# 5.6 Environmentally Superior Alternative/Preferred Alternative

This section presents a summary comparison of the overall potential environmental impacts of the proposed project and alternatives in order to identify an environmentally superior alternative and preferred alternative. Environmental advantages and disadvantages of each alternative are discussed. Section 5.5 addresses the individual impacts associated with each alternative by topic and by individual impact. The alternatives, as described in Chapter 3 (Description of Proposed Project) and Section 5.4, are the proposed project, no project/no action, Alternative 1 (Slant Wells at Potrero Road), Alternative 2 (Open-Water Intake at Moss Landing), Alternative 3 (Monterey Bay Regional Water Project (MBRWP or DeepWater Desal Project)), Alternative 4 (People's Moss Landing Water Desalination Project (People's Project)), Alternative 5a (Reduced Project 6.4-mgd Desalination Plant - Intake Slant Wells at CEMEX), and Alternative 5b (Reduced Project 6.4-mgd Desalination Plant - Intake Slant Wells at Potrero Road).

The analysis of alternatives presented in this section and Section 5.5, taken together with the analysis of the proposed project in Chapter 4, provide a basis to identify the environmentally superior alternative under CEQA (CEQA Guidelines Section 15126.6) and the preferred alternative under NEPA (40 CFR 1502.14(e)). Although NEPA CEQ regulations (40 CFR §1505.2) require the identification of the "environmentally preferable" alternative, this is required only for the Record of Decision (ROD). This Draft EIR/EIS identifies the NEPA environmentally preferred alternative for informational purposes. The environmentally superior alternative/preferred alternative is the alternative identified as meeting most of the basic project objectives, similar to satisfying the primary purpose and need, and resulting in the fewest or least severe combination of significant environmental impacts, CEOA Guidelines Section 15126.6 provides that if the No Project Alternative is the environmentally superior alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. Here, the No Project Alternative may technically qualify as the environmentally superior/preferred alternative because it would involve the least amount of impact on the existing physical environment. However, it would not meet most of the basic project objectives; it would have considerable economic and socioeconomic consequences (e.g., severe water conservation measures), and could result in different impacts than the proposed project or other alternatives given the failure of the No Project Alternative to supply sufficient water for customers within the CalAm service area. For this reason, the discussion below focuses on selecting another environmentally superior/preferred alternative from among the alternatives (including the proposed MPWSP) presented in this EIR/EIS.

It is important to recognize that the selection of the environmentally superior/preferred alternative is not always a straight-forward and formulaic exercise. In some cases, including here, no alternative stands out from the others as eliminating all significant and unavoidable, long-term environmental effects. There are environmental tradeoffs among the alternatives and even within resource issue areas or topics, making it difficult to summarize the net effect of the alternatives. As such, considerable weighing among the severity of impacts of the alternatives and professional judgment as to the relative importance of topical impact areas is necessary. Such judgment, while based on

reasoning grounded in the scientific study that comprises the EIR/EIS, can be subjective. This means that, although this EIR/EIS identifies an environmentally superior/preferred alternative, the CPUC and MBNMS decision-makers could ultimately come to a different conclusion as to which alternative is the environmentally superior/preferred alternative based on applying different weights to various impact areas. For example, one primary area of concern for MBNMS is marine biological resources and potential impacts on these resources from brine discharge and impingement/entrainment.

#### 5.6.1 Summary and Comparison of Impacts of Alternatives

While most of the alternatives have impacts that are similar to the proposed MPWSP for most of the topical areas identified in Sections 5.5, there are several impacts that are unique to certain alternatives, or the impacts are more or less severe than the proposed MPWSP, that factor heavily into the selection of the environmentally superior/preferred alternative. **Table 5.6-1** presents the impact conclusion for each impact statement, for every topical area evaluated, for the proposed project and for all alternatives, and provides a relative impact severity for each alternative (increased, decreased or same) compared to the proposed project. Beneficial impacts are highlighted in green.

#### 5.6.1.1 Overview and Assumptions

The alternatives evaluated in this EIR/EIS would produce different quantities of water and are placed into three categories: (a) those that would produce more water than CalAm needs to meet the project objectives/purpose and need (Alternatives 3 and 4); (b) those that would produce less water (Alternatives 5a and 5b), and; (c) those that would produce the same water as the proposed project (Alternatives 1 and 2). The alternatives that provide more water than the proposed project have been sized by their proponents to serve regional needs and that is acknowledged in the comparisons. The alternatives that are smaller than the proposed project would not completely meet the project purpose and need for water, but would reduce the severity of impacts commensurate with their smaller capacities. Since the GWR project EIR was certified and approved by the MRWPCA in October 2015, and the CPUC in September 2016 authorized CalAm to purchase 3,500 afy of the GWR supply for extraction from the Seaside Groundwater Basin, GWR is assumed in the No Action alternative and analyzed as a cumulative project with several of the alternatives, including the 6.4 mgd desalination plant in Alternatives 5a and 5b. While CalAm is seeking approval of the 9.6 mgd project (proposed project), CalAm proposes to move forward with a 6.4 mgd desalination plant (Alternative 5a and 5b) if the GWR project is successfully implemented to help meet the SWRCB's CDO. In case the GWR project faces hurdles that would impair its ability to supply the additional 3.2 mgd of water for CalAm's customers in a timely manner, CalAm also seeks contingency approval for the 9.6 mgd desalination plant. Therefore, in order to make a meaningful comparison, the methodology of choosing the environmentally superior, or preferred alternative, includes the following:

