Section 3.12
Water Supply and Demand

This section presents a discussion of relevant regulations and existing water supplies for the Project site; and it identifies potential impacts of the Project related to water supply and demand, including impacts on water supply, water supply infrastructure, and the Carmel River biological resources. A summary of impacts is presented in **Table 3.12-1**.

Table 3.12-1. Summary of Project Impacts on Water Supply and Demand

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
A. Water Supply and Demand			
WSD-A1. The Project's water demand would represent an increase in water use compared to without project conditions, but would be within the applicant's current entitlement and could be legally supplied by Cal-Am. However, given the current uncertain nature of regional water supplies, the additional Project water demand could intensify water supply shortfalls and rationing starting in 2017 until a regional water supply project is built.	Significant	None feasible[a]	Significant and Unavoidable
WSD-A1(C). Cumulative water demand on the Monterey Peninsula exceeds current water supplies requiring new regional water supplies to be developed. The Project's water demand would represent an increase in water use compared to without project conditions. In 2017 and after, given the current uncertain nature of regional water supply planning, the additional Project water demand could intensify cumulative water supply shortfalls and rationing starting until a regional water supply project is built.	Significant	None feasible[a]	Significant and unavoidable
B. Water Infrastructure Capacity			
WSD-B1. Local water infrastructure is included to serve the Project and existing supply infrastructure outside the Project site is adequate to serve the Project. A regional water supply project will need to be built to serve existing demand and the increase in demand from the Project. Regional water supply infrastructure and operations will have secondary environmental impacts.	Significant	None feasible[a]	Significant and Unavoidable
WSD-B1(C). Existing, Project, and other entitlement demand create a cumulative demand for a regional water supply project. Regional water supply infrastructure and operations may have significant and unavoidable secondary environmental impacts and the Project would contribute to the need for such infrastructure.	Significant	None feasible[a]	Significant and unavoidable

Impact	Significance Before Mitigation	Mitigation	Significance After Mitigation
C. Carmel River Biological Resources			
WSD-C1. If the State Water Board enforces the limitation on Cal-Am withdrawals from the Carmel River starting in 2017, then the Project would not have any impact on biological resources associated with the Carmel River. If the State Water Board delays enforcement, then the Project would likely increase withdrawals from the Carmel River aquifer compared to without project conditions and thus contribute to existing impacts on Carmel River biological resources until the limitations are fully enforced.	Significant	None feasible[a]	Significant and unavoidable
WSD-C1(C). If the State Water Board enforces the limitation on Cal-Am withdrawals from the Carmel River starting in 2017, then the Project and other entitlement demand would not have any impact on biological resources associated with the Carmel River. If the State Water Board delays enforcement of the limitations, then the Project and other entitlements would likely increase withdrawals from the Carmel River aquifer and thus contribute to cumulative impacts on Carmel River biological resources until the withdrawal limits are fully enforced.	Significant	None feasible[a]	Significant and unavoidable

[a] Mitigation is not feasible because any additional mitigation would be disproportionate to the impact of the Project given the applicant's prior financing of the infrastructure for the Carmel Area Wastewater District/Pebble Beach Community Services District Recycled Water Project. The applicant's use of water for this project is pursuant to a valid, legal water entitlement affirmed by Monterey Peninsula Water Management District, Cal-Am, and the State Water Resources Control Board.

Overview

The water supply situation on the Monterey Peninsula is complex. The majority of the existing public water supply has been derived primarily from two sources: 1) the Carmel River alluvial aquifer and 2) the Seaside aquifer. California-American Water (Cal-Am) is the regulated water utility that derives supply from both of these sources. In 1995, the State Water Resources Control Board (State Water Board) found Cal-Am to be extracting water from the Carmel River in amounts far greater than its legal water rights to provide water to the local community. Cal-Am is required to cease all extractions beyond its legal rights by 2016. The Seaside Aquifer is also oversubscribed resulting in an adjudication of the basin and actions to reduce basin withdrawals to a sustainable level over time.

Cal-Am's Monterey Peninsula Water Supply Project (MPWSP), whose principal element is a desalination plant and also includes expanded aquifer storage and recovery (ASR) and storage and conveyance, is planned to be completed by 2020 to replace the water that Cal-Am will no longer be able to withdraw from the Carmel River and the Seaside Aquifer, and to address current water shortfalls. Another project, the Groundwater Replenishment Project (GRP) proposed by the Monterey Regional Water Pollution Control Agency (MRWPCA) may also provide additional groundwater supply which could alter the size of the MPWSP proposed desalination plant.

Both the MPWSP and the GRP are currently in CEQA review and there remain a number of uncertainties including ultimate project permitting from the California Coastal Commission, cost concerns by ratepayers, governance issues regarding the structure of project control, as well as water rights issues. Thus, the MPWSP and the GRP are considered uncertain for the purposes of this analysis.

The applicant previously funded the Carmel Area Wastewater District/Pebble Beach Community Services District (CAWD/PBCD) Recycled[1] Water Project that treats wastewater to provide an irrigation source for golf courses and other large landscape areas within the Del Monte Forest in order to completely replace the use of potable water for these large irrigation uses. The applicant derived a water entitlement for a portion of the reduction in water use that it has used for several prior commercial developments and its buildout project approved in 2012. The applicant proposes to utilize this water entitlement for the Project.

This section also analyzes the impact of the Project's increased demand for water on the water supplies in the Carmel River, on the need for new water infrastructure, and on the biological resources of the Carmel River. Water to serve the Project would be derived pursuant to the applicant's water entitlement, which could come from any legal source from which Cal-Am could derive its water supply, which could include the Carmel River, the Seaside Aquifer (as limited by the adjudication), aquifer storage and recovery, or new sources developed as part of a regional water supply project. However, at this time, there are severe limitations on the use of existing water resources. The analysis does not presume the Project would increase withdrawals from the Seaside Aquifer due to the existing adjudication mandating a substantial reduction in Cal-Am's withdrawals from this aquifer. Some or all of the actual water serving the Project may come from the Seaside Aquifer but due to the adjudication, this increased demand cannot result in an overall increase of withdrawals from the Seaside Aquifer by Cal-Am which is legally restricted. The Project may increase Carmel River withdrawals and may be served from potentially new sources, such as desalination. The analysis looks at impacts related to providing water to the Project on the Carmel River and on other sources, because the Project could increase withdrawals from these sources, temporarily or permanently. This Project is unusual in that new development is inextricably related to a water entitlement derived from the prior reduction of water use due to the applicant's prior financing of the Recycled Water Project. This broader context is a fundamental part of the impact analysis used in this EIR. This section also analyzes cumulative demand from other residential and visitor-serving development in the Del Monte Forest and on the Monterey Peninsula in general that currently uses water from the Carmel River and the Seaside Aquifer, in combination with the Project's water demand.

Unlike other impact sections, this section describes the environmental setting before the description of the regulatory setting as an understanding of current water supply conditions is essential to understand the regulatory situation concerning water supply.

Environmental Setting

This setting describes the existing water supply sources, the history of the applicant's water entitlement, and the operational history of the CAWD/PBCSD Recycled Water Project.

[1] The terms "recycled" and "reclaimed" in describing water are used interchangeably.

Water Supply Sources

Public potable water supply and distribution for the Project site are provided by Cal-Am. Current water sources include wells in the Carmel Valley alluvial aquifer and wells in the Seaside Aquifer. Recycled water for golf course irrigation in the vicinity is supplied by the CAWD/PBCSD Recycled Water Project.

Cal-Am Production History

Figure 3.12-1 shows the history of water production by source from Cal-Am and its predecessor companies. **Table 3.12-2** shows the recent history of water production from the Carmel River and the Seaside Aquifer by Cal-Am from 1995 to 2014.

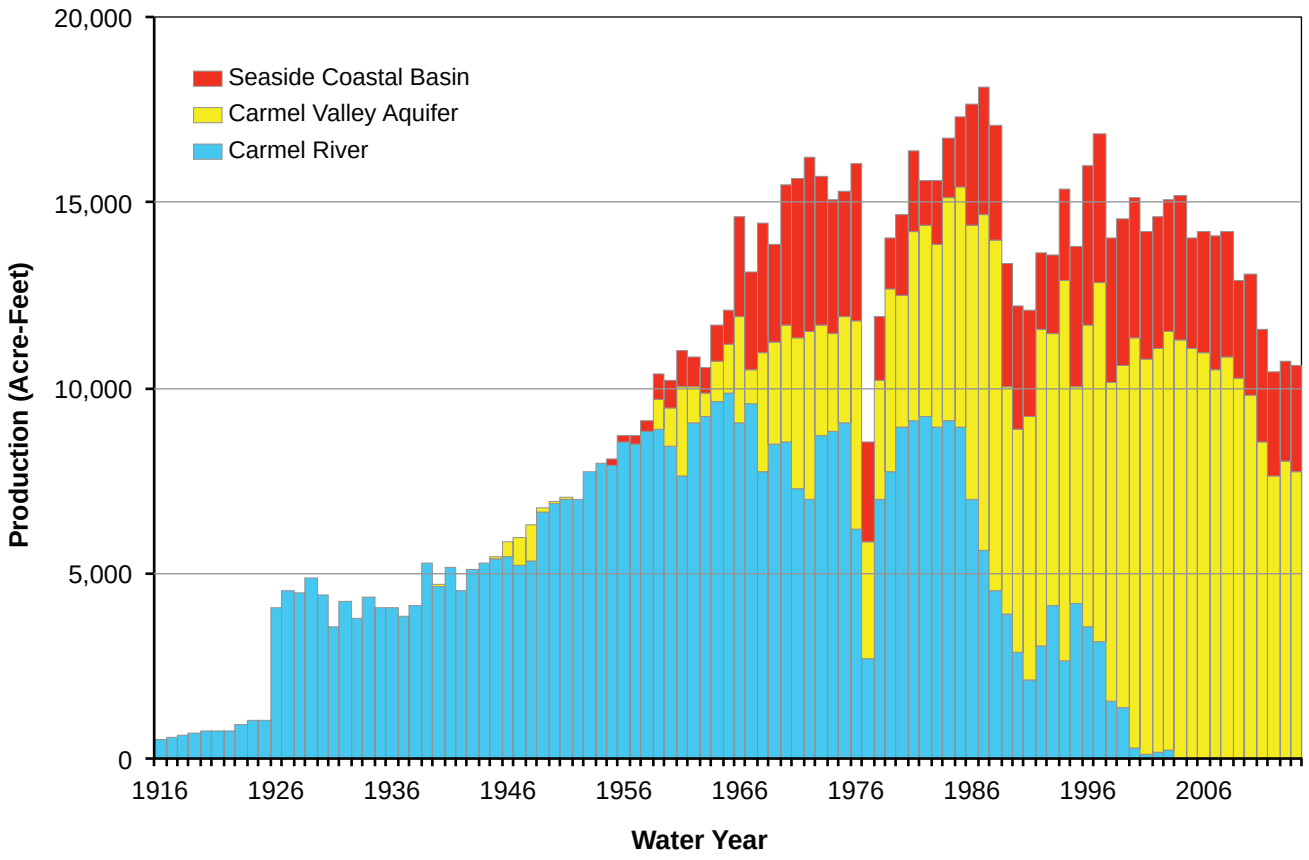
Table 3.12-2. Cal-Am Withdrawals, Carmel River Basin and Seaside Coastal Basin, 1995–2014

	Seaside Coastal Basin	Carmel River Basin			
Water Year	Ground Water	Ground Water	Surface Water	Subtotal	Total
1995	3,794	5,874	4,162	10,036	13,830
1996	4,319	8,174	3,527	11,701	16,020
1997	4,025	9,688	3,159	12,847	16,872
1998	3,910	8,597	1,557	10,154	14,064
1999	3,982	9,195	1,385	10,580	14,562
2000	3,754	11,092	258	11,350	15,104
2001	3,444	10,700	98	10,798	14,242
2002	3,521	10,893	175	11,068	14,589
2003	3,507	11,299	242	11,541	15,048
2004	3,918	11,282	0	11,282	15,200
2005	3,002	11,036	0	11,036	14,039
2006	3,264	10,954	0	10,954	14,218
2007	3,626	10,486	0	10,486	14,112
2008	3,390	10,835	0	10,835	14,225
2009	2,631	10,286	0	10,286	12,917
2010	3,284	9,786	0	9,786	13,069
2011	3,034	8,565	0	8,565	11,599
2012	2,811	7,646	0	7,646	10,457
2013	2,700	8,008	0	8,008	10,708
2014	2,871	7,744	0	7,744	10,615

Source: See **Appendix H**.

Notes:

Units are acre-feet per year. Production values for post water year 1998 are recorded values and include water produced from Carmel River Basin between January 1 and May 1 for injection into Seaside Groundwater Basin. For the Seaside Basin, the recovered water from injection is not included in the totals to avoid double-counting.



Note: "Cal-Am" refers to the California-American Water Company and its predecessor companies.

Figure 3.12-1
Cal-Am Water Production by Source: 1916-2014

Carmel River

The water supply setting for the Carmel River is presented below.

Hydrologic Setting

The Carmel River originates in the Ventana Wilderness at an elevation of approximately 5,000 feet and flows northwest for 35 miles before reaching the Pacific Ocean at Carmel Bay. The Carmel River Basin is comprised of the main stem of the Carmel River plus seven major tributaries and drains an area of approximately 250 square miles (see **Figure 3.12-2**).

Flows in the river rise rapidly in response to significant rainfall and fall quickly after rainfall ceases. Flows can peak in a matter of hours after rainfall begins, and very high flows seldom persist longer than three days.

The first significant rains of the season typically begin in November, but significant changes in instream flow resulting from these rains normally do not occur until December or January. Fall rains replenish soils that have dried out during summer; consequently little run-off occurs during this period.

The Carmel Valley aquifer is unconfined (there are no impermeable barriers between the groundwater surface and the atmosphere) and is highly permeable (laterally and vertically), recharging rapidly after extended dry periods. The aquifer is under the direct influence of the Carmel River. Due to the close connection between the alluvial aquifer and surface flows in the Carmel River, the State Water Board defines the alluvial aquifer as surface water. Historically, due to heavy reliance on the Carmel Valley aquifer as a source of water supply, the return flow from the aquifer to the river has decreased.

Surface Water Diversions

There are two dams on the Carmel River: San Clemente Dam and Los Padres Dam. Both are owned and operated by Cal-Am and have been used to regulate streamflow and supply water to users on the Monterey Peninsula. Diversions have been made from the San Clemente Reservoir though the Carmel Valley Filter Plant (CVFP) in the past. In 2003, the California Division of Safety of Dams (DSOD) required San Clemente Dam to be drawn down year-round, essentially eliminating the surface diversion from the reservoir. In 2008, the California State Coastal Conservancy (CSCC), Cal-Am, and National Marine Fisheries Service (NMFS) entered in to a Memorandum of Understanding (MOU) to indicate their intent to jointly seek implementation of dam removal and rerouting the river. In 2010, another MOU between these parties was entered into for dam removal and rerouting the river. Removing the dam would address DSOD safety concerns and remove the barrier to threatened Central Coast steelhead trout. Dam removal is underway and anticipated to be completed by 2016.

