

CHAPTER 6

ALTERNATIVES

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6.0 PROJECT ALTERNATIVES

6.1 INTRODUCTION

Chapter 6 provides a discussion of alternatives to the proposed project as required by CEQA. According to the CEQA guidelines, alternatives should include feasible 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 identifying alternatives achieving most or some of the objectives of the proposed project. 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 objectives of the proposed project are as follows:

- Reduce NO_x and SO_x emissions to assist in compliance with SCAQMD Regulation XX – RECLAIM requirements.
- Replace existing equipment with new equipment to reduce overall Refinery emissions and improve operating efficiency.
- Comply with future anticipated regulatory requirements that may be promulgated to limit sulfur oxide emissions at the Refinery and SRP.
- Improve process efficiency and reliability at the Refinery and SRP.
- Recover more liquid fuels and reduce the generation of process gas (reducing the potential for flaring events).
- Increase the generation of electricity on-site to reduce the purchase of electricity from third-party electricity providers.
- Comply with the revised CARB Phase III gasoline specifications.
- Reduce the potential for atmospheric releases and related emissions from pressure relief valves in the FCCU.

The proposed project involves modifying or replacing a number of different units. The alternatives presented in this chapter include modifications to various aspects of specific

equipment or operations of the proposed project that would still allow the Refinery to meet some or most of the project objectives.

Section 15126.6(f) of the CEQA Guidelines stipulates that the range of alternatives required in an EIR is governed by a rule of reason in that the EIR must discuss only those alternatives “necessary to permit a reasoned choice” and those that could feasibly attain most of the basic objectives of the proposed project.

The project alternatives were developed by modifying one or more components of the proposed project while taking into consideration the project’s limitations as to space, permitting requirements, and compliance agreement stipulations. Unless otherwise stated, all other components of each project alternative are identical to the proposed project. The identified feasible project alternatives as well as the alternatives rejected as infeasible are discussed further in the following sections.

Aside from the alternatives described below, no other project alternatives were identified that met most of the objectives of the proposed project, while substantially reducing significant adverse environmental impacts.

6.2 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.

6.2.1 ALTERNATIVE SITES

The Refinery has limited space for new units. The new cogeneration unit, new fuel gas treatment unit, crude oil storage tank, and new coke handling system and their supporting infrastructure require significant plot space. Alternate sites within the Refinery are not feasible because:

- There is not enough plot space elsewhere in the Refinery where the equipment and supporting infrastructure can be located.

- If new equipment were sited in different locations in the Refinery, either there is not sufficient space within the Refinery or extensive modifications would be required to the surrounding facilities to meet current code and safety requirements.
- Separate sites would require more equipment to connect processes and, consequently, would result in additional construction and fugitive emissions.

An alternative location to the Tesoro Refinery site is also not feasible as the proposed project consists of modifications to an existing Refinery that contains necessary processing units; natural gas, water, and electric transmission infrastructures; crude oil and petroleum product transportation infrastructure; and the appropriate land use designation necessary to support the project. Advantages of the existing Refinery 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, energy, hazards/hazardous materials, hydrology/water quality, noise, traffic, and) than the proposed project. Therefore, an alternative refinery site for the proposed project is not feasible.

6.2.2 EMx TECHNOLOGY INSTEAD OF SCR

The proposed project includes the installation of SCR units to control NO_x emissions from the new cogeneration unit and steam boilers. The use of SCR is considered BACT for the control of NO_x emissions from electrical generating equipment. A new air pollution control technology, the EMx Catalytic Absorption System, is being used in one cogeneration facility located in Redding, California for the control of NO_x, CO, VOC, and PM₁₀ emissions and is considered a potential alternative to the use of SCR.

The EMx control system is a post-combustion multi-pollutant control technology developed by EmeraChem LLC. EMx uses a single catalyst to remove NO_x, CO, and VOC emissions in turbine exhaust gas by oxidizing nitrogen oxide (NO) to NO₂, CO to CO₂, and hydrocarbons to CO₂ and water, and then adsorbing NO₂ onto the catalytic surface using a potassium carbonate absorber coating. The potassium carbonate coating reacts with NO₂ to form potassium nitrites and nitrates, which are deposited onto the catalyst surface.

