

CHAPTER 6

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CHAPTER 6.0
PROJECT ALTERNATIVES

INTRODUCTION

This EIR provides a discussion of alternatives to the proposed project as required by CEQA. According to the CEQA Guidelines, alternatives should include realistic measures to attain the basic objectives of the proposed project and provide means for evaluating the comparative merits of each alternative. In addition, though the range of alternatives must be sufficient to permit a reasoned choice, they need not include every conceivable project alternative (CEQA Guidelines, §15126.6(a)). The key issue is whether the selection and discussion of alternatives fosters informed decision making and public participation.

Alternatives presented in this chapter were developed by reviewing alternatives to the use of oxygenates and different methods to obtain more CARB compliant gasoline blending stocks. Consequently, each project alternative described below is similar to the proposed project in most respects. The rationale for selecting specific components of the proposed project on which to focus the alternatives analysis rests on CEQA's requirements to present a range of reasonable project alternatives that could feasibly attain the basic objectives of the project, while generating fewer or less severe adverse environmental impacts.

The proposed project objective is to produce cleaner-burning gasoline and diesel fuels for California markets in accordance with CARB requirements. Specifically, the objectives of the proposed project are as follows:

- Produce cleaner-burning California gasoline blend stock for oxygenate blending (CARBOB) by removing benzene from naphtha streams and increasing the octane rating of light gasoline components;
- Produce finished reformulated gasoline (RFG) by blending ethanol and the CARBOB product; and
- Produce cleaner-burning ultra-low sulfur diesel (ULSD) by removing sulfur from straight-run diesel streams.

The alternatives presented in this chapter involve modifications to aspects of the specific equipment or operations of the proposed project that would still allow the Refinery to meet the CARB specifications for gasoline and diesel fuel.

ALTERNATIVES REJECTED AS INFEASIBLE

In accordance with CEQA Guidelines §15126.6(c), a CEQA document should identify any alternatives that were considered by the lead agency, but were rejected as infeasible during the scoping process and briefly explain the reason underlying the lead agency's determination.

Section 15126.6(c) also states that among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are: (1) failure to meet most of the basic project objectives; (2) infeasibility; or (3) inability to avoid significant environmental impacts. Furthermore, CEQA Guidelines §15126.6(f)(2)(B) indicates that if the lead agency concludes that no feasible alternative locations for the project exist, it must disclose the reasons for this conclusion, and should include the reasons in the EIR.

Alternate Oxygenates: There are a number of other oxygenates besides MTBE and ethanol that could potentially be used in gasoline. However, with California's ban on MTBE and the requirements of the CARB regulations, ethanol is the only acceptable oxygenate that can be used to produce Phase 3 Reformulated Gasoline. Therefore, alternatives to the use of ethanol are not feasible and were not evaluated.

Purchase Additional Gasoline Blending Components: Rather than reducing the benzene content of the manufactured gasoline components at the Paramount Refinery, low-benzene blending components (e.g., alkylate or isomate) could be purchased by Paramount, transported to the Refinery, and blended with its manufactured streams. This alternative requires: (1) that sufficient quantities of the appropriate blendstocks be available for purchase at an economic price; (2) that the required quantities can be delivered to the Paramount refinery by railcar, truck or existing pipelines; and, (3) that the refinery have sufficient tankage to store and handle the required quantities of imported blendstocks. Due to the high benzene content of Paramount's manufactured streams, the needed quantity of appropriate blendstocks is not available from other local refiners. These blendstocks would have to be imported into California. It is doubtful that the blendstocks can be imported at an economical price. Therefore, this alternative was rejected as infeasible.

Alternative Sites: An alternative location is not feasible as the project consists of modifications to an existing facility that contains necessary processing units; natural gas, water, and electric transmission infrastructures; petroleum product transportation infrastructure; and the appropriate land use designation necessary to support the project. Advantages of the existing site would be lost if another location were proposed. The development of a new refinery in an alternative location would require substantially more equipment, construction, and potentially generate substantially greater impacts in many environmental categories (e.g., air quality, traffic and hazards) than the proposed project. Therefore, an alternative site for the project is not feasible.