1. The combination of Alternative 5a or 5b with the already-approved GWR project would size these alternatives to meet the purpose and need, and the cumulative environmental effects of the 6.4 mgd desalination plant in combination with the impacts of the GWR project are considered in the comparison, and;

2. Identifying two environmentally superior/preferred alternatives; one without, and one with the GWR Project.

#### 5.6.1.2 Proposed Project (9.6 mgd MPWSP) Significant Impacts

To provide a basis for comparison, the proposed project would result in the following significant and unavoidable impacts in the issue areas of terrestrial biology, transportation, air quality, greenhouse gases, noise, and growth-inducement:

- Disturbance to central dune scrub within the CEMEX mining facility that is designated as "primary habitat" under the City of Marina Local Coastal Program (LCP); construction and operation of portions of the Source Water Pipeline, new Desalinated Water Pipeline, and new Transmission Main, in vegetation communities within the coastal zone designated as primary or secondary habitat, in conflict with the City of Marina's LCP; and cumulatively considerable contribution to inconsistencies with the City of Marina LCP.
- Cumulatively considerable contribution to significant cumulative impacts on traffic and transportation, given the size of the MPWSP, along with the number of cumulative projects and uncertainty regarding overlap in project construction timing.
- Short-term construction emissions in excess of MBUAPCD significance thresholds for ozone and NO<sub>2</sub> standards on sensitive receptors; associated conflict with the intent of the 2012 Air Quality Management Plan due to these short-term exceedances; and cumulatively considerable contribution to construction emissions.
- Greenhouse Gas emissions in excess of the 2,000 metric tons per year significance threshold and associated inconsistency with the GHG emission reduction goals for year 2030 identified in Executive Order B-30-15.
- Potential conflicts with AB 32 Climate Change Scoping Plan Measure W-3 regarding electricity use.
- Cumulatively considerable contributions to GHG emissions and conflicts with the AB 32 Climate Change Scoping Plan.
- Project-specific and cumulative nighttime noise impacts from the installation of the Castroville Optional Alignment and drilling and development of the ASR-5 and ASR-6 Wells.
- Indirect growth inducement by removing, to some extent, water supply limitations as an obstacle to growth in CalAm's Monterey District service area. The environmental consequences of this planned growth have been addressed in adopted local plans and the associated CEQA review as well as in other, project-specific, documentation. Some of the identified indirect effects of this growth are significant and unavoidable; others are significant but can be mitigated.
- Cumulatively considerable contribution to secondary growth effects in Monterey County including increased traffic, noise, and air pollution and loss of open space and biological resources.

Alternative 5a, which is a reduced-size project with components at the same locations as the proposed project, would result in the same impacts listed above for the proposed project. However, the severity of impacts would be slightly reduced due to the smaller project size.

None of the alternatives would avoid all of the above-listed significant unavoidable impacts of the proposed project and several alternatives would result in additional significant impacts, as noted below. There would be tradeoffs in impacts on terrestrial biological resources due to the differences in locations of alternative components. All of the action alternatives would result in significant and unavoidable construction noise, air quality and GHG emissions impacts, including from temporary cumulatively considerable contributions to health effects on sensitive receptors, similar to the proposed project and in some cases, more severe than the proposed project.

#### 5.6.1.3 Key Impact Differences Between Alternatives

The following discussion summarizes key differences in the significant environmental impacts among the alternatives and the proposed project, including consideration of resource impacts that are of particular importance to MBNMS.

Three of the alternatives would use screened, open water intakes, which would reduce or avoid several proposed project impacts but result in new significant impacts. These alternatives would have similar or increased impacts compared to the proposed project with regard to air quality, GHG, traffic and noise. The key differences in impacts pertaining to open water intakes included in Alternative 2 (Open-Water Intake at Moss Landing), Alternative 3 (DeepWater Desal Project), and Alternative 4 (People's Project), compared to the proposed project include:

- The construction of a new open water intakes would require the use of barges and other activities in the waters of MBNMS, including the placement of ballast rock on the seafloor, and could result in temporary and permanent direct and indirect effects on marine habitat and associated marine biological resources, as well as historical resources (i.e., shipwrecks) in Monterey Bay, resulting in significant and unavoidable impacts.
- The construction and operation of new intake facilities, located within a ravine of the Monterey Submarine Canyon, could result in temporary and permanent direct and indirect effects due to unstable slopes and the potential for landslides on the seafloor as well as alteration of the seafloor and oceanic processes such as sediment transport, resulting in potentially significant impacts.
- Operation of screened open-water intakes would result in long-term direct and indirect effects on marine biological resources within MBNMS in Monterey Bay as a result of impingement and entrainment, resulting in a significant and unavoidable impact.
- Operation of these open water intake alternatives would avoid less than significant direct or indirect effects on groundwater resources because of the absence of slant well pumping for source water.

The following impacts are unique to Alternative 3 (DeepWater Desal Project) and Alternative 4 (People's Project):

- Due to the proximity of live-aboard boats in Moss Landing Harbor, construction activities would result in exposure of more sensitive receptors to substantial pollutant concentrations from construction equipment emissions, resulting in a significant and unavoidable impact.
- Operation of a new, brine-only outfall (no co-mingling with wastewater or other diluent flows) could result in long-term direct and indirect effects on water quality related to

increased levels of salinity and concentrations of certain constituents, resulting in a significant and unavoidable impact.

