

FINAL ENVIRONMENTAL IMPACT REPORT

VOLUME I

WATER ALLOCATION PROGRAM

SCH 87030309

Prepared for:

The Monterey Peninsula Water Management District

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EXECUTIVE SUMMARY

A. OVERVIEW

This Final EIR, prepared in compliance with the California Environmental Quality Act (CEQA) and the State's *CEQA Guidelines*, assesses the impacts of options and alternatives being considered by the Monterey Peninsula Water Management District (MPWMD or "District") as part of the District's Water Allocation Program.

The Monterey Peninsula Water Management District was created by the California Legislature in 1977 and ratified by local voters in 1978. In creating the MPWMD, the Legislature declared that "there is a need for conserving and augmenting the supplies of water by integrated management of ground and surface water supplies, for control and conservation of storm and wastewater, and for promotion of the reuse and reclamation of water (*Water Code Appendix §118-2*)."

The District has three primary responsibilities. The first is to manage the development of potable water supplies and the delivery of this water to users in the Monterey Peninsula area. The second is to protect the Monterey Peninsula area from drought impacts. The third is to protect the environmental quality of the Monterey Peninsula area's water resources, including the protection of instream fish and wildlife resources. The relationship among these three responsibilities is complex, and the responsibilities sometimes conflict with one another. Ultimately, the District must balance competing interests so as to satisfactorily, if not optimally, achieve each of its three primary responsibilities.

While it continues to pursue development of new water resources, the MPWMD must carefully manage the Monterey Peninsula area's currently limited water supplies. The District does this principally by regulating the amount of water that can be produced and delivered by public and private water distribution systems within the boundaries of the MPWMD.

Under State authorizing legislation and District regulations, the District requires that any person seeking to develop a new use, expand an existing use, or change an existing use first obtain a permit from the District.

Monterey Peninsula Water Resources System

This EIR analyzes the cumulative impacts of the extraction of water from the (MPWRS) and the delivery of this water to users in the Monterey Peninsula area. More specifically, however, this EIR focuses on the California-American Water Company (Cal-Am), which supplies approximately 92 percent of the water delivered by water distribution systems to users in the Monterey Peninsula area, and the role of the Monterey Peninsula Water Management District in regulating the Cal-Am system. Cal-Am, an investor-owned private utility, currently supplies water to public and private customers within part or all of the following jurisdictions: Carmel-by-the-Sea, Del Rey Oaks, City of Monterey, Pacific Grove, Sand City, Seaside, and Monterey County. Cal-Am is the only supplier within the district that serves more than one jurisdiction.

As a framework for the issuance of water meter permits and the equitable distribution of water among jurisdictions within Cal-Am's service area, the MPWMD in 1981 established a procedure for annually setting a limit on the total amount of water available to Cal-Am and a limit on how much Cal-Am water each jurisdiction could use during the following year. Under this procedure the District adopted a water supply capacity limit for the Cal-Am system and a formula for distributing water to jurisdictions within the Cal-Am service area. The same water supply capacity limit and distribution formula adopted in 1981 have been reaffirmed annually by the

District ever since. The District's Allocation Program does not govern how water is used within the various jurisdictions, but most jurisdictions have established their own internal policies and procedures for allocating water among various uses.

For the purpose of this EIR, the District's Water Allocation Program has been defined as a decision-making model containing the following three components:

- A limit on how much total water may be produced annually from the Monterey Peninsula Water Resource System, and a limit on how much of this can be produced by Cal-Am, given the need to protect instream fish and wildlife resources, protect riparian resources, provide for drought protection, and prevent seawater intrusion.
- A scheme for allocating Cal-Am water to each of the jurisdictions within the Cal-Am service area.
- A set of mechanisms for monitoring jurisdictional water use, ensuring jurisdictional compliance with the allocation scheme, and making adjustments to the allocation scheme over time.