New Processing Units: Instead of purchasing the quantity of alkylate blendstock required by the project, a new processing unit could manufacture this blendstock on site. Due to the high cost of industrial equipment, manufacturing the small quantity of alkylate needed for the project is not economical. Furthermore, Paramount would need to import the raw materials needed for alkylate manufacture. Overall, the environmental impact of on-site alkylate manufacture would be greater

than purchasing alkylate, as proposed in the project. As a result, this alternative is not feasible and not evaluated.

Alternative Transportation Modes: Most of the operational air quality impacts associated with the proposed project result from increased truck traffic for shipments of gasoline and diesel products. Truck transport of gasoline and diesel fuels to retail stations is currently the only feasible mode of product delivery because no other mode of transportation is available. Pipelines do not connect distribution centers to individual gasoline stations so that trucks are required to transport gasoline to the retail outlets. Therefore, this alternative is not feasible.

DESCRIPTION OF THE PROJECT ALTERNATIVES

Alternative 1 – No Project Alternative

Alternatives analyses are typically required to evaluate a “No Project Alternative” as a basis for comparing potential significant adverse environmental impacts among alternatives. Public Resources Code §21178(g) exempts projects for which permits were filed prior to January 1, 2001, that will enable the production of CARB RFG Phase 3 compliant fuels from the requirements of analyzing a No Project Alternative and alternative project sites. Since permits for the Paramount project were submitted after January 1, 2001, this EIR must include the no project alternative.

The no project alternative for Paramount Refinery assumes that there are no physical changes to the existing Refinery, but the Refinery can continue to operate under the conditions of the existing permits. This alternative would not achieve any of the proposed project objectives of: (1) producing cleaner-burning California gasoline blend stock for oxygenate blending (CARBOB) by removing benzene from naphtha streams; (2) producing finished reformulated gasoline by blending ethanol and the CARBOB product; or (3) producing cleaner-burning ultra-low sulfur diesel by removing sulfur from straight-run diesel streams. Under this alternative, the Refinery will operate in the same manner as described in the baseline conditions.

Since Paramount cannot meet the California specifications for retail sale of its gasoline and diesel products when operating under the baseline conditions, this alternative is not a realistic option if it is to sell fuels to the local market. Under this alternative, Paramount would continue to export its products to other refiners for additional processing or export it out of California. Note that Paramount cannot economically export its products out of California.

Alternative 2 – Delivery of Hydrogen to Paramount Via Underground Pipeline

This alternative would involve producing the hydrogen needed for the Clean Fuels project at an offsite location by a third party vendor. The hydrogen would then be transported to the Refinery via a newly constructed pipeline. Under this alternative, most of the onsite modifications would be eliminated. Although this alternative would allow Paramount to produce more CARB diesel and ULSD, it would not meet the objectives of producing CARBOB, and finished RFG.

Alternative 3 – Alternative Location for the Naphtha Splitter

This alternative would involve locating the Naphtha Splitter further from the refinery fence line. This would reduce the potential public impact from flammable and toxic hazards associated with operation of this unit. In order to reduce the potential public impact from hazards associated with the Naphtha Splitter so that future impacts will not extend beyond those of the existing operation, the unit would have to be moved to the northwest of its proposed location by at least 150 feet (see Figure 6-1). This alternative is under consideration pending further project engineering.

