

6.0 ALTERNATIVES TO THE PROPOSED ACTION

6.0 ALTERNATIVES TO THE PROPOSED ACTION

In conformance with CEQA Guidelines §15126.6, the EIR has included a comparative impact assessment of "alternatives to the proposed project". The primary purpose for this section is to provide decision-makers and the public with a "reasonable range" of project alternatives which could feasibly attain most of the basic project objectives, while avoiding or substantially lessening any of the project's significant adverse environmental effects. Important considerations for this alternatives analysis include (as noted in §15126.6):

- ❖ "...An EIR need not consider every conceivable alternative to a project."
- ❖ An EIR should identify "alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process..."
- ❖ Reasons for rejecting an alternative include:
 - "...failure to meet most of the basic project objectives";
 - "...infeasibility"; and
 - "...inability to avoid significant environmental effects".

Other than temporary, short-term air quality emissions associated with construction activities, the EIR has not identified any "unavoidable" significant impacts of the project, as all potentially significant impacts can be mitigated to less than significant levels. However, certain cumulative impacts, to which the project will contribute, may be slightly reduced with some of the alternatives. Project-related cumulative impacts include air quality and noise, although the project's contribution is not "cumulatively considerable" as defined in CEQA Guidelines §15126.6. As noted in Section 3.5, *PROJECT OBJECTIVES*, the proposed project's "basic objectives" consist of:

- ❖ Provide a reliable local source of potable water to Orange County and the surrounding region that is sustainable independent of climatic conditions and the availability of imported water supplies or local groundwater supplies;
- ❖ Provide product water that meets or exceeds the requirements of the Safe Drinking Water Act (SDWA) and the Department of Health Services (DHS);
- ❖ Reduce salt imbalance of current imported water supplies by providing a potable water source with lower salt loads for blending with existing supplies;
- ❖ Remediate the subject site of on-site contaminants resulting from approximately 35 years of use as a fuel oil storage facility in order to protect the health and safety of those in the surrounding community;
- ❖ Create ecosystem and biologic resources benefits that may accrue due to decreased pressures on existing water resources and reduced contamination within receiving waters; and
- ❖ Minimize demands on the existing imported water system.

The following alternatives to the proposed project are discussed: "No Development" alternative; "No Project (Existing General Plan)" alternative; "Alternative Site" alternative; "Alternative Use" alternative; "Alternative Project Designs" alternative; and "Environmentally Superior" alternative.

A comparison of issues with implementation of identified alternatives are provided within Table 6-1, *COMPARISON OF ALTERNATIVES*.

**TABLE 6-1
 COMPARISON OF ALTERNATIVES ***

Issue	No Project/ No Development	Alternative Site	Aboveground Tank Site Option Alternative	Alternative Project Design
Land Use/ Relevant Planning	<	N/A =>	=	N/A
Geology, Soils, and Seismicity	<	</=	=	N/A
Hydrology and Water Quality	<	=/>	>	N/A
Air Quality	<	=	=	N/A
Noise	<	=/>	=	N/A
Public Services and Utilities	> (water supply)	=	=	N/A
Aesthetics/Light & Glare	<	=/>	>	N/A
Hazards/Hazardous Materials	<	</=	=	N/A
Construction Related Impacts	<	</=	<	N/A

LEGEND

- = Impact is equivalent to impact of proposed project (neither environmentally superior or inferior).
- < Impact is less than impact of proposed project (environmentally superior).
- > Impact is greater than impact of proposed project (environmentally inferior).
- * The "Alternative Project Design"

6.1 "NO PROJECT/NO DEVELOPMENT" ALTERNATIVE

None of the impacts associated with the proposed development and construction activities would occur if the "No Project/No Development" alternative were selected. Implementation of this alternative would leave the existing portion of the fuel oil storage facility, proposed pipeline alignment, and proposed underground booster pump station site in place, and would avoid any adverse physical or environmental impacts associated with the proposed project. Existing geologic, soils, and aesthetic conditions in the area would remain the same. Air quality, noise, and traffic impacts due to desalination plant, pipeline, and pump station construction would not occur with the "No Project/No Development" alternative.