When all of the potassium carbonate absorber coating has been converted to nitrogen compounds, NO_x can no longer be absorbed and the catalyst must be regenerated. Regeneration is accomplished by passing a dilute hydrogen gas across the surface of the catalyst in the absence of oxygen. Hydrogen in the gas reacts with the nitrites and nitrates to form water and molecular nitrogen. CO₂ in the gas reacts with the potassium nitrite and nitrates to form potassium carbonate, which is the absorbing surface coating on the catalyst. The EMx catalyst is sensitive to contamination of sulfur in combustion fuel. Therefore, an ESx catalyst is necessary in conjunction with the EMx system to remove sulfur compounds from the gas turbine exhaust stream. Both SCR and EMx technologies can achieve BACT levels required by the SCAQMD. Therefore, Tesoro has the option of choosing either the EMx or SCR systems.

The cogeneration unit at the Tesoro Refinery will use refinery gas as fuel. Tesoro is concerned that the sulfur in refinery gas may interfere with the EMx catalyst's ability to control emissions and consistently comply with BACT NOx requirements. A second catalyst is necessary to remove sulfur species to prevent fouling of the NOx catalyst. Demonstration of the effectiveness for use with higher sulfur-containing fuels (such as, refinery fuel gas) has not yet shown consistent, reliable NOx control in the Refinery environment. In addition, although the EMx Technology does not use ammonia, it results in an increase in water use and wastewater discharge, and requires a hydrogen supply, which may generate other environmental impacts, including increased GHG emissions. Therefore, the use of the SCR is considered to be preferable over the EMx technology for the specific application at the Tesoro Refinery.

6.2.3 POWER RECOVERY GENERATION AT THE FCCU

The proposed project includes the installation of a new cogeneration unit *including a new I.C. engine*. As an alternative to a cogeneration unit, adding a power recovery turbine to the FCCU was considered and determined to be technically infeasible due to the current operating design limits (e.g., pressure limits, existing additional control equipment) of the FCCU, which would require a substantial redesign and rework of the FCCU.

6.2.4 ELIMINATE UPGRADES TO THE HTU NO. 2

The alternative of eliminating the modifications to the HTU No. 2 is not considered to be a feasible alternative. Modifications to HTU No. 2 are required to desulfurize more naphtha in order to meet sulfur specifications for blending into revised CARB Phase III compliant gasoline products. Eliminating the modifications to HTU No. 2 would not allow Tesoro to comply with state regulations and, therefore, is not feasible.

6.2.5 ELIMINATE UPGRADES TO THE SULFUR RECOVERY FACILITIES

The alternative of eliminating the upgrades to the Sulfur Recovery Facilities was considered but eliminated as a feasible alternative because the changes at the SRP are minor and would not create significant adverse construction or operational air quality, hazards and hazardous materials or construction transportation/traffic impacts.

6.3 DESCRIPTION OF THE PROJECT ALTERNATIVES

6.3.1 ALTERNATIVE 1 – NO PROJECT ALTERNATIVE

CEQA Guidelines §15126.6 (e) require evaluation of a “No Project Alternative”. Under the “No Project Alternative,” no Refinery modifications would occur and the Refinery would continue to operate under its current configuration. The proposed project modifications would not occur including modifications to: the cogeneration unit; steam boilers; fuel gas treatment unit; ammonia storage; LPG recovery system; coke handling, screening and loading system; HTU No. 2 modifications; amine/sour water reliability upgrades; new sour

gas recovery/treatment units; connecting atmospheric PRDs to the flare; DCU modifications; crude oil storage tank; and SRP modifications.

The “No Project Alternative” would not meet the objectives of the proposed project which include: (1) reduce NO_x and SO_x emissions to assist in compliance with current SCAQMD Regulation XX –RECLAIM requirements; (2) replace existing equipment with new equipment to reduce emissions and increase operating efficiency; (3) comply with future anticipated regulatory requirements that will limit sulfur emissions at the Refinery; (4) improve process efficiency and reliability at the Refinery and SRP; (5) recover more liquid fuels and reduce the generation of process gas (reducing the potential for flaring events); (6) increase the generation of electricity on-site to reduce the purchase of electricity from third-party electricity providers; (7) comply with revised CARB Phase III requirements for gasoline; and (8) reduce the potential for atmospheric releases and related emissions from pressure relief valves in the FCCU.