- Each of these alternatives would produce more desalinated water than the proposed MPWSP, resulting in more water being available that would remove an impediment to growth in the three county-region resulting in a significant and unavoidable impact:
  - Alternative 3 (DeepWater Desal) would produce 22 mgd
  - Alternative 4 (People's Project) would produce 12 mgd

The following impacts are unique to Alternative 3 (DeepWater Desal Project):

- Operation of the co-located data center would require the use of substantial quantities of
  energy that would constrain local or regional supplies and require additional capacity,
  resulting in a significant and unavoidable impact.
- Operation of emergency generators would use large amounts of fuel in a manner that would be unnecessary and wasteful, resulting in a significant and unavoidable impact.

The following impacts are unique to Alternative 4 (People's Project):

- Construction of the desalination plant could impact (currently unsurveyed) historical resources, resulting in a significant and unavoidable impact.
- Operation and siting of the intake pumping facilities on top of the existing caisson at the
  existing shoreline could result in long-term direct effects on coastal erosion and scour
  processes that could expose adjacent properties to coastal flooding and a change in
  sediment transport, resulting in potentially significant impacts.
- Operation and siting of the desalination plant facilities within a 100-year flood zone could cause long-term direct effects related to redirection of flood flows, resulting in a significant and unavoidable impact.
- Operation and siting of the intake pumping facilities on top of the existing caisson would result in impacts on the visual quality of the shoreline in Moss Landing and interrupt views of MBNMS resources, resulting in potentially significant impacts.

The following impact would be unique to slant well pumping at Potrero Road (Alternative 1 and 5b):

• Operation of the slant wells at Potrero Road for a 6.4 mgd desalination plant (Alternative 5b) would lower groundwater levels in the Dune Sands/Perched-A aquifer in the Moss Landing area; operation of the wells for a 9.6 mgd desalination plant (Alternative 1) would additionally lower groundwater levels in the 180- and 400-Foot aquifers, thereby capturing groundwater that would have otherwise flowed into Elkhorn Slough. The direct and indirect permanent effects on marine and terrestrial biological resources at Elkhorn Slough from the lowering of groundwater levels would result in significant and unavoidable impacts.

# 5.6.2 Determination of Environmentally Superior and Preferred Alternative

Based on current information, Alternatives 3 and 4 would each produce more water than the proposed MPWSP and while they would each meet most of the project objectives and purpose and need, these alternatives would not generally reduce or avoid the potential significant environmental impacts of the proposed MPWSP. Both alternatives would have a greater impact on the seafloor within MBNMS than the proposed project as a result of new intake and outfall structures, and Alternative 3 would use substantially more energy (because of the co-located data center) that would result in increased air quality and GHG impacts. In addition, the water that these alternatives would produce would exceed CalAm's needs, and would be available for use in the CalAm service area (People's Project, Alternative 4) or other areas in Monterey and/or Santa Cruz counties (DeepWater Desal, Alternative 3). That use is unknown and could eliminate an impediment to growth which would result in additional impacts. For these reasons, neither Alternative 3 nor Alternative 4 is the environmentally superior/preferred alternative.

The proposed project, Alternative 1 (Slant Wells at Potrero Road), and Alternative 2 (Open Water Intake at Moss Landing) would each provide 9.6 mgd of desalinated water and each would meet the project objectives and purpose and need. Alternative 2 would have greater impacts on the seafloor than the proposed project or Alternative 1, as a result of the construction of a new intake, and operation of an open water intake would result in long-term marine biological impacts from impingement and entrainment. The operational impacts would be mitigable, but the proposed project and Alternative 1 would avoid the impacts by using subsurface intakes. The impacts of the subsurface intakes at Potrero Road (Alternative 1), however, would have a greater impact on groundwater levels in the Dune Sands, 180- and 400-Foot aquifers, resulting in greater impacts on marine and terrestrial biological resources at Elkhorn Slough than pumping at CEMEX (proposed project). Therefore, neither Alternative 1 nor Alternative 5b would offer overall environmental advantages over the proposed project or reduced-size alternative (Alternative 5a).

Alternative 5b (Reduced Desal with Slant Wells at Potrero Road) would have similar but reduced groundwater level impacts at Elkhorn Slough in the Dune Sands aquifer. Although it would avoid impacts on marine and terrestrial biological resources at the proposed CEMEX site, the impacts on Elkhorn Slough biological resources were determined to be of greater magnitude. Therefore, Alternative 5b would not offer overall environmental advantages over the proposed project or Alternative 5a.

The proposed project would offer the following environmental advantages over other alternatives of the same or larger size (Alternatives 1, 2, 3, and 4):

- Use of an existing outfall and co-mingling brine with wastewater
- No construction on the seafloor
- Meets Ocean Plan Water Quality objectives for salinity within a very short distance
- Avoids impingement and entrainment of an open water intake

- Less than significant impacts on groundwater resources, surface water resources and marine biological resources; and
- Consistency with the Ocean Plan and MBNMS Desalination Guidelines.

While the proposed project would cause significant and unavoidable impacts on air quality and GHG during construction, and GHG during operations, the construction impacts would be temporary, and the GHG impacts would be the same for all of the alternatives that would produce 9.6 mgd. While the proposed slant wells at CEMEX would be inconsistent with the City of Marina's Local Coastal Plan, Coastal Act Section 30260 encourages coastal-dependent industrial uses and provides for resolution of conflicting Coastal Act policies where such development is concerned. Therefore, without the GWR Project, the proposed project would be the environmentally superior/preferred alternative that meets the project objectives and purpose and need.

