

SECTION 8 ALTERNATIVES

8.0 Introduction

CEQA requires an EIR to describe and evaluate a reasonable range of alternatives to the proposed project that could feasibly attain most of the basic objectives of the project, while avoiding or substantially lessening any significant impacts (CEQA Guidelines Section 15126(a)).

This section sets forth the objectives of the proposed project, summarizes its significant impacts, describes the range of alternatives considered, discusses the alternatives considered but eliminated from further analysis, and compares the merits of the alternatives evaluated in detail. **Section 5, Environmental Analysis**, of this EIR provides a detailed evaluation of the proposed desalination project, which includes some component alternatives, such as alternative plant site locations. A comparative evaluation of the component alternatives is provided in this section. Other potentially feasible alternatives are also identified and evaluated in detail in this section, as warranted under CEQA.

8.0.1 Organization of Section 8

This section is organized into the following subsections:

- **Section 8.0, Introduction**

Summarizes the public and agency comments received during the scoping period, sets forth the objectives of the proposed project, summarizes its significant impacts, describes the range of alternatives considered, and provides a summary of alternatives considered and evaluated in detail.

- **Section 8.1, Proposed Project Components - Alternatives Summary Evaluation and Comparison**

Discusses desalination alternatives that were eliminated from further analysis and provides a comparison of the proposed desalination component alternatives for the seawater intake and the desalination plant components of the proposed project. The basis for the selection of the preferred intake site and desalination plant site alternatives is provided.

- **Section 8.2, Alternatives to Proposed Project Considered but Eliminated**

Discusses alternatives (either previously considered by the City or District or were a result of the scoping comments received) that were eliminated from further analysis as allowed under CEQA because they did not meet most of the project objectives; were found to be infeasible for technical, economic, environmental, or social reasons; or they did not substantially lessen or avoid a significant environmental effect of the proposed project.

- **Section 8.3, Alternatives to the Proposed Project**

Discusses alternative projects evaluated in detail, including but not limited to the City No Project Alternative; District No Project Alternative; City-only Desalination Alternative; District-only Desalination Alternative; Proposed Project with Direct Potable Reuse Pilot Alternative; Regional Recycled Water for Irrigation Alternative; City Package Alternative; and District Package Alternative.

8.0.2 Comments Received During Scoping

Public and agency comments on alternatives received during the public scoping period (in response to the NOP) are summarized briefly below:

- Discuss alternative desalination technologies including, but not limited to, distillation, nanotubes, and evaporation chambers.
- Consider alternative site locations for the plant site, intake pump station, and water storage tanks.
- Evaluate groundwater recharge alternatives and methods to increase and maintain groundwater production, including the use of injection wells, percolation basins, and bioswales.
- Consider methods and technologies to expand use of recycled and reclaimed water, including but not limited to the use of satellite reclamation facilities, implementation of advanced tertiary waste treatment for reclamation and potable use, and the use of reclaimed wastewater for percolation and recharge.
- Consider the decentralization of WWTP and recycling at UCSC and large irrigation accounts.
- Evaluate the exchange of water between the City and District during winter months and drought months.
- Evaluate alternatives to increase water storage capacity at Loch Lomond Reservoir, or create additional water storage reservoirs or water storage tanks.
- Improve the management of the existing system, such as enhancing reservoir operation or minimizing system leaks.
- Consider conservation methods including, but not limited to:
 - Various irrigation and landscaping measures (e.g., irrigation controls, drip irrigation systems, lawn-replacement rebates, drought-tolerant landscaping).
 - Installation of gray water systems to flush toilets and water landscapes.
 - Installation of rain harvesting systems (e.g., cisterns, rain barrels).
 - Use of various toilet technologies (e.g., ultra-low flow, waterless, composting).
 - Implementation of a water neutral development policy to maintain low water consumption levels.

- Restructuring/increasing water rates.

Comments received on the NOP regarding alternatives to the proposed desalination project have been considered and addressed in this section, as warranted under CEQA. For a complete list of public comments received during the public scoping period, refer to **Appendix A, Scoping Report City of Santa Cruz and Soquel Creek Water District (scwd²) Regional Seawater Desalination Project**.