The purpose of this Environmental Impact Report is three-fold:

- To assist the District in making decisions about how much water can or should be produced annually from the Monterey Peninsula Water Resource System and how much of this water can or should be produced by Cal-Am.
- To assist the District in making decisions about how Cal-Am water should be allotted among the jurisdictions within Cal-Am's service area.
- To assist the District in making decisions about how the District's Water Allocation Program should be administered and how adjustments to the Allocation Program should be made in the future.

To accomplish these purposes, this document has been structured as a Program EIR. As such, it will be used as the environmental document for a range of decisions by the District Board concerning water supply, water distribution, and monitoring jurisdictional water use and compliance with the District's Allocation Program. Ultimately, this document provides an assessment of the cumulative impacts of the District's issuance of individual water meter permits.

It should be noted that this EIR does not address the environmental impacts of any new water supply or reclamation project that is currently being considered by the MPWMD or which may be considered in the future. These projects will be evaluated through the preparation of separate environmental documents.

B. RELATIONSHIP BETWEEN THE DRAFT AND FINAL EIRS

As a result of verbal and written comments received on the Draft EIR during the public review process, the text of the EIR has been expanded and comprehensively revised. The major changes include the following:

- Expansion of the scope of the analysis to include the cumulative impacts of total water production and development potential associated with the Monterey Peninsula Water Resource System.
- Inclusion of a fifth water supply option (16,700 acre-feet), which represents Cal-Am production assuming a nine percent conservation savings.
- Relabelling of Supply Option IV (17,500 acre-feet) as the "Minimum Acceptable Fish Protection Production Level" option and Supply Option V (16,700 acre-feet) as the "Least Environmentally Damaging Production Level" that was analyzed in this EIR.
- Elimination of quantified distribution assumptions for Water Distribution Alternative I and inclusion of a sixth water distribution alternative.
- Use of a revised version of the Carmel Valley Simulation Model (CVSIM) to assess water production impacts.
- Addition of a separate volume to the EIR containing all the written and verbal comments on the Draft EIR with each separate comment indexed, a summary of each comment, and a response to each comment.
- Numerous technical and editorial changes in response to comments on the Draft EIR.

C. SUMMARY OF WATER SUPPLY OPTIONS, WATER DISTRIBUTION ALTERNATIVES, AND MONITORING/COMPLIANCE MECHANISMS

The various options and alternatives being considered by the District as part of its Water Allocation Program are described in the following sections.

1. Water Supply Options

The District Board has selected five water supply options for analysis in this EIR. These options represent the total amount of water that Cal-Am would be allowed to extract annually from the Monterey Peninsula Water Resource System (i.e., the Carmel River, the Carmel Valley Aquifer, and the Seaside Coastal Groundwater Subbasin). The five water supply options are:

- Water Supply Option I: 18,400 Acre-Feet
- Water Supply Option II: 20,000 Acre-Feet
- Water Supply Option III: 20,500 Acre-Feet
- Water Supply Option IV: 17,500 Acre-Feet
- Water Supply Option V: 16,700 Acre-Feet

Supply Option I is simply Cal-Am's current (January 1988) production level. Supply Option II reflects the original Cal-Am capacity assumption upon which the current Water Allocation Program is based. Supply Option III represents a slightly larger Cal-Am capacity assumption selected by the District Board for analysis in this EIR. Supply Option IV is the highest Cal-Am production level, based upon computer simulation, that would still maintain a viable steelhead run in the Carmel River. Supply Option V reflects the production level that would result if the District's goal of a nine percent water conservation savings in existing development were to be achieved.

For each of these Cal-Am supply options, there is a corresponding supply option for total production from the Monterey Peninsula Water Resource System (MPWRS). These supply options for total MPWRS production, which include Cal-Am system production, non-Cal-Am system production, and individual private well production, are as follows:

- Water Supply Option I: 21,537 Acre-Feet
- Water Supply Option II: 23,137 Acre-Feet
- Water Supply Option III: 23,637 Acre-Feet
- Water Supply Option IV: 20,637 Acre-Feet
- Water Supply Option V: 19,837 Acre-Feet

For the purposes of assessing the impacts of various water supply options in this EIR, non-Cal-Am production is held constant at its 1987 reporting level. It is assumed that the nominal increased water consumption attributable to new development outside of the Cal-Am service area will be offset by water conservation in existing uses outside the Cal-Am service area, resulting in no net increase in non-Cal-Am water consumption or production.