Alternative 5a would result in similar environmental advantages (see above) and reduce the severity of some of the potential impacts of the proposed project (smaller footprint, less energy, reduced impacts on groundwater levels), but, as a standalone project, it would not meet the project objectives or purpose and need in terms of providing adequate water supply in the CalAm Service District. Assuming that the GWR project is implemented and producing water, the combination of Alternative 5a and GWR would meet project objectives. The cumulative effects of Alternative 5a and GWR may be greater for some of the construction-related impacts (air quality, traffic, noise), and some of the footprint-related impacts (all of the GWR facility footprints plus the footprint of Alternative 5a). However, some of the operational impacts would be reduced compared to the proposed project because the 3,500 afy provided by the GWR Project would require less energy than producing it by desalination, resulting in reduced impacts on GHG and air quality. The reduced capacity desalination plant would require less source water from the slant wells, resulting in a reduction in the severity of impacts on groundwater levels, and the GWR project would provide additional irrigation supplies to CSIP that would benefit the groundwater basin. For these reasons, assuming that the GWR project is fully funded and successfully implemented so as to meet its purposes, Alternative 5a would be the environmentally superior/preferred alternative.

Given a choice between the proposed MPWSP and Alternative 5a paired with the GWR project, this EIR/EIS identifies Alternative 5a as the environmentally superior/environmentally preferred alternative. While it is true that implementing Alternative 5a and the GWR Project would result in a larger footprint than the proposed action alone, the pairing of Alternative 5a and the GWR project would result in reduced operational energy use and reduced GHG emissions compared to the proposed project. Not only would the combination of Alternative 5a and the GWR Project result in reduced effects on groundwater levels influenced by fewer slant wells and less volume of pumping, the GWR project would provide water to the CSIP growers that would benefit the groundwater basin. In addition, Alternative 5a paired with the GWR project would be consistent with the 2016 California Action Plan seeking integrated water supply solutions, the Governor's drought proclamations, the CPUC Water Action Plan goal of promoting water infrastructure investment, and the Ocean Plan and MBNMS Desalination Guidelines.

#### TABLE 5.6-1 ALTERNATIVES IMPACT SUMMARY

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Section 4.2: Geology, Soils, and Seismicity							
Impact 4.2-1: Substantial soil erosion or loss of topsoil during construction.	LSM	Ni →	LSM ↑	LSM ↑	LSM ↑	LSM ↑	LSM ↓
Impact 4.2-2: Exposure of people or structures to substantial adverse effects related to fault rupture.	LS	NI →	LS =	LS =	LS =	LS =	LS =
<b>Impact 4.2-3:</b> Exposure of people or structures to substantial adverse effects related to seismically-induced groundshaking.	LS	<b>z</b> →	LS =	LS =	LS =	LS =	LS =
Impact 4.2-4: Exposure of people or structures to substantial adverse effects related to seismically-induced ground failure, including liquefaction, lateral spreading, or settlement.	LS	NI →	LS =	LS =	LS =	LS =	LS =
<b>Impact 4.2-5:</b> Exposure of people or structures to substantial adverse effects related to landslides or other slope failures.	LS	NI →	LS =	LS =	LS =	LS =	LS =
Impact 4.2-6: Exposure of people or structures to substantial adverse effects related to expansive soils.	LS	NI →	LS =	LS =	LS =	LS =	LS =
Impact 4.2-7: Exposure of structures to substantial adverse effects related to corrosive soils.	LS	NI →	LS =	LS =	LS =	LS =	LS =
Impact 4.2-8: Exposure of people or structures to substantial adverse effects related to land subsidence.	NI	NI →	NI =	NI =	NI =	NI =	NI =
Impact 4.2-9: Exposure of people or structures to substantial adverse effects related to alternative wastewater disposal systems.	LS	NI →	LS =	LS ↓	LS ↓	LS ↓	LS =
Impact 4.2-10: Accelerate and/or exacerbate natural rates of coastal erosion, scour, or dune retreat, resulting in damage to adjoining properties or a substantial change in the natural coastal environment.	LSM	NI ↓	NI ↓	NI ↓	NI ↓	su ↑	5a: LSM = 5b: NI ↓
<b>Impact 4.2.11:</b> Degrades the physical structure of any geologic resource or alters any oceanographic process, such as sediment transport, that is measurably different from pre-existing conditions.	NI	NI →	NI =	su ↑	SU ↑	su ↑	NI =
Impact 4.2-C: Cumulative impacts related to Geology, Soils, and Seismicity.	LSM	NI →	LSM =	SU ↑	LSM =	su ↑	LSM =