6.3.2 ALTERNATIVE 2 – ELIMINATE UPGRADES TO THE BOILERS

Under Alternative 2, the project as described in Chapter 2 would be constructed with the exception that no upgrades would be provided for the existing boilers and the existing boilers would continue to operate. All other portions of the proposed project would still be included. This alternative would preclude achieving several major objectives of the proposed project, namely:

- NO_x emissions would not be reduced to assist in compliance with SCAQMD Regulation XX – RECLAIM, requirements.
- The existing boilers would not be replaced with new equipment to reduce emissions and increase operating efficiency.

To comply with existing and future anticipated RECLAIM requirements, Tesoro would need to continue purchasing NO_x and SO_x RECLAIM Trading Credits (RTCs) for the Refinery.

6.3.3 ALTERNATIVE 3 – ELIMINATE THE NEW COGENERATION FACILITIES

The proposed project includes replacing two existing 30 MW cogeneration units (Cogens A and B) and their associated air pollution control equipment with one new 61 MW cogeneration unit (Cogen C) to decrease the Refinery’s need to purchase electricity from off-site sources during normal operating conditions. Alternative 3 would eliminate the new cogeneration unit *including the new I.C. engine* and the required electricity demand would continue to be supplied by the local utility company. Under Alternative 3, the existing cogeneration units would operate as long as physically possible. However, if the cogeneration units are not replaced, eventually they would not be able to be used and would need to be shut down because the equipment is near the end of its useful life. The long-term impact of this alternative would be the increased purchase of power produced off-site.

Under Alternative 3, the future shutdown of the existing cogeneration units would require a new auxiliary boiler to supply the necessary amount of steam demand for the Refinery. Similarly to the new the cogeneration unit, the new boiler would likely require installation of SCR as BACT for the boiler's combustion source. All other portions of the proposed project would still be included. This alternative would preclude achieving several major objectives of the proposed project, namely:

- NO_x emissions would not be reduced to assist in compliance with SCAQMD Regulation XX – RECLAIM requirements.
- The existing cogeneration units would not be replaced with new equipment to reduce emissions and increase operating efficiency.
- There would be no increase in the generation of electricity on-site and the Refinery would need to rely more on third-party electricity providers.

Similarly to Alternative 2, to comply with existing and future anticipated RECLAIM requirements, Tesoro would need to continue purchasing NO_x and SO_x RTCs for the Refinery.

6.3.4 ALTERNATIVE 4 – ELIMINATE THE NEW FUEL GAS TREATMENT UNIT

Under Alternative 4, the project as described in Chapter 2 would be constructed as proposed except that the new fuel gas treatment unit would not be built. Alternative 4 would eliminate the treatment of fuel gas to remove sulfur prior to combustion (thus reducing SO_x emissions). All other portions of the proposed project would still be included. This alternative would preclude achieving the objectives of the proposed project, namely:

- SO_x emissions would not be reduced to assist in compliance with SCAQMD Regulation XX – RECLAIM requirements.
- The Refinery would not be able to operate in compliance with the future regulatory requirements that will limit the sulfur emissions from the Refinery.

As for Alternatives 2 and 3, to comply with existing and future anticipated RECLAIM requirements, Tesoro would need to continue purchasing NO_x and SO_x RTCs for the Refinery.

6.3.5 ALTERNATIVE 5 – ELIMINATE CRUDE OIL STORAGE TANK

Under Alternative 5, the project as described in Chapter 2 would be constructed as proposed except that the new crude oil storage tank would not be built. Alternative 5 would eliminate the Refinery's flexibility to accommodate the variety of crude oil available in the market. All other portions of the proposed project would still be included. This would preclude

achieving the objective of the proposed project to improve process efficiency and reliability at the Refinery.