Seaside Aquifer

Within the Seaside Basin, the major Cal-Am and other significant water wells serving the local community are located in the Coastal Subareas portion of the Seaside Aquifer. The Seaside Coastal Subareas include the Northern Coastal and Southern Coastal portions of the Seaside Groundwater Basin and are shown in **Figure 3.12-3**. Roughly 25% of the Cal-Am municipal supply currently is

extracted from the Basin (see **Appendix H**). **Table 3.12-3** shows water production from the Seaside Coastal Subareas.

A lesser portion of Cal-Am's water and community water is derived from the Laguna Seca and Northern Inland subareas which are located inland of the Coastal Subareas.

Table 3.12-3. Seaside Coastal Basin Water Production (1995-2014)

Year	Cal-Am	Other	Total
Reporting Year 1995	2,800	479	3,279
Reporting Year 1996	4,429	636	5,065
Reporting Year 1997	4,651	797	5,448
Reporting Year 1998	3,563	588	4,151
Reporting Year 1999	3,578	659	4,237
Reporting Year 2000	4,013	1,011	5,024
Reporting Year 2001	3,307	979	4,286
Water Year 2002	3,522	903	4,425
Water Year 2003	3,507	959	4,466
Water Year 2004	3,918	953	4,871
Water Year 2005	3,002	848	3,850
Water Year 2006	3,264	841	4,105
Water Year 2007	3,626	722	4,348
Water Year 2008	3,390	931	4,321
Water Year 2009	2,631	888	3,519
Water Year 2010	3,284	399	3,683
Water Year 2011[a]	3,034	267	3,301
Water Year 2012[a]	2,811	264	3,075
Water Year 2013[a]	2,700	286	2,986
Water Year 2014[a]	2,871	NA	NA

Source: **Appendix H**

[a] These withdrawals do not include recovered groundwater from the aquifer and storage recovery project to avoid double-counting with withdrawals from the Carmel River Aquifer.

Units are acre-feet per year.

CAWD/PBCSD Recycled Water Project

The CAWD/PBCSD Recycled Water Project is a cooperative effort involving the CAWD, PBCSD, Monterey Peninsula Water Management District (MPWMD) and the Pebble Beach Company.

The Recycled Water Project involved the construction of a new tertiary treatment plant located on the site of the existing CAWD secondary wastewater treatment plant, the construction of a new distribution system and storage tank used to distribute the recycled water to the receptor sites in Pebble Beach, and irrigation system improvements. The tertiary treatment plant produces water which meets Title 22 standards specified by the California Department of Health Services, and which is a quality acceptable for human contact.

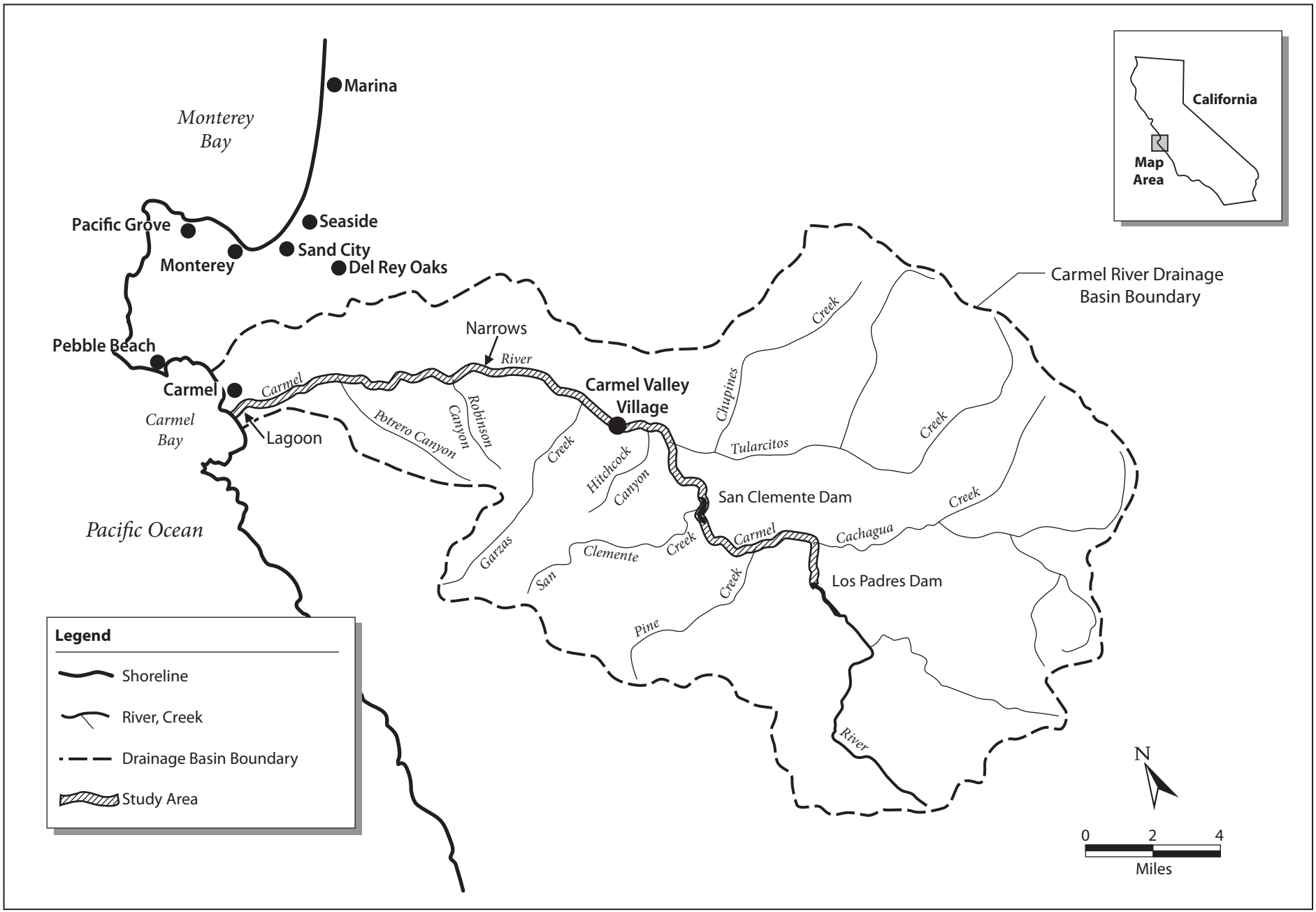


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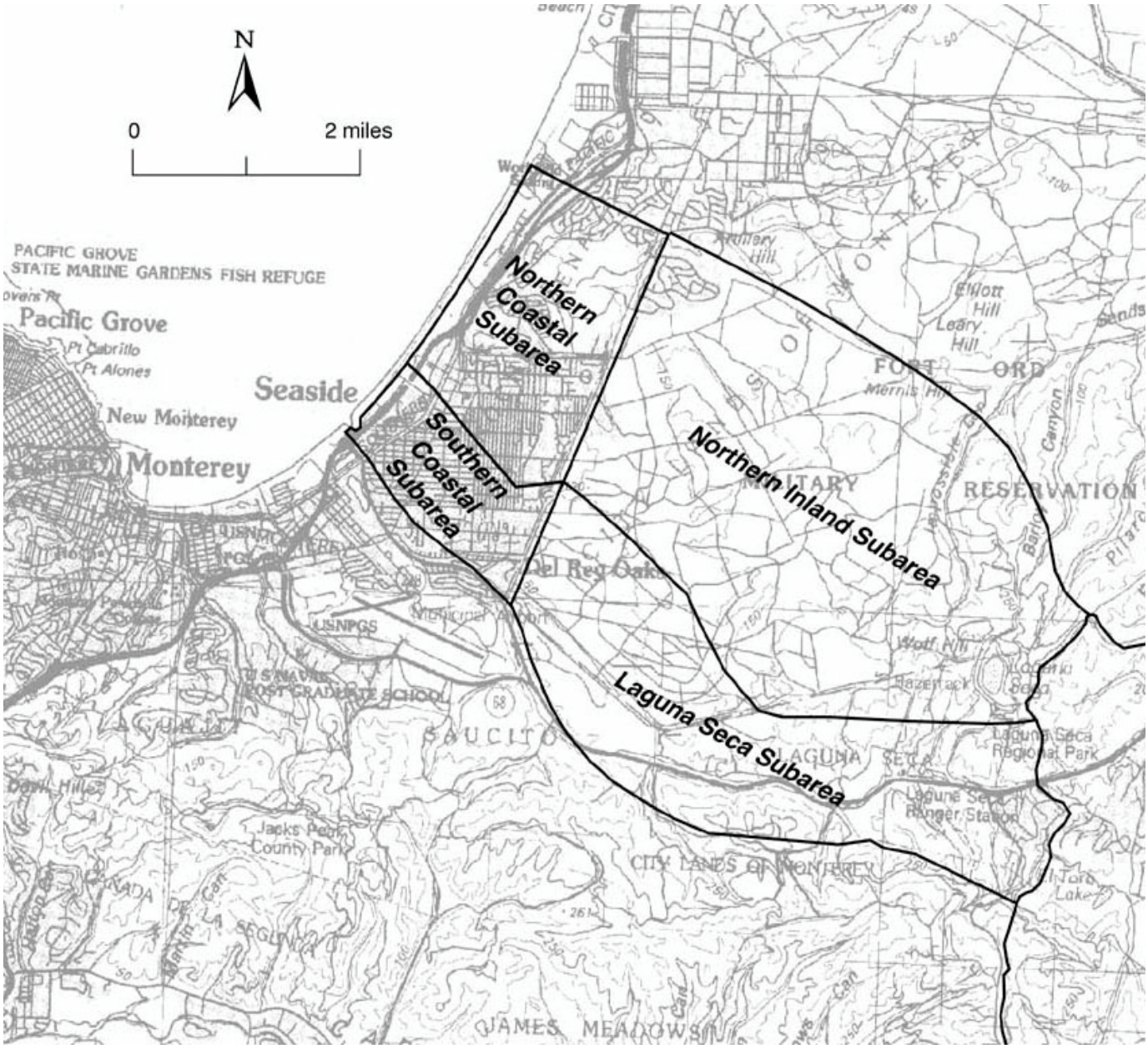
Figure 3.12-2
Carmel River Watershed



Source: Modified from Yates, Feeney, and Rosenberg 2002, Figure 1.

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Figure 3.12-3
Seaside Groundwater Basin

Certificates of Participation (COPs) were executed and delivered at the direction of the MPWMD in December 1992 in the amount of $33,900,000 to finance construction of the Recycled Water Project. The MPWMD owns the recycled water for the purpose of resale of such water and agreed to provide all revenues from recycled water sales to fund operating costs of the Recycled Water Project as well as principal and interest on the COPs. To the extent of any shortfall in revenues, Pebble Beach Company has guaranteed payment of principal and interest on the COPs as well as any operating deficiencies. Because of PBC's guarantee, no other assets or revenues of MPWMD are at risk due to the Recycled Water Project. Construction of Phase I of the project was completed in October, 1994.

The Recycled Water Project began supplying treated water in late 1994 (Water Year 1995). Between 1995 and 2010, the Recycled Water Project supplied between 550 and 1,000 acre-feet per year (AFY) for irrigation of eight golf courses, athletic fields and other landscaped areas in the Del Monte Forest. Irrigation was supplemented with potable water usage of approximately 110 to 430 AFY. Use is highest in summer and lowest in winter. Summaries of water supplied from the plant are presented in **Appendix H**.

Prior to 2009, the Recycled Water Project had to supplement recycled water with potable water for turf irrigation for three reasons: wastewater availability, peak demand, and recycled water quality. Prior to 2009, there were insufficient storage facilities for treated wastewater, peak demand would often exceed recycled plant production capacity, and recycled water was too high in salt content to irrigate sensitive turf areas (in particular golf course greens) without periodically flushing these areas with potable water. Phase II of the project was implemented between 2006 and 2009 and consisted of two elements: 1) the rehabilitation of Forest Lake Reservoir to provide a large recycled water storage facility, and 2) the installation of an additional microfiltration/reverse osmosis treatment facility at the Recycled Water Project to reduce the salt content of the recycled water. Phase II of the project relieved the constraints on the plant in regard to wastewater availability (by producing recycled water during low demand months and then storing in the reservoir), peak demand (by storing backup supply in the reservoir), and water quality (through additional treatment). In 2009, supplemental potable water was reduced to just 6% of the overall irrigation water supplied through the plant. From 2010 through 2014, no potable water has been necessary for irrigation and this is expected to continue in the future.

There were a total of 380 acre-feet (AF) of water entitlements issued as part of the initial financing of Phase 1 of the Recycled Water Project, of which 15 AF were dedicated to the Macomber Estates and Griffin Trust, leaving 365 AF for Pebble Beach Company uses. The Company has used approximately 12 AF for prior projects. In the 2012 Final EIR for the Pebble Beach buildout project, the buildout project was assumed to require up to 145 AF of the entitlement.

To help finance the eventual $33 million cost of Phase II, MPWMD adopted Ordinance 109 on May 27, 2004. Ordinance 109 allowed Pebble Beach Company to sell up to 175 AF of the Company's remaining unused water entitlement to interested Del Monte Forest residential property owners, with the proceeds from such sales to be used to pay for Phase II. Since 2004, Pebble Beach Company has sold approximately 123 AF of its water entitlement to Del Monte Forest residents, leaving 52 AF remaining that could still be sold (of the 175 AF allowed). Residents that have purchased entitlements are actually only using approximately 37 AF of their 123 AF as of early 2015 (MPWMD 2015).

Taking into account prior Pebble Beach Company dedications, the expected dedications for the buildout project, and the amount sold to other benefitted Del Monte Forest properties, there is

approximately 86 AF of unsold and unused water entitlement available for Pebble Beach Company use as of early 2015.

Table 3.12-4 provides a summary of Recycled Water Project production from 1995 to 2014 (Water-years).