The "No Project/No Development" alternative is not presently being considered because it fails to meet the basic project objectives, and does not preclude site development at a later date. In addition, the existing project site degrades the aesthetic character of the vicinity and, if not remediated as proposed, poses a significant health risk due to petroleum hydrocarbon contamination. Furthermore, the "No Project" alternative would not realize the project benefit of providing a new potable water supply.

6.2 "ALTERNATIVE SITE" ALTERNATIVE

An alternative site (formerly the proposed project site within the Initial Study) for the desalination plant is located southwest of the current project site, within the AES Huntington Beach Generating Station, with AES office buildings to the west, an electrical switchyard to the north, and fuel oil storage tanks to the east. The alternative site is located within approximately 300 feet of the proposed project site, closer to the residential uses to the west. Project operation and equipment would be similar as with the project. However, the primary constraint for this site that led to its rejection is potentially significant temporary and permanent disruption to AES parking, access and operational activities, as the site is located immediately adjacent to the generating units and would displace existing parking, access areas and buildings. In addition, due to the site constraints that would be placed on AES from this alternative, it may preclude the power plant from converting to gas turbine combined cycle operation in the future.

Several other locations outside of the City of Huntington Beach have also been considered for this project, including the mouth of San Juan Creek (within the City of Dana Point), San Onofre (within San Diego County), and along the coast of the City of San Clemente (refer to Exhibit 20, *ALTERNATIVE SITE LOCATION MAP*, and Table 6-2, *ALTERNATIVE SITE COMPARISON*). These alternatives are not being considered for a variety of reasons, such as environmental concerns of a new ocean intake/discharge system (Dana Point and San Clemente) and/or engineering/acquisition issues (San Onofre). A discussion of potential impacts is discussed below.

Land Use/Relevant Planning

Impacts in regards to land use/relevant planning vary primarily on uses surrounding the project site and general plan/zoning designations for the site. Sensitive uses (residences, schools, recreational areas, etc.) exist in the vicinity of the San Juan Creek and San Clemente locations, thereby creating a greater potential for land use impacts to occur for these two alternative sites. In addition, the proposed industrial use may conflict with existing General Plan, and zoning designations within the City of Dana Point, City of San Clemente, and County of San Diego. The AES alternative site would have potentially significant operational impacts upon the AES plant.

Table 6-2
ALTERNATIVE SITE COMPARISON

	Near Mouth of San Juan Creek	Coast in San Clemente	San Onofre	Huntington Beach
Environmental Issues	Many	Many	Many	Temporary
Land Use	Many Issues	Many Issues	Few Issues	None
Land Cost	Very High	Very High	Moderate	Moderate
Seawater Supply	Requires New Intake	Requires New Intake	Could use Existing Intake	Existing
Effluent	Requires New Outfall	Requires New Outfall	Could use Existing Outfall	Existing
Required Piping	< 2 miles	2-5 miles	5-7 miles	10 miles
Public Perception Issues	High	High	Very High	Moderate

