures (as specified under Ordinance 92). Regulation XIV also required that all existing commercial uses be retrofitted with water-saving plumbing fixtures.\(^1\) This, of course, includes all hotels, motels, and restaurants, which are very significant water users on the Monterey Peninsula. Compliance inspections by MPWMD staff and fines resulted in a very high installation rate. In addition, in 1997, the MPWMD adopted Ordinance No. 89 requiring all visitor-serving commercial users to retrofit to 1.6 gallons per flush toilets. The deadline for compliance with this program was December 31, 2000. As a result of these programs, water sales to the commercial sector decreased by 659 AFY between 1987 and 2002, even though there was an 11.4% increase in the number of connections. Overall sales to the commercial sector dropped 17.2%, while sales per connection dropped 26.4% over this period of time. An average of 135 commercial sites are inspected each year through the Water Permit Final Inspection and/or the Change of Title Inspection. Through these inspections by MPWMD, the required conservation retrofits and fixture upgrades were confirmed and over 90 percent of the regulated CII sites have been retrofitted (MPWMD’s Water Resource Management Department, Water Permit Inspector, 12/2005).

In addition to the associated efforts with Regulation XIV, CII customers were eligible to receive the various rebates for water efficient appliances and devices, and the free water savings fixtures and tools for their business facilities. Five commercial sites (not regulated under Regulation XIV or Ordinance 89) received rebates for installing ULF toilets.

*Smart Rinse Program*
California American Water reserved budget funds in 2005 for a special CII conservation effort involving participation in the statewide Smart Rinse Program. The Smart Rinse Program is administered by a contracted vendor who systematically visited potentially eligible CII sites to replace old pre-rinse spray valves (PRSV) with high pressure, low flow spray valves that use significantly less water. During each installation, a walk-through audit/survey was completed of the business facility to log all water using appliances, fixtures and processes. The information collected can be used by California American Water to better develop future CII programs targeted to opportunities for achieving the greatest water savings.

\(^1\)ULF toilets were not mandatory for this requirement to be met.
In FY 2005, the Smart Rinse Program resulted in the installation of 654 pre-rinse spray valves in 460 CII facilities in California American Water’s service area. Through the Smart Rinse Program and efforts by the Company’s Auditing Staff, nearly 15% of the CII customers/sites have been audited making Monterey District one of a few purveyors in all of CA to meet the CUWCC’s CII Audit requirement. In addition to the 460 walk through surveys/audits completed through Smart Rinse (11.5% of sites), there have been 130 Water Permit and Title Change Inspections or audits, and 86 in-depth audits of commercial landscape irrigation sites for a total of 676 CII audits/inspections and/or walk-through surveys.

11. Conserving Pricing
The District’s aggressively stepped, increasing block rate, per-capita billing structure provides a strong conservation incentive for customers with higher than average water usage.

12. Wastewater Reclamation

In August 1994, a wastewater reclamation program was developed by the Carmel Area Wastewater District and the Pebble Beach Community Services District with participation from the MPWMD and the Pebble Beach Company. The goal of the program was to supply at least 800 AFY of recycled water (equivalent to 7% - 8% of California American Water’s potable water sales) for irrigation of golf courses and open space areas in the Del Monte Forest area. The Pebble Beach Company, the major financial sponsor of the program was allocated 380 AFY of the “saved” potable water for development of it Lots Program; while the remainder is being conserved for future uses to be determined by the MPWMD Board of Directors. The program reached its goal for the first time in 1997 when 804 AF of reclaimed wastewater was distributed. However, subsequent problems have reduced the project’s yield, to an average of approximately 664 AFY since 1995, and the project has not freed up as much potable water as expected.

The dominant grasses on the golf course greens have proven to have a high salt-sensitivity, and the sub-drains have been inadequate to carry away accumulating salts. The reclaimed water salinity is higher than expected due to consumer water conservation efforts and increased use of water softening units that add salinity. Water conservation has also reduced influent flows to the tertiary treatment plant and no storage is available to help regulate the time differentials between the availability of supply and the irrigation demand. The water quality and supply
problems have been addressed by mixing potable water supplied by California American Water with the reclaimed water to irrigate the golf courses.

In 2004, the MPWMD developed a supplemental financing program to provide advanced treatment components at the tertiary treatment plant and to retrofit Forest Lake Reservoir (which is no longer being used by California American Water) to store up to 420 acre feet of reclaimed water. The improvements are being funded by the Pebble Beach Company, which, in turn, has the right to sell portions of its potable water entitlement to benefited residential properties in the Del Monte Forest area.

In the Seaside area, the Monterey Regional Pollution Control Agency and the Marina Coast Water District are planning a recycled water project that would supply water for golf course irrigation and other uses that currently use potable water from California American Water. The project is called the Regional Water Augmentation Project, and its sponsors have completed preliminary design, environmental review and obtained a Coastal Development Permit for facilities to supply reclaimed water to some areas of Seaside, Del Rey Oaks and Monterey that are within the California American Water service area. A pilot project using reclaimed water is in progress on a Seaside golf course, and it is expected that about 300 AFY will be available by 2007, offsetting demand California American Water by an equivalent amount. Future phases of the Regional Water Augmentation Project are being planned, initially with expansion of up to 1,400 AFY, and potentially 2,800 AFY that could offset demand in Seaside, Del Rey Oaks and Monterey that is now met by California American Water. An additional desalination component for the project is also being considered.

C. WATER CONSERVATION PROGRAMS — 2006 - 2010

1. DMM 1: INTERIOR AND EXTERIOR WATER AUDITS (BMP 1)

BMP 1: Implementation shall consist of at least the following actions:

- Develop and implement a strategy targeting and marketing water use surveys to single-family and multi-family residential customers.
- Directly contact not less than 20% of single-family and 20% of multi-family residential customers each reporting period.
- Surveys shall include indoor and outdoor components.
Customers shall be provided with results.
Track survey offers, completions, results and costs.

The MPWMD staff, which is funded in large part by California American Water ratepayers, conducts thorough inspections of residences that have been retrofitted with water conserving fixtures in accordance with the MPWMD Regulation XIV. As noted above, Regulation XIV mandates retrofit on resale, for home additions that increase floor area by over 25%, and when a bathroom is added or when there is a non-residential change in use. The Regulation requires the installation of 1.6 gallon per flush toilets, 2.5 gallon per minute faucets and showerheads, drip irrigation systems for plants and hot water recycling systems. The water district staff typically inspects over 1,000 units a year for compliance with the retrofit on resale rules. While the surveys are not exactly the same as water audits, they are actually more effective, because they verify installations, as contrasted with water audits, which only result in conservation recommendations. Since 1987, over 20,000 homes have been required to be retrofitted under Regulation XIV. This represents about 60% of all the single family homes in the District.

The Company initiated a program of water audits in 1992, when about 1,000 invitations were mailed and about 300 audits were scheduled. The audits covered both indoor and outdoor water use, with an evaluation of the condition and flow rate of all indoor fixtures as well as an assessment of the outdoor irrigation systems with recommendations for sprinkler head adjustments, repairs and replacements. In addition, the lawn areas were evaluated and a watering schedule was recommended. Other landscaping was graded by the degree to which it is “Water Wise,” i.e. the selection of plants, amount of mulch, etc.

In 1998, the MPWMD adopted Ordinance No. 92, (amended 2005 by Ordinance 119) the Expanded Water Conservation and Standby Rationing Plan (See Appendix A), as a program to maintain water use within the California American Water system below the limits set by the SWRCB in Order 95-10. The program consists of seven “stages.” Stages 1 - 3 respond to the SWRCB limits, Stages 4 - 7 respond to drought conditions or emergency water supply shortages.2 During Stage 1, landscape audits and water budgets are required for all dedicated irrigation meters, large irrigated areas over three acres, and large residential water users.