Table 3.12-4. CAWD/PBCSD Recycled Water Project, Water Production, Water Years 1995-2014

Water Year	Recycled	Potable	Total Used	% of Total Used that is Recycled Water	Rainfall	Rainfall Year Type
1995	615	178	792	78%	28.4	Wet
1996	552	384	936	59%	21.0	Average
1997	782	327	1,109	71%	21.7	Average
1998	590	111	701	84%	47.4	Wet
1999	667	235	902	74%	20.1	Average
2000	769	299	1,068	72%	21.0	Average
2001	599	373	972	62%	19.2	Average
2002	734	303	1,037	71%	15.6	Dry
2003	721	308	1,030	70%	18.4	Average
2004	791	435	1,226	65%	16.4	Dry
2005	674	207	881	77%	30.5	Wet
2006	768	152	920	83%	24.8	Wet
2007	918	160	1,078	85%	14.1	Critically Dry
2008	1,023	110	1,133	90%	14.4	Critically Dry
2009	991	64	1,055	94%	17.5	Average
2010	903	0	903	100%	23.9	Wet
2011	843	0	843	100%	24.5	Wet
2012	984	0	984	100%	13.5	Critically Dry
2013	936	0	936	100%	13.1	Critically Dry
2014	976	0	976	100%	8.9	Critically Dry
1995 to 2014 Average	792	182	974	82%	20.7	
2010-2014 Average	928	0	928	100%	16.8	
1950 to 2014 Average					19.1	

Source: **Appendix H**

Effect of Recycled Water Project on Carmel River Withdrawals

The Recycled Water Project has reduced the amount of withdrawals from the Carmel River to serve irrigation demand in the Del Monte Forest starting in Water Year 1995 through the use of recycled

water. **Table 3.12-5** and **Figure 3.12-4** shows the historic effect of the Recycled Water Project on Cal-Am withdrawals from the Carmel River. [2]

Table 3.12-5. Carmel River Withdrawals with and without the Recycled Water Project

Year	Type	Cal-Am Carmel River Withdrawals	RWP Historic Reductions	Historic Carmel River without the RWP
1995	Wet	10,036	615	10,651
1996	Average	11,701	552	12,253
1997	Average	12,847	782	13,629
1998	Wet	10,154	590	10,744
1999	Average	10,580	667	11,247
2000	Average	11,350	769	12,119
2001	Average	10,798	599	11,397
2002	Dry	11,068	734	11,802
2003	Average	11,541	721	12,262
2004	Dry	11,282	791	12,073
2005	Wet	11,036	674	11,710
2006	Wet	10,954	768	11,722
2007	Critically Dry	10,486	918	11,404
2008	Critically Dry	10,835	1,023	11,858
2009	Average	10,286	991	11,277
2010	Wet	9,786	903	10,689
2011	Wet	8,565	843	9,408
2012	Critically Dry	7,646	984	8,630
2013	Critically Dry	8,008	936	8,944
2014	Critically Dry	7,744	976	8,720
Avg.	**All**	**10,335**	**792**	**11,127**

Source: **Appendix H**
RWP = Carmel Area Wastewater District/Pebble Beach Community Services District Recycled Water Project

[2] Prior to the Recycled Water Project originally coming on line in 1994, golf course irrigation in the Del Monte Forest was consuming 850acre feet per year (AFY) to over 1,000 AFY (See Final EIR for the PBC buildout project). Between 1994 and 2005, the Recycled Water Project offset 550 AFY to 780 AFY of Carmel River withdrawals through production of recycled water for turf irrigation. With completion of the Forest Lake Reservoir improvements (in 2006) and the Reverse Osmosis plant at the CAWD WWTP (in 2009), the Recycled Water Project can now offset all turf irrigation demands from the golf courses in the Del Monte Forest (as well as a few other users). Since 2010, the Recycled Water Project offsets Carmel River withdrawals through provision of recycled water on average of 928 AFY, depending on water year type (see Appendix H). This total is approximately 2.5 times the total entitlement amount of 380 AFY, including 15 AFY for two parties other than the applicant. Consequently, the water entitlement is directly related to the offset of a documented prior potable water use of up to more than 1,000 AFY in exchange for a water entitlement of 380 AFY. However, as discussed below this EIR discloses impacts relative to both existing conditions and without project conditions, not to a prior year baseline before the Recycled Water Project became operational.

Carmel River Biological Resources Setting

Introduction

The Carmel River and its watershed are shown on **Figure 3.12-2**.

Existing diversions from the Carmel River have had an adverse effect on the following resources.

- The riparian corridor along the river below San Clemente Reservoir (River Mile (RM) 18.5 - river miles represent distances measured upstream of the mouth of the Carmel River).
- Steelhead and other fish that inhabit the river.
- The wildlife which depend on riparian and riverine habitat (State Water Resources Control Board 1995)

The focus of this setting is on the same resources, in particular, riparian vegetation, steelhead, and the California red-legged frog. These resources are the most obvious indicators of the river's biological health. Riparian (streamside) vegetation often defines a stream's presence to the human eye and provides habitat to a broad array of vertebrate and invertebrate species. The steelhead trout that occupy the river are the largest aquatic species in the system and are sought after by both fishermen and vertebrate predators. The riparian vegetation and the steelhead are also excellent indicators of water quality and flow conditions in the river. Past water supply project impact analyses on the Carmel River have identified potential significant effects on riparian vegetation and the steelhead trout and the red-legged frog. The California Department of Fish and Wildlife (CDFW) considers riparian vegetation a sensitive plant community because of its long-term loss to agriculture and development, and because of the species diversity it supports. The steelhead trout and the red-legged frog are the focus of analyses because ESA protects them as threatened species.

The biological resources setting related to water supply impacts focuses on these three resources. Other biological resources dependent on the Carmel River are noted below as well.

Riparian Vegetation

Vegetation Composition

Vegetation along all portions of the Carmel River generally consists of the same species; however, the relative species abundance and canopy structure differs between the river segments in the Upper, Middle, and Lower Carmel Valley.

The Upper Carmel Valley, upstream of San Clemente Dam (RM 18.6), consists mostly of narrow canyons with a narrow strip of riparian forest generally conforming to Holland's (1986) Central Coast Cottonwood-Sycamore Riparian Forest. Dominant species include western sycamore (*Platanus racemosa*), black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), white alder (*Alnus rhombifolia*), coast live oak (*Quercus agrifolia*), California bay (*Umbellularia californica*), California buckeye (*Aesculus californicus*), and willows (*Salix species*). Understory species typically include poison oak (*Toxicodendron diversilobum*), coffeeberry (*Rhamnus californica*), blackberries (*Rubus species*), and others. Marshy vegetation occurs along slower reaches of the river (Monterey County 2004).

Riparian vegetation in the Middle Carmel Valley (San Clemente Dam to The Narrows) (RM 9.5) and in the Lower Carmel Valley (the Narrows to the river mouth) conforms generally to Holland's (1986)

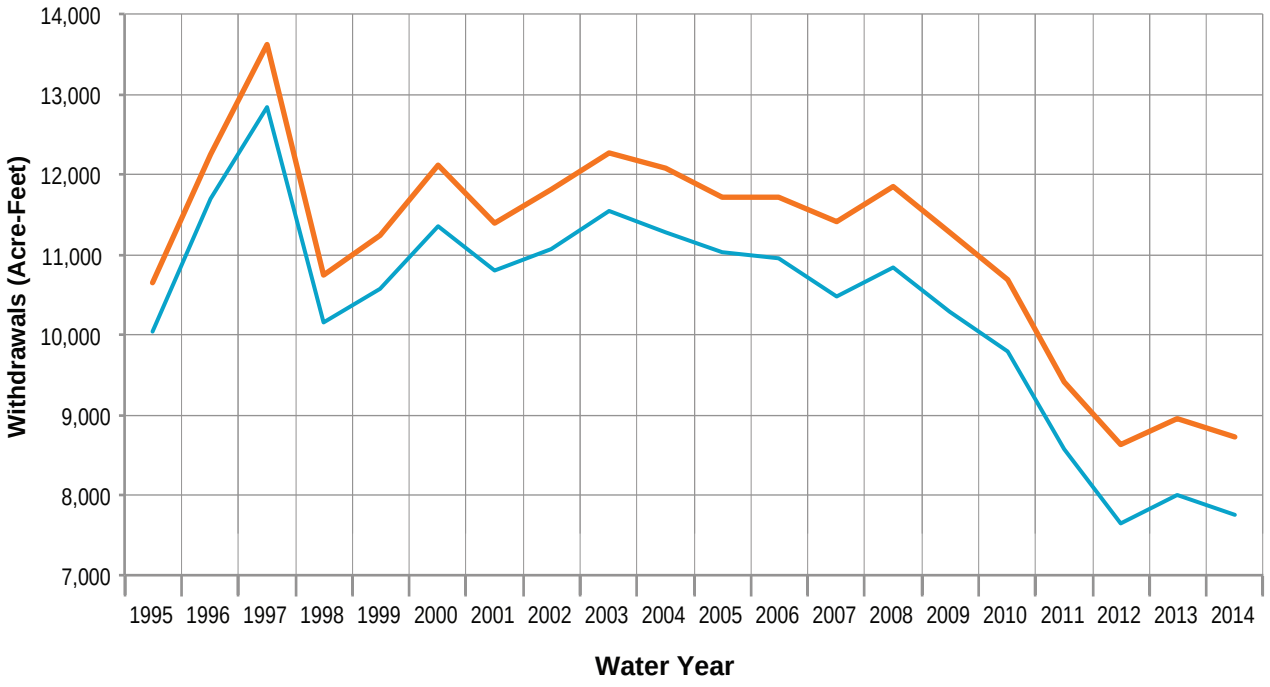

Figure 3.12-4
Cal-Am Carmel River Withdrawals with and without the Recycled Water Project, 1995 - 2014

Central Coast Arroyo Willow Riparian Forest. It is dominated by arroyo willow (*S. lasiolepis*), with red willow (*S. laevigata*), shining willow (*S. lucida* ssp. *lasiandra*), and narrow-leaved willow (*S. exigua*); and with black cottonwood as an important component of the overstory and with sycamore, box elder (*Acer negundo*) the other species listed above. In the drier outer floodplains of this region, coast live oak may dominate and the riparian vegetation conforms generally to Central Coast Live Oak Riparian Forest (Holland 1986). The Middle Carmel Valley has a steeper gradient and a more braided, less stable channel than the Lower Carmel Valley (Kondolf and Curry 1984). The vegetation in the Middle Carmel Valley tends to be more discontinuous than in the Lower Carmel Valley, where a more continuous riparian woodland or forest has developed (Monterey County 2004).

Riparian Vegetation along the Carmel River

Riparian vegetation along the Carmel River has been affected by a number of important natural and human-induced events.

The most important natural events that have affected riparian vegetation include floods and droughts. Major floods caused bank erosion and loss of riparian vegetation, but perhaps more importantly may also affect channel form and depth.

Droughts have probably had a substantial effect on riparian vegetation; however, the effect of droughts cannot be separated fully from human activities. For example, the drought of 1976-1977 led to extremely heavy groundwater pumping and unprecedented drawdown in the lower Carmel Valley (Monterey County 2004). To what extent the drawdown was the result of pumping or of the natural effects of drought cannot be determined. However, an analysis of simulated unimpaired flows for 1977, using the MPWMD's Carmel Valley Simulation Model (CVSIM) model, shows that the river would have been dry at the USGS "Near Carmel" gauge site (RM 3.6) without the presence of dams and pumping wells. McNiesh points out that drought alone cannot be blamed for vegetation decline in the Carmel Valley, because vegetation decline occurred prior to the 1970's drought and continued after the water table recovery that followed the drought (Monterey County 2004).

The major human-induced changes that have affected the riparian vegetation include encroachment on the riparian vegetation as the result of farming, housing development, and golf course construction, construction of San Clemente (1921) and Los Padres (1948) Dams, and groundwater pumping (Monterey County 2004). In addition, installation of bank protection has reduced lateral movement of the river (Monterey County 2004). The dams have relatively small reservoirs that have relatively little effect on flood peaks. Diversions and groundwater pumping have caused the once perennial river to become characteristically dry in late summer. However, reservoir releases also periodically cause increased flows in reaches below the dams that otherwise would have been dry. The dams also trap sediment which has led to downstream channel incision (Kondolf and Curry 1984). Groundwater pumping by Cal-Am and others has been identified as a major impact on riparian vegetation (Monterey County 2004).

McNiesh, Zinke, and others have demonstrated that groundwater pumping has led to local riparian vegetation mortality (Monterey County 2004). This mortality has been associated with local bank erosion. McNiesh has shown that not only total drawdown, but also the rate of drawdown, is critical for survival of riparian trees. The precise amount of drawdown that can be tolerated by vegetation cannot be defined, because it is dependent on a large number of interrelated factors (Monterey County 2004). However, a general model outlined by McNiesh can be used to predict thresholds of damage to vegetation. Mild stress of riparian trees occurs if drawdown is between 4 and 8 feet in a season or between 1 and 2 feet per week. Severe stress occurs when seasonal drawdown is greater

than 8 feet, or drawdown in a week exceeds 2 feet. These are drawdown rates in excess of the normal seasonal fluctuation in groundwater levels.

Steelhead

NMFS has listed steelhead trout in the Carmel River Basin as a threatened species. NMFS considers these fish to be part of a broader population designated as the south-central California Coast Distinct Population Segment (DPS). The steelhead population within the California Central Coast was listed as threatened under the federal Endangered Species Act in 1997 and critical habitat was designated in 2005, including the Carmel River

Life History

Steelhead are anadromous (sea-run) rainbow trout that spawn in freshwater, spend the first year (or years) of life in freshwater, and then migrate to the ocean where they continue to grow and mature before returning to spawn.

Following upstream migration, the female establishes a territory and digs a redd (gravel nest) with her tail, usually in areas where there is sufficient subsurface flow to sustain eggs and alevins (yolk-sac fry) through the incubation period (usually the lower ends of pools or heads of riffles). She then lays the eggs in the redd where they are fertilized by one or more males. Eggs buried in redds hatch in 3-4 weeks (at 10-15 degrees Celsius), and fry emerge from the gravel 2-3 weeks later. The fry initially live in quiet waters close to shore and soon establish feeding territories that they defend against other juveniles. As they grow during spring and summer, juvenile steelhead move to faster, deeper water in riffles, runs, and pools. They typically maintain positions near swift currents that carry drifting aquatic and terrestrial insects on which they feed. Some juveniles may move downstream to the lower reaches of streams or lagoons during the summer and fall to complete their freshwater rearing phase.

After one year of stream residence, most juveniles become smolts (juveniles adapted to seawater) and migrate downstream to the ocean in late winter and spring. Some juveniles remain in fresh water 1-2 more years before they enter the ocean. Because juvenile steelhead rear for a year or more in freshwater, juveniles of different age groups are usually present year-round in California coastal streams.

Most steelhead spend 1-3 years in the ocean before returning to spawn. Some adults return to the ocean after spawning (kelts) and return to spawn again. Occasionally, juvenile steelhead mature in freshwater and spawn without migrating to the ocean. This occurs most frequently during droughts when juveniles are trapped in the river and cannot migrate to the ocean.

Steelhead within the Carmel River

The upstream migration of adults in the lower Carmel River primarily occurs from mid-December through mid-April in response to flows of sufficient magnitude and duration to stimulate movement of adults, permit passage of adults past critical riffles in the lower river, and keep the river mouth open between storms. Although suitable migration conditions may occur earlier, adults typically do not begin arriving at San Clemente Dam until late December or January. Depending on migration opportunities later in the season, the migration of adults may continue into April.

The primary spawning season for steelhead in the Carmel River is February through March, but spawning may continue through mid-April. Downstream of San Clemente Dam, the highest concentration of redds generally occurs upstream of the Narrows but redds have been observed further downstream.

In the Carmel River, most steelhead fry emerge from the gravel in April-June and rear for at least one year in the river before migrating to the ocean as smolts. Juveniles may migrate downstream to lower reaches of the Carmel River in late spring or early summer of their first year of life (young-of-the-year or age 0+ juveniles) or in late fall and early winter of their first, second, or third years (as yearling and older juveniles). Juveniles of all age classes may migrate as far downstream as the lagoon in years when flows to the lagoon are sustained through the summer and fall. Substantial downstream movement of juveniles in late fall and early winter appears to be associated with the initial storms of the season that result in spill and increased flows downstream of San Clemente Dam. Viable steelhead populations in the Carmel River depend on sufficient attraction flows, passage flows for adults and smolts, suitable spawning and egg-incubation conditions, and good rearing conditions (Monterey County 2004).