8.0.3 Project Objectives and Significant Impacts

As indicated above, CEQA requires an EIR to describe and evaluate a reasonable range of alternatives to the proposed project that could feasibly attain most of the basic objectives of the project, while avoiding or substantially lessening any significant impacts. Given that, this section provides the project objectives and a summary of significant environmental impacts of the proposed project. The alternatives evaluated in **Section 8.3**, are compared to the project objectives and to the significant environmental impacts of the proposed project.

Project Objectives

The objectives of the proposed desalination project presented below address the need for a supplemental water supply, as identified by both the City's IWP and the District's IRP. These project objectives were developed primarily to achieve the broad policy and planning objectives of the IWP and IRP, as described in detail in **Section 3**. However, other current water planning objectives are also considered, such as those associated with the City's habitat conservation planning process. The objectives apply to both agencies, unless otherwise stated.

1. Provide for a supplemental water supply in a timely manner that meets the IWP and IRP program objectives and provides for the amount of supplemental water supply identified as necessary in the City and District 2010 UWMPs and/or in other available City and District reports (see **Section 3**) that complements on-going and future water conservation and drought curtailment efforts. The City and District need the supplemental water supply for the following reasons:
 - City - During the dry season of dry and critically dry years, a supplemental supply is needed to limit peak season shortages to 15 percent of normal water needs currently projected through 2030¹, which is the reliability objective set by the City in the long term. The supplemental supply needs to support potable uses given that irrigation and other outdoor uses will already be restricted during these periods.

¹ Use of the desalination plant is anticipated beyond 2030, but it is sized to meet existing and projected demand through 2030 from growth anticipated in existing adopted general plans of the City, County, and Capitola and in the current urban water management plans for the City and District.

- District - A supplemental supply is needed in the near-term to meet the District's target groundwater yield during the time period in which the basin recovers from overdraft and in the long-term to provide for currently projected water demand through 2030¹.
2. Allow the City to reduce its ongoing effects on listed species in the coastal streams and rivers from which the City currently diverts water by developing a supplemental water supply sufficient to permit the City to reduce the extent of its existing reliance on those coastal streams and rivers, as part of the City's pending habitat conservation planning process.
 3. Provide the District with a supplemental water supply that will offset groundwater pumping, and thereby assist the District in operating its wells in a manner that reduces overdraft, allows for aquifer recovery to protective target groundwater levels, and thus reduces the potential for seawater intrusion.
 4. Protect the local economy and community from the effects of an uncertain water supply due to high levels of curtailments needed to address drought and/or groundwater quality and quantity issues associated with seawater intrusion in the City and District service areas.
 5. Develop a supplemental water supply project that promotes efficient use of resources and infrastructure, avoids duplicative infrastructure and effort, and has regional benefits by serving multiple agencies and water users.
 6. Provide a supplemental water supply that serves to diversify the water supplies available to the City and District, is readily available, reliable, drought-proof, and avoids uncertainty and/or risks during project operations and/or maintenance. Reliability and diversification will allow for operational flexibility for the City with the use of Loch Lomond Reservoir and other surface water resources and for the District to significantly reduce pumping at differing wells.
 7. Provide flexibility to efficiently and cost effectively meet future changed conditions, including changes in demand, changes in regulatory requirements, or changes in source water quality. This flexibility will help to ensure that a supplemental water supply will accommodate planned growth, and will not otherwise support growth above and beyond that allowed in relevant agency planning documents. This flexibility will also allow for adjustments to be made in treatment and/or technologies in response to changing regulatory requirements.
 8. Plan for climate change, as summarized below:
 - City - Consistent with the City's Climate Adaptation Plan, diversify and supplement the City's water supply portfolio in anticipation of possible changes in precipitation patterns, greater variability (reduced reliability) in water supply, increased water demand, water quality degradation and reduced quantity and modified seasonal patterns of groundwater recharge resulting from climate change.
 - District - Provide the District with a supplemental water supply in anticipation of reduced quantity and modified seasonal patterns of groundwater recharge,

increased water demand, and water quality degradation resulting from climate change.