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Section 4.3: Surface Water Hydrology and Water Quality							
<b>Impact 4.3-1:</b> Degradation of water quality associated with increased soil erosion and inadvertent releases of hazardous chemicals during general construction activities.	LS	NI →	LS ↑	LS ↑	SU ↑	su ↑	LS ↓
Impact 4.3-2: Degradation of water quality from construction-related discharges of dewatering effluent from open excavations and water produced during well drilling and development.	LSM	NI ↓	LSM ↑	LSM =	LSM ↑	LSM ↓	LSM ↓
<b>Impact 4.3-3:</b> Degradation of water quality from discharges of treated water and disinfectant from existing and newly installed pipelines during construction.	LS	NI ↓	LS ↑	LS =	LS ↑	LS ↓	5a: LS = 5b: LS ↑
Impact 4.3-4: Violate water quality standards or waste discharge requirements or degrade water quality from increased salinity as a result of brine discharge from the operation of the MPWSP Desalination Plant.	LSM	NI ↓	LSM =	LSM =	LSM ↑	su ↑	LSM =
<b>Impact 4.3-5:</b> Violate water quality standards or waste discharge requirements or degrade water quality as a result of brine discharge from the operation of the MPWSP Desalination Plant.	LSM	NI ↓	LSM =	LSM =	LSM ↑	su ↑	LSM =
<b>Impact 4.3-6:</b> Degradation of water quality due to discharges associated with maintenance of the subsurface slant wells and the ASR -5 and ASR-6 Wells.	LS	NI ↓	LS =	LS ↑	LS ↑	LS ↑	LS ↓
<b>Impact 4.3-7:</b> Alteration of drainage patterns such that there is a resultant increase in erosion, siltation, or the rate or amount of surface runoff.	LS	NI ↓	LS ↓	LS ↓	LS ↑	LS ↓	LS =
Impact 4.3-8: Alteration of drainage patterns such that there is an increase in flooding on- or offsite or the capacity of the stormwater drainage system is exceeded.	LS	NI ↓	LS ↑	LS ↓	LS ↑	LS ↓	LS ↓
Impact 4.3-9: Impedance or redirection of flood flows due to the siting of project facilities in a 100-year flood hazard area.	LS	NI ↓	LS ↓	LS =	LS ↓	su ↑	5a: LS = 5b: LS ↓
<b>Impact 4.3-10:</b> Exposure of people or structures to a significant risk of loss, injury, or death from flooding due to a tsunami.	LS	NI ↓	LS ↓	LS =	LS ↓	su ↑	LS =
<b>Impact 4.3-11:</b> Exposure of people or structures to a significant risk of loss, injury, or death from flooding due to sea level rise.	LS	NI ↓	LS ↓	LS =	LS ↓	su ↑	LS =
Impact 4.3-C: Cumulative impacts related to Surface Water Hydrology and Water Quality.	LSM	NI →	LSM =	LSM =	SU ↑	su ↑	LSM =

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Section 4.4: Groundwater Resources							
<b>Impact 4.4-1:</b> Deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level during construction.	LS	NI ↓	NI ↓	NI ↓	NI ↓	NI	NI ↓
Impact 4.4-2: Violate any water quality standards or otherwise degrade groundwater quality during construction.	LS	NI ↓	LS =	LS ↑	LS ↑	LS ↑	LS ↓
<b>Impact 4.4-3:</b> Deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level during operations so as to expose well screens and pumps.	LS	NI ↓	LS ↓	LS ↓	LS ↓	LS ↓	5a: LS ↓ 5b: LS =
Impact 4.4-4: Violate any water quality standards or otherwise degrade groundwater quality during operations.	LSM	NI ↓	LS ↓	LS ↓	LS ↓	LS ↓	5a: LSM = 5b: LS ↓
Impact 4.4-C: Cumulative impacts related to Groundwater Resources.	LS	NI ↓	NI ↓	NI ↓	NI ↓	NI ↓	5a: LS = 5b ↓
Section 4.5: Marine Resources				1	1	1	
Impact 4.5-1: Result in a substantial adverse effect, either directly or through habitat modifications, including direct disturbance, removal, filling, hydrological interruption, or discharge, on any marine species, natural community, or habitat, including candidate, sensitive, or special-status species identified in local or regional plans, policies, regulations or conservation plans (including protected wetlands or waters, critical habitat, essential fish habitat (EFH); or as identified by the CDFW, USFWS, and/or NMFS during construction	LS	NI ↓	LS ↑	su ↑	SU ↑	SU ↑	LS ↓
Impact 4.5-2: Threaten to eliminate a marine plant or animal wildlife community or cause a fish or marine wildlife population to drop below self-sustaining levels during construction.	LS	NI ↓	LS ↑	LS ↑	LS ↑	LS ↑	LS ↓
<b>Impact 4.5-3:</b> Interfere substantially with the movement of any native marine resident or migratory fish or marine wildlife species or with established native resident or migratory marine wildlife corridors, or impede the use of native marine wildlife nursery sites during construction.	LS	NI ↓	LS ↑	LS ↑	LS ↑	LS ↑	LS ↓
Impact 4.5-4: Result in a substantial adverse effect, either directly or through habitat modifications, including direct disturbance, removal, filling, hydrological interruption, or discharge, on any marine species, natural community, or habitat, including candidate, sensitive, or special-status species identified in local or regional plans, policies, regulations or conservation plans (including protected wetlands or waters, critical habitat, essential fish habitat (EFH); or as identified by the CDFW, USFWS, and/or NMFS during operations.	LS	NI ↓	su ↑	su ↑	su ↑	su ↑	su ↑