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2 Ordinance 92 provides the framework for the Water Shortage Contingency Plan discussed in Section VI, below.
supplied by California American Water’s Monterey unit. Stage 1 also implements enforcement of water waste and nonessential water use.

Throughout the term of this Plan, the Company’s operations personnel will continue to visit homes and business establishments in response to specific requests or sudden increases in water bills. The focus of these visits is to conduct an interior and exterior water audit to determine if there is a leak or other source of wasted or misused water. In the past, a number of malfunctioning toilets, faucets and irrigation devices have been discovered and repaired in this way.

**IMPLEMENTATION:** MPWMD will continue to conduct, and California American Water will continue to finance, retrofit on resale inspections. It is expected that the rate of housing turnover and home additions will remain within the range of 1,400 to 2,100 per year and that an additional 3,000 to 4,000 homes will be retro-fitted in the coming five years under Regulation XIV.

California American Water will also continue to conduct residential water audits in response to individual requests or abnormal increases in consumption. However, the Company believes that it more than exceeds the water auditing requirement of BMP 1, and is not proposing any additional auditing efforts so long as the retrofit on resale program remains in effect.

### 2. RESIDENTIAL PLUMBING RETROFIT (BMP 2)

**BMP 2: Implementation shall consist of at least the following actions:**

- Develop a targeting and marketing strategy to distribute or directly install low-flow showerheads, toilet displacement devices, toilet flappers and faucet aerators to single-and multi-family residences constructed prior to 1992.
- Maintain distribution and/or direct installation programs so that devices are distributed to not less than 10% of single-family connections and multi-family units each reporting period or require through an enforceable ordinance the replacement of high-flow showerheads and other water using fixtures with their low-flow counterparts, until it can be demonstrated that 75% are retrofitted.

California American Water and the MPWMD have been providing free water service retrofitting devices since 1978 and both organizations continue to provide free devices to customers requesting them. The kits provided by the Company consist of low-flow
showerheads, toilet water dams, dye kits for toilet leak detection, applications for the ULF toilet rebate program and a list of household conservation ideas.

MPWMD aggressively promoted a kit program for two years beginning in 1987. More than 42,000 kits had been distributed by 1988. A 1988 follow-up survey of the most widely publicized effort, called the “Water Corps” program, found that the devices had been installed in 93.2% of the 26,975 households that were contacted in this particular delivery/canvass effort. The Company estimates that this program resulted in a permanent 9 percent reduction in average consumption per participating residential customer.

In addition, MPWMD Regulation XIV, which has been in effect since 1987, requires homes to be retrofit on resale with water conserving plumbing devices. There have been about 1,400 to 2,100 residential resales a year since Regulation XIV was enacted, and an estimated total of over 20,000 homes that have been sold and repurchased have been retrofitted in order to comply with Regulation XIV. California American Water staff also believes that customers voluntarily installed large numbers of retrofit devices during the 1991-93 drought when water rationing was in effect and water usage was being carefully tracked. Finally, the Company has been distributing low flow showerheads, dye tablets, faucet aerators and toilet tank displacement devices in conjunction with on-going public education efforts and customer trouble shooting requests for years.

Due to the combined effects of the various California American Water and MPWMD programs, the Company believes that the BMP goal of a 75% retrofit rate has been achieved in the Monterey District, and that the low per-capita consumption demonstrates the aggregate achievements of these and the ULF toilet replacement programs.

**IMPLEMENTATION:** Plumbing retrofit kits for pre-1992 homes will continue to be available from the District and from the MPWMD upon customer request and in conjunction with programmed water audits and public education efforts (See, also, BMPs 1 and 14.)

**3. DISTRIBUTION SYSTEM AUDITS AND LEAK DETECTION AND REPAIR (BMP 3)**

*BMP 3: Implementation shall consist of at least the following actions:*

> Annually complete a prescreening system audit to determine the need for a fullscale system audit.
When indicated, complete a distribution system audit using methodology consistent with the American Water Works Association’s “Manual of Water Supply Practices, Water Audits and Leak Detection.

Advise customers whenever it appears possible that leaks exist on the customer’s side of the meter; perform system leak detection when warranted and repair leaks when found.

The Company has an established Water Loss Control and Leak Detection Policy\(^1\) which is followed by the staff when conducting routine annual surveys for pipeline leaks. Leaks found during the leak detection work are prioritized and scheduled for repair as quickly as possible. Larger leaks are given higher priority (but lower than emergency repairs).

The MPWMD Ordinance 92, which was adopted to assist California American Water in maintaining water production limits from the Carmel River system below the limits established in SWQCB Order 95-10, requires California American Water to have unaccounted-for water losses of no more than 7 percent in the most recent 12 month period.\(^2\) California American Water tracks and reports production, sales, non-revenue and unaccounted-for water data to the MPWMD on a monthly basis, thereby completing what is essentially a monthly pre-screening audit. While the District ‘s running average of unaccounted-for water has not been below the 7% requirement established in Ordinance 92 for most months, volume and percentage of unaccounted-for water has been lower in recent years than it was in the 1996 to 1999 period, prior to Ordinance 92.

The water losses have only exceeded 10% of production once since 1998. While A 10% loss rate is generally acceptable by traditional industry standards, the MPWMD has set a more stringent standard of 7% for California American Water within the areas served by the Carmel River system.

**IMPLEMENTATION:** Unaccounted-for water use data will continue to be tabulated and monitored on a regular basis and reported to the MPWMD. In addition, the Company will continue to replace older and deteriorating pipelines, and older water meters, and will continue to monitor the distribution system in order to find and repair leaks and other sources of lost water. In the coming year the Company plans to review the water system pressures and reduce

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them where feasible, so as to reduce the chances of new leaks occurring and to reduce the volume of water lost when leaks do occur. California American Water plans to work with MPWMD to review unaccounted for water use standard and gain consensus on appropriate water accounting methods used to arrive at the unaccounted for water percentage.

4. METERING WITH COMMODITY RATES FOR ALL NEW CONNECTIONS AND RETROFIT OF EXISTING CONNECTIONS (BMP 4)

BMP 4: Implementation shall consist of at least the following actions:

Require meters for all new connections and billing by volume of use.
Identifying a program for retrofitting existing unmetered connections and billing by volume of use.
Identifying intra- and inter-agency disincentives or barriers to retrofitting mixed use commercial accounts with dedicated landscape meters, and conducting a feasibility study to assess the merits of a program to provide incentives to switch mixed use accounts to dedicated landscape meters.

The Monterey District of California American Water is fully metered and all customers are billed by volume of use.

BMP 4 encourages retrofitting mixed-use commercial accounts with dedicated landscape meters. Beginning in 1999, the Company initiated a program install separate water meters for larger landscaped areas whenever feasible. Currently the Company has about 600 separate irrigation meters, enabling customers to track consumption and better manage water used for irrigation.

In addition to customer metering, the Company has had a policy in operation since 1989\(^1\) that requires the metering of water flows from all production facilities, relay pumping stations, and water transfer points in order to provide accountability for all water flowing through the system. This information can be used to pinpoint water losses and to conserve supplies by monitoring and reducing unaccounted-for water.

IMPLEMENTATION: This BMP is being fully implemented. All of the District’s existing rate structures meet or exceed the basic requirements of this BMP, and the vast majority of the customers are billed under a 4-Tier, per capita, increasing block rate structure that may be the most ambitious water conserving rate structure in the State of California. See BMP 11.