6.4 ENVIRONMENTAL IMPACTS FROM THE PROJECT ALTERNATIVES

6.4.1 ALTERNATIVE 1 – NO PROJECT ALTERNATIVE

Air Quality: Air quality impacts associated with construction of the proposed project would be eliminated (see Table 4-3) under Alternative 1 because no construction activities would be required. Construction emissions associated with the proposed project were considered significant for NO_x emissions. Under Alternative 1, air quality impacts from construction would be less than significant for all pollutants.

The criteria pollutant emission reductions associated with the operational phase of the proposed project would not occur because no new or modified units are required under Alternative 1. Under the proposed project, the only emission increases were associated with VOCs, which would be reduced to less than significant through Regulation XIII offset requirements. While the No Project Alternative would eliminate the emission increases, it would also eliminate all emission benefits, i.e., reduced emissions due replacement of existing equipment with new, more efficient equipment, including boilers and the cogeneration unit. The proposed project would result in an emission decrease in CO, NO_x, SO_x, PM₁₀, and PM_{2.5} (see Table 4-6). Therefore, the operational emissions from the proposed project were considered to be less than significant after mitigation. Alternative 1 would also result in no significant operational air quality impacts, but would not provide the benefit of reduced criteria pollutants emissions from the operation of the Refinery.

Alternative 1 would not generate the increased TAC emissions and the associated health risks. The health risks from the proposed project (both carcinogenic and non-carcinogenic) were analyzed and concluded to be less than significant.

The proposed project is also expected to result in a decrease in GHG emissions of about 61,334 metric tons per year (see Table 5-5) associated with the new cogeneration unit and new boilers which are more energy efficient than the existing cogeneration units and existing boilers. Under the No Project Alternative, there would be no reductions in GHG emissions.

Hazards: The No Project Alternative would eliminate the hazards associated with the proposed project, including the potentially significant impacts associated with the Amine/Sour Water Upgrades and the new crude oil storage tank. Therefore, the hazard impacts from Alternative 1 would not be significant. Under the No Project Alternative, the Refinery would continue to use both anhydrous and aqueous ammonia. Therefore, the existing hazards associated with anhydrous ammonia at the cogeneration units would not be eliminated under Alternative 1.

Traffic/Transportation: The No Project Alternative would eliminate traffic associated with construction activities since no portion of the proposed project would be constructed. The construction traffic impacts associated with the proposed project are considered to be significant to the I-710 Freeway at Anaheim Street, and mitigation measures are not expected to reduce the traffic impacts to less than significant. The No Project Alternative would eliminate traffic impacts as no construction activities would be required. The No Project Alternative would eliminate construction traffic impacts associated with the proposed project.

6.4.2 ALTERNATIVE 2 – ELIMINATION OF UPGRADES TO THE BOILERS

Air Quality: Alternative 2 would eliminate the replacement of the existing boilers with new boilers. Alternative 2 would result in a decrease in construction emissions from fewer workers and less equipment installation since the new boilers would not be built; however, other portions of the proposed project would still be built and similar construction equipment would still be required. The construction emissions under Alternative 2 are expected to remain significant because the construction of the new boilers is only a portion of the proposed project construction activities.

Under Alternative 2, the operational emissions are expected to be higher than the proposed project as the existing boilers are a large source of criteria pollutant emissions. The new boilers are expected to result in a reduction in certain pollutants, e.g., NO_x (see Table 4-6). Thus, Alternative 2 would result in less of a reduction in operational emissions, as compared to the proposed project. The operational emissions under Alternative 2 are expected to remain less than significant due to the requirement to offset emission increases.

Alternative 2 would eliminate the increased TAC emissions associated with the new boilers and the associated health risks; however, the health risks associated with the existing boilers would continue at a slightly lower rate compared to the proposed project. Therefore, a slight reduction in TAC emissions is expected under Alternative 2.

The proposed project is also expected to result in a decrease in GHG emissions of about 61,334 metric tons per year (see Table 5-5) associated with the installation of new Cogen C and new boilers which are more energy efficient than the existing cogeneration units and existing boilers. Under the Alternative 2, the GHG emissions are expected to be greater as the GHG emission reductions associated with the new boilers would not occur.