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Section 4.5: Marine Resources (cont.)							<b>'</b>
<b>Impact 4.5-5:</b> Threaten to eliminate a marine plant or animal wildlife community or cause a fish or marine wildlife population to drop below self-sustaining levels during operations.	LS	NI →	LS =	LS ↑	LS =	LS =	LS ↓
<b>Impact 4.5 6:</b> Interfere substantially with the movement of any native marine resident or migratory fish or marine wildlife species or with established native resident or migratory marine wildlife corridors, or impede the use of native marine wildlife nursery sites during operations.	LS	NI ↓	LS =	LS ↑	LS =	LS =	LS ↓
Impact 4.5-C: Cumulative impacts on Marine Resources.	LS	NI ↓	LS =	su ↑	NI ↓	su ↑	LS ↓
Section 4.6: Terrestrial Biological Resources						'	'
<b>Impact 4.6-1:</b> Result in substantial adverse effects on species identified as candidate, sensitive, or special status, either directly or through habitat modification, during construction.	LSM	NI ↓	LSM =	LSM ↓	LSM ↑	LSM =	LSM =
Impact 4.6-2: Result in substantial adverse effects on riparian habitat, critical habitat, or other sensitive natural communities during construction.	LSM	NI ↓	LSM =	LSM ↓	SU ↑	LSM =	LSM =
<b>Impact 4.6-3:</b> Result in substantial adverse effects on federal wetlands, federal other waters, and/or waters of the State during construction.	LSM	NI ↓	LSM =	LSM =	LSM ↑	LSM ↑	LSM =
<b>Impact 4.6-4:</b> Be inconsistent with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance with local tree ordinances.	SU	NI ↓	SU ↓	LSM ↓	SU =	SU =	SU =
Impact 4.6-5: Introduce or spread an invasive non-native species during construction.	LSM	NI ↓	LSM =	LSM =	LSM =	LSM =	LSM =
<b>Impact 4.6-6:</b> Result in substantial adverse effects on candidate, sensitive, or special-status species during project operations.	LSM	<b>↓</b>	LSM =	LSM ↓	LSM =	LSM =	LSM =
Impact 4.6-7: Result in substantial adverse effects on riparian habitat, critical habitat, or other sensitive natural communities during project operations	LSM	<b>↓</b>	su ↑	LSM ↓	LSM =	LSM =	5a: LSM = 5b: SU ↑
<b>Impact 4.6-8:</b> Result in substantial adverse effects on federal wetlands, federal other waters, and waters of the State during project operations.	LSM	NI ↓	LSM =	NI ↓	LSM =	LSM =	LSM =
Impact 4.6-9: Introduce or spread an invasive non-native species during project operations.	LSM	NI ↓	NI ↓	NI ↓	NI ↓	NI ↓	5a: LSM = 5b: NI ↓

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Section 4.6: Terrestrial Biological Resources (cont.)	<u> </u>		<u> </u>			1	
Impact 4.6-10: Conflict with the provisions of an adopted Habitat Conservation Plans, natural community conservation plans or other approved local, regional, or state habitat conservation plan.	LSM	NI ↓	LSM =	LSM =	LSM =	LSM =	LSM =
Impact 4.6-C: Cumulative impacts related to Terrestrial Biological Resources.	su	NI ↓	SU =	LSM ↓	LSM ↓	SU =	SU =
Section 4.7: Hazards and Hazardous Materials			•				
<b>Impact 4.7-1:</b> Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction.	LS	NI ↓	LS ↑	LS ↑	LS ↑	LS ↑	LS ↓
Impact 4.7-2: Encountering hazardous materials from other hazardous materials release sites during construction.	LSM	NI ↓	LSM =	LSM ↑	LSM ↑	LSM ↑	LSM =
Impact 4.7-3: Project facilities would be located on a known hazardous materials site.	LS	NI ↓	LS =	LS ↑	LS ↑	LS ↑	LS =
Impact 4.7-4: Handle hazardous materials or emit hazardous emissions within 0.25 mile of schools during construction.	LS	NI ↓	LS =	LS =	LS =	LS =	LS =
Impact 4.7-5: Increase risk of wildland fires during construction.	LS	NI ↓	LS =	LS =	LS =	LS =	LS =
<b>Impact 4.7-6:</b> Create a significant hazard to the public or the environment through the routine transport, use, disposal, or accidental release of hazardous materials during project operations.	LS	NI ↓	LS =	LS =	LS ↑	LS ↑	LS ↓
Impact 4.2-C: Cumulative impacts related to Hazards and Hazardous Materials.	LSM	NI ↓	LSM =	LSM ↑	LSM ↑	LSM ↑	LSM =
Section 4.8: Land Use, Land Use Planning, and Recreation							
<b>Impact 4.8-1:</b> Consistency with applicable plans, policies, and regulations related to land use and recreation that were adopted for the purpose of mitigating an environmental effect.	LS	NI ↓	LS =	LS =	LS =	LS =	LS =
Impact 4.8-2: Disrupt or preclude public access to or along the coast during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM
Impact 4.8-C: Cumulative impacts related to Land Use, Land Use Planning, and Recreation.	LSM	NI ↓	LSM =	LSM =	LSM =	LSM =	LSM =

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Section 4.9: Traffic and Transportation							
Impact 4.9-1: Temporary traffic increases on regional and local roadways due to construction-related vehicle trips.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM
Impact 4.9-2: Temporary reduction in roadway capacities and increased traffic delays during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM
Impact 4.9-3: Increased traffic safety hazards for vehicles, bicyclists, and pedestrians on public roadways during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM
Impact 4.9-4: Impaired emergency access during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM
<b>Impact 4.9-5</b> : Temporary disruptions to public transportation, bicycle, and pedestrian facilities during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM
Impact 4.9-6: Increased wear-and-tear on the designated haul routes used by construction vehicles.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM
Impact 4.9-7: Parking interference during construction.	LSM	NI ↓	LSM ↑	LSM =	LSM =	LSM =	5a: LSM = 5b: LSM
Impact 4.9-8: Long-term traffic increases on regional and local roadways during project operations and maintenance.	LS	NI ↓	LS =	LS =	LS =	LS =	LS =
Impact 4.9-C: Cumulative impacts related to Traffic and Transportation.	su	NI ↓	SU =	SU =	SU =	SU =	SU =