Many juvenile steelhead in the Carmel River become smolts and enter the ocean in late winter and spring after one year in the river. A small number remains for two to three years before emigrating.

The steelhead run in the Carmel River at the time of the Spanish explorers was believed to be upwards of 12,000 fish (State Water Resources Control Board 1995). The river was overfished during the mid-to-late 1800s, and the runs subsequently declined. Snider (1983) reported annual runs of 1,200 adult steelhead at the San Clemente Dam fishway during the mid-1970s. During droughts in 1976-77 and the late 1980s, no steelhead passed San Clemente Dam. The Lagoon never opened during the four years from 1987 to 1990. The density of rearing juvenile steelhead reached very low levels by 1989 but has increased in subsequent years. After lows of zero returning adult steelhead in 1989-90, one fish in 1991, and 15 in 1992, the run has increased to an average of a few hundred fish.

California Red-Legged Frog

The CRLF is listed as threatened under the federal Endangered Species Act. It has been extirpated from 70% of its former range and now is found primarily in coastal drainages of central California, from Marin County, California, south to northern Baja California, Mexico. CRLF has been reported from several relatively isolated, although widely distributed locations, along the Carmel River. This Carmel River population has been identified by USFWS as a core population, and is targeted for development and implementation of a management plan (USFWS 2002).

Information on CRLF occurrences in the lower Carmel River floodplain, between approximately RM 28 (above Los Padres Dam reservoir) and the Carmel River Lagoon, was taken primarily from information provided in the Draft Interim Biological Assessment for the Carmel River Dam and Reservoir Project (Monterey County 2004), although other sources such as the Recovery Plan for the CRLF (USFWS 2002) were also reviewed.

The USFWS most recently updated designated critical habitat for the CRLF in 2010 (USFWS 2010). Most of the lower Carmel River watershed was included in critical habitat. Only a few localities in California have been identified with more than 350 adults; one of these is Rancho San Carlos, a private ranch on the upper portion of the Carmel River Valley (USFWS 2002).

Other Biological Resources

The fish community in the Carmel River is diverse relative to other Central Coast streams. Twenty species have been identified within the river and lagoon, including 12 native and 8 introduced species. Sculpin (*Leptocottus armatus*), brown trout (*Salmo trutta*), hitch (*Lavinia exilicauda*), stickleback (*Gasterosteus aculeatus*), and steelhead are the most abundant species. Species composition in the lower river and lagoon may change as a function of the connectivity of the mouth of the river with the ocean (Monterey County 2004).

While other biological resources of interest (such as birds, benthic invertebrates, amphibians) are also dependent on the overall health of the river system, impacts on these groups can be assessed with some reliability by considering impacts on flow on riparian vegetation, steelhead, and CRLFs. Riparian vegetation provides habitat for numerous wildlife species including neotropical song birds and raptors. Special-status birds that may occur in the area and nest and forage in riparian habitat along the river include the federal and state endangered least Bell's vireo (*Vireo bellii*), the yellow warbler (*Dendroica petechia brewsteri)*, and the yellow-breasted chat *(Icteria virens*) (Monterey County 2004). Special-status raptors that may utilize riparian vegetation in the Carmel Valley include sharp-shinned hawks (*Accipiter striatus*) and Cooper's hawk *(Accipiter cooperi)* (Monterey County 2004). Other sensitive amphibian and reptile species that could be affected by increased diversions include the southwestern pond turtle (*Clemmys marmorata pallida*) and possibly the foothill yellow-legged frog (*Rana boylii*) (MPWMD 1998).

Historic Effect of the Recycled Water Project on Carmel River Biological Resources

As discussed above, the Recycled Water Project has reduced withdrawals from the Carmel River to serve irrigation uses in the Del Monte Forest from late 1994 to the present, which has benefitted (and will continue to benefit) the following biological resources dependent on the river.

- **Riparian vegetation**: A reduction in groundwater pumping reduces stress to local riparian vegetation and increases access to water and reduces local bank erosion. Species dependent on riparian vegetation benefit through maintenance and expansion of forage, nesting, and rearing habitat. Bank stability is improved with the expansion of extant riparian vegetation. Stream temperatures are lowered due to increase in shade cover affecting steelhead and other aquatic resources sensitive to stream temperature fluctuations.
- **Steelhead:** Existing low-flow conditions in the Carmel River during average, dry, and very dry years are improved by decreased groundwater pumping which results in improvement of migration potential and stream connectivity, expanding spawning areas, lowering temperatures, increasing dissolved oxygen, and reducing salinity in downstream coastal areas.
- **California Red-Legged Frog:** Reduced groundwater pumping in average, dry, and very dry years increases the water table, potentially improving successful breeding and expanding rearing locations for CRLF. Potential increases in riparian vegetation described above also favorably affect this species, which utilize riparian areas for foraging and dispersal.
- **Other Resources:** Other fish species and other aquatic resources dependent on adequate flows and water quality experience similar benefits described above for steelhead. Special-status birds, raptors and other species gain breeding and foraging locations with expansion of riparian vegetation and areas. Special-status wildlife species, such as southwestern pond turtle, also see

an improvement of habitat conditions due to increase of flow and raising of water tables, particularly in summer and early fall periods of average, dry, and very dry years.

Regulatory Setting and Water Supply Planning

Relevant state and local regulations and prior legal rulings that apply to water supply and demand are discussed below.

SB 610 and SB 221 Applicability

SB 610 and SB 221 (Water Code Section 10912 and Government Code Section 65867.5, respectively) are companion measures that support planning between water suppliers and local jurisdictions. SB 610 expands the existing requirement that lead agencies confer with affected public water agencies when preparing a negative declaration, mitigated negative declaration, or EIR for certain large projects. The water agency is required to provide the lead agency a detailed water supply assessment (WSA) of whether the water agency has sufficient current and future water supplies to service the proposed project and other expected future projects (Water Code Section 10910). The WSA must be considered during the CEQA process. If there is insufficient water, the County must include that determination in its findings for the project (Water Code Section 10911).

Pursuant to Water Code Section 10912, a WSA is required for a proposed residential development of more than 500 units. Because the Project would have only 24 units, a WSA is not required.

Carmel River: State Water Resources Control Board Order WR95-10 and State Water Resources Control Board Order WR2009-0060 (CDO)

In 1995, the State Water Board issued Order WR 95-10, which found that Cal-Am did not have sufficient water rights for its existing water diversions from the Carmel River. The State Water Board found that Cal-Am had rights to only 3,376 AFY, and ordered Cal-Am to do the following: 1) immediately cease and desist from diverting any water from the Carmel River in excess of 14,106 AFY; 2) obtain appropriative permits for its diversions; 3) obtain water from other sources to make 1:1 reductions in unlawful diversions; and/or 4) contract with another agency having rights to divert and use water from the Carmel River. Cal-Am was also ordered to implement a water conservation plan to further reduce diversions to 11,990 AFY in 1996 and to 11,285 AFY in 1997 and subsequent years. The State Water Board subsequently required Cal-Am to maintain a water conservation program with the goal of limiting annual diversions to 11,285 AFY until full compliance with the order was achieved (State Water Resources Control Board 1995). A discretionary exemption to certain limitations of WR 95-10 related to the applicant's entitlement is discussed in the section on the history of the entitlement below.

The State Water Board (in Decision D-1632, as amended in Order WR 98-04) has also determined that the Carmel River is a "fully appropriated stream" from the mouth of the river upstream to the Sleepy Hollow Gage (RM 17.2) between May 1 through December 31 and that the State Water Board has permit authority in this reach. Certain existing diversions present prior to Decision D-1632 are allowed to apply for a permit to allow diversion between May and December; all other applicants must limit their diversions to between January and April.

In October 2009, the State Water Board issued Order WR2009-0060, a cease and desist order (CDO), which prescribes a series of significant cutbacks to Cal-Am's pumping from Carmel River after 2010 leading to compliance with a limit of withdrawals to 3,376 AFY (amount of Cal-Am's legal rights) by the end of 2016. Specifically, it includes a schedule for Cal-Am to reduce diversions from the Carmel River, bans new water service connections (with certain exceptions, including for connections related to the applicant's entitlement), bans increased use of water at existing service connections resulting from a change in zoning or use, establishes a requirement to build smaller near-term water supply projects, and requires reporting procedures. If a new water supply cannot be built by the end of 2016 and the 3,376 AFY limit is enforced, then the CPUC, which regulates Cal-Am as a water utility, may require water rationing and/or a moratorium on new water permits for construction/remodels. Customers in Del Monte Forest using an entitlement from the Pebble Beach Wastewater Reclamation Project (including the Project) are not subject to the moratorium, but are subject to any rationing program that affects the Cal-Am water system.

Seaside Aquifer Adjudication

Most of the Seaside Area groundwater basin is within the incorporated cities of Marina, Seaside, and Sand City. The Seaside Area basin is composed of a number of smaller sub-basins, and the boundaries of the basin are poorly understood, particularly under Monterey Bay. Recent water use within the basin, excluding recovery of water injected from the ASR project (2011–2013) has averaged about 3,100 AFY (see **Appendix H**).

Because of the 1995 Order WR 95-10 that ruled Cal-Am did not have a legal right to approximately 70% of the water it had been diverting from the Carmel River (refer to Carmel River discussion above), Cal-Am began drawing more water from groundwater wells within the Seaside groundwater basin. In 2006, the basin was adjudicated and a watermaster was appointed to manage the basin and bring its groundwater budget into balance. The adjudication resulted in a court-ordered physical solution to the basin's groundwater problem. The operating yield for three years beginning in 2007 for the basin as a whole was defined as 5,600 AFY (including 4,611 AFY for the coastal subareas) including both Cal-Am and other users. The judgment requires a 10% decrease in operating yield for the coastal subareas every three years beginning in 2010. The decreases are to continue until production reaches the "natural safe yield" of 3,000 AFY established under the judgment. The watermaster adopted the Seaside Monitoring and Maintenance Program in 2006 to implement the decreases (MPWMD 2007). Cal-Am's current (2014) allocation for the Seaside Aquifer is 2,816 AFY (including 2,669 AFY for the Coastal Subareas and 147 AFY for the Laguna Seca Subareas). Cal-Am's ultimate adjudicated allocation is 1,474 AFY and withdrawals will be reduced to that level over time.

This analysis presumes that there would be no increase in withdrawals from the Seaside Aquifer to serve water demand generated by the Project from this aquifer due to the constraints noted above. Some or all of the actual water serving the Project may come from the Seaside Aquifer but due to the adjudication, this increased demand cannot result in overall increase of withdrawals from the Seaside Aquifer by Cal-Am which is legally restricted.

History of Pebble Beach Company's Water Entitlement

Following is a summary of the water entitlement relative to the applicant's properties within the Del Monte Forest.

In 1989, MPWMD adopted Ordinance 39, which offered to provide a permanent dedication of potable water to users who guaranteed financing of the CAWD/PBCSD Recycled Water Project, which would reclaim wastewater for irrigation use on golf courses and other uses in the Del Monte Forest. The intent of the Recycled Water Project was to lower use of potable water for irrigation by an average of 800 AFY by provision of recycled water for irrigation.

A Fiscal Sponsorship Agreement was signed by MPWMD and the Pebble Beach Company, in which the applicant guaranteed financing for the Recycled Water Project to be operated by CAWD and PBCSD. In return, the applicant would be granted a dedicated water entitlement of 365 AFY of potable water for specific "benefited" properties in the Del Monte Forest. An additional 15 AFY entitlement would be granted to two other property owners on Areas S and W in the Del Monte Forest who also participated in the agreement. The total entitlement granted was for 380 AFY of potable water. The right to the remaining water savings would be held by MPWMD.

The Agreement identifies this entitlement as a vested property right and allows the applicant the right to reallocate the water entitlement among the benefited properties, provided that the annual water usage among all benefited properties does not exceed the aggregate water entitlement held by the applicant.

In 1994, the Recycled Water Project and the distribution and storage system were constructed and began operations.

As noted above, in 1995, the State Water Board found that Cal-Am did not have sufficient water rights for its existing water diversions from the Carmel River (Order WR 95-10) and required Cal-Am to reduce its diversions and take actions to implement a water project to replace its illegal diversions. In 2009, the State Water Board issued a cease and desist order directing Cal-Am to take various actions to further curtail and reduce its illegal diversions of water from the Carmel River (Order WR2009-0060). The final Order WR 2009-0060 allowed Cal-Am to divert water to supply the applicant's water entitlement from MPWMD until December 31, 2016. The original Order prohibited Cal-Am from diverting water from the Carmel River to supply the applicant's water entitlement. The applicant and other parties separately filed petitions with the State Water Board for reconsideration of Board Order WR 2009-0060. The applicant's petition focused on challenging the prohibition of Cal-Am diversions to supply the water entitlement. Upon review of this petition, the State Water Board determined that Cal-Am could provide water from the Carmel River to supply the applicant's water entitlement, provided the water provided is within Cal-Am's legal water rights. The State Water Board also determined that WR 2009-0060 does not contain language extinguishing the applicant's entitlements but affirms that the entitlements must be served in a manner consistent with the water rights held by Cal-Am. When Cal-Am develops a new source of water that makes water available for new connections consistent with Order WR 2009-0060, the entitlements will apply to that new supply (State Water Resources Control Board 2010).

In summary, Cal-Am can increase withdrawals from the Carmel River to supply new connection for the applicant's entitlements until December 31, 2016 without limitation. After December 31, 2016, Cal-Am would have to supply the applicant's entitlement from water withdrawn from the Carmel River within its legal rights or from other legal sources, such as a new alternative regional supply project. Increased withdrawals from the Seaside Aquifer would not occur to serve the Project due to the limits established by the adjudication, although the actual water to serve the Project may come from the Seaside Aquifer because the aquifer is oversubscribed and subject to constraint by the basin adjudication described above. Increased withdrawals from the Seaside Aquifer may occur in

the future in association with additional supply from aquifer and storage (and may serve the Project's demand) provided such withdrawals comply with the adjudication and do not result in depletion of the aquifer.

Pursuant to MPWMD Ordinance 109 the applicant is allowed to transfer up to 175 AFY of their remaining entitlement to other residential users. As of early 2015, the applicant had used 10 AFY of the entitlement for the previously developed Casa Palmero project, has sold approximately 123 AFY to other residential users, and will need up to 145 AFY for its buildout project approved in 2012. Subtracting these amounts from the original 365 AFY, there is approximately 87 AFY remaining entitlement for project or other use. As of 2014, the total amount of the original entitlement of 365 AFY actually used was approximately 49 AFY, leaving 316 AFY unused (MPWMD 2015).

Cal-Am's Monterey Peninsula Water Supply Project

Cal-Am's MPWSP is a proposed program to replace the water illegally withdrawn from the Carmel River by Cal-Am and water above Cal-Am's adjudicated allocation for the Seaside Aquifer and to provide adequate supplies for Cal-Am to meet its duty to serve customers in the Monterey District as required by Public Utilities Code Section 451.

Cal-Am submitted an application for the MPWSP in 2012 and the project is currently in CEQA review with a Draft EIR expected in Spring 2015. As described in the Notice of Preparation (NOP) for the project (CPUC 2012), the MPWSP would include the following elements.