Hazards: The proposed project hazards impacts are expected to be significant due to potential accidents involving the Amine/Sour Water Upgrades and the new crude oil storage tank. The hazards associated with the proposed new boilers are expected to be less than significant. Therefore, Alternative 2 would not result in a decrease in significant hazard impacts as the boilers are not a source of significant hazard impacts. Alternative 2 would be expected to reduce the use of aqueous ammonia needed as a new SCR unit will not be installed.

Traffic/Transportation: The construction traffic impacts associated with the proposed project are considered to be significant on the local I-710 Freeway at Anaheim Street. Alternative 2 would result in less construction activities so that fewer workers and less traffic impacts would be expected. However, peak construction activities are associated with multiple portions of the proposed project occurring simultaneously so that the elimination of the construction of the new boilers is not expected to reduce traffic/transportation impacts during construction to less than significant since other portions of the project would still occur.

6.4.3 ALTERNATIVE 3 – ELIMINATION OF THE NEW COGENERATION FACILITIES

Air Quality: Alternative 3 would eliminate the replacement of the existing cogeneration units with a new cogeneration unit *including a new I.C. engine*. Alternative 3 would result in a decrease in construction emissions from fewer workers and less equipment installation since the new cogeneration unit *and I.C. engine* would not be built; however, other portions of the proposed project would still be built and similar construction equipment would still be required. The construction emissions under Alternative 3 are expected to remain significant, because the construction of the new cogeneration unit is only a portion of the proposed project construction activities.

Under Alternative 3, the operational emissions are expected to be higher than the proposed project as the existing cogeneration facilities are a large source of criteria pollutant emissions. The new cogeneration unit is expected to result in a reduction of certain pollutants, especially NO_x, CO, PM₁₀, etc. (see Table 4-6). Thus, Alternative 3 would result in less of a reduction in operational emissions from the proposed project. In addition, a new auxiliary boiler would be required to provide steam to other portions of the Refinery. The operational emissions under Alternative 3 are expected to be higher than the proposed project, but would likely remain less than significant due to the requirement to offset emission increases from the new boiler.

Alternative 3 would eliminate the increased TAC emissions associated with the new cogeneration unit and the associated health risks; however, the health risks associated with the existing cogeneration units are expected to be greater than the new cogeneration unit. Also, additional TAC emissions are expected from the auxiliary boiler. Therefore, no reduction in TAC emissions is expected under Alternative 3.

The proposed project is also expected to result in a decrease in GHG emissions of about ~~61,663~~ 61,334 metric tons per year (see Table 5-5) associated with the new cogeneration unit and new boilers which are more energy efficient than the existing cogeneration units and existing boilers. Under the Alternative 3, the GHG emissions from the Refinery are expected to be greater as the GHG emission reductions associated with the new cogeneration unit would not occur.

Hazards: The proposed project impacts on hazards are expected to be significant due to the Amine/Sour Water Upgrades and the new crude oil storage tank. The hazards associated

with the proposed new cogeneration unit are expected to be less than significant. Therefore, Alternative 3 would not result in a decrease in hazards as the cogeneration unit is not a source of significant hazard impacts.

Traffic/Transportation: The construction traffic impacts associated with the proposed project are considered to be significant on the I-710 Freeway at Anaheim Street. Alternative 3 would result in less construction activities so that fewer workers and less traffic impacts would be expected. However, peak construction activities are associated with multiple portions of the proposed project occurring simultaneously so that the elimination of the construction of the new cogeneration unit is not expected to reduce traffic/transportation impacts during construction to less than significant since other portions of the project would still occur.

6.4.4 ALTERNATIVE 4 – ELIMINATION OF THE NEW FUEL GAS TREATMENT UNIT

Air Quality: Alternative 4 would eliminate the construction of the new fuel gas treatment unit. Alternative 4 would result in a decrease in construction emissions from fewer workers, less pieces of construction equipment, and less equipment installation since the new fuel gas treatment unit would not be built; however, other portions of the proposed project would still be built and similar construction equipment would still be required. The construction emissions under Alternative 4 are expected to remain significant, since the construction of the new fuel gas treatment unit is a small portion of the proposed project construction activities.