2. Water Distribution Alternatives

For those supply options that would result in additional water, the District Board has selected six alternative schemes for distributing available water among the eight jurisdictions to receive Cal-Am water under the District's Allocation Program. These jurisdictions are the cities of Carmel-by-the-Sea, Del Rey Oaks, Monterey, Pacific Grove, Sand City, and Seaside, unincorporated portions of Monterey County, and the Monterey Peninsula Airport District. The six distribution alternatives are:

- Water Distribution Alternative I: No Allocation
- Water Distribution Alternative II: Current Allocation
- Water Distribution Alternative III: Percentage of New Growth Allocation
- Water Distribution Alternative IV: Percentage of New Growth (with Adjusted Base) Allocation
- Water Distribution Alternative V: Percentage of Total Buildout Allocation
- Water Distribution Alternative VI: Current Consumption Plus Limited Expansion Allocation

Under Alternative I, water would be distributed to new development on a first-come, first-served basis or based on a priority system that favors particular types of development without regard to jurisdictional boundaries.

Under Alternative II, each jurisdiction would be allocated water according to MPWMD's current distribution formula. The current formula would be adjusted to reflect the creation of a separate allocation for the Monterey Peninsula Airport District.

Under Alternative III, each jurisdiction would be allocated water according to its percentage share of the *total new potential* residential, commercial, and industrial growth in the Cal-Am service area.

Alternative IV is similar to Alternative III, except that water for projects approved/completed in 1987 and for vacant lots-of-record would be included in each jurisdiction's base allocation.

Under Alternative V, each jurisdiction would be allocated water according to its percentage share of *total buildout potential* within the Cal-Am service area (i.e., 1987 base year consumption plus water for approved/completed 1987 projects and for potential new growth).

Under Alternative VI, each jurisdiction would be allocated water based on its current level of consumption plus water for vacant lots-of-record and a limited amount of water for low- and moderate-income housing and public projects.

To determine how much water would be made available to each jurisdiction within the Cal-Am service area, these six water distribution alternatives are applied to the five water supply options based on two different sets of assumptions concerning baseline production/consumption:

A. Current Production/Consumption

Total Cal-Am Production:	18,400 acre-feet
Total Cal-Am Consumption:	17,112 acre-feet

B. Current Production/Consumption with Nine Percent Conservation

Total Cal-Am Production:	16,700 acre-feet (16,744 acre-feet)
Total Cal-Am Consumption:	15,572 acre-feet

Because of the nature of some of the supply options and the distribution alternatives, only 26 of the total possible combinations of supply options, distribution alternatives, and assumed baseline production/consumption levels result in supply/distribution scenarios that would provide discrete and quantifiable amounts of additional water to the eight affected jurisdictions. These are shown in Table 1.

TABLE 1

SUPPLY/DISTRIBUTION SCENARIOS

**Baseline Production/Consumption Level A
(18,400 Acre-Feet/17,112 Acre-Feet)**

Distribution Alternative	Supply Option				
	I 18,400	II 20,000	III 20,500	IV 17,500	V 16,700
I	--	--	--	--	--
II	O	X	X	O	O
III	O	X	X	O	O
IV	O	X	X	O	O
V	O	X	X	O	O
VI*	O	X	X	O	O

**Baseline Production/Consumption Level B
(16,700 Acre-Feet/15,572 Acre-Feet)**

Distribution Alternative	Supply Option				
	I 18,400	II 20,000	III 20,500	IV 17,500	V 16,700
I	--	--	--	--	--
II	X	X	X	X	O
III	X	X	X	X	O
IV	X	X	X	X	O
V	X	X	X	X	O
VI*	X	X	X	X	O

X = New water available for allocation

O = No new water

-- = No jurisdictional water allocation

*Because of the nature of Distribution Alternative VI, there is actually only one allocation scenario under each assumed baseline consumption/production level.