Geology and Soils

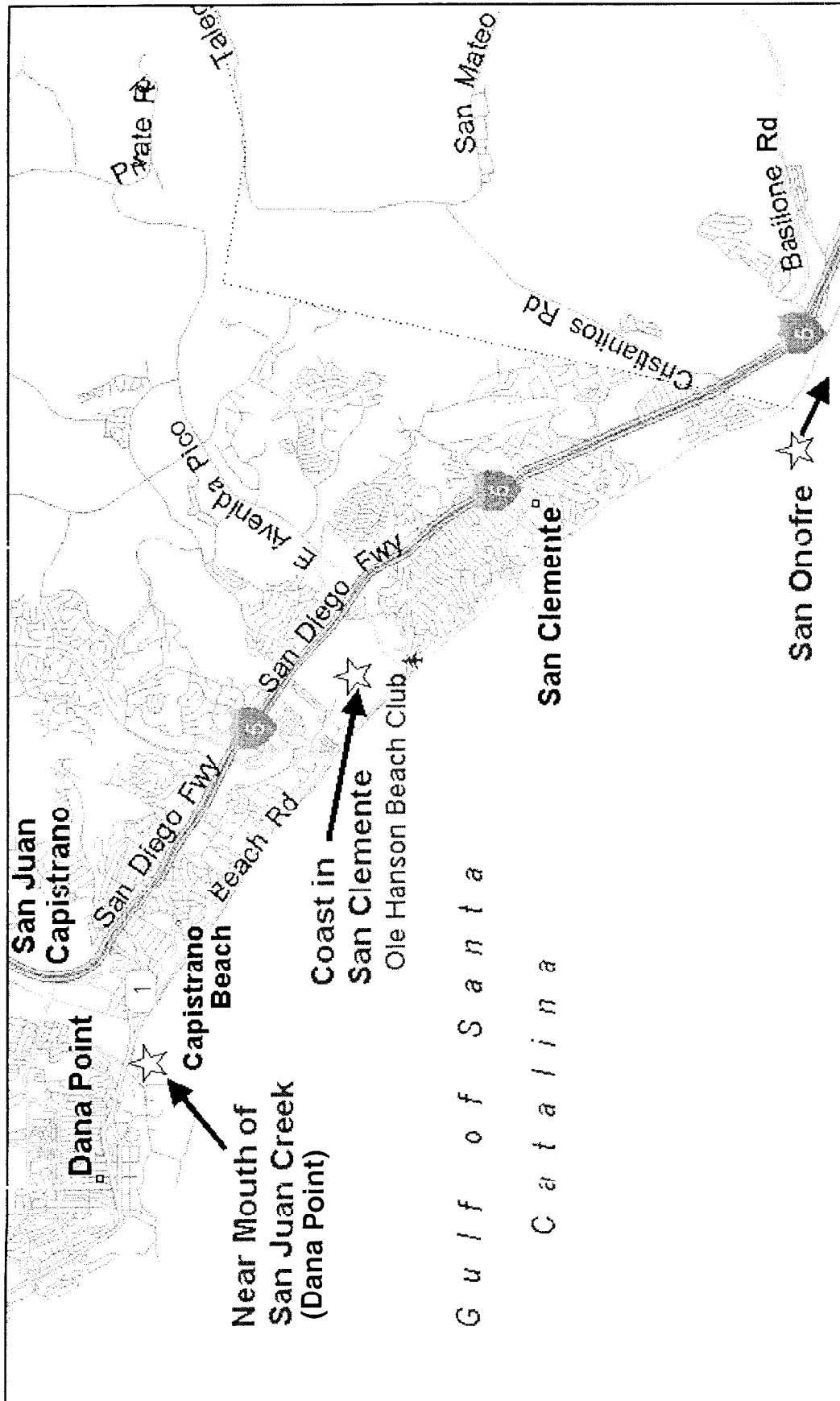
Geology and soils impacts are dependent on the unique geological/soil characteristics of each alternative site considered. However, project implementation on an alternative site would comply with the Uniform Building Code (UBC) and all other State and local regulations in regards to geologic and seismic safety. Impacts are anticipated to be similar to those of the proposed project site, although the AES alternative site avoids issues associated with the OCFCD channel.

Hydrology and Water Quality

Depending on the alternative site selected, impacts in regards to hydrology and water quality may be greater than those of the proposed project site. If implementation of the proposed project on an alternative site requires the construction of new intake and outfall facilities for plant operation (as is the case with the San Clemente and San Juan Creek alternative sites), substantial impacts to marine biological resources would occur, as construction and operation of plant facilities may disrupt sensitive marine habitats. If the desalination plant were to utilize existing intake and outfall facilities (as is the case with the San Onofre alternative site), impacts are anticipated to be similar to those of the proposed project site within the City of Huntington Beach.

