CHAPTER 5
Alternatives Screening and Analysis

5.1 Introduction and Overview

This chapter describes the methodology used to identify and screen alternatives to the proposed project, compares the environmental impacts of the alternatives against the proposed project, and identifies the CEQA environmentally superior alternative and the NEPA environmentally preferable alternative and agency preferred alternative.

- ***Sections 5.1.1*** and ***5.1.2*** describe the guidelines for alternatives analysis under CEQA and NEPA, and the process by which the alternatives presented in this EIR/EIS will be carried forward and presented in the EIR/EIS for analysis. ***Section 5.1.2*** restates the proposed project objectives and significant impacts, and discusses their relevance in the alternatives review process.
- ***Section 5.2*** presents and discusses other water supply alternatives that were considered and may have informed the formulation of the alternatives analyzed in this EIR/EIS, but were not carried forward for detailed evaluation in this EIR/EIS.
- ***Section 5.3*** describes the process employed to develop, screen and evaluate potential alternative components in order to develop whole alternatives to the MPWSP for analysis.

Section 5.3.1 describes the regulatory considerations applicable to the successful implementation of a desalination project and **Section 5.3.2** describes the two-step screening and evaluation process for components of whole alternatives. After the individual components are described and screened to determine feasibility in step 1 (**Sections 5.3.3** through **5.3.5**), the components that are carried forward are evaluated against each other (step 2) in **Section 5.3.6.** Components that are considered to be the least environmentally damaging are then combined into "whole" alternatives in **Section 5.4**. Components that are not carried forward are described, with the reason for their dismissal, in Appendix I.

- ***Section 5.4*** describes a No Project/No Action Alternative and five action alternatives -- which include alternatives to the CalAm proposed project, reduced capacity alternatives, and desalination projects proposed by other entities -- and discusses their ability to meet project objectives.
- ***Section 5.5*** presents the impact analyses of the six whole alternatives (the No Project/No Action Alternative and the five action alternatives) that are described in Section 5.4 and compares those alternatives against the proposed project.
- ***Section 5.6*** identifies the environmentally superior/preferred alternative(s) and the NEPA agency preferred alternative.

5.1.1 Alternatives Analysis – CEQA/NEPA Requirements

One of the most important aspects of the environmental review process is the identification and assessment of the environmental impacts of reasonable alternatives. In addition to mandating consideration of the No Project/No Action Alternative, both the CEQA Guidelines (14 Cal. Code Regs. § 15126.6(d)) and the NEPA Regulations (40 CFR § 1502.14) emphasize the selection of a reasonable range of alternatives that meet the purpose and need of the proposed action, and the comparative assessment of the impacts of the alternatives to allow for public disclosure and informed decision-making.

5.1.1.1 CEQA Requirements

Section 15126.6 of the CEQA Guidelines sets forth the following criteria for selecting and evaluating alternatives:

- ***Identifying Alternatives*.** An EIR shall describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the proposed project but would avoid or substantially lessen any of the significant effects of the project. Factors that may be considered when addressing the feasibility of an alternative include site suitability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, economic viability, and whether the proponent can reasonably acquire, control, or otherwise have access to an alternative site. An EIR need not consider an alternative whose impact cannot be reasonably ascertained and whose implementation is remote and speculative. The specific alternative of "no project" must also be evaluated. Of those alternatives presented, an EIR needs to examine in detail only ones that are determined at a preliminary level to feasibly attain most of the basic objectives of the proposed project.
- ***Range of Alternatives*.** An EIR need not consider every conceivable alternative, but must consider and discuss a reasonable range of feasible alternatives in a manner that will foster

informed decision-making and public participation. The "rule of reason" governs the selection and consideration of EIR alternatives, requiring that an EIR set forth only those alternatives necessary to permit a reasoned choice. The CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may "impede to some degree the attainment of project objectives or would be more costly." However, alternatives must also be feasible, and feasible is defined as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors."

- ***Evaluation of Alternatives.*** The EIR must evaluate the comparative merits of the alternatives and include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. Matrices may be used to display the major characteristics and the environmental effects of each alternative. If an alternative would cause one or more significant effects not caused by the project as proposed, the significant effects of the alternative must be discussed, but in less detail than the significant effects of the project.