9. Provide a supplemental water supply that avoids or minimizes significant environmental impacts, including—but not limited to—adverse impacts to marine and coastal resources.
10. Provide a supplemental water supply that does not increase greenhouse gas emissions over those generated by the existing water supply systems of the City and District.
11. Provide a supplemental water supply that helps the City to respond to the significantly reduced groundwater yield from the existing over drafted Live Oak well field.
12. Provide a supplemental water supply that is relatively cost-effective in terms of both capital and operation/maintenance costs.

Significant Impacts of the Project

Based on the outcome of the environmental evaluation provided in **Section 5, Environmental Analysis**, the potentially significant impacts of the proposed desalination project, including those that can be reduced to less than significant with the implementation of mitigation measures, are listed below in **Table 8.0-1, Summary of Environmental Impacts of the Proposed Project**. Other impacts are also provided to support the comparative evaluation of impacts associated with the alternatives considered in detail in **Section 8.3**. The impact summary is provided for all project components and component alternatives, where relevant, and for the project overall.

Based on the conclusions of **Section 8.1**, it is assumed that the proposed project would not involve the selection of Plant Site A-2 as the preferred plant site, based on its current configuration and related potentially significant resource impacts. Therefore, the table column showing Plant Site A-2 is shown with gray text to indicate that it is no longer being considered. Given that, the impacts of the proposed project overall presented in the table below are based on the selection of either Plant Site A-1 or Plant Site A-3 for the proposed desalination plant. See **Section 8.1** for additional information.

The following acronyms and symbols are used in **Table 8.0-1**:

- **SU** = Potentially significant and unavoidable impacts
- **LTSM** = potentially significant impacts that can be reduced to less than significant with the implementation of identified mitigation measures
- **LTS** = Less than significant impact
- **NI** = No impact
- -- = Impact not applicable, or not applicable to individual project components
- * Impact significance of project overall will depend on the site alternative selected

Table 8.0-1, Summary of Environmental Impacts of the Proposed Project

Impact	LEVEL OF SIGNIFICANCE													
	Seawater Intake Site Alternatives								Plant Site Alternatives			Other Components	Project Overall ¹	Possible Future Expansion
	SI-4	SI-5	SI-7	SI-9	SI-14	SI-16	SI-17	SI-18	A-1	A-2 ¹	A-3			
5.1 Hydrology and Water Quality														
5.1-1: Construction Water Quality – Onshore Components	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTS
5.1-2: Construction and Maintenance Water Quality – Offshore Components	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	--	--	--	--	LTSM	LTSM
5.1-3: Brine Discharge	--	--	--	--	--	--	--	--	--	--	--	--	LTS	LTS
5.1-4: Groundwater	--	--	--	--	--	--	--	--	--	--	--	--	B	--
5.1-5: Drainage	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
5.1-6: Flooding and Inundation	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
5.1-7: Product Water Quality	--	--	--	--	--	--	--	--	LTS	LTS	LTS	--	LTS	LTS
5.2 Marine Biological Resources														
5.2-1: Entrainment/ Impingement	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	--	--	--	--	LTS	LTS

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	Seawater Intake Site Alternatives								Plant Site Alternatives			Other Components	Project Overall ¹	Possible Future Expansion
	SI-4	SI-5	SI-7	SI-9	SI-14	SI-16	SI-17	SI-18	A-1	A-2 ¹	A-3			
5.2-2: Brine Discharge Water Quality	--	--	--	--	--	--	--	--	--	--	--	--	LTS	LTS
5.2-3: Construction & Maintenance Water Quality	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	--	--	--	--	LTS	LTS
5.2-4: Underwater and Airborne Construction Noise	LTSM	LTSM	LTSM	LTS	LTSM	LTSM	LTSM	LTS	--	--	--	--	LTS/LTSM*	LTS
5.2-5: Fill/Placement of Intake Structures	LTSM	LTSM	LTSM	LTS	LTSM	LTSM	LTS	LTS	--	--	--	--	LTS/LTSM*	LTS
5.2-6: Movement of Fish or Wildlife	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	--	--	--	--	LTS	LTS
5.3 Terrestrial Biological Resources														
5.3-1: Special-Status Species	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTSM	LTS	LTSM	LTSM	LTSM
5.3-2: Riparian Habitat	LTSM	LTS	LTS	LTS	LTS	LTS	LTS	LTSM	LTS	LTSM	LTS	LTSM	LTSM	LTSM
5.3-3: Monarch Butterfly Overwinter	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	SU	LTS	LTS	LTS	LTS