As shown in Table 1, at the current production level of 18,400 acre-feet and consumption level of 17,112 acre-feet there would be no additional water to allocate under Supply Options I (18,400 acre-feet), IV (17,500 acre-feet), or V (16,700 acre-feet). At the production level of 16,700 acre-feet and consumption level of 15,572 acre-feet (which assume nine percent conservation) there would be no additional water to allocate under Supply Option V (16,700 acre-feet). Distribution Alternative I by definition would not establish a formula for allocating water to jurisdictions, but would provide for water use on a first-come, first-served basis or based on a priority system that favors particular types of development without regard to jurisdictional boundaries. Distribution Alternative VI because of its nature results in only one allocation scenario under each baseline production/consumption level.

For each of the 26 supply/distribution scenarios noted in Table 1, the District and its Consultants calculated the total amount of water and the net new water that would be made available to each jurisdiction.

To translate the net new water under each distribution alternative into new development potential for each jurisdiction and for the entire Cal-Am service area, water use multipliers for various types of development were applied to water use preferences provided by each jurisdiction. The resulting information is used as the basis for much of the impact analysis in this EIR.

3. Monitoring/Compliance Mechanisms

To administer the District's Water Allocation Program, the Monterey Peninsula Water Management District has developed several policies and procedures, some of which have been modified over time. In addition, the District has determined that alternatives to current procedures should be evaluated as part of this EIR.

Fixed-Year versus Rolling-Year Monitoring and Compliance Determinations

The District currently monitors jurisdictional water use and makes compliance determinations on a fixed-year basis. Jurisdictional water use is reported by Cal-Am at the end of each water year (i.e., June 30), and this information is formally reviewed by the Board for compliance with the jurisdictional water allocations the following October. Because this procedure would allow a jurisdiction to exceed its allocation (for any given 12-month period) many months before this fact is reported to the District and the District or jurisdiction could take corrective action, the Board is considering instituting a monitoring and compliance determination procedure based on a rolling-year. Under this procedure jurisdictional cumulative water use for the previous 12-month period would be monitored by the District monthly, allowing for rapid corrective action by the District or jurisdiction should a jurisdiction exceed its water allocation limit.

Fixed-Formula versus Discretionary Action

Under current practices the Board establishes jurisdictional water allocations for the following water year each May. While the process is totally discretionary, the Board has annually readopted the same water allocation formula it established in 1981.

Alternatives selected by the Board for analysis in this EIR include keeping the allocation process completely discretionary or establishing a fixed formula, such as one of the six distribution alternatives discussed in this EIR, including its current formula.

If a fixed-formula is to be adopted, there is a second set of alternatives for how frequently the formula should be reviewed and adjusted (e.g., every year, every other year, every third year, as needed).

A third set of alternatives concerns what information should be considered in these formal reviews and what information should be used as the basis for the adjustments to the formula.

Grace Amount

The District currently has an interim "grace" policy allowing any jurisdiction that exceeds its annual water allocation to temporarily borrow up to 100 acre-feet of water. The District has established a limit of 300 acre-feet on the total amount of "grace" water available to all jurisdictions.

The alternatives selected by the District for analysis in this EIR are continuing the interim policy, modifying it, or eliminating it.

4. Allocation/Conservation of New Water Supplies

The District has developed a proposed policy for how water saved through conservation, water freed up for use by reclamation projects, or potable water made available through the development of new supplies should be handled in the context of the District's Water Allocation Program. The District, however, has decided alternatives to this proposed policy should also be considered in this EIR.

Conservation

According to the policy proposed by the District, Cal-Am water saved through conservation would not be subject to reallocation. Such savings would instead automatically remain in the conserving jurisdiction's allotment in the form of reduced total metered sales. The jurisdiction would retain discretion as to the rededication of this water. The District's proposed policy would encourage each jurisdiction to set aside up to 50 percent of its saved water as a reserve to balance fluctuations in demand between years, and in recognition of the fact that conservation measures reduce capacity to conserve further in times of drought.