- Seawater intake system consisting of eight 750-foot-long subsurface slant wells extending offshore into the Monterey Bay, and source water conveyance pipelines.
- Desalination plant and appurtenant facilities, including source water receiving tanks; pretreatment, reverse osmosis, and post-treatment systems; chemical feed and storage facilities; brine storage and discharge facilities; and associated non-process facilities. The desalination facility would be a new 9 mgd plant proposed to be located near Charles Benson Road, northwest of the MWRPC regional wastewater treatment plant and would produce 9,006 AFY on average.
- Desalinated water conveyance facilities, including pipelines, pump stations, clearwells, and a terminal reservoir
- Improvements to the existing Seaside Groundwater Basin ASR system, including two additional injection/extraction wells, a pump station, a product water pipeline, a pump-to waste pipeline, and pump-to-waste treatment which would expand the ASR project to 1,920 AFY, which would be a 1,000 AFY expansion over the existing capacity of 920 AFY.
- Including all elements, the MPWSP would produce, on average, an additional 10,006 AFY of new water supply.

An alternative with a smaller 5.4 mgd desalination project (annual production of approx. 5,500 AFY) is also being considered in which there would be a water purchase agreement for 3,500 AFY of product water from the Groundwater Replenishment Project (see description below).

The NOP (CPUC 2012) also mentions several other alternatives that may be considered in the EIR.

- DeepWater Desal Alternative: DeepWater Desal LLC is proposing the DeepWater Desal Alternative, a 25-mgd seawater reverse osmosis desalination facility that would serve Santa Cruz, San Benito, and Monterey Counties. The desalination facility would be constructed at

Capurro Ranch on a leased 8-acre property located on Highway 1 near Moss Landing. This site is immediately north of the Moss Landing harbor in Santa Cruz County, and approximately 1 mile from the proposed seawater intake to be located at the Sandholdt pier, which would be rebuilt under this alternative. The intake and brine discharge pipes would be anchored to the Sandholdt pier. Approximately 50 million gallons of raw seawater per day would be drawn via a passive open-water intake at a depth of about 100 feet through an existing pipeline and easement located on the edge of the Monterey Submarine Canyon.

- People's Moss Landing Water Desalination Project Alternative: The People's Project would be a 10-mgd desalination facility located at the Moss Landing Green Commercial Park, adjacent to the Moss Landing Power Plant on the former National Refractories & Minerals Corporation site. The proposed 200-acre site is currently zoned for heavy industrial use, and approximately 25 acres would be designated for the desalination plant. The People's Project would consist of the following major components: screened, passive open-water intake (existing, located at the former National Refractories and Minerals Plant site); outfall pipeline (existing); intake pump station (existing); pretreatment media filtration system; 10-mgd seawater desalination system; 45-mgd onsite product water storage tanks; post-treatment facilities; product water pump station; solids handling system; electrical and solar power supply and energy recovery system; and approximately 13 miles of transmission and/or distribution pipeline to convey product water to the Monterey Peninsula.
- Conservation Alternative: As an alternative to the proposed project, Cal-Am would implement water reduction efforts and other conservation measures to reduce demand on the existing water supply. This alternative, which would further expand conservation programs, could set stricter conservation requirements for residential and commercial customers. Under this alternative, Cal-Am would reduce system water loss via leakage control zones, pressure control, acoustic monitoring, transmission main testing, and main replacement programs. Cal-Am would use tiered rates to reduce water use. Cal-Am would also work with customers to promote water-wise landscaping and turf replacement, graywater use, plumbing retrofits, and other best management practices.
- Locational Alternatives: The MPWSP EIR will also consider locational alternatives to the MPWSP preferred project, including alternative desalination plant locations and sizes (capacity); alternate pipeline alignments; and alternate intake well locations and configurations (i.e. open water intake; vertical wells; Ranney collector wells; etc.).

Pure Water Monterey Groundwater Replenishment Project

The GRP would include replenishment of the Seaside Groundwater Basin with wastewater treated at a proposed advanced water treatment plant to be located at the MRWPCA Regional Treatment Plant. The project is proposed to produce 3,500 AFY per year as replacement water for Cal-Am. Another purpose of the project is to provide up to 5,292 AFY of additional recycled water for crop irrigation in the Castroville Seawater Intrusion Project area. The project is jointly sponsored by the MRWPCA and MPWMD.

The GRP would treat municipal wastewater, industrial wastewater, urban stormwater, and surface water diversions from the Blanco Drain and Reclamation Ditch at a new advanced treatment facility to be located at the MRWPCA Regional Treatment Plant located 2 miles north of Marina. The GRP would convey the treated water into the Seaside Basin for dilution and storage. A "banked reserve" of up to 1,000 AF would serve as a drought reserve to support crop irrigation during dry years

through injection of an extra 200 AFY into the Seaside Basin during normal and wet years. The GRP could be operated during the winter months and during other non-peak months. Extraction from the Seaside Groundwater Basin can occur later, at any time of the year (MRWPCA 2014).

Proposal to Delay Enforcement of State Water Resources Control Board Order WR2009-0060

Even under even the best-case scenarios, the MPWSP will not be operational until sometimes in 2020 or 2021. Thus, the sponsors of the MPWSP are asking for more time. The State Water Board has rejected two similar proposals within the past year. Highlights from the draft proposal are as follows.

- A four-year extension, pushing the 70-percent cutback deadline back to Dec. 31, 2020.
- A process giving officials from the state water board's Division of Water Rights authority to extend the deadline "for good cause."
- Starting in the 2015-16 water year, Cal-Am will ratchet back its illegal pumping from the Carmel River by an additional 1,000 acre-feet per year beyond the reduction already achieved.
- Cal-Am will set the following milestones:
    - Construction of downstream fish passage facilities at the Los Padres Dam by September 2016.
    - Groundbreaking on the desalination plant by September 2017.
    - Construction for the desal plant "substantially on schedule" by September 2018 and September 2019.
    - Desal plant complete by September 2020.
- If Cal-Am misses any of the above milestones, it will have to reduce Carmel River pumping by another 1,000 acre-feet per year on top of the reductions described above unless Division of Water Rights officials determine, at MPRWA/Cal-Am/Monterey Peninsula Water Management Authority request, that Cal-Am and the local water agencies have tried their best to hit the milestones.
- In the meantime, Cal-Am will look to acquire other water rights in order to reduce its illegal diversions from the Carmel River.

Impact Analysis

Methodology

Approach

To evaluate potential impacts on water supply and demand resulting from the Project, the Project's water demand was evaluated against the criteria for determining significance discussed below.

In the Del Monte Forest, potable water is supplied by Cal-Am from sources in the Carmel Valley alluvial aquifer and the Seaside Aquifer. It is presumed that the Project's water could be derived

from the Carmel River (within Cal-Am's legal right limit), from the Seaside Aquifer (within Cal-Am's adjudication limit), or from a regional water supply project.

State CEQA Guidelines Section 15125 specifies that the environmental setting extant at the time of an EIR's NOP will "normally" constitute the baseline physical condition by which a lead agency determines whether an impact is significant. However, the water supply condition on the Monterey Peninsula is complicated by existing legal requirements for Cal-Am to reduce the amounts of diversion from the Carmel River Aquifer and the Seaside Basin. These legal requirements mandate reductions of withdrawals from these two aquifers below their 2014 levels on an ongoing basis until legal limits are reached.

1995–2014 Existing Conditions are defined in terms of the current level of withdrawals from the Carmel River and the Seaside Aquifer and the current level of water demand served by Cal-Am. Non-Cal-Am water users are presumed to derive their water from the Carmel River, Seaside Aquifer, or other sources but are not included in the analysis because they are not presumed to be served by Cal-Am, which would supply water to the Project. Carmel River withdrawals from 1995 to 2014 were used for this analysis (**Table 3.12-6**), but were adjusted (as discussed in **Appendix H**) to account for the relatively wetter conditions during this period compared with long-term conditions.

Table 3.12-6. Carmel River Cal-Am Withdrawals for 1995 to 2014 (in Acre-Feet)

Year	Water Year Type	Historic Cal-Am Withdrawals
1995	Wet	10,036
1996	Average	11,701
1997	Average	12,847
1998	Wet	10,154
1999	Average	10,580
2000	Average	11,350
2001	Average	10,798
2002	Dry	11,068
2003	Average	11,541
2004	Dry	11,282
2005	Wet	11,036
2006	Wet	10,954
2007	Critically Dry	10,486
2008	Critically Dry	10,835
2009	Average	10,286
2010	Wet	9,786
2011	Wet	8,565
2012	Critically Dry	7,646
2013	Critically Dry	8,008
2014	Critically Dry	7,744
1995 to 2014	**Annual Average**	**10,335**
	Water Year Type	**1995–2014 Average Conditions**
	Wet	*10,088*
	Average	*10,604*
	Dry	*10.873*
	Critically Dry	*11,141*

Source: **Appendix H**

While **Table 3.12-6** lists the actual Cal-Am withdrawals from the Carmel River for the last 20 years and estimates withdrawals by water year type, these withdrawals are influenced by the limits in State Water Board orders. In particular, the withdrawals starting in Water Year 2010 to Water Year 2014 are shown to be substantially reduced compared with prior years, and this is due largely due to the progressively more stringent reduction requirements in WR 2009-60.

Cal-Am withdrawals have been affected by State Water Board Orders 95-10 and WR 2009-60 and will continue to be affected in future years, including in 2017 when the Project would be completed and Project water demands would begin to affect water supply conditions. **Table 3.12-7** shows the limitations on Carmel River withdrawals by Cal-Am mandated by the State Water Board orders.

Table 3.12-7. Carmel River Withdrawals Mandated by WR 2009-060 Type (in Acre-Feet)

Water Year	With Delay in Enforcement of 3,376 AFY limit	With No Delay in Enforcement of 3,376 AFY limit
2009	11,385	11,385
2010	10,429	10,429
2011	9,042	9,042
2012	8,949	8,949
2013	9,355	9,355
2014	9,887	9,887
2015	8,725	8,725
2016	8,483	8,483
2017	8,241	3,376
2018	7,999	3,376
2019	7,757	3,376
2020	7,515	3,376

Notes:
WR 2009-060 requires progressive reductions in Cal-Am withdrawals from the Carmel River Aquifer starting in Water Year 2010. The schedule of reductions starts from a base of 10,978 AFY and was reduced 549 AFY in Water Year 2010, 121 AFY more each year starting in Water Year 2012, and 242 AFY more each year starting in Water Year 2016. In addition, the amount of water produced from ASR and from the Sand City desalination plant are also deducted from the base. For WY 2009 through WY 2014, the amounts above are based on MPWMD reporting. For WY 2015 and after, the amounts are estimated assuming ASR production of 920 AFY and Sand City desalination production of 300 AFY. Actual limits will depend on the amount of actual ASR and Sand city desal production.

Because the State Water Board order compliance will reduce Cal-Am Carmel River withdrawals to levels substantially below the 1995–2014 average conditions described in **Table 3.12-7** with or without the Project, the use of average Carmel River withdrawal conditions is not used as the CEQA baseline, because the use of this baseline would not reveal the increased water demand posed by the Project and allow one to assess its actual environmental impact.[3] Similarly, a comparison of 2017 with project conditions to the allowable withdrawal levels under WR 2006-090 in 2014 would also

[3] As shown in the analysis below, given the relatively small water demand of the Project, use of a physical 2014 baseline compared with project conditions in 2017 would result in identification of a net reduction in withdrawals due to WR 2009-060 limits even though there is a contingency in which the Project could actually increase Carmel River withdrawals in 2017 (presuming there is a delay in enforcement of the 3,376 AFY limit as is being sought by backers of the MPWSP).

obscure the Project's water supply impact because WR 2006-090 required 2017 withdrawals to be substantially less than in 2014 (regardless of whether the 3,376 AFY limit is enforced starting in 2017).[4]

One other option for the project analysis would be to compare "Existing Plus Project" conditions to 1995 – 2014 average conditions. In this scenario, the additional project water demand would be added to average withdrawals by water year type shown in **Table 3.12-7**. While this would disclose the incremental impact of the Project, the "Existing Plus Project" condition cannot happen in the real world because the reduction in requirements in WR 2009-060 will result in lower withdrawals than the existing conditions by the time the Project construction is completed.

Given the problems with a 1995–2014 baseline based on actual Carmel River withdrawals and a baseline based on legally allowed withdrawals in 2014, this EIR instead utilizes both a 2017 without project conditions baseline and a 2020 without project conditions baseline in order to more clearly disclose project water supply conditions. Project construction would be completed in 2017 and Project water demands would start in 2017. Thus, a 2017 without project condition baseline would most clearly disclose the environmental effects of the Project when it is first operational. A 2020 without project conditions baseline is used to disclose Project impacts in 2020, which is the earliest that a regional water supply project could be completed, and is used to evaluate Project impacts in that contingent future.

The impact analysis does disclose the change to the 1995–2014 baseline for disclosure purposes as well, but the baselines noted above are used to determine significance.

At present it is unknown if and when a regional water supply project may actually be completed. As a result, this EIR considers potential water supply impacts under three future water supply scenarios.

- Scenario A (2017): The State Water Board delays full enforcement of Order WR2009-0060 based on reasonable progress toward regional water supply project completion by 2020. Under this scenario, Cal-Am would continue withdrawals above its legal limit from 2017 until presumed completion of a regional water supply project in 2020. However, the progressive schedule of reduction included in WR 2009-060 would continue.
- Scenario B (2017): State Water Board fully enforces Cal-Am withdrawal limitations in Order WR2009-0060 including the 3,376 AFY limit of Cal-Am's legal rights. Under this scenario, Cal-Am withdrawals above its legal limits would cease on December 31, 2016.
- Scenario C (2020): A regional water supply project is completed by 2020 including water for the Project allowing Cal-Am full compliance with Order WR 2009-0060 limitations on Cal-Am withdrawals. Under this scenario, as of 2020, Cal-Am withdrawals above its legal limit would cease upon completion of a regional water supply project providing sufficient replacement water, including for the Project.

[4] Similar to the case with use of a physical 2014 baseline, use of the legal limits in 2014 as the baseline would obscure the Project impact as net withdrawals would decline in 2017 due to WR 2009-060, whereas use of a 2017 without project condition as the baseline will show the potential for an increase in Carmel River withdrawals in 2017 (presuming the same delay noted in Footnote 3).

Criteria for Determining Significance

In accordance with CEQA, the State CEQA Guidelines, Monterey County plans and policies, and agency and professional standards, an impact would be considered significant if the Project would result in any of the following conditions.

A. Water Supply and Demand

- Result in a water demand that exceeds water supplies available to serve the Project from existing entitlements and resources, and/or require new or expanded supplies.

B. Water Infrastructure Capacity

- Result in water demand that exceeds capacity of the water supply or infrastructure system, requiring substantial expansion of water supply and treatment facilities and/or water infrastructure, the construction of which could cause significant environmental effects.

C. Carmel River Biological Resources

- Result in water demand that would result in new or substantially more severe impacts on sensitive biological resources of the Carmel River, including associated riparian vegetation.