ALTERNATIVE 1 – NO PROJECT ALTERNATIVE

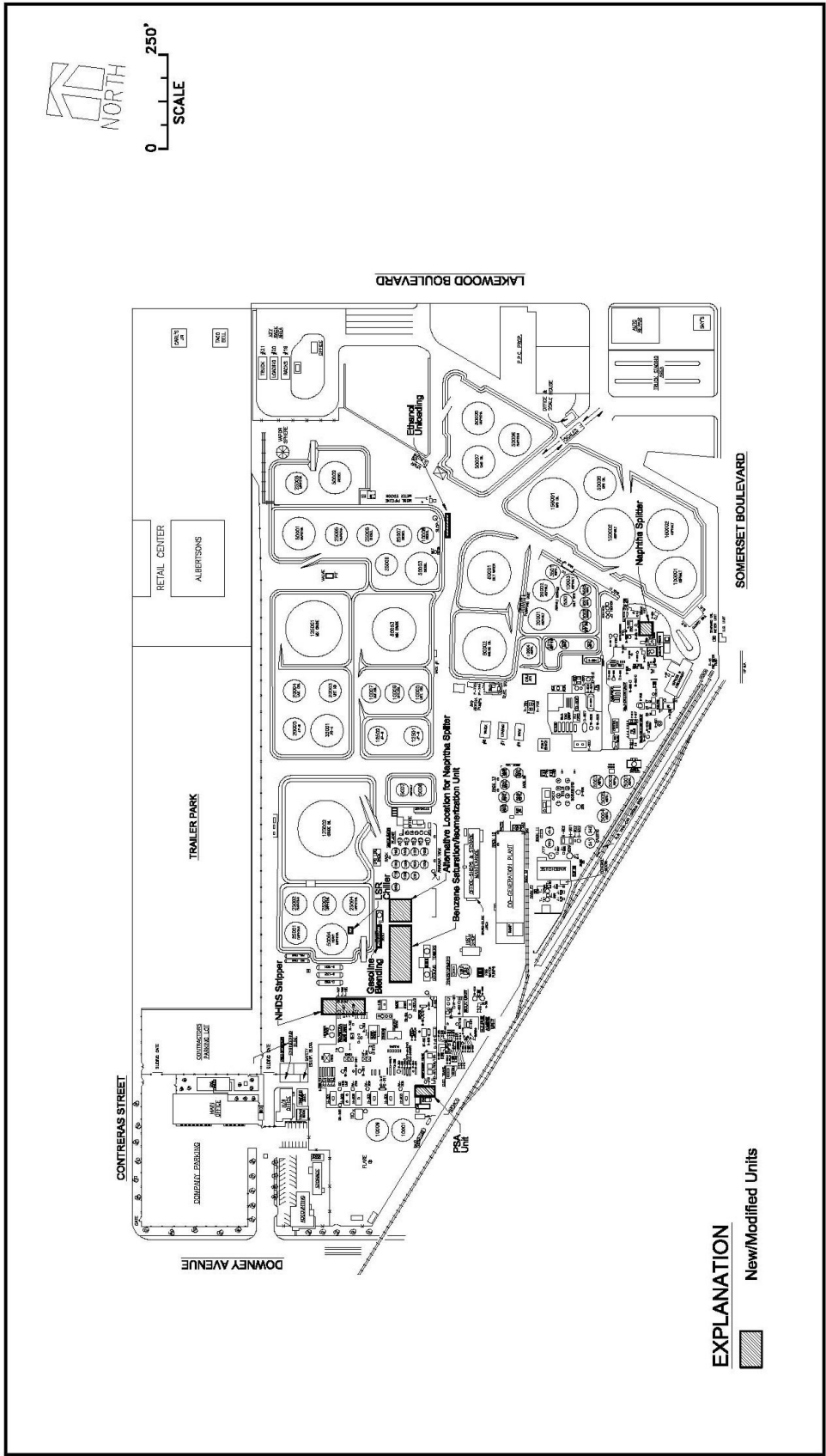
Air Quality: Air quality impacts associated with construction under Alternative 1 would be less than the proposed project because no construction activities would be required. Construction emissions associated with the proposed project were considered less than significant.

The emissions associated with the operational phase of Alternative 1 would be less than the proposed project since no new or modified units are required under this Alternative. Therefore, the emissions identified in Table 4-3 (including 104 lbs/day of CO, 66 lbs/day of VOC, 52 lbs/day for NO_x, one lb/day of SO_x, and 69 lbs/day of PM₁₀), would be eliminated. The No Project Alternative would eliminate all emission increases associated with the proposed project during the operational phase. Consequently, Alternative 1 would result in no significant air quality impacts.

The proposed project will remove benzene from various refinery product streams, reducing the overall benzene emissions from the Refinery. Alternative 1 would eliminate the benzene emission reductions associated with the proposed project so that the emissions of toxic air contaminants and the associated health risks under Alternative 1, would be greater than the proposed project. As a result, the emissions of toxic air contaminants under this Alternative would be similar to the baseline emissions.