5.1.1.2 NEPA Requirements

NEPA emphasizes that the identification and assessment of alternatives is the heart of the environmental impact statement (40 CFR § 1502.14). NEPA requires the agency to consider the no action alternative, other reasonable courses of action, and mitigation measures that are not already incorporated in the proposed action. Except for the no action alternative, alternatives should meet the purpose and need (40 CFR § 1502.13), and be reasonable, i.e., practical or feasible from the technical and economic standpoint and using common sense. NEPA also requires agencies to consider reasonable alternatives not within the jurisdiction of the lead agency (40 CFR § 1502.14 (c)). Agencies must rigorously explore and evaluate all reasonable alternatives, and briefly discuss the reasons for eliminating alternatives from detailed study. Agencies must provide substantial and detailed treatment to each alternative in the analysis, and impacts of the alternatives should be presented in comparative form in order to sharply define the issues and provide a clear basis for choice to the public and the decision-makers.

5.1.2 Project Objectives and Significant Impacts

As noted in Section 5.1.1.1, the CEQA Guidelines call for evaluating alternatives that would attain most of the basic objectives of the project, but would avoid or substantially lessen any identified significant effects of the project. Under the CEQ regulations for NEPA (40 CFR § 1502.13, Purpose and Need; and 40 CFR §1502.14, Alternatives), an EIS must identify "the underlying purpose and need to which the lead agency is responding in proposing the alternatives including the proposed action" (40 CFR § 1502.13), and present the environmental impacts for the proposed action and each alternative in comparative form, thus defining the issues and providing a clear choice among alternatives for decision-makers and the public (40 CFR §1502.14). Therefore, under the CEQA Guidelines and CEQ regulations, appropriate alternatives for the EIR/EIS analysis are those that would meet most of the basic project objectives (or underlying purpose and need for the project) and are reasonable/feasible. Furthermore, the analysis includes alternatives that would avoid or substantially lessen any of the significant

environmental effects of the proposed project. In addition, NEPA does not require a cost-benefit analysis, but allows cost-benefit analysis if it is relevant to the choice among environmentally different alternatives. In this EIR/EIS, economic factors were not used as criteria for selection of the alternatives carried through for detailed analysis. Nevertheless, Section 5.5.20 considers the economic and social impacts of the alternatives resulting from any natural or physical effects on the environment. Other cost factors will be considered by decision-makers as described in Section 1.5.4.

5.1.2.1 MPWSP Objectives, Purpose and Need

The MPWSP is needed to replace existing water supplies that have been constrained by legal decisions affecting the Carmel River and Seaside Groundwater Basin water resources. In 1995, the California State Water Resources Control Board (SWRCB) directed CalAm to reduce and eventually terminate surface water diversions from the Carmel River in excess of its legal entitlement of 3,376 acre-feet per year (afy). SWRCB Order 95-10 directed CalAm either to obtain appropriative rights to the water that was being unlawfully diverted, or to obtain water from other sources. In the meantime, to reduce diversions from the Carmel River to the greatest practicable extent, the order directed CalAm to implement conservation measures to offset demand and to maximize its use of the Seaside Groundwater Basin to serve existing customers. (See Chapter 2 for more information on Order 95-10 and the subsequent Cease and Desist Order, SWRCB Order 2009-0060).

In 2006, the Monterey County Superior Court adjudicated the rights of various entities to use groundwater resources from the Seaside Groundwater Basin. In its decision, the Court established the adjudicated water rights of all the users of the Seaside Groundwater Basin, for the purpose of avoiding long-term damage to the basin. The adjudication substantially reduced the amount of groundwater available to CalAm (from approximately 4,000 afy to 1,474 afy). (See Section 2.2.4 in Chapter 2, Water Demand, Supplies, and Water Rights for more information on the Seaside Groundwater Basin adjudication.)

The need for the proposed MPWSP is predicated on the following:

- SWRCB Order 95-10, which requires CalAm to reduce and terminate surface water diversions from the Carmel River in excess of its legal entitlement of 3,376 afy, and SWRCB Order 2009-0060, which requires CalAm to terminate the diversions in excess of its legal entitlement by December 2021; and
- The Monterey County Superior Court's adjudication of the Seaside Groundwater Basin, which effectively reduced CalAm's pumping from the Seaside Groundwater Basin from approximately 4,000 afy at the time of the adjudication to CalAm's adjudicated right of 1,474 afy.