Alternatives to the District's proposed policy could include variations on these same essential components. For instance, rather than having conserved water remain in the conserving jurisdiction's allocation, it could either be reallocated by the District according to the District's chosen distribution formula (e.g., one of the six distribution alternatives discussed in this EIR), or it could be preserved by the District in the form of reduced Cal-Am production from MPWRS as drought or grace reserve for all jurisdictions within the Cal-Am service area.

Reclamation

Another major policy question for the District is how potable water supplies freed-up by reclamation projects should be reallocated and/or conserved within the context of the District's Allocation Program. The Carmel Sanitary District-Pebble Beach Community Services District (CSD-PBCSD) is currently proposing such a wastewater reclamation project.

The District's proposed policy is that water saved through reclamation projects reclaiming less than 50 acre-feet would not be subject to reallocation. For projects larger than 50 acre-feet,

reclaimed water savings in excess of 50 acre-feet would be reallocated and/or conserved by the District following CEQA review. The portion of the reclaimed water necessary to secure a project sponsor would be dedicated to that fiscal sponsor. The balance of the saved water would then be apportioned between environmental/drought reserve and growth at the discretion of the District Board. The water determined available for rededication to new development would then be allocated to each jurisdiction at the discretion of the District Board.

Variations on this proposed policy could include different methods of funding reclamation (e.g., no fiscal sponsor), different approaches to reallocating water to project sponsors, different standards for the size of projects over which water would be reallocated (instead of 50 acre-feet), and changed apportionment of water between environmental/drought reserve and new development.

Development of New Potable Water Supplies

Projects that add new potable water supplies may increase Cal-Am's system capacity limit and afford additional water for allocation. Such projects include the District's water supply efforts or efforts of private parties such as Cal-Am. Additionally, land-use development or non-Cal-Am water distribution systems may propose dedication of production facilities to Cal-Am or the District, thus increasing firm yield. Finally, current non-Cal-Am water rights may be permanently extinguished, thus increasing the firm yield available to Cal-Am.

According to the proposed District policy, water made available through the development of new sources would be "processed" by the District Board following CEQA review. The Board would first determine the magnitude of the new system capacity limit. The Board would then dedicate a portion of the new water to the project sponsor. The balance of the conserved water would then be apportioned between environmental/drought reserve and new development at the discretion of the District Board. The water available for new development would then be allocated to each jurisdiction at the discretion of the District Board.

Alternatives to the District's proposed policy would be similar to those discussed under reclamation.

D. SUMMARY OF WATER SUPPLY IMPACTS

The following paragraphs summarize the impacts of the five water supply options, focusing on those impacts that are deemed to be either significant or potentially significant. Mitigation measures identified to reduce or eliminate the significant and potentially significant impacts are also summarized.

1. Surface Water, Groundwater Resources, and Water Quality

While the Carmel River could experience no-flow periods under all five water supply options, surface water flows in the Carmel River replenish following rainfall events. All the water supply options are, therefore, considered to have less-than-significant impacts on surface water.

Although the increase in the periods of complete depletion of the usable storage in the Seaside Coastal Subbasin is small under Supply Options II and III, the increase represents a potentially significant impact on the basin. Staal et al. (1987) found that the aquifer could be pumped in excess of the long-term yield if it were to occur only for short periods. This point was

demonstrated by the aquifer response to heavy pumping during the 1976-1977 period. Increasing the overdraft frequency, however, increases the risk of going into a drought with a depleted aquifer.

The potential impact on the Seaside Coastal Subbasin due to depletion of usable storage can be mitigated to a less-than-significant level by reducing pumping from this subbasin when little or no usable storage remains, by providing additional supplies of water, by instituting water conservation measures, or by replenishing the subbasin during wet years through reduced water supply production.