Air Quality

Implementing the proposed desalination project on an alternative site would have similar air impacts to those of the proposed project site. As stated above, the design, area, and operation of the proposed desalination facility would generally remain the same. Therefore, air impacts resulting from short-term project construction and long-term facility operation would be similar to those of the proposed project site within the City of Huntington Beach.



Source: Poseidon Resources Corporation, August 2002.

POSEIDON SEAWATER DESALINATION PROJECT Alternative Site Location Map



RBF
CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
08/02 JN 10-101409

Noise

Impacts in regards to noise are anticipated to be similar to those of the proposed project site. As stated above, the design, area, and operation of the proposed desalination facility would generally remain the same. It is anticipated that the same noise-generating equipment (pumps, compressors, etc.) and noise attenuation measures would be incorporated upon implementation on an alternative site. In addition, the level of noise generated by mobile sources (automobiles driven by on-site employees, delivery trucks) would not change, as facility operations would not significantly change. However, alternative sites with nearby sensitive receptors may create greater noise impacts.

Public Services and Utilities

Implementing the proposed desalination facility on an alternative site is anticipated to have similar impacts in regards to public services and utilities as the proposed project site. As stated above, the design, area, and operation of the proposed desalination facility would generally remain the same. In addition, impacts to public services and utilities such as police/fire service, solid waste, sewer, drainage, and electricity would not vary significantly from proposed project site implementation within the City of Huntington Beach.

Aesthetics/Light & Glare

As stated above, the design, area, and operation of the proposed desalination facility would generally remain the same. Although building height and lighting standards vary by city/county, it is expected that impacts in regards to aesthetics, light, and glare on an alternative site would be similar in nature to proposed project site implementation. However, construction of a new facility in a sensitive coastal environment absent of industrial uses (San Clemente) may have significant aesthetic impacts.

Hazards and Hazardous Materials

Impacts in regards to hazards and hazardous materials are anticipated to be similar to those of the proposed project site. The nature in which hazardous materials will be stored, handled, and used for project operation is not expected to change upon alternative site implementation. However, one or more alternative sites may have less existing site contamination.

Construction Related Impacts

As stated above, the design, area, and operation of the proposed desalination facility would generally remain the same. Although many short-term construction impacts (primarily noise and air) will vary by the amount of grading necessary, it is anticipated that the phasing and construction process would not vary significantly from proposed project site implementation. However, construction-related impacts due to pipeline implementation are anticipated to be lower for the alternative sites in comparison to the proposed project site, as shorter lengths of pipeline would be necessary to convey product water to the distribution system (refer to Table 6-2, *ALTERNATIVE SITE COMPARISON*).

Conclusion

While the alternative site locations offer advantages over the proposed project site by reducing the length of the product water pipeline, the San Juan Creek and San Clemente sites would have greater impacts due to sensitive surrounding uses and the need to create a new ocean intake/outfall. Implementation of the "Alternative Site" alternative would not avoid the project's identified unavoidable air quality impact, and may result in significant aesthetic and/or marine biological impacts. This alternative is not presently under consideration.

6.3 "ABOVEGROUND PRODUCT WATER STORAGE TANK" ALTERNATIVE

The proposed project also includes an option that would eliminate the on-site underground product water storage tank and instead implement an aboveground tank on one of two separate parcels owned by AES to the north/northwest of the proposed desalination facility (refer to Exhibit 7, *ABOVEGROUND PRODUCT WATER STORAGE TANK - "NORTH" OPTION* and Exhibit 8, *ABOVEGROUND PRODUCT WATER STORAGE TANK - "WEST" OPTION*). The two optional aboveground tank sites are situated adjacent to one another and are currently developed in a similar fashion to the proposed desalination facility site, with fuel oil storage tanks, containment berms, and associated pipelines on-site. The two optional tank sites are each approximately two acres in size and are currently developed with what have historically been referred to as the "West" and "North" fuel oil storage tanks (for the purposes of this document, the optional tanks shall hereafter be referred to as the "West" tank site and "North" tank site).