Hazards: The No Project Alternative would eliminate the potentially significant impacts associated with the proposed project since no new or modified units would be required. The Naphtha Splitter would not be constructed and the related consequences of a release from this equipment would not occur. Therefore, Alternative 1 would eliminate the potentially significant hazard impacts associated with the Naphtha Splitter portion of the proposed project.

Traffic/Transportation: The No Project Alternative would eliminate traffic associated with construction activities since the new units and modifications to the Refinery would not be constructed. The construction traffic impacts associated with Alternative 1 are less than the proposed project and traffic impacts under Alternative 1 would be less than significant. The proposed project impacts on traffic during the construction phase would also be less than significant.



REFINERY LAYOUT AND LOCATION OF PROCESS UNITS

Figure 6-1



Project No. 2150
 13150/Refinery Layout42

The No Project Alternative would also eliminate the traffic associated with the operational phase of the proposed project. The proposed project impacts on traffic were considered to be less than significant. The No Project Alternative would eliminate the need to transport gasoline via truck since CARB compliant fuels could not be produced. The truck traffic would be expected to remain at its current level. The impacts of Alternative 1 on transportation are expected to be the same as the proposed project and would be less than significant.

ALTERNATIVE 2 - DELIVERY OF HYDROGEN TO PARAMOUNT VIA UNDERGROUND PIPELINE

Air Quality: Construction activities under Alternative 2 at the Refinery would be less than the proposed project because fewer modifications to the Refinery would be required. However, Alternative 2 would require the construction of a pipeline from a third party hydrogen supplier. Currently, the large third party hydrogen plants and suppliers are located in the Wilmington/Carson area. Therefore, the construction of a pipeline from the Carson/Wilmington area to Paramount would be required, a distance of about 14 miles. Therefore, air quality impacts associated with all of the construction activities required under Alternative 2 could be greater than the proposed project. Construction emissions associated with the proposed project were considered less than significant. Construction emissions associated with Alternative 2 are expected to be significant.

The emissions associated with the operational phase of Alternative 2 would be reduced since fewer new or modified units would occur under this Alternative. Also, under Alternative 2, no CARBOB or finished RFG would be produced by the Refinery so fewer truck trips to deliver the finished gasoline product would be required. Alternative 2 would also eliminate the shipment of pentane and ethanol to/from the Refinery. As a result, Alternative 2 would reduce all pollutant emission increases, especially those emissions associated with truck shipments of product during the operational phase of the proposed project. Consequently, Alternative 2 is expected to result in less than significant operational air quality impacts.

The proposed project will remove benzene from various refinery product streams, reducing the overall benzene emissions from the Refinery. Alternative 2 would eliminate the benzene emission reductions associated with the proposed project so that the emissions of toxic air contaminants and the associated health risks under Alternative 2, would be greater than the proposed project. As a result, the emissions of toxic air contaminants under this Alternative would be similar to the baseline emissions.

Hazards: Alternative 2 would eliminate the potentially significant adverse impacts associated with the proposed project since no new or modified units would be required. The Naphtha Splitter would not be constructed and the related consequences of a release from this equipment could not occur. Also, the transportation hazards associated with gasoline would be eliminated under Alternative 2 since there would be no increase in gasoline produced.

Traffic/Transportation: Alternative 2 would result in less traffic associated with construction activities than the proposed project since no new units and fewer modifications to existing Refinery

equipment would occur. The construction traffic impacts associated with Alternative 2 are expected to be less than the proposed project and less than significant.

Alternative 2 would result in less traffic than the proposed project since RFG could not be produced and would not be transported by truck. As with the proposed project, the impacts of Alternative 2 on transportation are expected to be less than significant.