As the quantity of water in storage in Subbasin AQ4 decreases, the subsurface inflow into, and therefore the quality of, the Lagoon will change. The decrease in the frequency of maximum aquifer storage would, therefore, be a potentially significant impact on the Lagoon hydrology.

Reducing pumping from Carmel Valley Aquifer Subbasin AQ4 could lessen impacts on Lagoon hydrology, but it is unknown whether or not reduced pumping would result in less-than-significant impacts. The impact is, therefore, considered potentially significant.

Supply Options II and III, by increasing the frequency of large drawdown in the Carmel Valley Aquifer and Seaside Coastal Subbasin, could have a potentially significant impact on non-Cal-Am users of groundwater. Impacts on non-Cal-Am users of groundwater could be mitigated either by providing Cal-Am water to these users or by curtailing Cal-Am pumping during periods of excessive drawdown. Since these measures are not modeled with CVSIM, it is unknown whether or not these actions would reduce the impact to a less-than-significant level. These impacts are, therefore, considered potentially significant.

Water quality impacts of each water supply option are related to the quantity of streamflow and groundwater discharge. The water supply options do not result in the direct discharge of pollutants, but might reduce flows that would dilute the pollutants. Supply Options II and III could have a potentially significant impact on water quality of the Monterey Peninsula Water Resource System. Water quality impacts could be mitigated by expanding the District's shallow groundwater quality monitoring program to include additional monitoring wells in the Carmel Valley Aquifer and Seaside Coastal Subbasin and additional monitoring locations on the Carmel River. If changes are detected in water quality constituents, the District could modify its water use to provide sufficient streamflow or groundwater storage to offset the changes. It is unknown if these changes could be mitigated to a less-than-significant level. These impacts are, therefore, considered potentially significant.

2. Vegetation

All five supply options would have a significant adverse impact on riparian vegetation, particularly that in Subbasins AQ3 and AQ4. During extremely dry years, Supply Options I, IV, and V would have potentially significant impacts on a small portion of the vegetation that relies on Subbasin AQ2 (that portion upstream of the Narrows) and significant impacts to channel bottom riparian vegetation near Los Laureles Wells. Supply Options II and III would have significant adverse impacts on Subbasin AQ2. Even under Supply Options I, IV, and V, there would be continuing loss of riparian vegetation due to extraction of groundwater, leading to extensive drawdown. This drawdown would continue to stress riparian species, resulting in a direct die-off of existing species and a decrease in seedling survival.

All five water supply options could have a potentially significant impact on Lagoon vegetation through increasing salinity and deteriorating water quality. While these impacts may be minor, the impacts are considered potentially significant due to the declining amount of wetland vegetation locally and statewide.

Upland vegetation could be affected through displacement or encroachment by new development under Supply Options I through IV. Impacts to upland vegetation due to urban growth cannot be assessed without site-specific information on the location and intensity of future development. The significance of these impacts is, therefore, unknown.

To minimize the impacts on riparian vegetation in Subbasins AQ2, AQ3, and AQ4, the following mitigation measures have been identified:

- Implement a water conservation program that retains water in the river and increases groundwater storage available to the riparian vegetation.
- Identify existing riparian areas of greatest extent and control drawdown to minimize the onset of water stress. Guarantee that no more than 10 percent of the identified riparian area would be lost due to groundwater drawdown.
- Enhance existing riparian areas by continuing and expanding the present riparian irrigation program to meet the physiological needs of existing vegetation, and preserve areas that may be destroyed or disturbed by development. Guarantee that no more than 10 percent of the riparian vegetation in the identified sites would be lost to water stress.
- Create new riparian habitat under the guidance of a qualified botanist and hydrologist to replace lost habitat in the lower terraces. Revegetation should be done using riparian species such as willows and cottonwood. A performance standard would be set to ensure a 70-percent survivorship of the total number of plantings after the first three years.
- Purchase conservation easements on upper floodplain terraces for riparian revegetation of sycamores and valley oaks.
- Remove non-riparian and non-native species along the riparian corridor and revegetate with riparian species.