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	Seawater Intake Site Alternatives								Plant Site Alternatives			Other Components	Project Overall ¹	Possible Future Expansion
	SI-4	SI-5	SI-7	SI-9	SI-14	SI-16	SI-17	SI-18	A-1	A-2 ¹	A-3			
Habitat														
5.3-4: Waters and Wetlands	LTSM	NI	NI	NI	NI	NI	NI	LTSM	NI	LTSM	LTS	LTSM	LTSM	LTS/LTSM*
5.3-5: Wildlife Movement	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM
5.3-6: Conflict with Local Plans	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	SU	LTSM	LTSM	LTSM	LTSM
5.3-7: Adopted HCPs	--	--	--	--	--	--	--	--	--	--	--	--	B	--
5.4 Land Use, Planning, and Recreation														
5.4 1: Conflicts with Land Use Plans, Policies, and Regulations	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	SU	LTSM	LTSM	LTSM	LTSM
5.5 Air Quality and Climate Impacts														
5.5-1: Conflicts with Air Quality Plan	--	--	--	--	--	--	--	--	--	--	--	--	LTSM	LTS
5.5-2: Violation of AAQS - Construction	--	--	--	--	--	--	--	--	--	--	--	--	LTSM	LTS
5.5-3: Violation of AAQS - Operations	--	--	--	--	--	--	--	--	--	--	--	--	LTSM	LTS
5.5-4:	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

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	Seawater Intake Site Alternatives								Plant Site Alternatives			Other Components	Project Overall ¹	Possible Future Expansion
	SI-4	SI-5	SI-7	SI-9	SI-14	SI-16	SI-17	SI-18	A-1	A-2 ¹	A-3			
Sensitive Receptors														
5.5-5: Odors	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
5.5-6: GHG Emissions and Plan Conflicts	--	--	--	--	--	--	--	--	--	--	--	--	LTS	LTS
5.6 Noise and Vibration														
5.6-1: Operational Noise	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTS	LTSM	LTSM
5.6-2: Construction Noise	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
5.6-3: Vibration	LTS	LTS	LTS	LTS	LTS	LTS	LTSM	LTS	LTSM	LTS	LTS	LTS	LTS/LTSM*	LTS
5.7 Geology and Soils														
5.7-1: Seismic Hazards	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTS	LTSM	LTSM
5.7-2: Coastal Bluff Retreat	LTS	LTS	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	LTS/NI*	LTS
5.7-3: Other Slope Stability Impacts	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTSM	LTSM	LTSM	LTS	LTSM	LTSM
5.7-4: Expansive and Corrosive Soils	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTS	LTSM	LTSM

Table 8.0-1, Summary of Environmental Impacts of the Proposed Project

Impact	LEVEL OF SIGNIFICANCE													
	Seawater Intake Site Alternatives								Plant Site Alternatives			Other Components	Project Overall ¹	Possible Future Expansion
	SI-4	SI-5	SI-7	SI-9	SI-14	SI-16	SI-17	SI-18	A-1	A-2 ¹	A-3			
5.8 Cultural Resources														
5.8-1: Known Cultural Resources	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
5.8-2: Unknown Cultural Resources	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM
5.8-3: Human Remains	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM
5.8-4: Paleontological Resource	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM
5.9 Utilities and Service Systems														
5.9-1: Water Supply	--	--	--	--	--	--	--	--	LTS	LTS	LTS	--	LTS	LTS
5.9-2: Wastewater	--	--	--	--	--	--	--	--	LTSM	LTSM	LTSM	LTS	LTSM	LTSM
5.9-3: Solid Waste	--	--	--	--	--	--	--	--	LTS	LTS	LTS	--	LTS	LTS
5.9-4: Energy	--	--	--	--	--	--	--	--	--	--	--	--	LTS	LTS
5.10 Aesthetics														
5.10-1: Scenic Vistas	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
5.10-2: Scenic Resources	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