Under Alternative 4, the operational emissions are expected to be lower than the proposed project as the new fuel gas treatment unit is expected to generate about 69 pounds per day of VOC emissions associated with fugitive components (e.g., pumps, valves, flanges, etc.) (see Table 4-6). Operational VOC emissions associated with the proposed project are expected to be mitigated through the use of offsets to less than significant. The operational emissions under Alternative 4 are expected to remain less than significant using VOC offsets for the remaining proposed project VOC emissions.

Alternative 4 would eliminate the increased TAC emissions associated with the new fuel gas treatment unit and the associated health risks; however, the health risks associated with the proposed project, which includes the fuel gas treatment unit, are expected to be less than significant. The GHG emissions associated with Alternative 4 are expected to be the same as the proposed project, since the elimination of the fuel gas treatment unit would only involve VOC emissions.

Hazards: The proposed project hazards impacts are expected to be significant due to potential accidents involving the Amine/Sour Water Upgrades and the new crude oil storage tank. The hazards associated with the proposed fuel gas treatment unit are expected to be less than significant. Therefore, Alternative 4 would not result in a decrease in hazards as the new fuel gas treatment unit is not a source of significant hazard impacts.

Traffic/Transportation: The construction traffic impacts associated with the proposed project are considered to be significant on the I-710 Freeway at Anaheim Street. Alternative 4 would result in less construction activities so that fewer workers and less traffic impacts would be expected. However, peak construction activities are associated with multiple portions of the proposed project occurring simultaneously so that the elimination of the construction of the new fuel gas treatment unit is not expected to reduce traffic/transportation impacts during construction to less than significant since other portions of the project would still occur.

6.4.5 ALTERNATIVE 5 – ELIMINATION OF CRUDE OIL STORAGE TANK

Air Quality: Alternative 5 would eliminate the construction of the new crude oil storage tank. Alternative 5 would result in a decrease in construction emissions from fewer workers, less pieces of construction equipment, and less equipment installation since the new crude oil storage tank would not be built; however, other portions of the proposed project would still be built and similar construction equipment would still be required. The construction emissions under Alternative 5 are expected to remain significant, since the construction of the crude oil storage tank is a small portion of the proposed project construction activities.

Under Alternative 5, the operational emissions are expected to be lower than the proposed project as the new crude oil storage tank is expected to generate about 16 pounds per day of VOC emissions associated with breathing and working losses (see Table 4-6). Operational VOC emissions associated with the proposed project are expected to be mitigated through the use of offsets to less than significant. The operational emissions under Alternative 5 are expected to remain less than significant using VOC offsets for the remaining proposed project VOC emissions.

Alternative 5 would eliminate the increased TAC emissions associated with the new crude oil storage tank and the associated health risks; however, the health risks associated with the crude oil storage tank are expected to be less than significant. The GHG emissions associated with Alternative 5 are expected to be the same as the proposed project, since the elimination of the crude oil storage tank would only involve VOC emissions.

Hazards: The proposed project hazards impacts are expected to be significant due to the Amine/Sour Water Upgrades and the new crude oil storage tank. Therefore, Alternative 5 would eliminate the new crude oil storage tank and the related fire hazards associated with operation of the tank, eliminating a potentially significant hazard impact. The potential significant hazard impacts from the Amine/Sour Water Upgrades would still remain.

Traffic/Transportation: The construction traffic impacts associated with the proposed project are considered to be significant on the I-710 Freeway at Anaheim Street. Alternative 5 would result in less construction activities so that fewer workers and less traffic impacts would be expected. However, peak construction activities are associated with multiple portions of the proposed project occurring simultaneously so that the elimination of the construction of the new crude oil storage tank is not expected to reduce traffic/transportation

impacts during construction to less than significant since other portions of the project would still occur.

6.5 CONCLUSION

Table 6-1 compares the potential environmental impacts of the various alternatives relative to the proposed project. Based on the analyses herein, no feasible alternatives were identified that would reduce or eliminate the potentially significant air quality impacts during construction activities related to the proposed project and achieve the objectives of the proposed project. Alternative 5 would eliminate the potentially significant hazard impacts associated with the crude oil storage tank, although significant hazard impacts from the Amine/Sour Water Upgrades would remain. It is expected that Alternative 5 would achieve most of the goals of the proposed project.