Impacts and Mitigation Measures

A. Water Supply and Demand

WSD-A1. The Project's water demand would represent an increase in water use compared to without project conditions, but would be within the applicant's current entitlement and could be legally supplied by Cal-Am. However, given the current uncertain nature of regional water supplies, the additional Project water demand could intensify water supply shortfalls and rationing starting in 2017 until a regional water supply project is built. (Significant and unavoidable)

Water Demand

The Project would create an estimated demand for water of between 6 and 7 AFY depending on the water year type. A summary of water demands is provided in **Table 3.12-8**. A more detailed estimate of water demand is provided in **Appendix H**. This water demand includes both interior residential water demand and landscape irrigation demand for proposed landscaping. The higher demand of 7 AFY is generally used in the remainder of this impact analysis.

Table 3.12-8. Direct Water Demand of the Project (AFY)

Proposed Development	Water Demand
24 Inclusionary Housing Units	6.31
Water Year Type	
Wet Year	5.99
Average Year	6.31
Dry Year	6.63
Critically Dry Year	6.80

Note: Includes both interior and exterior water demands.
Source: **Appendix H**

Water Supply Impact Analysis

As noted above, the applicant's proposal is to use water pursuant to a water entitlement that was derived through financing the replacement of potable water used for turf irrigation in the Del Monte Forest with recycled water. Given the constraints on the Seaside Aquifer and the basin adjudication which will reduce Cal-Am's withdrawals over time, it is presumed that the Project would not increase water withdrawals from the Seaside Aquifer, although it may be provided actual water from the Seaside Aquifer within Cal-Am's adjudicated limits. The Project could be supplied by Cal-Am with water from the Carmel River within Cal-Am's water rights, from the Seaside Aquifer (within Cal-Am's adjudication limit) or through new water supplies from a regional water supply project.

Scenario A: Change in Carmel River Withdrawals in 2017 with Project with Delay in WR 2009-60 Enforcement

Under this scenario, the Project's increase in demand would result in increased withdrawals by Cal-Am from the Carmel River aquifer starting in 2017. The Project-related changes in withdrawals can be estimated, as shown in **Table 3.12-9**. Depending on water year type, Project increased withdrawals are estimated at 6 to 7 AF from the Carmel River.

The results shown in **Table 3.12-9** are shown graphically in **Figure 3.12-5** and supporting data are provided in **Appendix H**.

Scenario B: Change in Carmel River Withdrawals in 2017 with Full Enforcement of WR 2009-60 Limitations

This scenario presumes there is no delay in enforcement of the Carmel River withdrawal limitations. Starting in 2017, Cal-Am would be required to reduce its withdrawals from the Carmel River to the level of its existing water rights (3,376 AFY) and over time to reduce its withdrawals from the Seaside Aquifer to its ultimate adjudicated allocation (1,474 AFY).

Under this scenario, the Project would be supplied by water from the Carmel River, but due to regional supply shortfalls would be subject to water rationing as would all existing demand. This scenario would also apply to interim years between the start of 2017 and when a regional water supply project would be completed. The estimated change in withdrawals with the Project in 2017 is shown in **Table 3.12-10**.

Scenario C: Change in Carmel River Withdrawals in 2020 with Completion of a Regional Water Supply Project

This scenario evaluates water supply and demand conditions, presuming that a regional water supply project is completed to replace water from the Carmel River that is above Cal-Am's existing water rights and water from the Seaside Aquifer in excess of Cal-Am's adjudicated ultimate allocation. Under this scenario, the Project would not result in any increases in withdrawals from the Carmel River, the Seaside Aquifer due to the legal restrictions, but the actual water provided to the Project may come from the Carmel River, Seaside Aquifer or a regional water supply project. The estimated change in withdrawals with the Project is shown in **Table 3.12-11**.

Table 3.12-9. Cal-Am Withdrawals from the Carmel River Scenario A: Delay in Enforcement of Cal-Am 3,376 AFY Limit (in Acre-Feet)

Water Year Type	Wet	Average	Dry	Critically Dry
1995–2014 Average Conditions	10,088	10,604	10,873	11,141
2014 Allowable Cal-Am withdrawals pursuant to WR 2009-060[a]	9,887	9,887	9,887	9,887
Project Demand	6	6	7	7
2017 Allowable Cal-Am withdrawals pursuant to WR 2009-060 excluding 3,376 AFY limit[b]	8,261	8,261	8,261	8,261
2017 Cal-Am withdrawals with Project	8,267	8,267	8,268	8,268
Change with Project Compared with 1995-2014 Average Conditions	**-1,821**	**-2,336**	**-2,605**	**-2,873**
Change with Project Compared with 2014 Allowable Withdrawals	**-1,620**	**-1,620**	**-1,619**	**-1,619**
Change with Project compared with 2017 without Project	**6**	**6**	**7**	**7**

Source: **Appendix H**

[a] Based on MPWMD Cal-Am reporting for 2011. Base = 10,978 AF - mandatory reduction of 912 AF - ASR yield of 0 AF - Sand City Desal yield of 179 AF.

[b] Based on WR 2009-060 requirements. Base = 10,978 AF - mandatory reduction of 1,759 AF - ASR yield of 920 AF - Sand City Desal yield of 300 AF.

Graphics ... 00384.14 (2-24-2015)

Figure 3.12-5
Cal-Am Carmel River Withdrawals in 2017 with Project
(Assuming delay in SWRCB enforcement of 3,376 AFY limit)

Table 3.2-10. Cal-Am Withdrawals from the Carmel River 2017 Scenario B: Enforcement of Cal-Am 3,376 AFY Limit (in Acre-Feet)

Water Year Type	Wet	Average	Dry	Critically Dry
1995–2014 Average Conditions	10,088	10,604	10,873	11,141
2014 Allowable Cal-Am withdrawals pursuant to WR 2009-060[a]	9,887	9,887	9,887	9,887
2017 Cal-Am Withdrawal Limit pursuant to State Water Board Order 2009-0060	3,376	3,376	3,376	3,376
2017 Project Demand at 70% rationing	2	2	2	2
Change with Project Compared with 1995-2014 Average Conditions	**-6,712**	**-7,228**	**-7,497**	**-7,765**
Change with Project Compared with 2014 Allowable Withdrawals	**-6,511**	**-6,511**	**-6,511**	**-6,511**
Change compared with 2017 Without Project	**0**	**0**	**0**	**0**
2017 Reduction in Service to Existing Demand Due to Project	**-2**	**-2**	**-2**	**-2**

Source: **Appendix H**

[a] Based on MPWMD Cal-Am reporting for 2011. Base = 10,978 AF - mandatory reduction of 912 AF - ASR yield of 0 AF - Sand City Desal yield of 179 AF.

Table 3.12-11. Cal-Am Withdrawals from the Carmel River 2020 Scenario C: Assumed Completion of a Regional Water Supply Project (in Acre-Feet)

Water Year Type	Wet	Average	Dry	Critically Dry
1995–2014 Average Conditions	10,088	10,604	10,873	11,141
2014 Allowable Cal-Am withdrawals pursuant to WR 2009-060[a]	9,887	9,887	9,887	9,887
Project Demand	6	6	7	7
2020 Cal-Am Withdrawal Limit pursuant to State Water Board Order 2009-0060	3,376	3,376	3,376	3,376
Change with Project Compared with 1995-2014 Average Conditions	**-6,712**	**-6,712**	**-6,712**	**-6,712**
Change with Project Compared with 2014 Allowable Withdrawals	**-6,511**	**-6,511**	**-6,511**	**-6,511**
Change with Project compared with 2017 without Project	**0**	**0**	**0**	**0**
Additional Project-Demand for a Regional Water Supply Project	**6**	**6**	**7**	**7**

Source: **Appendix H**

[a] Based on MPWMD Cal-Am reporting for 2011. Base = 10,978 AF - mandatory reduction of 912 AF - ASR yield of 0 AF - Sand City Desal yield of 179 AF.

Significance Evaluation

Impacts of the increased water demand from the Project were analyzed with respect to: (a) whether sufficient water could be supplied to service the Project; and (b) the potential to require development of additional supply to meet project demand.

Ability to Supply Water for Project

As described in the *Environmental Setting* section, there is a remaining unused water entitlement available to the Application of 87 AFY. The estimated increased supply needed to serve project demands could range between 6 and 7 AFY, depending on water year type.

After December 31, 2016, Cal-Am would be limited to supplying the applicant's water entitlement from the Carmel River within its legal water rights limit or from future new connection to other legal sources, such as a regional water supply project. Given recognition by the State Water Board, MPWMD, and Cal-Am of the validity of the applicant's water entitlement and its basis in a net reduction of Carmel River withdrawals due to the Recycled Water Project operations, the Project can be supplied water from legal sources of water after December 31, 2016.

However, given the uncertainty with a regional water supply project at this time (as described above), it is possible that there will be no new water supply adequate to fully meet existing demand and project demand by 2017. As a result, there is the possibility of a supply shortfall and water rationing starting in 2017 if the State Water Board does not delay enforcement of the restrictions in WR 2009-60. In this case, the Project's water demand would intensify the need for water rationing for existing water uses. The Project would be subject to rationing like other existing demand, but the additional Project demand would mean the impact of rationing would be more intense.

Based on the estimated shortfall in supply without a regional water supply project (see **Appendix H**), water rationing could reach up to 70%. Water rationing could result in economic disruption of commercial and industrial activities on the Monterey Peninsula as well as disruption of residential use. It is also possible that current users of Cal-Am water who have overlying rights to groundwater may increase pumping in certain areas, which may exacerbate environmental conditions (unless other prohibitions like the Seaside aquifer adjudication prevent such activity). The exact response of the community to deep, persistent water rationing is difficult to estimate. This would be a significant and unavoidable impact related to water supply if the State Water Board does not delay enforcement of WR 2009-60 until a regional water supply project is completed.

Under constitutional limitations established in the U.S. Supreme Court decisions in the *Nollan* and *Dolan* cases[5], a project can only be required to mitigate proportionately to their level of impact. No further mitigation is feasible on the part of the applicant because any additional mitigation would be disproportionate to their water supply impact in light of the Applicant's prior financing of the Recycled Water Project which has restored more water to the Carmel River than the Applicant proposes to use for the Project pursuant to the applicant's water entitlement.

In summary, the Project would be able to obtain water in 2017 but, unless WR 2009-60 enforcement of 3,376 AFY limit for Cal-Am withdrawals is delayed until a regional water supply project is completed, the Project would be subject to deep rationing and would intensify the level of rationing for other existing users, which would be a significant unavoidable water supply impact.

[5] *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987), and *Dolan v. City of Tigard*, 512 U.S. 374 (1994),

Need for New Water Supplies

After December 31, 2016, the Project water supply may be drawn from the Carmel River within Cal-Am's legal rights, but, if so, it would displace an equivalent amount of supply for other existing Cal-Am users. Alternatively, the Project could be supplied directly from a regional water supply project. In either case, the Project would increase demand for new supply. The proposals for a regional water supply project (including the MPWSP) are designed to accommodate the existing demand that would be displaced by the restrictions on Cal-Am withdrawals from the Carmel River and the Seaside Aquifer. As discussed in the cumulative impact analysis below, with existing legal supplies and current planning for the MPWSP there would be adequate supply to meet projected existing demands, plus project demands, and other entitlement demands but no other future growth demands. Thus, although the Project's water demand would be met either directly from a regional water supply project or indirectly from a regional water supply project (due to displacement of other existing demand from being met via Carmel River water), the Project would not require an expansion of a regional water supply project (such as the MPWSP) beyond its currently planned capacity. This would be a less than significant impact.

The Project's impact on water infrastructure and associated secondary impacts on the environment of infrastructure are discussed separately below.

B. Water Infrastructure Capacity

WSD-B1. Local water infrastructure is included to serve the Project and existing supply infrastructure outside the Project site is adequate to serve the Project. A regional water supply project will need to be built to serve existing demand and the increase in demand from the Project. Regional water supply infrastructure and operations will have secondary environmental impacts. (Significant and Unavoidable)

Inside the Del Monte Forest, local distribution water lines are included in the Project to deliver water from current distribution lines to the point of demand. The Project's new demand could range from 6 to 7 AFY. The infrastructure already exists to deliver the Project's water supply from the Carmel River to the Del Monte Forest, taking into account the local connecting water lines included in the project. Thus, no water infrastructure impacts would occur due to the Project related to supplying the Project from the Carmel River.

After 2016, the Project's water demand must either be provided from the Carmel River or from a regional water supply project. If the Project is provided water from the Carmel River (by Cal-Am pursuant to its existing water rights), then a proportionate amount of water would need to be supplied to other existing users from a regional water supply project. Regardless of whether the Project's water is supplied from the Carmel River or from a regional water supply project, a regional water supply project will need to be built to meet existing demand and Project demand. In the CPUC's Final EIR (CPUC 2009) for a prior version of a regional water supply project (also including a desalination plant and expansion of ASR), the EIR identified significant and unavoidable impacts in the following areas: air quality (during construction); geology, soils and seismicity (specifically concerning liquefaction); and greenhouse gas emissions. Both the MPWSP and the GRP are currently being evaluated under CEQA so their environmental impacts are currently not known. There is the potential for one or both of these projects to have additional impacts related to water rights, exportation of groundwater from the Salinas Valley basin, brine impacts at the ocean outfall, impacts

on overlaying adjacent properties and water quality, as well as other impact areas. Depending on the revised analysis the Project may also have significant unavoidable impacts.

The Project would indirectly contribute to these secondary physical impacts on the environment because the Project would add additional demand for new regional water supply infrastructure. This would be a significant and unavoidable impact pending completion of the CEQA evaluations of the MPWSP and the GRP.

C. Carmel River Biological Resources

WSD-C1. If the State Water Board enforces the limitation on Cal-Am withdrawals from the Carmel River starting in 2017, then the Project would not have any impact on biological resources associated with the Carmel River. If SWRCB delays enforcement, then the Project would likely increase withdrawals from the Carmel River aquifer compared to without project conditions and, thus, contribute to existing impacts on Carmel River biological resources until the limitations are fully enforced. (Significant and unavoidable)

The Project would not increase withdrawals from the Carmel River if the State Water Board limitations in WR 2009-060 for 2017 Cal-Am Withdrawals (to its legal right limit) is enforced. However, if the legal right limit is delayed, then the Project could result in a minor increase in Cal-Am withdrawals, which would affect biological resources dependent on the Carmel River, including riparian vegetation, steelhead, CRLF, and other sensitive biological resources dependent on the river and its aquifer.

As described under *Carmel River* in the *Environmental Setting* section, existing groundwater pumping (and prior surface diversions) has adversely affected the biological resources found in the Carmel River. Withdrawal of additional water from the Carmel River aquifer to meet project water demand would lower the water table, shorten the amount and period of flow, and contribute to ongoing impacts on Carmel River resources.

In wet years, limited increases are less likely to adversely affect biological resources in the Carmel River due to the relative abundance of available water for both withdrawal and to support the river and its resources. Based on the analysis above, the Project would result in increased withdrawals of around 6 AFY in a wet year. The wettest year in the last 15 years was Water Year 1998 (> 47 inches of rain on the Monterey Peninsula) (see **Appendix H**) and Cal-Am Carmel River withdrawals totaled around 10,154 AF. In such a wet year, the Project would add less than 0.1% to existing withdrawals. In its study of instream flow needs for steelhead, NOAA Fisheries identified that in above normal rainfall years, there could be somewhere between 13,000 and 17,000 AF available for withdrawal on an annual basis without affecting critical flows identified as necessary for steelhead in the Carmel River (NMFS 2002). Thus in wet years, the limited withdrawals associated with the Project are not expected to result in adverse effects on Carmel River biological resources on an annual basis compared with without project conditions.