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Impact	LEVEL OF SIGNIFICANCE													
	Seawater Intake Site Alternatives								Plant Site Alternatives			Other Components	Project Overall ¹	Possible Future Expansion
	SI-4	SI-5	SI-7	SI-9	SI-14	SI-16	SI-17	SI-18	A-1	A-2 ¹	A-3			
5.10-3: Visual Character	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
5.10-4: Light and Glare	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM
5.11 Hazards and Hazardous Materials														
5.11-1: Construction Impacts	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM
5.11-2: Operational Impacts	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
5.11-3: Hazardous Materials Impacts Near Schools	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTSM	LTS
5.12 Traffic and Transportation														
5.12 1: Traffic	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS
5.12 2: Emergency Access	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS	LTS

Acronyms:
 SU = Potentially significant and unavoidable impact
 LTSM = Less than significant impact after mitigation
 LTS = Less than significant impact
 NI = No impact
 -- = Impact not applicable, or not applicable to individual project components
 * Impact significance of project overall will depend on the site alternative selected

Notes:
 1. Based on the conclusions of Section 8.1, it is assumed that the proposed project would not involve the selection of Plant Site A-2 as the preferred plant site, based on its current configuration and related potentially significant resource impacts. Therefore, the table column showing Plant Site A-2 is shown with gray text to indicate that it is no longer being considered. Given that, the impacts of the proposed project overall presented in the table above are based on the selection of either Plant Site A-1 or Plant Site A-3 for the proposed desalination plant. See Section 8.1 for additional information.

8.0.4 Range of Alternatives Considered

In conformance with CEQA Guidelines Section 15126.6, the range of alternatives required in an EIR is governed by a “rule of reason” that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice by decision-makers when considering the merits of the project. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. The alternatives should avoid or substantially lessen any of the significant effects of the project. Further, the EIR need only examine in detail those alternatives that could feasibly attain most of the basic objectives of the project. Alternatives that avoid or substantially reduce significant impacts should be considered, even if these alternatives would impede to some degree the attainment of project objectives, or would be more costly. Under CEQA, alternatives that are remote or speculative do not need to be addressed.

Importantly, the inclusion of an alternative in an EIR requires only that the alternative be “potentially feasible.” The ultimate determination of “actual feasibility” can only be made by final agency decision-makers. Under CEQA, “feasible” is defined as “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.” (Public Resources Code, Section 21061.1). Under this definition, decision-makers have discretion to reject as “infeasible” alternatives that embody what the decision-makers believe to be unacceptable policy consequences. After weighing “economic, environmental, social, and technological factors,” decision-makers “may conclude that an alternative is impractical or undesirable from a policy standpoint and reject it as infeasible on that ground.” Similarly, “an alternative ‘may be found infeasible on the grounds of inconsistency with the project objectives as long as the finding is supported by substantial evidence in the record.’”²

8.0.5 Summary of Alternatives Considered

A wide range of alternatives were screened to determine whether a given alternative should be evaluated in detail or eliminated from further consideration in this EIR. The alternatives considered in this screening process were those that have been previously or currently considered by the City and District, as well as alternatives raised during the scoping process or during other major public review processes conducted by the City and District. Based on the above referenced CEQA requirements, the screening process consisted of reviewing alternatives against three criteria, derived from the CEQA requirements described above. These criteria include:

1. Would the alternative meet most of the basic (or primary) project objectives?
2. Would the alternative be potentially feasible, as defined under CEQA?

² *California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal.App.4th 957, 1001.

3. Would the alternative have the potential to avoid or substantially lessen any of the significant effects of the proposed project? This criterion should consider whether the alternative would create other significant effects that would be potentially greater than those of the proposed project.