5. LARGE LANDSCAPE CONSERVATION PROGRAMS AND INCENTIVES (BMP 5)

BMP 5: Implementation shall consist of at least the following actions:

Provide non-residential customers with support and incentives to improve their landscape water use efficiency. This support shall include the following:

- Identify accounts with dedicated irrigation meters and assign Eto-based water use budgets. Provide notices each billing cycle to accounts with water use budgets showing the relationship between budget and actual consumption.
- Develop and implement a strategy targeting and marketing large landscape water use surveys to CII accounts with mixed-use meters. Each reporting period, directly contact via letter or telephone not less than 20% of such accounts and offer water use services.
- Provide information on climate-appropriate landscape design, efficient irrigation equipment/management to new customers and change of service customer accounts.

Recommended actions:

- Install climate appropriate water efficient landscaping at water agency facilities.
- Provide customer notices prior to the start of the irrigation season alerting them to check their irrigation systems and make repairs as necessary. Provide notices at the end of the irrigation season advising them to adjust their irrigation system timers and irrigation schedules.

The largest landscape irrigators in the Monterey District are golf courses. Other major landscape irrigators are the Cities, which irrigate parks and the school districts, which irrigate athletic fields and school playgrounds.

In 1994 the Carmel Area Wastewater District in conjunction with the MPWMD, the Pebble Beach Company, and California American Water began supplying reclaimed wastewater to six golf courses along the western shore of the Peninsula. This program reduced the demand for potable water for outdoor use by 804 AF in 1997 and has averaged annual water saving of 684 AFY. The program is currently being expanded with measures to improve water quality and
add a storage component. With these changes it is hoped that the yield will rise to at least 800 AFY, on average.

In the previous UWMP, the Company committed to conducting irrigation audits and establishing water budgets for selected users. Customers with irrigated areas of 3 acres or larger were targeted, as were high volume residential users (top 10%). Approximately 600 separate irrigation meters have been installed since 1999, and the Company’s trained auditors have completed hundreds of audits that provide landscape managers with site-specific water budgets, information that enables them to apply accurate irrigation amounts throughout the year and schedule timely equipment maintenance. Customers are also supplied with informational brochures describing the causes and cures of maintenance and management problems in irrigation systems.

California American Water and MPWMD require all large residential water users (i.e. using an average of 32 or more units per month), dedicated irrigation meters, and irrigators over three acres to have a landscape water budget on file with California American Water in the event of Stage 2 or 3 emergencies (triggered if California American Water customers exceed Order 95-10 year to date targets one time or more than one time in a water year).

California American Water complies with the noticing recommendations included in BMP 5 by providing customer messages on water bills prior to the start of the irrigation season alerting them to check their irrigation systems and make repairs as necessary. The Company also provides notices at the end of the irrigation season advising them to adjust their irrigation system timers and irrigation schedules.

California American Water also has a water efficient landscaping at the Company’s offices and the MPWMD has supported the creation of xeriscape landscaping examples. In addition, both California American Water and the MPWMD promote the installation of cisterns for on-site collection and storage of rainfall runoff to be used for landscape irrigation during the summer months. Rebates of $25 per 100 gallons of storage are available for cisterns, up to a maximum of $750.

**IMPLEMENTATION:** The District will continue to work with its largest irrigation water customers to establish water budgets and to support all efforts to improve efficiency and encourage conservation, including the development of cisterns to supply established irrigation systems. The District’s volume pricing policy, which will remain in effect, provides very strong
financial incentives for the conservation of irrigation water because of the high volumes required.

6. HIGH-EFFICIENCY CLOTHES WASHING MACHINE FINANCIAL INCENTIVE PROGRAMS (BMP 6)

BMP 6: Implementation shall consist of at least the following actions:

Until January 1, 2007, the water agency shall offer financial incentive, if cost effective, for the purchase of high-efficiency clothes washing machines (HEWS) meeting a water factor of 9.5 or less.

Any financial incentive offered shall be not less than the marginal benefits of the water savings, reduced by the necessary expense of administering the incentive program. A program is not required if the agency determines that the maximum cost-effective incentive is less than $50.

The MPWMD, in cooperation with California American Water, began offering rebates of $100 to customers within the Carmel River system, Ryan Ranch, Hidden Hills and Bishop service areas for the installation of high efficiency clothes washing machines, dishwashers, instant-access hot water systems and dual-flush toilets on December 1, 2003. This is in addition to the on-going ULF Toilet rebate program. The rebates are available to all residential customers and commercial and publicly owned properties. Commercial accounts are limited to 20 rebates per customer.

IMPLEMENTATION: California American Water exceeds the criteria established in BMP 6. The joint MPWMD/California American Water program provides a larger rebate ($100 instead of $50) and covers a wider range of water conserving appliances.

7. PUBLIC INFORMATION (BMP 7)

BMP 7: Implementation shall consist of at least the following actions:

Implement a public information program to promote water conservation and conservation related benefits.

Program should include providing speakers to community groups and the media; using paid and public service advertising, using bill inserts; providing information on

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1Monterey Peninsula Water Management District, Ordinance 110, effective December 1, 2003
customers bills showing use in gallons per day for the last billing period compared to the same period the year before; providing public information to promote other water conservation practices; and coordinating with other governmental agencies, interest groups and public interest groups.

As noted above in Section V, B, 6, Public Education, California American Water’s Monterey District has conducted an extensive variety of public education activities since 1977. The public information programs have included as-needed customer information programs, as well as television and radio ads, in-school education, summer programs for children, new customer information, Water Awareness Week programs, speakers bureau, water system tours and other events. In addition to its own programs, the Company has been very active in its support of the Water Awareness Committee’s efforts and has provided funding and support for many MPWMD public information programs.

The purpose of the public education programs have been to promote understanding and dialogue in the community on water conservation topics, as well as to motivate customers to conserve water. Water conservation information campaigns increase customers’ awareness of habits or procedures that waste water, as well as their awareness of available sources, system capacity and treatment and distribution issues.

Water education has also been aimed at increasing the awareness of water scarcity and motivating people to respond to the specific drought emergencies, both natural and regulatory. Included among the many activities that the Company has initiated directly, or in conjunction with the MPWMD or the Water Awareness Committee are:

- **Past Usage Information.** A customer’s past year’s usage for the same period is always shown on the water bill when the information is available (i.e. when the account has been open for more than one year).

- **Bill Inserts, Newsletters, Flyers.** California American Water has distributed regular bill inserts with conservation messages relating to water shortages or with a water awareness theme. Special information on water conservation issues have been prepared in the past and brochures informing customers of individual conservation programs have been distributed. The District has also prepared annual water quality reports to customers. Water conservation flyers and brochures are kept on display in the reception area in the Company’s office and made available to interested customers coming to pay bills or make inquiries. Water conservation display ads have also been purchased for transit buses.


- **Television and Radio Advertizing.** In recent years the Company has participated in television campaigns running from April through September using both AWWA and locally produced film clips. Typically, about 65 spot ads are run each month.

  The radio campaigns have been run on two local stations, who have assisted in preparing the conservation messages on such topics as bathroom conservation, kitchen conservation and outdoor conservation. The radio campaign also operates from April through September when approximately 360 spots are run each month.

- **Local Newspaper Announcements.** Paid advertisements with water conservation messages, promoting free water audits, supplying financial reports to customers, and providing information about hydrant flushing programs have all been purchased in local newspapers from time to time.

  Mandatory water conservation programs implemented by the MPWMD have been announced with ads in the *Monterey Herald*. In addition California American Water, MPWMD and the Water Awareness Committee have purchased advertisements in conjunction with Water Awareness Month. These ads have been used to initiate the poster and fire hydrant decorating contests sponsored by the Company.