ALTERNATIVE 3 - ALTERNATIVE LOCATION FOR THE NAPHTHA SPLITTER

Air Quality: Air Quality under Alternative 3 would be the same as the proposed project. Since the alternative involves building the proposed Naphtha Splitter in a different location within the refinery, it does not affect either the expected emissions from construction activities or those from operation of the project. Air quality impacts under Alternative 3 would remain less than significant for construction emissions of all pollutants and for CO, NO_x, SO_x, and PM₁₀ emissions during the operation phase. VOC emissions during project operation are expected to be significant.

Relocating the Naphtha Splitter could alter the toxic air contaminant impacts at the MEIR. The post-project cancer risk at the MEIR would decrease from 9.766×10^{-6} to 9.71×10^{-6} if the Naphtha Splitter is moved. Therefore, Alternative 3 would not result in significant adverse impacts to toxic air contaminants, but would result in a slightly lower cancer risk from that of the Refinery.

Hazards: The hazard impacts resulting from Alternative 3 are expected to be less than those of the proposed project. The currently proposed location for the Naphtha Splitter places it closer to neighboring residents than would be the case under Alternative 3. Since the potential consequences associated with the flammable and toxic materials handled at the Naphtha Splitter are attenuated by distance, moving the Naphtha Splitter further from neighboring residents will reduce these potential impacts. Depending on the final construction location for the Naphtha Splitter, this alternative could result in Naphtha Splitter hazard impacts that are less than significant.

Traffic/Transportation: Traffic/Transportation impacts under Alternative 3 would be the same as the proposed project. Since the alternative simply involves building the proposed Naphtha Splitter in a different location within the refinery, it does not affect the expected traffic from either construction activities or operation of the project. Furthermore, relocating the Naphtha Splitter does not change the types or quantities of petroleum products that the Refinery will ship via truck transport. Traffic/Transportation impacts under Alternative 3 would remain less than significant.

CONCLUSION

Table 6-1 compares the potential environmental impacts of the various alternatives with those of the proposed project. The environmentally superior alternative would be the No Project Alternative as no additional environmental impacts over the existing baseline conditions would occur. Pursuant to CEQA Guidelines §15126.6(e)(2), if the environmentally superior alternative is the “no project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. The environmentally superior alternative is considered to be Alternative 2, delivery of hydrogen via pipeline. Under Alternative 2, the potentially significant hazards

associated with the proposed project would be reduced. However, Alternative 2 could result in significant air quality impacts associated with construction activities. Alternative 2 also would not provide the estimated emission reductions of toxic air contaminants and related cancer risk reduction as would the proposed project. Further, Alternative 2 would only allow Paramount to produce CARB diesel and ULSD, it would not meet the objectives of producing CARBOB and finished RFG. Therefore, while Alternative 2 may be the environmentally superior alternative of the identified alternatives, it is not environmentally superior to the proposed project.

Alternative 3 could potentially reduce the project hazard impacts to less than significant while achieving all of the proposed project objectives. If the alternative location reduced project impacts to less than significant, it would be environmentally superior to the proposed project. The feasibility of this alternative is under review.

TABLE 6-1

**ENVIRONMENTAL IMPACTS OF ALTERNATIVES
(compared to the proposed project)**

ENVIRONMENTAL TOPIC	Proposed Project	Alternative 1	Alternative 2	Alternative 3
AIR QUALITY				
Construction (CO, VOC, NO _x , SO _x , PM10 emissions)	NS	NS(-)	S(+)	NS(=)
Operation (CO, NO _x , SO _x , PM10 emissions)	NS	NS(-)	NS(-)	NS(=)
Operation (VOC emissions)	S	NS(-)	NS(-)	S(=)
Toxic Air Contaminants	NS	PS(+)	PS(+)	NS(-)
Hazards				
Construction	NS	NS(-)	NS (-)	NS(=)
Operation	S	NS(-)	NS(-)	NS(-)
Transportation				
Construction	NS	NS(-)	NS(-)	NS(=)
Operation	NS	NS(-)	NS(-)	NS(=)

Notes:

- S = Significant
- NS = Not Significant
- PS = Potentially Significant
- MNS = Mitigated to Non-significance
- (-) = Potential impacts are less than the proposed project.
- (+) = Potential impacts are greater than the proposed project.
- (=) = Potential impacts are approximately the same as the proposed project.