Those alternatives that met the above criteria were carried forward in the evaluation provided in **Section 8.1** and **Section 8.3**. Those alternatives that did not meet at least the first two criteria were not carried forward in the evaluation, as alternatives need to meet most of the basic objectives of the project and be potentially feasible before they can be reviewed for their ability to reduce the significant effects of the proposed project. Exceptions to this approach are identified in the tables referred to below. The reason for elimination of any particular alternative or set of alternatives is provided in **Section 8.1** and **Section 8.2**.

The results of the screening process are presented in two tables below. **Table 8.0-2, Summary of Desalination Component Alternatives Considered for the Proposed Project** includes desalination component alternatives, technology alternatives, and other alternatives that were considered in conjunction with the development of the proposed project. The desalination component alternatives considered in detail in this EIR include eight site alternatives for the seawater intake and three plant site alternatives for the desalination plant site. These component alternatives are described in detail in **Section 4, Project Description** and evaluated at an equal level of detail in **Section 5**. A comparative evaluation of these component alternatives is provided in **Section 8.1**.

Table 8.0-3, Summary of Other Alternatives Considered for the Proposed Project includes numerous water supply alternatives to the proposed project that were considered during the IWP and IRP planning processes or related background studies or were reviewed as a result of scoping or other comments received. The alternatives to the proposed project considered in detail in this EIR include a City No Project Alternative; District No Project Alternative; City-only Desalination Alternative; District-only Desalination Alternative; Proposed Project with Direct Potable Reuse Pilot Alternative; Regional Recycled Water for Irrigation Alternative; City Package Alternative; and District Package Alternative. These alternatives are described in detail in **Section 8.3**. An evaluation of each alternative in comparison to the proposed project is also provided in **Section 8.3**.

Table 8.0-2. Summary of Desalination Component Alternatives Considered for the Proposed Project

Alternative	Key Project Objectives Criterion Met?	Feasibility Criterion Met?	Environmental Criterion Met?	Considered in Detail in EIR?
Desalination Plant Alternatives				
Area A	Yes	Yes	--	Yes
- Plant Site A-1	Yes	Yes	--	Yes
- Plant Site A-2	Yes	Yes	--	Yes
- Plant Site A-3	Yes	Yes	--	Yes
Area B	No	No	No	No
Area C	No	No	No	No
Other Sites Not Considered In IWP	No	No	Unknown/Undetermined	No
Reuse of Existing Facilities	No	No	Unknown/Undetermined	No
Seawater Intake Alternatives				
Screened Open-Ocean Intake	Yes	Yes	--	Yes
- Seawater Intake SI-4	Yes	Yes	--	Yes
- Seawater Intake SI-5	Yes	Yes	--	Yes
- Seawater Intake SI-7	Yes	Yes	--	Yes
- Seawater Intake SI-9	Yes	Yes	--	Yes
- Seawater Intake SI-14	Yes	Yes	--	Yes
- Seawater Intake SI-16	Yes	Yes	--	Yes
- Seawater Intake SI-17	Yes	Yes	--	Yes
- Seawater Intake SI-18	Yes	Yes	--	Yes
- Other seawater intake sites	No	No	Unknown/Undetermined	No
Sub-Sea-floor Intakes	No	No	No ¹	No
- Radial Collector Wells	No	No	No ¹	No
- Vertical Beach Wells	No	No	No ¹	No
- Slant Wells	No	No	No ¹	No

Table 8.0-2. Summary of Desalination Component Alternatives Considered for the Proposed Project

Alternative	Key Project Objectives Criterion Met?	Feasibility Criterion Met?	Environmental Criterion Met?	Considered in Detail in EIR?
- Engineered Infiltration Galleries	No	No	No ¹	No
Intertie Alternatives				
Proposed Pipeline Alignment	Yes	Yes	--	Yes
Alternative Pipeline Alignments	No	No	No	No
Storage Tanks	No	Maybe	No	No
Regional and Capacity Alternatives				
Regional Location Alternatives	No	No	No	No
Water Import From Other Desalination Projects	No	Maybe	No	No
Smaller Capacity Desalination Project	No	Maybe	No	No
Larger Capacity Desalination Project	Maybe	Maybe	No	No
Other Desalination Technologies				
Pretreatment Alternatives	No	No	Unknown/Undetermined	No
Thermal Distillation	No	No	No	No
Forward Osmosis	No	No	No	No
Other Technologies	No	No	Unknown/Undetermined	No
Brine - Sea Salt Production	No	No	No	No
Brine - Chemical Recovery	No	No	Unknown/Undetermined	No
Brine - Beach Wells	No	No	No ²	No
Brine - Discharge via a New Ocean Outfall	No	No	No	No