However, even during wetter years, lower flows in the Carmel River can still occur in summer and early fall. The Carmel River can still go dry in its lower reaches (as it did in early September 1998 during the wettest year in the last 25 years) and surface flow to Carmel Lagoon can cease. NMFS has identified that new diversions from the Carmel River should be avoided between June and October of wet years (as well as other years) to avoid further adverse effects on steelhead (NMFS 2002).

On its own, the Project's demand of 7 AFY would not likely result in any measurable change in river conditions. But combined with the existing effects of current withdrawals, by increasing diversions, the Project could contribute to the river drying earlier in the spring, which would affect river resources and could contribute to lower lagoon levels and reduced water quality in Carmel Lagoon.

Given that existing average year withdrawals from the Carmel River have been identified as having adverse effects on river resources, project increases in withdrawals in average, dry, and very dry years could adversely affect Carmel River biological resources compared with without project conditions. The effects on biological resources from Cal-Am withdrawals are as follows.

- **Riparian Vegetation**: Increased groundwater pumping could lead to local riparian vegetation mortality through stress, lack of access to water and local bank erosion. Species dependent on riparian vegetation would be indirectly affected due to the loss of forage, nesting, and rearing habitat. Bank stability could be lessened with the loss of extant riparian vegetation. Stream temperatures could rise due to a reduction of shade cover affecting steelhead and other aquatic resources sensitive to stream temperature fluctuations.
- **Steelhead:** Existing low-flow conditions in the Carmel River during average, dry, and very dry years would be exacerbated by increased groundwater pumping. Successful migration, spawning, and rearing are dependent on appropriate flow conditions and adequate water quality. The depletion of the aquifer in the summer by pumping can cause the first fall flows to infiltrate very quickly. This process may delay adult upstream migration or reduce duration of suitable upstream migration periods. Shallow areas within the river channel may present migration barriers to adult steelhead under low flow conditions; pumping has the potential to reduce river flows below critical thresholds for migration at these low points in the stream. Lower flows in average, dry, and very dry years could lower the available spawning areas by drying suitable locations. Juvenile steelhead are routinely stranded and isolated during summer drying of the river, leading to mortality. With increased pumping, drying would occur earlier and more often in rearing areas. In addition, reduction in flow would reduce water quality in terms of further depressed dissolved oxygen levels and increased temperatures affecting juveniles and adults. Elevated temperatures, low dissolved oxygen levels, and lack of flow constrain migration of smolts to the ocean in summer and fall; increased pumping would further limit periods of feasible migration in average, dry, and very dry years. Steelhead rearing habitat and suitable smolt holding areas in Carmel lagoon are also limited by shallower than natural water depths and salinity stratification in summer and fall due to existing withdrawals and this could be exacerbated by increased withdrawals.
- **California Red-Legged Frog:** CRLF require streams or ponds that hold water for lengthy periods of time (3.5–7 months) for successful breeding and maturation of larvae. They utilize the Carmel River and adjacent creeks and ponds that are supported by groundwater connected to the Carmel River aquifer. Increased groundwater pumping in average, dry, and very dry years will lower the water table even further, potentially reducing successful breeding and rearing locations for CRLF. Loss of riparian vegetation described above would also affect this species, which utilize riparian areas for foraging and dispersal.
- **Other Resources:** Fish and other aquatic resources dependent on adequate flows and water quality would be subject to similar effects described above for steelhead. Special-status birds, raptors and other species could lose breeding and foraging locations in the event of loss of riparian vegetation and areas. Special-status wildlife species, such as southwestern pond turtle,

could also see a loss of habitat due to reduction of flow and lowering of water tables, particularly in summer and early fall periods of average, dry, and very dry years.

This would be a significant and unavoidable impact in the contingency in which the State Water Board delays enforcement of the Carmel River withdrawal legal limit limitations beyond December 31, 2016 until such a time as a regional water supply project provides adequate water to serve existing demand.

As discussed above, no further mitigation is feasible on the part of the applicant because any additional mitigation would be disproportionate to their water supply impact in light of the applicant's prior financing of the Recycled Water Project. As shown in **Table 3.12-4**, the Project's demand (and the applicant's entitlement) is much less than the amount of water already saved from the applicant's financing of the Recycled Water Project, which has restored more water to the Carmel River than the applicant proposes to use. Thus, when comparing PBC's usage of water before the Recycled Water Project with the Project's proposed water use, there would still be a net benefit to the Carmel River that should be acknowledged.

When State Water Board Order WR95-10 and Order WR2009-0060 are fully enforced (e.g. limiting Cal-Am withdrawals to their legal right limits), it will result in a substantial reduction in Cal-Am withdrawals from the Carmel River. Because the State Water Board orders cap the amount that Cal-Am can withdraw from the Carmel River, the potential provision of water from the river to the Project from either the Carmel River or from a regional water supply project would not result in any change in the amount of Cal-Am withdrawals from the Carmel River (as shown in **Table 3.12-10** and **Table 3.12-11**). Thus, the Project would not have a significant impact on biological resources in the Carmel River once the State Water Board orders are fully in force or a regional water supply project is operational.

Cumulative Impacts

A. Water Supply and Demand

WSD-A1(C). Cumulative water demand on the Monterey Peninsula exceeds current water supplies requiring new regional water supplies to be developed. The Project's water demand would represent an increase in water use compared to without project conditions. In 2017 and after, given the current uncertain nature of regional water supply planning, the additional Project water demand could intensify cumulative water supply shortfalls and rationing starting until a regional water supply project is built. (Significant and unavoidable)

Cumulative Water Demand

Cumulative demand was analyzed in two ways: 1) Cumulative impacts were evaluated due to the use of the remaining unused portion of the applicant's water entitlement combined with project water demand to examine potential near-term impacts on withdrawals from the Carmel River; and 2) Cumulative impacts were evaluated due to cumulative demands on the Monterey Peninsula for 2017, 2020 and 2030.

Cumulative development within the Del Monte Forest, other than the PBC buildout project, includes the potential for development of perhaps up to 105 new single-family dwelling units[6], as well as 46 additional visitor serving units at The Lodge at Pebble Beach and The Inn at Spanish Bay. As shown in **Table 3.12-11**, these units could result in a demand of up to 93.5 AFY. It is expected that Del Monte Forest new residential owners may purchase a portion of the applicant's entitlement; if not they would have to be supplied by a regional water supply project that produced water for growth. MPWMD Ordinance No. 109 allowed up to 175 AF to be sold by the applicant to other Del Monte Forest benefitted properties. As of September 2011, of the 175 AF, only 37 AF was being used, leaving 138 AF that could be used in future. It was assumed that all of the remaining 138 AF of residential entitlement would be used in the near future and that the 93.5 AF of cumulative Del Monte Forest growth would either be accommodated through use of the residential entitlement or the remaining unused part of the applicant's entitlement (for their own properties) or would be deferred until new regional supplies were available.[7] These demands are summarized in **Table 3.12-12**.

On the Monterey Peninsula, cumulative water demands were examined in the Final EIR for the Coastal Water Project (CPUC 2009), which analyzed a regional water supply project similar to, but with notable differences from the currently proposed MPWSP. Using data on cumulative water demands from the CWP Final EIR and several other data sources, cumulative water demand was analyzed for 2017, 2020 and 2030 in comparison to available or projected water supplies. The results of this analysis are discussed later in this section.[8]

[6] As of 2012, there were 96 undeveloped (vacant) existing residential lots, 8 new lots allowed in Area X based on County-issued certificates of compliance, and 1 new lot allowed in Area Y based on the presumption that presence of environmentally sensitive habitat area may prevent further subdivision – thus the potential for up to 105 new dwelling units.

[7] If residential owners do not purchase a portion of the applicant's water entitlement, they would not be able to obtain a Cal-Am connection until such a time as a regional water supply project were built that included allocations for new growth, which could be at a distant future period.

[8] The court ruling concerning MCWD's reliance on the EIR for the prior regional water supply project did not indicate any deficiencies in the analysis of cumulative water demand.

Table 3.12-12. Summary of Other Recycled Water Project Entitlement Demand

Element	Demand (AFY)	Notes
Potential Future Development in the Del Monte Forest		
Existing vacant lots in Del Monte Forest Future SFD Development	76.8	Future single-family development in Del Monte Forest based on 96 vacant lots.
Area X and Y residential	7.2	Future development on PBC owned areas not included in the PBC buildout project
Visitor- Serving Lots at the Lodge at Pebble Beach and Inn at Spanish Bay	9.5	Additional VSC units allowed by proposed LCP Amendment beyond the VSC units included in the 2012 buildout project.
Total	93.5	Assumed that such properties would either purchase PBC entitlement or would have to be served by future expansions of the regional water supply project (or its equivalent).
PBC Entitlement Allocations		
Total entitlement	365	
Amount sold to others or dedicated for PBC use as of 2014	279	PBC pre-buildout project dedications, PBC buildout project, plus entitlement sales to others
Remaining entitlement available for PBC use	86	Total Entitlement - amount dedicated
Entitlement used for project	7	Based on critically dry year estimate
Remaining unsold entitlement outside of project for other residential use	52	MPWMD Ordinance 109 allows up to 175 AF to be sold to DMF benefitted properties. As of January 2015, PBC had sold 123 AF
Unreserved entitlement beyond potential for other residential use	27	Remaining entitlement minus amount to be used for project minus remaining amount that can be used for DMF benefited properties.
Other Entitlement Demand		
Amount of entitlement allowed to be transferred to others	175	MPWMD Ordinance 109 allows up to 175 AF to be sold to DMF benefitted properties.
Amount of entitlement actually use by others in 2014	37	Benefitted Properties
Remaining amount that can be used by others	*138*	*Potential actual amount of water that could be used for residential benefitted properties in the future.*
Total entitlement	365	From above
Amount that is in use as of 2014	49	PBC – 12 AF; Other Benefitted Properties – 37 AF
Total Other Entitlement Use	316	Amount that can be used by current and future entitlement holders that is not used as of January 2015

Source: **Appendix H**

It may take many years for new cumulative water demand related to the applicant's sale of a portion of its water entitlement (as of early 2015, while 123 AF of the entitlement had been sold to other parties, only 37 AF was actually in use). Thus, in the short and near-term, the estimates of other entitlement demand likely overstate the demand that will actually occur, and thus provide a worst-case analysis of potential impacts.

Water Supply Impact Analysis

As noted above, the applicant's proposal is to use water pursuant to a water entitlement that was derived through financing the replacement of potable water used for turf irrigation in the Del Monte Forest with recycled water. Given the restrictions on the withdrawals from the Seaside Aquifer, the Project is not expected to result in increased withdrawals from the Seaside Aquifer, but may cause increased withdrawals from either the Carmel River or from a regional water supply project.

Cumulative Change in Carmel River Withdrawals in 2017 and 2020 with the Project and Future Other Entitlement Demand

As described above, several scenarios of what will occur in 2017 and 2020 were evaluated.

- **Scenario A: Change in Carmel River Withdrawals in 2017 With Delay in WR 2009-60 Enforcement -** Under this scenario, the increase in project and other entitlement demand would result in increased withdrawals by Cal-Am from the Carmel River aquifer starting in 2017 as shown in **Table 3.12-13**. Depending on water year type, increased withdrawals are estimated at up to 300 to 341 AF from the Carmel River.

- **Scenario B: Change in Carmel River Withdrawals in 2017 with Full Enforcement of WR 2009-60 Limitations** - This scenario presumes there is no delay in enforcement of the Carmel River withdrawal limitations. Starting in 2017, Cal-Am would be required to reduce its withdrawals from the Carmel River to the level of its existing water rights (3,376 AFY) and over time to reduce its withdrawals from the Seaside Aquifer to its ultimate adjudicated allocation (1,474 AFY). Under this scenario, the Project and other entitlement demand would be supplied by water from the Carmel River, but due to regional supply shortfalls would be subject to water rationing as would all existing demand. This scenario would also apply to interim years between the start of 2017 and when a regional water supply project would be completed. The estimated change in withdrawals with the Project and other entitlement demand in 2017 is shown in **Table 3.12-14**.

- **Scenario C: Change in Carmel River Withdrawals in 2020 with Completion of a Regional Water Supply Project** - This scenario evaluates water supply and demand conditions, presuming that a regional water supply project is completed to replace water from the Carmel River that is above Cal-Am's existing water rights and water from the Seaside Aquifer in excess of Cal-Am's adjudicated ultimate allocation. Under this scenario, the Project and other entitlement demand would not result in any increases in withdrawals from the Carmel River or the Seaside Aquifer, but the actual water provided to the Project may come from the Carmel River, Seaside Aquifer, or a regional water supply project. The estimated change in withdrawals with the Project and other entitlement demand is shown in **Table 3.12-15**.

Table 3.12-13. Cal-Am Withdrawals from the Carmel River Scenario A: Delay in Enforcement of Cal-Am 3,376 AFY Limit in 2017 (in Acre-Feet)

Water Year Type	Wet	Average	Dry	Critically Dry
1995–2014 Average Conditions	10,088	10,604	10,873	11,141
2014 Allowable Cal-Am withdrawals pursuant to WR 2009-060[a]	9,887	9,887	9,887	9,887
Project Demand	6	6	7	7
Future Other Entitlement Demand	294	310	326	334
2017 Allowable Cal-Am withdrawals pursuant to WR 2009-060 excluding 3,376 AFY limit[b]	8,261	8,261	8,261	8,261
2017 Cal-Am withdrawals with Project	8,267	8,267	8,268	8,268
2017 Cal-Am withdrawals with Project and Other Entitlement Demand	8,567	8,583	8,600	8,608
Change with Project Compared with 1995-2014 Average Conditions	**-1,821**	**-2,336**	**-2,605**	**-2,873**
Change with Project and Other Entitlement Demand compared with 1995-2014 Conditions	*-1,521*	*-2,020*	*-2,272*	*-2,533*
Change with Project Compared with 2014 Allowable Withdrawals	**-1,620**	**-1,620**	**-1,619**	**-1,619**
Change with Project and Other Entitlement Demand compared with 2014 Allowable Withdrawals	*-1,320*	*-1,304*	*-1,287*	*-1,279*
Change with Project compared with 2017 without Project	**6**	**6**	**7**	**7**
Change with Project and Other Entitlement Demand compared with 2017 Without Project	*300*	*316*	*332*	*341*

Source: **Appendix H**

[a] Based on MPWMD Cal-Am reporting for 2011. Base = 10,978 AF - mandatory reduction of 912 AF - ASR yield of 0 AF - Sand City Desal yield of 179 AF.

[b] Based on WR 2009-060 requirements. Base = 10,978 AF - mandatory reduction of 1,759 AF - ASR yield of 920 AF - Sand City Desal yield of 300 AF.