  Furthermore, the *Monterey Herald* has had regular coverage of the MPWMD’s actions related to the development of expanded sources of water for the Peninsula and the mandatory water rationing programs that have been implemented in the recent past.

- **Service Club Presentations.** California American Water operates a speaker’s bureau and can provide guest speakers for local service clubs and business associations (Chamber of Commerce, Rotary, Kiwanis, etc.), homeowner and neighborhood associations and other community groups on water supply and water conservation related topics.

**IMPLEMENTATION:** The District’s programs of informational billing inserts, media ads, and community presentations will be continued on a routine basis, directly by the Company and in cooperation with the MPWMD and the Water Awareness Committee. The level of public contact through the media will be increased in the event that higher levels of water rationing are enacted during the term of this Plan.
8. **SCHOOL EDUCATION PROGRAMS (BMP 8)**

*BMP 8: Implementation shall consist of at least the following actions:*

- Implement a school education program to promote water conservation and conservation related benefits.
- Programs shall include working with the school districts and private schools in the water supplier’s service area to provide instructional assistance, educational materials and classroom presentations that identify urban, agricultural, and environmental issues and conditions in the local watershed. Education materials shall meet the state education framework requirements, and grade appropriate materials shall be distributed to grade levels K-3, 4-6, 7-8 and high school.

See Section V, B, 6, *Public Education*, above. California American Water has an active school outreach program and is also a supporting agency for the Water Awareness Committee of Monterey County, which operates an on-going water education effort. School education is a primary focus of the Committee’s efforts. The Committee maintains a supply of materials to support water education activities and works with teachers throughout Monterey County to encourage and support the inclusion of water education units in the curriculum.

These programs have included:

- Teachers workshops for the AIMS program;
- Purchase of teaching materials from AWWA and other sources;
- The development of a “Water Day” program with schools;
- Sponsorship of water related Science Fair Projects;
- Field trips to the Company’s water treatment and distribution facilities;
- Sponsorships of plays with a water conservation message.

**IMPLEMENTATION:** California American Water will continue to promote water education through its *Use Water Wisely* program and to support the Water Awareness Committee in its efforts to provide materials, teacher training and other programs that support the inclusion of water conservation and water education topics in the school curriculum.

9. **CONSERVATION PROGRAMS FOR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL (CII) ACCOUNTS (BMP 9)**

*BMP 9: Implementation shall consist of both (a) and (b) and either (c) or (d):*

(a) Identify and rank CII accounts according to water use;
(b) Implement a program to accelerate replacement of high-water using toilets with ULF Toilets in CII accounts;
(c) Implement a CII Water-use Survey and Customer Incentives Program such that 10% of the CII accounts are surveyed within 10 years of the date of implementation;
(d) Achieve a water use reduction in CII sectors equaling or exceeding 10% of the baseline (1997) use over a 10-year period.

The largest commercial and industrial customers in the Monterey District are hotels and restaurants as a group and the individual championship private golf courses located on the western side of the Peninsula. These golf courses are primarily irrigated with reclaimed water, resulting in a net conservation savings averaging 664 AFY (over 4%) of California American Water’s potable water supply. The program is currently being expanded so less potable water will have to be blended with recycled water and to increase the supply flexibility through water storage.

Not all golf courses within the District’s service area are served by the reclaimed water system. In recent years, sales to golf courses (one in Pacific Grove and the others in unincorporated Monterey County areas) have averaged about 550 AFY. These facilities have participated in the large landscape conservation programs, (BMP 5) and water budgets have been developed for them.

The hotels and restaurants were retrofitted with low-flow plumbing devices beginning in 1987 with the adoption of MPWMD’s Regulation XIV. All visitor serving commercial establishments were required to have fully converted to ULF toilets by December 31, 2000. Primarily as a result of this program, commercial water sales were 588 AF lower in 2002 than they were in 1987. This is the equivalent of a 33.4% conservation reduction on a per connection basis.

Institutional (Public Authority) accounts have also been encouraged to retrofit their building with ULF toilets and participate in the large landscape conservation programs wherever they are responsible for irrigated landscape areas over 3 acres in size. The average water consumption for the institutional accounts was 2.2 AF in 2002, almost an 11% drop from the 2.5 AF consumed in 1998.

The Company has very few industrial connections (less than 10) in the Monterey District, and their aggregate consumption is very minor, less than 0.5% of the District’s overall sales. The
District has responded to requests for water audits and conservation suggestions to all customers in these categories as they have been made.

**IMPLEMENTATION:** The District will continue to work with its commercial, institutional and industrial accounts to improve their water use efficiency. The plans to expand and improve the wastewater reclamation program operated by the Carmel Area Wastewater District, is expected eliminate the use of an additional 136 AFY of potable water by commercial and publicly-owned golf courses. In addition, the proposed wastewater recycling project in Seaside may potentially reduce irrigation demand by an another 300 AFY during the term of this Plan.

**10. WHOLESALE AGENCY ASSISTANCE PROGRAMS (BMP 10)**

_BMP 10: Implementation shall consist of at least the following actions:_

_Wholesale water suppliers shall provide financial incentives, or equivalent resources, as appropriate, beneficial and mutually agreeable to their retail water agency customers to advance water conservation efforts and effectiveness._

California American Water does not have any wholesale water customers in the Monterey District so BMP 10 is not applicable.

It should be noted, however, that California American Water supplies significant financial assistance to the MPWMD and works with the District on many water management initiatives including the development of expanded supplies, water conservation programs, wastewater reclamation, and water shortage contingencies. The MPWMD, however, is not a water supply agency and does not purchase water from California American Water for distribution and resale.

**IMPLEMENTATION:** None required.

**11. CONSERVATION PRICING (BMP 11)**

_BMP 11: Implementation shall consist of at least the following actions:_

_Implementation methods shall be at least as effective as eliminating non-conserving pricing and adopting conserving pricing. For signatories supplying both water and sewer service, this BMP applies to pricing of both water and sewer service. Signatories that_
supply water but not sewer service shall make good faith efforts to work with sewer agencies so that those sewer agencies adopt conservation pricing for sewer service.

In 1997, the District received permission from the CPUC\(^1\) to implement an experimental rate structure designed to promote water conservation. This new structure was a three block residential quantity rate with increasing rates per block. A low-income tariff rate was also established, with no monthly service charge for qualified customers. Customers in multi-family residential buildings were charged a reduced quantity rate equal to the low block residential rate, plus the full monthly service charge. This experimental rate structure was designed to reduce the consumption of those residential customers who use larger quantities of water and to provide some relief for large multifamily, single metered, residential complexes that previously did not have rate parity with individually metered multi-family residential buildings.

In 1998, data on the Company’s 90 largest residential accounts was compiled. This research indicated that these customers purchased 24.78 AF of water, a 41% reduction from the previous year, before the District instituted the experimental rate system.

Recognizing that there are limits to price elasticity, and that usage fees can be a powerful conservation tool, the Company proposed, and the CPUC adopted, effective January 1, 2002, a four-tier, per-capita based increasing block rate structure applicable to all residential accounts within the areas served by the Carmel River system. The rate differentials in the 4-block structure are shown below, in Table 13.

The numbers of hcf units per month that are included in each tier are based on the number of ECU’s (Equivalent Consumption Units) that each customer can qualify to consume, based on their individual circumstances and the time of year (where landscape irrigation is required). The ECU determination takes into consideration the following factors: a) the number of people in the household; b) the size of the lot on which the home is constructed; c) an allotment for large animals; and d) an adjustment for winter and summer months.