To mitigate the significant impacts on Lagoon vegetation, the following mitigation measures have been identified:

- Reduce production in the MPWRS by providing additional supplies of water and use the additional water as surface inflow to the Lagoon. Water could be pumped from the Carmel Valley Aquifer and released to the Carmel River during the dry season to maintain Lagoon surface water levels and quality.
- Lagoon vegetation should be monitored to quantify its current status and long-term response to groundwater pumping. The monitoring should include mapping of the extent of existing wetland acreage and vegetation zonation patterns.

Implementation of these mitigation measures would reduce impacts on riparian vegetation and Lagoon vegetation, but it is unknown whether these impacts would be reduced to a less-than-significant level. These impacts are, therefore, considered potentially significant.

3. Wildlife

All five supply options would have a significant adverse impact on wildlife due to the continued decline in riparian habitat.

The impacts on wildlife dependent on riparian habitat, including special-status species, can be minimized by adopting the mitigation measures outlined for riparian vegetation impacts. As noted under "Vegetation," however, impacts on riparian vegetation may not be reduced to a less-than-significant level even after implementation of the identified mitigation measures. Impacts on wildlife associated with riparian vegetation would, therefore, be considered potentially significant under all five supply options.

Potentially significant impacts on Lagoon wildlife would occur as impacts to Lagoon vegetation increased (as discussed in the previous section). These impacts could be mitigated by the Lagoon vegetation mitigation measures discussed above. It is unknown, however, whether these measures could reduce the impacts to a less-than-significant level. Lagoon wildlife impacts are, therefore, considered potentially significant.

Wildlife dependent on upland vegetation could be affected through displacement or encroachment by new development under Options I through IV. Impacts to upland vegetation and wildlife due to urban growth cannot be assessed without site-specific information on the location and intensity of future development. The significance of these impacts is, therefore, unknown.

4. Fisheries

All five water supply options would have significant adverse impacts on the steelhead population by reducing flows in the Carmel River to a level that would not sustain a viable steelhead run.

The impacts of Supply Options IV and V on the steelhead population could be reduced to a less-than-significant level if the following mitigation measures were successfully implemented:

- If additional sediment enters Los Padres and San Clemente Reservoirs and reduces the ability to maintain flows upstream of the Narrows, a permanent, fully-funded program to rescue juveniles would be instituted. The goal of this program would be to rescue juveniles from the reach between Robles Del Rio and the Narrows and transplant them into the reach between Robles Del Rio and San Clemente Dam, if habitat is available there, or into a holding facility below San Clemente Dam. Either of these options would probably require that juveniles be fed and the facilities maintained on a daily basis. The effect of reservoir sedimentation on streamflow could be offset to a limited degree by dredging Los Padres and San Clemente Reservoirs to their original storage capacities. ✓
- Partial reconstruction of the fish ladder at San Clemente Dam and a change in the operation of the spillway gates to allow adult steelhead to pass upstream and juvenile steelhead to pass downstream without being interrupted by lowering or raising the gates.
- Additional modifications to the downstream end of the spillway at Los Padres Dam to keep steelhead smolts and kelts from being impinged against the exposed bedrock below the spillway chute.

- If additional sediment enters Los Padres and San Clemente Reservoirs and reduces the ability to maintain flows upstream of the Narrows, drilling of new wells in Subbasin AQ4 to increase Cal-Am production capacity during drought years *and* eliminate pumping from AQ2, except during years when unimpaired runoff does not exceed the 12.5 percentile rank.
- Expansion of the program to capture and transport smolts downstream during critical years which is being implemented as part of a cooperative agreement by MPWMD and Cal-Am. Under the current agreement, this program is required only in critical years.
- A program to prevent stranding of early fall and winter migrants by capturing them whenever such a risk exists.
- A program to attract adults into the Lagoon and transport them upstream of the Narrows.

Although these measures would reduce the impacts of Supply Options I, II, and III on steelhead resources, the impacts would still be considered potentially significant.