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Section 4.10: Air Quality			1		<u>I</u>	1	
Impact 4.10-1: Generate emissions of criteria air pollutants and contribute to a violation of an ambient air quality standard during construction.	SU	NI ↓	su ↑	SU ↑	su ↑	SU =	SU =
Impact 4.10-2: Construction activities could conflict with implementation of the applicable air quality plan.	SU	NI ↓	su ↑	SU ↑	su ↑	SU =	SU =
<b>Impact 4.10-3:</b> Expose sensitive receptors to substantial pollutant concentrations and/or <i>Coccidioides immitis</i> (Valley Fever) spores or create objectionable odors affecting a substantial number of people during construction.	LS	NI ↓	LS ↑	LS ↑	SU ↑	su ↑	LS =
Impact 4.10-4: Long-term increase of criteria pollutant emissions that could contribute to a violation of an ambient air quality standard during operations.	LS	NI ↓	LS =	LS ↑	LSM ↑	LS ↑	LS ↓
Impact 4.10-5: Expose sensitive receptors to substantial pollutant concentrations or create objectionable odors affecting a substantial number of people during operations.	LS	NI ↓	LS =	LS ↑	LSM ↑	LS ↑	LS ↓
Impact 4.10-C: Cumulative impacts related to Air Quality.	SU	NI ↓	su ↑	SU ↑	su ↑	su ↑	SU =
Section 4.11: Greenhouse Gas Emissions	<u> </u>		1	1	<u> </u>	1	
Impact 4.11-1: Incremental contribution to climate change from GHG emissions associated with the proposed action.	SU	NI ↓	su ↑	SU ↑	su ↑	su ↑	su ↓
Impact 4.11-2: Conflict with the Executive Order B-30-15 Emissions Reduction Goal.	SU	NI ↓	su ↑	SU ↑	su ↑	su ↑	su ↓
Impact 4.11-3: Conflict with AB 32 Climate Change Scoping Plan.	SU	NI ↓	SU ↑	SU ↑	SU ↑	su ↑	su ↓
Impact 4.11-C: Cumulative impacts related to Greenhouse Gas Emissions.	SU	NI ↓	SU ↑	SU ↑	SU ↑	su ↑	su ↓
Section 4.12: Noise and Vibration	'		'	,	ľ	"	
Impact 4.12-1: Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity during construction.	SU	NI ↓	su ↑	su ↑	su ↑	su ↑	5a: SU = 5b: SU

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Section 4.12: Noise and Vibration (cont.)							
<b>Impact 4.12-2:</b> Expose people to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM ↑
Impact 4.12-3: Exposure of people to or generation of excessive groundborne vibration during construction.	LSM	NI ↓	LSM ↓	LSM ↓	LSM ↓	LSM ↓	5a: LSM = 5b: LSM ↓
Impact 4.12-4: Consistency with the construction time limits established by the local jurisdictions.	LSM	NI ↓	LSM =	LSM =	LSM ↑	LSM =	5a: LSM = 5b: LSM ↓
<b>Impact 4.12-5:</b> Substantial permanent increases in ambient noise levels in the project vicinity above levels existing without the project during operations.	LSM	NI ↓	LSM =	LSM =	LSM ↑	LSM ↑	LSM =
<b>Impact 4.12-6:</b> Expose people to or generate operational noise levels in excess of standards established in the local general plan, noise ordinance, or applicable standards of other agencies during operation.	LS	NI →	LS =	LS =	LS =	LSM ↑	LS =
Impact 4.12-C: Cumulative impacts related to Noise and Vibration.	SU	NI ↓	su ↑	su ↑	su ↑	su ↑	5a: SU = 5b: SU ↑
Section 4.13: Public Services and Utilities			1	'		*	
Impact 4.13-1: Disrupt or relocate regional or local utilities during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM ↑
<b>Impact 4.13-2:</b> Exceed landfill capacity or be out of compliance with federal, state, and local statutes and regulations related to solid waste during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM
<b>Impact 4.13-3</b> Exceed landfill capacity or be out of compliance with federal, state, and local statutes and regulations related to solid waste during operations.	LS	NI →	LS =	LS =	LS ↑	LS ↓	LS =

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Section 4.13: Public Services and Utilities (cont.)			<b>'</b>	_		_	4
Impact 4.13-4: Exceed wastewater treatment requirements of the Central Coast RWQCB, or result in a determination by the wastewater treatment provider that it has inadequate treatment or outfall capacity to serve the project.	LSM	NI ↓	LSM =	LSM =	LS ↓	LS ↓	LSM =
Impact 4.13-5: Increased corrosion of the MRWPCA outfall and diffuser as a result of brine discharge associated with project operations.	LSM	NI ↓	LSM =	LSM =	NI →	NI ↓	LSM =
Impact 4.13-C: Cumulative impacts related to Public Services and Utilities.	LSM	NI ↓	LSM =	LSM =	LSM ↓	LSM ↓	LSM =
Section 4.14: Aesthetic Resources							
<b>Impact 4.14-1:</b> Construction-related impacts on scenic resources (vistas, roadways, and designated scenic areas) or the visual character of the project area and its surroundings.	LS	NI ↓	LS =	LS =	LS =	LSM ↑	LS =
Impact 4.14-2: Temporary sources of substantial light or glare during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	LSM =
<b>Impact 4.14-3:</b> Permanent impacts on scenic resources (vistas, roadways, and designated scenic areas) or the visual character of the project area and its surroundings.	LSM	NI ↓	LSM =	LSM ↓	LSM ↓	LSM =	LSM =
Impact 4.14-4: Permanent new sources of light or glare.	LSM	NI ↓	LSM =	LSM =	LSM ↑	LSM ↑	LSM =
Impact 4.14-C: Cumulative impacts related to Aesthetic Resources	LSM	NI ↓	LSM =	LSM =	LSM =	LSM =	LSM =
Section 4.15: Cultural and Paleontological Resources			•				
<b>Impact 4.15-1:</b> Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines or historic properties pursuant to 36 CFR 800.5 during construction.	NI	NI =	NI =	NI =	NI =	su ↑	NI =
<b>Impact 4.15-2:</b> Cause a substantial adverse change during construction in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines or historic properties pursuant to 36 CFR 800.5.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM ↑
<b>Impact 4.15-3:</b> Directly or indirectly destroy a unique paleontological resource or site, or unique geological feature during construction.	LS	NI ↓	LS ↑	LS ↑	LS ↑	LS ↑	5a: LS = 5b: LS