\(^1\)California Public Utilities Commission, Decision D96-12-005.
The ECU Table is shown below (Table 14). Each residential customer’s ECU number is determined as follows:

Step 1: Determine the base allotment by adding the number of units allowed for a) the number of people in the household; b) the size of the lot; and c) the number of large animals kept on the lot.

Step 2: Apply the lot size adjustment for winter (1 unit if there is outside space) or summer (twice the units allotted for outside space minus 1 unit).

Step 3: Divide the sum of (a) and (b) by 2 to arrive at the customer’s ECU number.

The Company believes that this 4-tier, per-capita, increasing block rate structure provides exceptionally strong water conservation incentives, and is convinced that it is a crucial component in ensuring continued compliance with the Order 95-10 limits on withdrawals from the Carmel River system. Non-residential customers are billed by volume of use and are assigned monthly allotments. Water consumed in excess of the monthly allotments is billed at 300% of the base rate. All customers in the Carmel River Service area except low-income customers qualifying in the Program for Alternative Rates (PAR) must also pay a monthly service charge based on the size of their water meter.

| TABLE 13 | RESIDENTIAL BLOCK RATE QUANTITY CHARGES |
| CARMEL RIVER SYSTEM AREAS |
| First Tier | Standard Rate |
| Second Tier | 200% of the Standard Rate |
| Third Tier | 300% of the Standard Rate |
| Fourth Tier | 800% of the Standard Rate |
### TABLE 14
**EQUIVALENT CONSUMPTION UNIT (ECU) TABLE**

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<th></th>
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</tr>
<tr>
<td>3 People</td>
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<td>11 People</td>
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</tr>
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<table>
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</tr>
<tr>
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</tr>
<tr>
<td>Over ½ , up to 1 acre</td>
<td>3</td>
</tr>
<tr>
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</tr>
<tr>
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</tr>
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</tr>
<tr>
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<table>
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</thead>
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</tr>
<tr>
<td>3 or 5 Large Animals</td>
<td>2</td>
</tr>
<tr>
<td>6 or 10 Large Animals</td>
<td>3</td>
</tr>
<tr>
<td>11 or 20 Large Animals</td>
<td>4</td>
</tr>
<tr>
<td>Over 20 Large Animals</td>
<td>5</td>
</tr>
</tbody>
</table>
The 4-Tier, per capita, increasing block rate structure described above is in effect for all areas of the District served by the Carmel River system. The Hidden Hills/Ryan Ranch areas and the Ambler Park/Bishop service areas are served from separate groundwater sources and are billed by volume-of-use (as called for in BMP 4), although the rate structures are less aggressive.

The Hidden Hills/Ryan Ranch residential customers are billed according to a 4-tier increasing block rate structure as shown in Table 15.

Non-residential accounts in the Hidden Hills/Ryan Ranch service areas are billed by a flat volume of use rate that is equivalent to the second tier of the residential rate. All customers also pay a monthly service charge based on the size of their water meter. The Hidden Hills/Ryan Ranch area has about 600 customers, about 1.5% of the District’s total.

<table>
<thead>
<tr>
<th>TABLE 15</th>
<th>RESIDENTIAL BLOCK RATE QUANTITY CHARGES</th>
<th>HIDDEN HILLS/RYAN RANCH AREAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 8 hcf units</td>
<td>Standard Rate</td>
<td></td>
</tr>
<tr>
<td>Next 16 hcf units</td>
<td>133% of the Standard Rate</td>
<td></td>
</tr>
<tr>
<td>Next 16 hcf units</td>
<td>266% of the Standard Rate</td>
<td></td>
</tr>
<tr>
<td>Over 40 hcf units</td>
<td>666% of the Standard Rate</td>
<td></td>
</tr>
</tbody>
</table>

In the Ambler Park and Bishop Service areas all customers are billed by a flat rate, volume of use quantity charge plus a monthly service charge based on the size of their water meter. The Ambler Park and Bishop Service areas have about 525 customers, or 1.3% of the District’s total.

Except for one small area, the Company does not provide wastewater treatment for customers within the Monterey District. The existing wastewater agencies serving the Monterey Peninsula generally have flat rate billing structures, as does the 1,600 connection system California American Water purchased from the County in 2003. Monetary incentives for water conservation within the District’s service area are being effectively implemented on the water
supply side; no additional pricing incentives are believed to be necessary on the wastewater side.

**IMPLEMENTATION:** Cal-Am will continue to maintain a conservation pricing rate structure. It is expected that the four-tier, per-capita based increasing block rate structure for most residential accounts served by the District will remain in effect through the term of this UWMP. This rate structure conforms to Stage 1 Water Conservation Requirements (MPWMD, Ordinance 92), which went into effect in 1999, and will remain in effect until water supplies to the Monterey Peninsula can be increased by the amounts required under by Order 95-10, (10,730 AFY). While the Coastal Water Project is in planning, it is not expected that new water will flow from it before 2010.

### 12. CONSERVATION COORDINATOR (BMP 12)

**BMP 12:** Implementation shall consist of at least the following actions:

- **a)** Designation of a water conservation coordinator and support staff (if necessary), whose duties shall include the coordination and oversight of conservation programs and BMP implementation, preparation and submittal of Council BMP Implementation Reports, and communication and promotion of water conservation issues to agency senior management, coordination of agency conservation programs with operations and planning staff; preparation of annual conservation budget; participation in the California Urban Water Conservation Council; and preparation of the conservation elements of the agency’s Urban Water Management Plans.

- **b)** Agencies jointly operating regional conservation programs are not expected to staff duplicative and redundant conservation coordinator positions.

The Monterey District has three AWWA certified water auditors, whose duties include a variety of water conservation related responsibilities, occupying as much as 30 percent of each person’s job. They respond to customer-initiated requests and assist with the implementation of Company sponsored conservation initiatives. The Company provides staff liaison to the Water Awareness Committee, which is responsible for much of the leadership for water conservation work throughout Monterey County.

In addition, the MPWMD also has a very active water conservation staff. Much of this office’s work is directed at California American Water customers, as the Company is the largest water purveyor serving communities within the MPWMD’s jurisdiction.
IMPLEMENTATION: The Water Conservation Coordinator on the California American Water staff and the MPWMD staff will continue to fulfill, directly and indirectly, the Monterey District’s needs for the management and coordination of its water conservation programs.

13. WATER WASTE PROHIBITION (BMP 13)

BMP 13: Implementation methods shall be enacting and enforcing measures prohibiting gutter flooding, sales of automatic (self regenerating) water softeners, single pass cooling systems in new connections, nonrecirculating systems in all new conveyer car washes and commercial laundry systems and non-recycling decorative water fountains.

The MPWMD prohibits the waste of water as well as a number of non-essential uses of water in conjunction with both voluntary and mandatory water rationing programs that have been implemented during recent droughts. In 1992, when the last rationing program was repealed, the MPWMD amended and retained the water waste regulations so that the waste of water would be prohibited on a permanent basis.1 Wasteful practices which are banned include waste caused by correctable leaks, etc., use of potable water to wash sidewalks or roads, turf irrigation during the warm periods of the day, car, sidewalk or house washing without positive shut-off valves, indiscriminate water use which allows excess to run to waste, operation of a commercial car wash without recycling more than 50% of the potable water per cycle, use of potable water for street cleaning, outdoor watering in violation of landscape irrigation restrictions including failure to stay within a mandatory landscape irrigation budget, misrepresentation of the number of persons residing on a property and transportation of water from the area without authorization. The ordinance is enforced with penalties of $50.00 for each flagrant occurrence and $150.00 for each subsequent occurrence within 18 months. Uncorrected or regular violations can result in the installation of a flow restrictor in the customer’s meter.