Table 3.12-14. Cal-Am Withdrawals from the Carmel River Scenario B: Enforcement of Cal-Am 3,376 AFY Limit in 2017 (in Acre-Feet)

Water Year Type	Wet	Average	Dry	Critically Dry
1995–2014 Average Conditions	10,088	10,604	10,873	11,141
2014 Allowable Cal-Am withdrawals pursuant to WR 2009-060[a]	9,887	9,887	9,887	9,887
2017 Cal-Am Withdrawal Limit pursuant to State Water Board Order 2009-0060	3,376	3,376	3,376	3,376
2017 Project Demand at 70% rationing	2	2	2	2
2017 Future Other Entitlement Demand at 70% rationing	88	93	98	100
Change with Project Compared with 1995-2014 Average Conditions	**-6,712**	**-7,228**	**-7,497**	**-7,765**
Change with Project and Other Entitlement Demand compared with 1995-2014 Conditions	*-6,712*	*-7,228*	*-7,497*	*-7,765*
Change with Project Compared with 2014 Allowable Withdrawals	**-6,511**	**-6,511**	**-6,511**	**-6,511**
Change with Project and Other Entitlement Demand compared with 2014 Allowable Withdrawals	*-6,511*	*-6,511*	*-6,511*	*-6,511*
Change compared with 2017 Without Project	**0**	**0**	**0**	**0**
Change with Project and Other Entitlement Demand compared with 2017 Without Project	*0*	*0*	*0*	*0*
2017 Reduction in Service to Existing Demand Due to Project	**2**	**2**	**2**	**2**
2017 Reduction in Service to Existing Demand Due to Project and Other Entitlement Demand	*90*	*95*	*100*	*102*

Source: **Appendix H**

[a] Based on MPWMD Cal-Am reporting for 2011. Base = 10,978 AF - mandatory reduction of 912 AF - ASR yield of 0 AF - Sand City Desal yield of 179 AF.

Table 3.12-15. Cal-Am Withdrawals from the Carmel River Scenario C: Assumed Completion of a Regional Water Supply Project in 2020 (in Acre-Feet)

Water Year Type	Wet	Average	Dry	Critically Dry
1994–2014 Average Conditions	10,088	10,604	10,873	11,141
2014 Allowable Cal-Am withdrawals pursuant to WR 2009-060[a]	9,887	9,887	9,887	9,887
Project Demand	6	6	7	7
Future Other Entitlement Demand	294	310	326	334
2020 Cal-Am Withdrawal Limit pursuant to State Water Board Order 2009-0060	3,376	3,376	3,376	3,376
Change with Project Compared with 1995-2014 Average Conditions	**-6,712**	**-6,712**	**-6,712**	**-6,712**
Change with Project and Other Entitlement Demand compared with 1995-2014 Conditions	*-6,712*	*-6,712*	*-6,712*	*-6,712*
Change with Project Compared with 2014 Allowable Withdrawals	**-6,511**	**-6,511**	**-6,511**	**-6,511**
Change with Project and Other Entitlement Demand compared with 2014 Allowable Withdrawals	*-6,511*	*-6,511*	*-6,511*	*-6,511*
Change with Project compared with 2017 without Project	**0**	**0**	**0**	**0**
Change with Project and Other Entitlement Demand compared with 2017 Without Project	*0*	*0*	*0*	*0*
Additional Project-Demand for Regional Water Supply Project	**6**	**6**	**7**	**7**
Additional Project-Demand and Other Entitlement Demand for Regional Water Supply Project	*300*	*316*	*332*	*341*

Source: **Appendix H**

[a] Based on MPWMD Cal-Am reporting for 2011. Base = 10,978 AF - mandatory reduction of 912 AF - ASR yield of 0 AF - Sand City Desal yield of 179 AF.

Change in Water Supply Balance on the Monterey Peninsula Compared with 2017, 2020, and 2030 Conditions

Cumulative conditions were also evaluated for the Monterey Peninsula as a whole considering existing and future demands, including the Project's demands, and future other entitlement demands noted above. The results of this analysis are shown in **Table 3.12-16**. As shown therein, there would be inadequate supply to serve cumulative demand in 2017 because the earliest that the MPWSP (or any equivalent) could be completed would be 2020. In 2020 with completion of the MPWSP (or any equivalent), cumulative demand could be met (presuming only limited other future growth on the Monterey Peninsula). In 2030 with completion of the MPWSP (or an equivalent), cumulative demand would not be met as the MPWSP is not being designed to provide adequate additional water supply for projected growth under the local general plans. Regardless of other future growth, in 2020 and 2030, the MPWSP would provide enough water to accommodate project and other entitlement water demands along with existing water demand to allow Cal-Am to meet its legal requirements.

Significance Evaluation

Impacts of the increased cumulative water demand was analyzed with respect to: (a) whether sufficient water could be supplied to service cumulative demand; and (b) the potential to require development of additional supply to meet project demand.

Ability to Supply Water for Cumulative Development

After December 31, 2016, Cal-Am would be limited to supplying water entitlement demands from the Carmel River within its legal water rights limit or from other legal sources, such as a regional water supply project. Given recognition by the State Water Board, MPWMD, and Cal-Am of the validity of the applicant's water entitlement and its basis in a net reduction of Carmel River withdrawals due to the Recycled Water Project operations, the Project and future other water entitlement use can be supplied water from legal sources of water after December 31, 2016.

However, given the uncertainty with regional water supply at this time, there will be no new water supply adequate to fully meet existing demand, project demand, and future other entitlement demand by 2017. As a result, there is the possibility of a supply shortfall and water rationing. If the WR 2009-060 limit on Cal-Am Withdrawals from the Carmel River is fully enforced (to 3,376 AFY), then the Project's water demand and future other entitlement demand would intensify the need for water rationing for existing water uses. The Project and future other entitlement demand would be subject to rationing like other existing demand, but the additional Project and future other entitlement demand would mean the impact of rationing would be more intense.

Table 3.12-16. Water Supply and Demand for 2017, 2020 and 2030 Monterey Peninsula in Cal-Am Service Area[a]

	2014	2017	2020 with MPWSP	2030 with MPWSP	Sources and Notes
Water Demand					
Existing Cal-Am demand from Carmel River	7,744	11,015	11,015	11,015	2014 = actual. Others =CPUC 2009
Existing Cal-Am demand from Seaside Aquifer	2,871	3,695	3,695	3,695	2014 = actual. Others =CPUC 2009
Future Potential Monterey Peninsula Growth		455	909	4,545	Future demand estimates for 2030 based on CPUC 2009; 2017 estimated as 10% of 2030; 2020 estimated as 20% of 2030[b]
Project Demand	6	6	6	6	Average year demand.
Future other PBC Entitlement Demand	310	310	310	310	Average year demand.
Total Demand	***10,931***	***15,481***	***15,935***	***19,571***	
Water Supply					
Carmel River (Cal-Am water rights)	3,376	3,376	3,376	3,376	Limit in WR 95-10
Carmel River (Cal-Am interim limit over water rights)	4,368	0	0	0	2014 = actual. Assumed none for other years.
Seaside Aquifer (Cal-Am withdrawals)	3,233	1,474	1,474	1,474	2014 = actual. Adjudication limit for others.
Seaside Aquifer Storage and Recovery (ASR)	0	920	920	920	2014 = actual. CPUC 2012 for others
Sand City Desalination	179	300	300	300	2014 = actual. Target of 300 AF for others
Subtotal Existing Sources	*11,156*	*6,070*	*6,070*	*6,070*	
MPWSP: Desalination	0	0	9,066	9,066	CPUC 2012
MPWSP: Seaside ASR Expansion		0	1,000	1,000	CPUC 2012
Total Additional Supply	*0*	*0*	*10,066*	*10,066*	
Total Supply	***11,156***	***6,070***	***16,136***	***16,136***	
Supply/ Demand Balance (Excluding Future Growth)		**-8,956**	**1,110**	**1,110**	**Only including existing, project, and other entitlement**
Supply/ Demand Balance (All Demands)	**225**	**-9,411**	**201[c]**	**-3,435**	

Notes:

Source: **See Appendix H**

MPWSP = Monterey Peninsula Water Supply Project. As described in text, the MRWPCA's Groundwater Replenishment Project may supply up to 3,500 AFY which may lower the desalination plant size and production by a corresponding amount.

[a] Does not include existing non-Cal-Am demand or supply. Other existing users not supplied by Cal-Am are presumed to derive water from the Carmel River and the Seaside Aquifer or other sources pursuant to their existing rights.

[b] Due to current moratorium on most new connections, only limited new hookups are allowed (including pursuant to the entitlement from the PBCSD Recycled Water Project and the Sand City Desalination project and certain areas in the Laguna Seca Subareas). 10% of 2030 new demand was assumed for the 2017 scenario and 20% of 2030 new demand was assumed for the 2020 scenario assuming that most of the growth potential will not occur until a regional water supply with adequate water for growth is actually provided. These assumptions for 2017 and 2020 are not forecasts, they are merely illustrative only.

[c] Although a nominal surplus is shown for 2020 (with MPWSP) the water demand shown is normal-year demand and does not account for dry or critically dry -year demands. Thus, this should not be considered a true surplus in toto but rather, mostly a reserve for use during critical years.

Based on the estimated shortfall in supply, water rationing in 2017 and after could reach 60 to 70%. Impacts associated with water rationing were discussed above. This would be a significant impact related to water supply because the Project demand would intensify the level of water rationing in this scenario. Under constitutional limitations established in the U.S. Supreme Court decisions in the *Nollan* and *Dolan* cases[9], a project can only be required to mitigate proportionately to their level of impact. No further mitigation is feasible on the part of the applicant because any additional mitigation would be disproportionate to their water supply impact in light of the applicant's prior financing of the Recycled Water Project which has restored more water to the Carmel River than the applicant proposes to use for the Project pursuant to the applicant's water entitlement.

As shown in **Table 3.12-16**, by 2030, cumulative demand would far exceed water supplies developed with the MPWSP (or an equivalent) because the MPWSP is not being designed to accommodate future growth. As described in the EIR for the 2010 Monterey County General Plan, existing City, County, MPWMD, and State Water Board policies and restrictions would constrain new development in absence of a long-term water supply and thus cumulative demands beyond that serviced by MPWSP (or an equivalent) would not worsen the water supply conditions.

In summary, the Project's contribution to cumulative impacts is as follows: 1) Project demand and other entitlement demand could be serviced by Cal-Am in 2017 and after, even if a regional water supply project is not built, but would be subject to deep rationing and would intensify the cumulative level of rationing, which would be a significant unavoidable water supply impact; 2) in 2030, cumulative demand including future growth would far exceed regional water supplies and the Project's demand would contribute to that shortfall and likely rationing, but controls in local plans would likely constrain other future growth than that associated with the Recycled Water Project derived entitlements (and similar other entitlements) which would likely reduce these impacts.

Need for New Water Supplies

After December 31, 2016, the Project and future other entitlement water demands may be drawn from the Carmel River within Cal-Am's legal rights, but if so, it would displace an equivalent amount of supply for other existing Cal-Am users. Alternatively, the Project could be supplied directly from a regional water supply project, when completed. In either case, the Project and future other entitlement demand would increase demand for new supply. Cumulative impacts on water infrastructure, associated secondary impacts on the environment of infrastructure, and the Project's contribution to cumulative impacts are discussed separately below.

B. Water Infrastructure Capacity

WSD-B1(C). Existing, Project, and other entitlement demand create a cumulative demand for a regional water supply project. Regional water supply infrastructure and operations may have significant and unavoidable secondary environmental impacts and the Project would contribute to the need for such infrastructure. (Significant and unavoidable)

Distribution water lines are included in the Project to deliver water from current distribution lines to the point of demand. Other cumulative development inside the Del Monte Forest is limited to residential development and visitor-serving demand in areas with existing distribution lines. The Project's new demand and future other entitlement demand could range from 306 to 347 AFY. This

[9] *Nollan v. California Coastal Commission*, 483 U.S. 825 (1987), and *Dolan v. City of Tigard*, 512 U.S. 374 (1994),

amount is less than the amount of potable water previously provided to the Del Monte Forest for use in irrigation of golf courses and other large turf areas, which averaged up to 1,000 AFY and over in the past (see **Appendix H**). With Phase 2 of the Recycled Water Project, this demand for potable water use for irrigation of golf courses and large turf areas no longer occurs. Thus, the infrastructure already exists to deliver water to the Project and other entitled development from the Carmel River to the Del Monte Forest, taking into account the local connecting water lines included in the Project. Thus, no water infrastructure impacts would occur inside the Del Monte Forest due to the Project or future other entitlement demand related to supplying them with water from the Carmel River.

After 2016, project and future other entitlement water demand must either be provided from the Carmel River or from a regional water supply project If the Project and future other entitlement demand is provided from the Carmel River (by Cal-Am pursuant to its existing water rights), then a proportionate amount of water would need to be supplied to other existing users from a regional water supply project. As discussed above for the Project analysis, regional water infrastructure may have one or more significant unavoidable impacts on the environment. The Project would indirectly contribute to these secondary physical impacts on the environment because the Project would add additional demand (along with cumulative demand) for new regional water supply infrastructure.

This would be a significant and unavoidable impact.[10] As noted above, due to constitutional limitations established in the U.S. Supreme Court decisions, no further mitigation is feasible on the part of the applicant because any additional mitigation would be disproportionate to its water supply impact in light of the applicant's prior financing of the Recycled Water Project which has restored more water to the Carmel River than the applicant proposes to use for the Project pursuant to its water entitlement.

C. Carmel River Biological Resources

WSD-C1(C). If the State Water Board enforces the limitation on Cal-Am withdrawals from the Carmel River starting in 2017, then the Project and other entitlement demand would not have any impact on biological resources associated with the Carmel River. If the State Water Board delays enforcement of the limitations, then the Project and other entitlement would likely increase withdrawals from the Carmel River aquifer and thus contribute to cumulative impacts on Carmel River biological resources until the withdrawal limits are fully enforced. (Significant and unavoidable)

As noted above, after December 31, 2016, Cal-Am withdrawals from the Carmel River will be limited to its existing legal rights, which are far less than current levels of withdrawals, unless the State Water Board allows for a delay in enforcement of the 3,376 AFY limit for Cal-Am withdrawals. If the legal limit is enforced, cumulative demand from the Project, future other entitlement demand, or other sources will not change the allowable levels of Cal-Am withdrawals from the river and thus withdrawals would be the same with or without the Project. Because withdrawals would be unchanged for 2017 and after, the Project would not contribute to any adverse effect on Carmel River biological resources in 2017 and after in this scenario.

However, if the legal right limit is delayed, then the Project's demand plus other entitlement demand could result in an increase in Cal-Am withdrawals, which would affect biological resources

[10] As the CEQA evaluation for the MPWSP (and the GRP) has not yet been completed, this conclusion is tentative and will be re-examined when the Draft EIRs for these two regional water supply projects are released.

dependent on the Carmel River, including riparian vegetation, steelhead, CRLF, and other sensitive biological resources dependent on the river and its aquifer. This would be a significant impact. As noted above, due to constitutional limitations established in the U.S. Supreme Court decisions, no further mitigation is feasible on the part of the applicant because any additional mitigation would be disproportionate to their water supply impact in light of the applicant's prior financing of the Recycled Water Project which has restored more water to the Carmel River than the applicant proposes to use for the Project pursuant to the applicant's water entitlement.