The optional aboveground product water storage tank would have an approximate capacity of 10 million gallons and would be 250 feet in diameter and a maximum of 30 feet in height. Tank implementation would require the demolition of either the "West" or "North" fuel oil storage tank, depending on which site is utilized. The existing southern and western berms surrounding the "North" tank and southern and eastern berms surrounding the "West" tank would also be demolished, depending on which site is utilized. The exterior berms on both tank sites will remain as is. Potable product water would be pumped from the proposed desalination facility to the product water tank for storage via underground piping. Either tank site would include an on-site storm drainage system (no such drainage system is currently installed) which would transfer storm water to the desalination facility's storm water system, ultimately discharging into the Pacific Ocean via the AES outfall.

Product water would be distributed from the tank during periods when desalination facility output is reduced (for electricity conservation) or temporarily halted (for maintenance, cleaning, repairs, etc.). The aboveground tank would be designed and painted to match the general aesthetic character of the proposed desalination facility. In addition, landscaping and other enhancements would be utilized to screen the tank from local sensitive receptors and adjacent roadways to the maximum extent practicable.

An analysis of this alternative's potential impacts in comparison to the proposed project has been incorporated throughout this document (refer to Sections 4.1 through 4.9).

6.4 "ALTERNATIVE PROJECT DESIGN" ALTERNATIVE

The proposed desalination project is currently designed to incorporate reverse osmosis (RO) technology to remove impurities from seawater to produce approximately 50 mgd (56,000 AFY) of potable water for distribution to local water agencies. The proposed facility will utilize the AES Huntington Beach Generating Station intake and outfall pipelines for source water intake and brine discharge during operation. An alternative reducing the output of project water may reduce the size of the facility and also reduce the amount of water intake and brine discharge, but it would not significantly reduce potential environmental impacts when compared to the existing project, and, therefore, is not under consideration.

Alternative methods of desalination, such as thermal distillation, have been previously considered in coastal desalination development using a variety of technologies. The Metropolitan Water District of Southern California (MWD), in combination with a consortium of architects, engineers, and a desalination process vendor, proposed a 12.6 mgd multiple-effect-distillation (MED) desalination project under the MWD Desalination Research and Innovative Partnership (DRIP) program in 1996 to be located within the immediate vicinity of the AES Huntington Beach Generating Station. Used initially for industrial desalination, the MED process is an alternative process to reverse osmosis. While there are certain advantages to the MED process when compared to the RO process (power consumption not dependent on seawater salinity, higher product water quality, does not require sophisticated pretreatment; and no high-cost membrane replacement elements), the extreme height required for the vertical tubes (300 feet) and the dependency on power plant operation for steam supply precluded MWD from further considering the MED process at AES Generating Station site. For the same reasons, the MED process is rejected as a feasible alternative to the existing project. No other desalination designs or alternatives are considered commercially feasible for large-scale continuous operation given the site constraints present at this location.

6.5 "ENVIRONMENTALLY SUPERIOR" ALTERNATIVE

None of the above alternatives are considered "environmentally superior" to the proposed project, except for the "No Development" Alternative. In this case, CEQA requires identification of an "environmentally superior" alternative from among the other alternatives. A hypothetical reduction in facility size can be argued to be "environmentally superior", based superficially on the reduction in facility size and corresponding reduction in traffic, air and noise impacts. A low-intensity use of the site, such as water storage tanks or storage units, would be considered "environmentally superior", although this would not accomplish the project's primary goal of providing a new supplemental potable water supply. However, reducing facility size and output would not substantially reduce any significant impacts. Implementation of the project on an alternative site, while dependent on site-specific variables, is not anticipated to significantly reduce impacts, as alternative site implementation is expected to result in overall similar or greater environmental impacts. The aboveground tank option is anticipated to produce a lower amount of temporary, short-term construction-related emissions, as it would require less grading and excavation than the proposed belowground tank. The "Aboveground Product Water Storage Tank" alternative is the environmentally superior alternative in comparison to the proposed project.