The MPWMD also prohibits non-essential water use. These uses include serving water to restaurant customers, unless expressly requested; operation of ponds, lakes, or other ornamental uses of potable water without recycling, excessive use of water for dust control or earth compaction if non-potable water is available, use of unmetered fire hydrant water except for fire suppression or utility maintenance purposes, failure to comply with required retrofits,

draining and refilling of swimming pools or spas except for structural or public health reasons. Non-essential water use violations are subject to the same penalties as water wasting.

**IMPLEMENTATION:** The MPWMD regulations meet or exceed the requirements of BMP 13, except that they do not address water softeners and single-pass cooling systems. California American Water will recommend that the MPWMD ordinance and implementing rules be amended to prohibit self-regenerating water softeners and single-pass cooling systems. The Company will continue to cooperate with the MPWMD in the enforcement of the District’s existing water waste regulations.

14. **Residential ULF Toilet Replacement Programs (BMP 14)**

*BMP 14: Implementation shall consist of at least the following actions:*

- Implementation of programs for replacing existing high-water- using toilets with ultra-low-flush toilets (1.6 gallons or less) in single family and multi-family residences.
- Programs shall be at least as effective as requiring the replacement at the time of resale.

As described in section B, 5, (above) the Monterey Peninsula Water Management District has operated plumbing retrofit programs for the residential and commercial sectors beginning with a demonstration program in 1985. The residential retrofit on resale program implemented by Ordinance 30 began in 1987. Over 20,000 homes have been involved. Between 1996 and 2004, 15,919 ULF toilets were retrofitted under this program.

The $100 rebate program was started in 1997, and supplements the mandatory change-of-ownership retrofit program. A total of 7,622 retrofits had been documented under this program through 2003. During the term of this Plan, the Company will continue to cooperate with the MPWMD in implementing both of these residential ULF toilet replacement programs.

**IMPLEMENTATION:** The Monterey District, pursuant to MPWMD Ordinances, has achieved a high level of ULF toilet installation and will continue to support these retrofit on resale and rebate programs.
15. **Other Appliance Rebate Programs**

In December 2003, the MPWMD expanded the appliance rebate program to cover additional water saving appliances.\(^1\) In addition to $100 rebates for ULF toilets (which are still available), California American Water customers are eligible for $100 rebates for the following:

a) Dual flush ultra-low flush toilets. These allow the user to choose between a light flush and a longer flush.

b) Ultra-low consumption dishwashers. These use a maximum of 7.66 gallons per cycle.

c) Ultra-low consumption washing machines. These use a maximum of 28 gallons per cycle.

d) Hot water demand pumping systems. These systems quickly bring hot water to a fixture by drawing hot water from the tank and returning ambient house temperature water back to the tank where it is heated

16. **Cisterns**

Beginning in December 2003, the MPWMD also commenced a program of rebates for cistern systems where storage tanks are integrated into an irrigation system and a rainwater collection system. The rebates are $25 per 100 gallons of capacity up to 3,000 gallons. The maximum rebate is $750.

17. **Meter Calibration and Replacement Program**

The purpose of calibrating and/or replacing water meters that have been in service for some time is to, a) enhance revenue by ensuring payment for all water sold, b) encourage conservation by ensuring that customers pay for all water delivered, c) provide a point of reference for consumer knowledge of water use patterns from cycle to cycle and year to year, and d) increase the Company’s ability to account for its distributed water. This program is not included on the list of BMPs.

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\(^1\)MPWMD, *Ordinance 110*, October 2003.
The Company has operated a formal meter testing, maintenance and replacement program since 1981. This program predated the Urban Water Management Plan and is considered an integral part of the Company’s water management strategy. It requires random testing of new meters from bulk shipments, and testing due to length of service. All 1-inch or smaller meters are to be replaced after 15 years in service. Larger meters are to be tested as specified intervals ranging from 1 to 4 years. Currently, approximately 33,000 of the Monterey District’s total of approximately 40,000 meters are less than 10 years old, and the majority of the remaining are larger than 1-inch and are regularly tested and calibrated. The Company’s program for regular meter replacement will also continue throughout the term of this Plan. It is expected that there will never be more than 20 percent of the District’s meters that are greater than 10 years old.

IMPLEMENTATION: This measure has been implemented on an on-going basis and will be continued.

18. WASTEWATER RECLAMATION

The Carmel Area Wastewater District and the Pebble Beach Community Service District (CAWD/PBCSD), in cooperation with MPWMD, the Pebble Beach Company and California American Water has been operating a wastewater reclamation program since 1994. (See V, B, 7, above). The reclaimed wastewater is being distributed to golf courses and large turf users on the Peninsula for irrigation use. Currently, the facilities have a capacity of about 800 AFY. In 1996, only 472 AF of reclaimed water were used after the grass showed signs of stress due to high sodium levels in the wastewater. Supplemental treatment with gypsum and blending with potable water was successful in reducing the problem. Reclaimed water purchases peaked in 1998 at over 804 AF, although it has been necessary to supplement the reclaimed water with as much as 200 AF of potable water a year.

In 2004, the MPWMD developed a supplemental financing program to provide advanced treatment components at the tertiary treatment plant and to retrofit Forest Lake Reservoir (which is no longer being used by the Company) to store up to 420 acre feet of reclaimed water.

1California American Water Company, Services and Meters, NO. 2, approved by Board of Directors, July 1, 1981.

With these improvements the project sponsors hope to increase the program’s reliability, water quality and capacity.

In addition, as described previously, the Monterey Regional Pollution Control Agency and the Marina Coast Water District are developing a recycled water project that would supply water for golf course irrigation and other uses in the Seaside area that currently use potable water from California American Water. This project, the Regional Water Augmentation Project obtained a Coastal Development Permit and the first phase may be developed by 2007. Initially, it is expected that about 300 AFY, offsetting demand California American Water by an equivalent amount. Future phases of the Regional Water Augmentation Project are being planned, initially with expansion of up to 1,400 AFY, and potentially 2,800 AFY that could offset demand in Seaside, Del Rey Oaks and Monterey that is now met by California American Water.

**IMPLEMENTATION:** California American Water will continue to support the wastewater reclamation projects.

**19. EXCHANGES OR TRANSFERS OF WATER.**

The Monterey Peninsula is dependent on local supplies and is not connected to the State Water Project, the Central Valley Project, the Hetch Hetchy system, or other large systems that can draw on Sierra snowmelt as a source of supply. A pipeline tie-in with the Pajaro Valley Water Management Agency (PVWMA) was investigated but rejected in the 1990’s for financial reasons. Then, in 1998, the PVWMA voters passed Measure D, requiring the PVWMD to look for local solutions and stop work on projects involving water imports for 10 years.