5. Recreation

Under all five supply options, there would be potentially significant impacts on fishing-related recreation because of the reduction in the steelhead run in the Carmel River. Under all five supply options, there would also be significant adverse impacts on recreation activities because of the continued loss of riparian vegetation.

Fishing-related impacts could be reduced by the mitigation measures outlined above under "Fisheries", and the other recreation impacts could be minimized by the measures identified under "Vegetation." Even with these mitigation measures, however, the effects on recreation from Supply Options I, II, and III are considered potentially significant. For purposes of CEQA, however, recreation impacts are considered socioeconomic effects and should, therefore, not be considered significant environmental impacts.

6. Aesthetics

Under all five supply options, there would be significant adverse impacts on the aesthetic qualities of the Carmel River corridor due to the continued loss of riparian vegetation. These adverse impacts could be minimized by the measures outlined under "Vegetation." Even with these mitigation measures, however, the aesthetic impacts all five supply options would be considered potentially significant.

A reduction in available water supply could also have an adverse effect on urban aesthetics. Under Supply Options IV and V, water reduction could reduce the amount of available water for irrigation of open space, landscape, and lawns, thus creating the "brown lawn effect." The brown lawn effect is aesthetically unpleasant and would be considered a potentially significant impact. This impact could be mitigated to a less-than-significant level by using drought-resistant landscaping or vegetation.

7. Drought Conditions

The impacts on drought conditions on the Monterey Peninsula of the five water supply options are characterized according to four categories: the frequency and magnitude of shortfalls; the

level of risk/uncertainty, the institution of limitations on setting new water meters; and the hardship effects of rationing. Only under the category of frequency and magnitude of shortfalls would there be adverse effects under any of the supply options. Under Supply Options II and III, shortfalls in water supply would occur two to three times as often as they would under current conditions. These impacts could be reduced to less-than-significant levels if the District implemented conservation or reclamation programs or developed additional water storage capacity.

The conservation or reclamation of water would reduce the frequency and magnitude of shortfalls only if the freed-up water is neither reallocated to the jurisdictions nor rededicated by the jurisdictions to new development. On the other hand, if all the water is reallocated or rededicated, the frequency and magnitude of shortfalls would worsen. The development of additional water storage would reduce, if not eliminate, shortfalls--depending on how much of the new water is allocated to support additional growth.

For purposes of CEQA, social and economic inconveniences, such as those used to describe drought-related impacts, are considered to have no significant environmental impact.

8. Traffic

Supply Options II and III at Baseline Consumption/Production Level A and Supply Options I, II, III, and IV at Baseline Consumption/Production Level B would have significant impacts on traffic by allowing for additional growth in the jurisdictions within the MPWMD boundaries. The additional traffic associated with new development would generally worsen the levels of service (LOS) on freeways. Since all of the freeway segments discussed in this EIR are currently operating at unacceptable levels of service, as defined by Monterey County, the impacts associated with additional traffic volumes resulting from new development supported by Supply Options II and III are considered significant.

Street and highway projects have been identified by the Monterey County Transportation Commission (MCTC) and the California Department of Transportation to improve freeway conditions in the Monterey Peninsula region (Monterey County Transportation Commission 1988). Additional improvements would be needed to improve LOS on some area freeways to the C/D range.

It is unknown, however, whether all these traffic improvements would reduce the traffic impacts of new development under Supply Options I through IV to less-than-significant levels.

9. Schools

New development in areas served by Cal-Am under Supply Option III at both production/consumption levels could lead to student enrollments which would exceed remaining high school capacities in the Monterey Peninsula Unified School District (MPUSD) and the Carmel Unified School District (CUSD).

In addition, while development in the jurisdictions served by Cal-Am would not alone result in student enrollments beyond existing remaining capacities under Supply Option II at Baseline Production/Consumption Level A and Supply Options I, II, and IV at Baseline Production/Consumption Level B, it would contribute to the cumulative increases in student enrollment which would exceed remaining existing capacities at MPUSD and CUSD high schools. Additionally, Supply Option III at both production/consumption levels would contribute