The purpose and need is thus to comply with these legal requirements while supplying sufficient water to CalAm customers. Project alternatives were evaluated for their ability to fulfill the project purpose and need and meet the basic objectives of the proposed project. The MPWSP objectives (presented in Chapter 1, Introduction) are repeated here for ease of reference:

The primary, or fundamental, objectives of the proposed MPWSP are to:

1. Develop water supplies for the CalAm Monterey District service area to replace existing Carmel River diversions in excess of CalAm's legal entitlement of 3,376 afy, in accordance with SWRCB Orders 95-10 and 2009-0060;
2. Develop water supplies to enable CalAm to reduce pumping from the Seaside Groundwater Basin from approximately 4,000 to 1,474 afy, consistent with the adjudication of the groundwater basin, with natural yield, and with the improvement of groundwater quality;
3. Provide water supplies to allow CalAm to meet its obligation to pay back the Seaside Groundwater Basin by approximately 700 afy over 25 years as established by the Seaside Groundwater Basin Watermaster;
4. Develop a reliable water supply for the CalAm's Monterey District service area, accounting for the peak month demand of existing customers;
5. Develop a reliable water supply that meets fire flow requirements for public safety;
6. Provide sufficient water supplies to serve existing vacant legal lots of record;
7. Accommodate tourism demand under recovered economic conditions;
8. Minimize energy requirements and greenhouse gas emissions per unit of water delivered; and
9. Minimize project costs and associated water rate increases.

The secondary objectives of the MPWSP are to:

1. Locate key project facilities in areas that are protected against predicted future sea-level rise in a manner that maximizes efficiency for construction and operation and minimizes environmental impacts;
2. Provide sufficient conveyance capacity to accommodate supplemental water supplies that may be developed at some point in the future to meet build out demand in accordance with adopted General Plans; and
3. Improve the ability to convey water to the Monterey Peninsula cities by improving the existing interconnections at satellite water systems and by providing additional pressure to move water over the Segunda Grade.

The purpose of the federal proposed action is to authorize otherwise prohibited activities to occur within MBNMS under the National Marine Sanctuaries Act (NMSA), to ensure that the State and Federal permits and the proposed project comply with NMSA regulations, and to ensure that sanctuary resources are protected by identifying terms and conditions that may be necessary. The MBNMS proposed action was prompted by CalAm's request for NMSA authorization and permits to construct, operate, maintain and decommission subsurface seawater intake facilities in the sanctuary and to allow brine discharges through an existing ocean outfall facility within the sanctuary; both activities would be associated with CalAm's proposed desalination plant. Therefore, the need for MBNMS action is to respond to CalAm's request, in accordance with NMSA regulations, and to protect sanctuary resources. This EIR/EIS assesses the environmental

impacts of other project alternatives which also involve intakes from and/or discharges into MBNMS which would require authorization from MBNMS.

5.1.2.2 Significant Environmental Impacts

The alternatives to be considered under CEQA and NEPA include those that avoid or substantially lessen one or more of the significant environmental effects identified for the proposed project. Many of the adverse environmental impacts described in Chapter 4, Environmental Setting, Impacts, and Mitigation Measures, were determined to be less than significant. Other adverse impacts were determined to be significant, but could be reduced to a less-than-significant level through the implementation of mitigation measures. Still other impacts were found to be significant and unavoidable even with mitigation measures. The consideration of these mitigation measures also satisfies the requirements under NEPA to consider mitigation alternatives, and for MBNMS to consider imposition of additional terms and conditions to the authorizations to minimize impacts on sanctuary resources.

Based on the analysis presented in Chapter 4, mitigation measures would reduce potentially significant impacts to less-than-significant levels for most topical areas, except for: conflict with the City of Marina's Local Coastal Land Use Plan (a terrestrial biology impact), construction noise, air quality during construction, and indirect impacts from growth. Further, the proposed project may result in significant and unavoidable cumulative impacts on transportation and traffic, noise, and air quality during construction.

While the primary focus of the alternatives analysis in this chapter is to develop a reasonable range of alternatives and analyze their impacts on the environment, this chapter also analyzes two other separately proposed water supply projects in the region (DeepWater Desal and the People's Project) for full consideration and comparison among projects currently under NEPA and CEQA review that could satisfy the project objectives and the agencies' purpose and need for action.