When the previous UWMP Plan was prepared in 1999, the Company sponsored Carmel River Dam and Reservoir project was the preferred alternative for satisfying the State Water Resources Control Board Order 95-10. However, the project could not overcome environmental constraints and in August 2003, the State Water Resources Control Board voted against letting the Company build the proposed 24,000 AF dam replacement project. California American Water turned to Plan B, and is pursuing a desalination solution, with the proposed Coastal Water Project as the preferred project.
D. IMPLEMENTATION PROGRAM AND SCHEDULE

Table 16 summarizes California American Water’s implementation program for the Urban Water Management Plan. The implementation program is based on a five-year time horizon, beginning with 2005. The schedule is intended to provide general guidance to the Company for the enactment of the water conservation programs described in this report. The Company will maintain full flexibility in funding and scheduling the various programs, and the implementation schedule may be modified as a result of new developments or changes in conditions. As required by State law, the entire plan will be reviewed after five years.
<table>
<thead>
<tr>
<th>BMP # Program</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Single- and Multi-family Water Survey Programs</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>2 Residential Plumbing Retrofit</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>3 Systemwide Water Audits</td>
<td>O</td>
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<td>O</td>
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<td>O</td>
</tr>
<tr>
<td>3 Leak Detection</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>4 Metering with Commodity Rates</td>
<td>O</td>
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<td>O</td>
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<td>O</td>
</tr>
<tr>
<td>5 Large Landscape Conservation</td>
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<td>O</td>
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</tr>
<tr>
<td>6 High Efficiency Washing Machine Rebates</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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</tr>
<tr>
<td>7 Public Information Program</td>
<td>O</td>
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</tr>
<tr>
<td>8 School Programs</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>9 Commercial and Industrial Water Conservation</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>10 Wholesale Agency Assistance</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<td>11 Conservation Pricing</td>
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<td>O</td>
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<td>12 Water Conservation Coordinator</td>
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<tr>
<td>13 Water Waste Prohibition</td>
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<td>O</td>
</tr>
<tr>
<td>14 Residential ULF Toilet Replacement</td>
<td>O</td>
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</tr>
<tr>
<td>- Other UFL Appliance Replacement</td>
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<tr>
<td>- Meter Calibration and Replacement</td>
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<td>O</td>
</tr>
<tr>
<td>- Wastewater Reclamation</td>
<td>E</td>
<td>E</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Key to Symbols:
- O = Ongoing Program from Previous Plan or Before
- E = Expand Program
- NA = Not Applicable
VI. WATER SHORTAGE CONTINGENCY PLAN

A. INTRODUCTION

AB11 (1991) amended the Water Code provisions addressing Urban Water Management Plans to expand their scope to include the preparation of a Water Shortage Contingency Plan as one component of the updated Urban Water Management Plans. The District’s first Water Shortage Contingency Plan was completed in January 1992, updated in 1995, and is again updated in this chapter.

B. PAST, CURRENT AND PROJECTED WATER USE

The Water District’s total annual production requirement, by user category, between 1987 and 2005 are shown in Table 3 in Chapter III, above, and are summarized in Table 17, on this page. The years in which water rationing was in effect are noted, along with the years falling under the Order 95-10 production limits.

Between 1987 and 2003 the population served by the Monterey District increased by about 16% to 124,300 people and the District had an average of 376 new connections per year. Portions of these were new meters to serve existing customers in multi-family dwellings. The existing water supplies are fully allocated and increases in supply are not likely in the short term. The District is in a water-restricted area and expects minimal growth in the coming five years.

The previous UWMP reported that planning projections call for 14,950 additional residential units and 34,721 more jobs (over a

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TABLE 17
WATER PRODUCTION
1987 - 2005

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>17,886</td>
</tr>
<tr>
<td>1988</td>
<td>17,095</td>
</tr>
<tr>
<td>1989*</td>
<td>12,815</td>
</tr>
<tr>
<td>1990*</td>
<td>12,583</td>
</tr>
<tr>
<td>1991*</td>
<td>10,766</td>
</tr>
<tr>
<td>1992*</td>
<td>14,138</td>
</tr>
<tr>
<td>1993*</td>
<td>12,952</td>
</tr>
<tr>
<td>1994</td>
<td>15,233</td>
</tr>
<tr>
<td>1995</td>
<td>14,775</td>
</tr>
<tr>
<td>1996**</td>
<td>16,232</td>
</tr>
<tr>
<td>1997**</td>
<td>17,048</td>
</tr>
<tr>
<td>1998**</td>
<td>14,070</td>
</tr>
<tr>
<td>1999**</td>
<td>15,221</td>
</tr>
<tr>
<td>2000**</td>
<td>15,039</td>
</tr>
<tr>
<td>2001**</td>
<td>15,655</td>
</tr>
<tr>
<td>2002**</td>
<td>15,526</td>
</tr>
<tr>
<td>2003**</td>
<td>15,164</td>
</tr>
<tr>
<td>2004**</td>
<td>15,793</td>
</tr>
<tr>
<td>2005**</td>
<td>15,349</td>
</tr>
</tbody>
</table>

*Years with full or partial water rationing.
**Years with Carmel River system

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1An additional 589 separate irrigation meters have been installed, but are not counted here because they are billed to existing customers.
California American Water has had about 5,375 new connections since 1998, a significant portion of which have come from the acquisition of existing, small water systems. It is not known when, if ever, the build out projections will be approached. Over the next five years the District is likely to have some new connections in the Del Monte Forest area where the Pebble Beach Company has the right to sell portions of its potable water entitlement in exchange for financing the expansion of the wastewater treatment program. A few hundred new connections from residential development along the Highway 68 corridor are also possible, although the numbers could be limited as a result of the pending groundwater adjudication.

The company is seeking approvals for construction of the Coastal Water Project. Initial planning and environmental studies are well underway, however, the earliest this project could be completed is 2010.

C. ESTIMATE OF MINIMUM WATER SUPPLY

Currently, California American Water’s maximum legal water supply for the Monterey District is 15,807 AFY (11,285 AF from the Carmel River System, 4,022 AF from the Seaside Basin and about 500AFY from the ASR project). This is an interim maximum, subject to the Company’s development of new sources of water to replace the historical diversions of subterranean surface flow of the Carmel River. The SWRCB has determined that the Company has recognized legal rights to only 3,376 AFY from the Carmel River, so the total proven water rights available to the District are only 7,898 AFY, a level that is well below the current requirements, i.e. an average of about 15,400 AFY in recent years. The District’s 7,898 AFY could be considered the District’s minimum water supply, at least until additional supplies become available from the proposed Coastal Water Project or other sources.

Based on the experience in the 1976-77 drought, when the District suffered with restrictions to 50 gpcpd, the minimum demand could theoretically be reduced to as low as 6.2 mgd and would be somewhat more than a 46% reduction from current consumption levels. This would be considered a worst-case minimum supply, to be implemented only as a result of a prolonged, 36-month, dry period. Furthermore, because of existing conservation and demand hardening, a reduction of this magnitude would probably not be achievable.

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1It should be noted that this amount is based on storage in Los Padres Reservoir and is subject to reduction if the reservoir’s storage capacity drops.
Water Shortage Contingency Plan

In the 1987-91 period, which was the driest consecutive five year period on record, the MPWMD imposed a maximum 20% reduction in per capita use, which was achieved, and in fact exceeded — water production in 1991 was about 9.6 mgd, 40% lower than in 1987, but well above the post-Order 95-10 theoretical minimum supply of 7,898 AFY, equivalent to 7.0 mgd.

D. STAGES OF ACTION IN THE EVENT OF WATER SUPPLY SHORTAGES

The Monterey District has its water resources regulated by the Monterey Peninsula Water Management District, which was empowered by the California Legislature in 1978 following the 1976-77 drought.