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Section 4.15: Cultural and Paleontological Resources (cont.)					l	<u>'</u>	1
Impact 4.15-4: Disturbance any human remains, including those interred outside of formal cemeteries, during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM = 5b: LSM
Impact 4.15-C: Cumulative impacts related to Cultural and Paleontological Resources.	LS	NI ↓	LS =	LSM ↑	LSM ↑	LSM ↑	LSM =
Section 4.16: Agricultural Resources							
<b>Impact 4.16-1:</b> Result in changes in the existing environment that, due to their location or nature, could temporarily disrupt agricultural activities or result in the permanent conversion of farmland to non-agricultural use.	LSM	NI ↓	LSM =	LSM =	LSM ↑	NI ↓	LSM =
Impact 4.16-2: Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use.	LS	NI ↓	LS =	LS =	LS ↑	NI ↓	LS =
Impact 4.16-3: Conflict with zoning for agricultural uses or with Williamson Act contracts.	LS	NI ↓	LS =	LS =	LS ↑	NI ↓	LS =
Impact 4.16-C: Cumulative impacts related to Agricultural Resources.	LSM	NI →	LSM =	LSM =	LSM ↑	NI ↓	LSM =
Section 4.17: Mineral Resources							
<b>Impact 4.17-1:</b> Loss of availability of known mineral resources that are of value to the region or residents of the state or result in the loss of a locally-recognized important mineral resource recovery site.	LS	NI ↓	LS ↓	LS ↓	LS ↓	LS ↓	5a: LS = 5b: LS ↓
Impact 4.17-C: Cumulative impacts related to Mineral Resources.	LS	NI ↓	LS ↓	LS ↓	LS ↓	LS ↓	5a: LS = 5b: LS ↓

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Section 4.18: Energy Conservation							
Impact 4.18-1: Use large amounts of fuel and energy in an unnecessary, wasteful, or inefficient manner during construction.	LSM	NI ↓	LSM ↑	LSM ↑	LSM ↑	LSM ↑	5a: LSM ↓ 5b: LSM
Impact 4.18-2: Use large amounts of fuel and energy in an unnecessary, wasteful, or inefficient manner during operations.	LS	NI ↓	LS ↑	LS ↑	LS ↑	LS ↑	LS ↓
<b>Impact 4.18-3:</b> Constrain local or regional energy supplies, require additional capacity, or affect peak and base periods of electrical demand during operations.	LS	N→	LS ↑	LS ↑	SU ↑	LS ↑	LS ↓
Impact 4.18-C: Cumulative impacts related to Energy Resources.	LSM	NI ↓	LSM ↑	LSM ↑	su ↑	LSM ↑	5a: LSM ↓ 5b: LSM
Section 4.19: Population and Housing			1	'		1	*
Impact 4.19-1: Induce substantial population growth directly during project construction.	LS	NI ↓	LS =	LS =	LS =	LS =	LS =
Impact 4.19-2: Induce substantial population growth directly during project operations.	LS	NI ↓	LS =	LS =	LS =	LS =	LS =
Impact 4.19-C: Cumulative impacts related to Population and Housing.	LS	NI →	LS =	LS =	LS =	LS =	LS =
Section 4.20 Socioeconomics and Environmental Justice							
Impact 4.20-1: Reductions in the rate of employment, total income, or business activity in Monterey County.	LSM	SU ↑	LSM =	LSM =	LSM =	LSM =	LSM =
Impact 4.20-2: Disproportionately high and adverse effects on low-income or minority populations.	LS	SU ↑	LS =	LS ↓	SU ↑	su ↑	LS ↓
Impact 4.20-C: Cumulative impacts related to Socioeconomics and/or Environmental Justice.	LSM	su ↑	LSM =	LSM =	su ↑	su ↑	LSM ↓

Impact	Proposed Action 10 Slant Wells at CEMEX	No Action	Alt. 1: Slant Wells at Potrero Road	Alt. 2: Open Water Intake at Moss Landing	Alt. 3: Deep Water Desal	Alt. 4: People's Project	Alt. 5: Reduced Size Desal
Growth Inducement							
Impact 6.3-1: Secondary effects of planned growth.	SU	NI ↓	LS ↓	su ↑	su ↑	su ↑	LS ↓
Impact 6.3-C: Cumulative impacts related to growth inducement.	SU	NI ↓	su ↑	su ↑	su ↑	su ↑	SU =

#### NOTES:

↑ Increased severity of impact ↓ Decreased severity of impact = Same severity of impact

NI – No Impact
LS = Less than Significant impact, no mitigation proposed
LSM = Less than Significant impact with Mitigation

**SU** = Significant and Unavoidable impact, even with implementation of mitigation

= Beneficial Impact

5. Alternatives Screening and Analysis 5.6 Environmentally Superior Alternative/Preferred Alternative	_
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