Notes:

1. The proposed project's entrainment and impingement effects associated with an open-ocean intake would be less than significant. Therefore, an alternative would not need to be identified to avoid or substantially lessen such effects. The specific entrainment effects from these subsurface intake alternatives are unknown/undetermined.
 2. The proposed project's marine water quality effects due to brine disposal via the City's WWTF would be less than significant. Therefore, an alternative would not need to be identified to avoid or substantially lessen such effects. The specific brine disposal effects from beach well are unknown/undetermined.
- = A dash is provided for component alternatives that are evaluated as part of the proposed project. The environmental criterion is not applicable for these components, as they are part of the proposed project.

Table 8.0-3, Summary of Other Alternatives Considered for the Proposed Project

Alternative	Key Project Objectives Criterion Met?	Feasibility Criterion Met?	Environmental Criterion Met?	Consider in EIR?
Groundwater Alternatives				
Additional City Groundwater Supply	No	No	No	No
Recharge Enhancements with Precipitation	No	No	No	No
Water Import/Groundwater Banking with PVWMA	No	No	No	No
Reservoir Alternatives				
Maximizing Existing Sources and Storage in Loch Lomond Reservoir	No	No	No	No
Zayante Dam	No	No	No	No
Olympia Quarry Recharge	No	Maybe	No	No
On-Stream Reservoir on Soquel Creek (Glenwood)	No	No	No	No
Soquel Creek Off-Stream Diversion	No	No	No	No
Other Reservoir Alternatives	No	No	No	No
Reclamation/Recycled Water Alternatives				
Indirect Potable Reuse – groundwater recharge	No	No	No	No
Indirect Potable Reuse – reservoir augmentation	No	No	Unknown/Undetermined	No
Direct Potable Reuse (see also Proposed Project Plus DPR Pilot Alternative)	No	No	No	No
Agricultural Application for the North Coast	No	No	No	No
Recycled Water Exchange with Scotts Valley ¹	No	Yes	Unknown/Undetermined	No

Table 8.0-3, Summary of Other Alternatives Considered for the Proposed Project

Alternative	Key Project Objectives Criterion Met?	Feasibility Criterion Met?	Environmental Criterion Met?	Consider in EIR?
Satellite Reclamation Plants	No	Yes	Unknown/Undetermined	No
Other Alternatives				
District-Only Desalination Project (within District's Service Area)	No	No	Unknown/Undetermined	No
Alternatives To Proposed Project Considered in Detail				
City No Project Alternative ²	No	Yes	Yes in some categories No in some categories	Yes
District No Project Alternative ²	No	Yes	Yes in some categories No in some categories	Yes
City-Only Desalination Project	Partial	Yes	Somewhat	Yes
District-Only Desalination Project (outside District's Service Area)	Partial	Yes	No – Impacts would be similar to proposed project	Yes
Proposed Project Plus DPR Pilot Alternative	Yes	Yes	No – Impacts would be similar to proposed project	Yes
Regional Recycled Water Alternative for Irrigation	Partial	Yes	Yes in some categories No in some categories	Yes
City Package Alternative ³	No	Maybe	Yes in some categories No in some categories	Yes
District Package Alternative	Partial	Maybe	Yes in some categories No in some categories	Yes

Notes:

1. This exchange is being pursued by both the City and Scotts Valley; however, it does not constitute an alternative to the proposed desalination project.
2. The City and District No Project Alternatives are evaluated in detail even though they would not meet the basic objectives of the proposed project, as they are required under CEQA.
3. The City Package Alternative is evaluated in detail even though it would not meet the basic objectives of the proposed project, given that elements contained in this alternative were raised in public scoping comments for the proposed project and in public recommendations for the City's 2010 Santa Cruz Urban Water Management Plan.