The MPWMD has the power to pass ordinances to create staged responses to all water shortages on the Monterey Peninsula and surrounding areas. Ordinances requiring voluntary and mandatory water conservation in response to water shortages have been adopted when the District has faced periods of below normal precipitation. On January 28, 1999 the MPWMD adopted Ordinance 92, to amend the existing Water Supply Emergency Ordinance (Ordinance 54) and modify District Rules to create an Expanded Water Conservation and Standby Water Rationing Plan. It was designed to address both legal and physical water emergency situations. California American Water is bound by the provisions of MPWMD Ordinance 92, as amended by Ordinance 119 in March 2005. Although the Monterey District has flexibility to act within the parameters set by Ordinance 92, as amended, it largely defines the Company’s responses to water supply emergencies. The Ordinance establishes seven stages, the first three respond to legal and regulatory supply limitations, while Stages 4 through 7 are designed to respond to increasingly severe water shortages caused by drought or sudden emergencies. The respective stages of action that would be implemented include:

**Stage 1:** Stage 1 water conservation goals reflect the California American Water regulatory production limits of 11,285 AFY from the Carmel River system (imposed by the SWRCD) and the 4,000 AFY production limit from the Seaside groundwater production system. Stage 1 requires all California American Water customers to comply with the MPWMD water waste and non-essential water use prohibitions, and urges all customers to voluntarily reduce water use to the extent possible. It requires odd/even outdoor watering day. Stage 1 water conservation was put in effect on March 1, 1999 and is unlikely to be repealed until additional water supplies become available, which may not occur during the term of this UWMP.
Stage 2: Stage 2 is also a water conservation program. It expands the parameters of water waste to include use above the established landscape water budget by large residential users, users of dedicated landscape meters, and users that irrigate more than three acres. It is designed to provide a management tool that will allow California American Water and the MPWMD to respond to monthly increases in water consumption that have the potential to result in violations of the SWRCB production limits. This could avoid future SWRCB penalties, such as the one imposed on the Company in 1997.

The Expanded Water Conservation and Standby Rationing Plan establishes monthly water production targets. Stage 2 can be activated whenever a year-to-date at month-end target is exceeded.

Stage 2 incorporates the Stage 1 water waste and non-essential water use prohibitions and adds requirements that all water users who are obligated to have landscape water budgets (See BMP 5), must meet the irrigation budget assigned to the property.

Stage 3: Stage 3 provides for more comprehensive water conservation incentives. Stage 3 Water Conservation shall be enforced when any of the following criteria has been met: 1) the average of California American Water’s year-to-date production from the MPWRS for each month has exceeded the year-to-date at month-end production target of California American Water from the MPWRS for a second time during the period from October 1 through March 31 in any water year, or 2) the average of California American Water’s year-to-date production from the MPWRS for each month has exceeded the year-to-date and month-end production target for California American Water from the MPWRS once during the period from April 1 through September 30 in any water year, or 3) a Resolution has been adopted by the Board when there is an need for an immediate water use reduction requirement in response to an unexpected water production increase.

The Stage 3 water conservation program was in effect from February to December of 2000. California American Water and MPWMD believe that the Stage 3 program has the potential to achieve 15% reductions from the Stage 1 regulatory production limits.
Stage 4: This would be a water rationing program designed to be implemented in drought or water supply emergencies. It would be triggered by decision of the MPWMD Board if the total usable storage in the system managed by the MPWMD is less than 27,807 AF but more than 21,802 AF on May 1 of any year. The Stage 4 water rationing plan would have the same features as the Stage 3 plan, with the addition of all water users within the affected water system. It is designed to achieve a 15% reduction in water use from the system production limit.

Stage 5: The Stage 5 water rationing program would be implemented in drought or water supply emergencies in which the total usable storage in the system managed by the MPWMD is less than 21,802 AF but more than 15,615 AF on May 1 of any year. It would be triggered by action of the MPWMD Board, and would have a goal of 20% reduction in water consumption.

If Stage 5 is activated, California American Water will be required to provide written notice of mandatory water rationing to every water user and to include monthly reminders in every water bill, along with information on the quantity of the water ration consumed in the past month. Water rations are to be developed for each user category, based on available production divided by the percentage of historical use. Water savings achieved that are greater than the monthly ration will be “banked” for use by the individual customer later in the year. The Stage 5 water rationing program will also include a moratorium on any new water permits involving an intensification of use. In addition, the Stage 1 through Stage 4 restrictions will remain in effect.

Stage 6: The Stage 6 water rationing program would be implemented when the total usable storage in the system managed by the MPWMD is less than 15,615 AF but more than 9,610 AF on May 1 of any year. It would be triggered by action of the MPWMD Board, and would have a goal of 35% reduction in water consumption. Like Stage 5, Stage 6 water use restrictions would be achieved with water use cutbacks by user category and by per-capita water rations as well as by a moratorium on the issuance of water permits that intensify use. In addition, Stage 6 rationing will include prohibitions on all ornamental water uses and on the use of water for dust control. Restrictions implemented in Stages 1 - 5 would be continued in Stage 6.
Stage 7: The Stage 7 water rationing program would be implemented when the total usable storage in the system managed by the MPWMD is less than 9,610 AF on May 1 of any year. Triggered by action of the MPWMD Board, it would be intended to achieve 50% reduction in water consumption from system production limits. The rationing program would function in the same manner as Stages 5 and 6, although additional prohibitions would probably be placed in effect. These could include limitations (or possible prohibitions) in outdoor watering; prohibitions of irrigation of non-turf outdoor areas, restrictions on golf course irrigation to greens and tees only, and prohibitions on the use of portable and hydrant meters. Restrictions implemented in previous stages would also remain in effect.

E. MANDATORY PROVISIONS TO REDUCE WATER USE

In the past, MPWMD has implemented a number of increasingly broad mandatory restrictions on water use in response to increasingly severe water shortages. MPWMD has a permanent prohibition on certain wasteful water use practices. All stages of the contingency plan, both voluntary and mandatory, incorporate these prohibitions. They can be enforced by fines imposed by the MPWMD, while the Company has the ability to install flow restrictors in the service connections of flagrant violators.

The water rationing programs (Stages 4 through 7) incorporate increasingly stringent additional mandatory reductions such as total prohibitions on the use of water for irrigation, ornamental functions, certain construction purposes, and moratoria on new water permits.

F. CONSUMPTION LIMITS

The Company’s response to any recognized water shortage requiring the adoption of a mandatory water rationing program would involve a percentage reduction goal based upon quantities available for each user category in base years when the maximum production limits of the Monterey Peninsula Water Resources System are available. For residential customers, the allocations will be derived from the number of people served by each individual connection.
G. PENALTIES OR CHARGES FOR EXCESS USE

The existing rate structure for residential customers is a four-block conservation pricing structure that effectively includes a charge for excess use, as the cost per unit of residential water increases as the amount consumed increases. Water waste fees are also incorporated into the MPWMD water rationing plans (Stages 4 through 7) and would be imposed by MPWMD as an enforcement mechanism.

H. IMPACTS ON REVENUES AND EXPENDITURES

California American Water must follow the rules and regulations of the California CPUC in its billing practices and rates to customers. Revenues that are either over-collected or under-collected due to the effects of modifications in the current rate design from standard commission practices are tracked in special accounts. The Commission determine how the over or under collected revenues are either returned or received to or from customers. Currently, some of the excess use charges that have been set aside are used to fund water conservation programs sponsored by the Company and the MPWMD.

I. DRAFT ORDINANCE

As noted, California American Water does not have the authority to adopt resolutions or ordinances. California American Water must comply with ordinances adopted by the MPWMD. Ordinance 92 (adopted March 1, 1999), as amended by Ordinance 119, (adopted March 21, 2005) is the operating Water Shortage Contingency Plan for the MPWMD and for the Monterey District. Ordinances 92 and 119 are reproduced in Appendix A.

J. MECHANISM FOR DETERMINING ACTUAL REDUCTIONS

Since all California American Water customers are metered and the sources of supply are metered, the Company is able to measure the effectiveness of any water shortage contingency plan that is implemented. Water production and sales data is continually being collected by the Company and is submitted to MPWMD and other regulatory authorities, including the CPUC, as required.
APPENDIX A

MONTEREY PENINSULA WATER MANAGEMENT DISTRICT
ORDINANCES 92 AND 119

Effective March 1, 1999
Amended March 21, 2005