TABLE 6-1

**Environmental Impacts of Alternatives
as Compared to the Proposed Project**

ENVIRONMENTAL TOPIC	Proposed Project	Alt. 1	Alt. 2	Alt. 3	Alt.4	Alt. 5
Air Quality						
Construction	S	NS(-)	S(-)	S(-)	S(-)	S(-)
Operation	MNS	NS(-)	MNS(+)	MNS(+)	MNS(-)	MNS(-)
Toxic Air Contaminants	NS	NS(-)	NS(+)	NS(+)	NS(-)	NS(-)
Hazards						
Operational Hazards	PS	NS(-)	PS(=)	PS(=)	PS(=)	PS(-)
Transportation Hazards	NS	NS(=)	NS(-)	NS(-)	NS(=)	NS(=)
Transportation/Traffic						
Construction	S	NS(-)	S(-)	S(-)	S(-)	S(-)
Operation	NS	NS(=)	NS(=)	NS(=)	NS(=)	NS(=)

Notes:

- S = Significant
- NS = Not Significant
- MNS = Mitigated, Not Significant
- PS = Potentially Significant
- (-) = 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.

The No Project Alternative (Alternative 1) would prevent Tesoro from: (1) reducing NOx and SOx emissions by replacing existing boilers and cogeneration units with new units; (2) increasing the operating efficiency of certain units (e.g., boilers, and cogeneration unit, and

sulfur recovery plant); (3) recovering more liquid fuels and reducing the generation of process gas (reducing the potential for flaring events); (4) increasing the generation of electricity on-site to reduce the purchase of electricity from third-party electricity providers; (5) complying with the revised CARB Phase III requirements for gasoline; and (6) reducing the potential for atmospheric releases and related emissions from pressure relief valves in the FCCU.

Criteria pollutant and precursor emissions from the Refinery under Alternative 2 would be much higher compared to the proposed project for CO, NO_x, SO_x, PM₁₀ and PM_{2.5}, as well as GHG emissions, as the existing less efficient boilers would continue to operate (see Table 4-6). Therefore, Alternative 2 would not provide any of the emission benefits of the proposed project, as well as any of the emission increases. In addition, Alternative 2 would not eliminate any significant adverse environmental impacts.

Criteria pollutant and precursor emissions from the Refinery under Alternative 3 are also expected to be much higher compared to the proposed project for CO, NO_x, SO_x, PM₁₀ and PM_{2.5}, as well as GHG emissions, as the existing less efficient cogeneration units would continue to operate. Therefore, Alternative 3 would not provide any of the emission benefits of the proposed project. Additional emissions would also occur due to the need for an auxiliary boiler under this alternative. Alternative 3 would not eliminate any significant adverse environmental impacts

Alternative 4 would have similar impacts to the proposed project relative to air quality, hazards/hazardous materials, and traffic. Alternative 4 would result in significant impacts to air quality and traffic during construction, but would have lower emissions and related traffic since fewer units would be built. Alternative 4 would not allow the Refinery to reduce sulfur from fuel gas and the related SO_x emissions due to the combustion of refinery fuel gas. Therefore, Alternative 4 would not provide any of the emission benefits of the proposed project associated with reduced sulfur in refinery fuel gas. Alternative 4 would not eliminate any significant adverse environmental impacts

Alternative 5 would reduce air quality and traffic impacts compared to the proposed project, but would not reduce potentially significant impacts to less than significant. Alternative 5 would eliminate the construction of the new crude oil storage tank which would eliminate the potentially significant fire hazard associated with the new tank, although significant adverse impacts from the Amine/Sour Water Upgrades would remain. For the most part environmental impacts from Alternative 5 are equivalent to or slightly less than impacts from the proposed project. Because Alternative 5 would eliminate one of two significant hazard impact sources, Alternative 5 is considered to be the environmentally superior alternative. The proposed project is preferred because it would most effectively attain all project objectives, whereas, all alternatives except the No Project Alternative do not completely eliminate significant adverse construction air quality and traffic impacts during construction and significant hazard impacts during operation.