

CHAPTER 1

INTRODUCTION AND EXECUTIVE SUMMARY

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1.0 INTRODUCTION AND EXECUTIVE SUMMARY

1.1 INTRODUCTION

The Tesoro Refining and Marketing Company (Tesoro) is proposing a project at its Los Angeles Refinery (Refinery) and Sulfur Recovery Plant (SRP) to improve the reliability of refinery operations and to comply with regulatory requirements. The Tesoro Reliability Improvement and Regulatory Compliance Project (proposed project) includes the following changes to the Refinery: 1) install a new fuel gas treatment unit; 2) replace an existing cogeneration system with a new cogeneration system; 3) replace multiple, existing steam boilers with new equipment; 4) modify the Delayed Coking Unit (DCU), the Hydrocracking Unit (HCU) and the Fluid Catalytic Cracking Unit (FCCU) to increase recovery of LPG; 5) modify the existing coke handling, screening, and loading system; 6) modify the existing Hydrotreating Unit (HTU) No. 2 in order to comply with the revised California Air Resources Board's gasoline specifications (revised CARB Phase III); 7) upgrade the existing amine/sour water system to improve hydrocarbon removal efficiency; 8) connect certain existing atmospheric pressure relief devices (PRDs) to the existing flares to prevent direct atmospheric releases; 9) recover and treat sour gas from the spent acid storage tank and the liquefied petroleum gas (LPG) sulfur extraction unit; 10) modify the coke drum blowdown system; 11) modify heater number H-101 at the DCU; and, 12) install a new crude oil storage tank. The proposed project at the SRP will modify an existing Claus Unit to improve sulfur recovery. The proposed project will not increase or change the crude throughput capacity of the Tesoro Refinery.

1.2 PURPOSE/LEGAL REQUIREMENTS

In accordance with §15121(a) of the California Environmental Quality Act (CEQA) Guidelines (California Administrative Code, Title 14, Division 6, Chapter 3), the purpose of an EIR is to serve as an informational document that: “will inform public agency decision makers and the public generally of the significant environmental effect of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.” The proposed project requires discretionary approval from the SCAQMD and, therefore, it is subject to the requirements of CEQA (Public Resources Code, §21000 et seq.).

CEQA Public Resources Code §21000 et seq., requires that the environmental impacts of proposed projects be evaluated and that feasible methods to reduce, avoid or eliminate significant adverse impacts of these projects be identified and implemented. The lead agency is the public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment (Public Resources Code §21067). The proposed project requires discretionary approvals from the SCAQMD for air quality permits for modifications to existing stationary source equipment and installation of new stationary source equipment. The project involves replacement of existing cogeneration units with a new unit with an increment increase of approximately one megawatt (MW). Since the incremental increase is less than 50 MW, the California Energy Commission is not required to be the lead agency. Therefore, the SCAQMD has the primary responsibility for supervising or approving the entire project as a whole and is the most appropriate public agency to act as lead agency (CEQA Guidelines §15051(b)).

To fulfill the purpose and intent of CEQA, the SCAQMD, as the lead agency for this project, prepared and released for a 30-day public review and comment period a Notice of Preparation and

Initial Study (NOP/IS) to identify potential adverse environmental impacts associated with the Tesoro Reliability Improvement and Regulatory Compliance Project (see Appendix A). Six comment letters were received on the NOP/IS. Comment letters and responses to individual comments can be found in Appendix A.

The Draft EIR was circulated for a 45-day public review and comment period on January 21, 2009, and ending March 6, 2009. The SCAQMD received nine comment letters on the Draft EIR during the public comment period and one comment letter after the close of the comment period. In addition, the same form letter was received from 57 individuals. The comment letters and responses to the comments raised in those letters are provided in Appendix F.

1.3 SCOPE AND CONTENT

The NOP/IS was circulated for a 30-day comment period from February 21, 2008 to March 21, 2008. The NOP/IS was circulated to neighboring jurisdictions, responsible agencies, other public agencies, and interested individuals in order to solicit input on the scope of the environmental analysis to be included in the EIR. Six comment letters were received on the NOP/IS during the public comment period. Comment letters and responses to the individual comments are provided in Appendix A. The NOP/IS formed the basis for and focus of the technical analyses in this ~~Draft~~ Final EIR. The following environmental issues were identified in the NOP/IS as potentially significant and are further addressed in this document:

- Air Quality,
- Hazards and Hazardous Materials, and
- Transportation/Traffic.

The NOP/IS concluded that the proposed project would not create significant adverse environmental impacts to the following areas: aesthetics, agricultural resources, biological resources, cultural resources, energy, geology and soils, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, and solid and hazardous waste.

A discussion of potential cumulative impacts is also provided. The alternatives section of this ~~Draft~~ Final EIR is prepared in accordance with §15126.6 of the CEQA Guidelines. This section requires that an EIR include a range of reasonable alternatives that could feasibly attain the basic objectives of the proposed project or are capable of eliminating or reducing some of the significant adverse environmental effects associated with the proposed project.

The Draft EIR was circulated for a 45-day public review and comment period on January 21, 2009, and ending March 6, 2009. The SCAQMD received nine comment letters on the Draft EIR during the public comment period and one comment letter after the close of the comment period. In addition, the same form letter was received from 57 individuals. The comment letters and responses to the comments raised in those letters are provided in Appendix F.

1.4 RESPONSIBLE AGENCIES

CEQA Guidelines §15381 defines a “responsible agency” as “a public agency which proposes to carry out or approve a project, for which a Lead Agency is preparing or has prepared an EIR or Negative Declaration. For the purposes of CEQA, the term 'responsible agency' includes all public agencies other than the lead agency that have discretionary approval power over the project.”

The following agencies may have ministerial permitting authority for aspects of modifications at the Refinery and SRP, and have been given an opportunity to review and comment on the NOP/IS and EIR; however, no new discretionary permits or permit modifications are expected to be required from these agencies for the proposed project:

- State Water Resources Control Board (SWRCB),
- Regional Water Quality Control Board (RWQCB), and
- Cities of Carson and Los Angeles.

For convenience, all the aforementioned agencies will be referred to generally as Responsible Agencies in this EIR.

1.5 INTENDED USES OF THE EIR

The EIR is intended to be a decision-making tool that provides full disclosure of the environmental consequences associated with implementing the proposed project. Additionally, CEQA Guidelines §15124(d)(1) requires a public agency to identify the following specific types of intended uses:

- A list of the agencies that are expected to use the EIR in their decision making;
- A list of permits and other approvals required to implement the project; and,
- A list of related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies.

To the extent that local public agencies, such as cities, county planning commissions, etc., are responsible for making land use and planning decisions related to the proposed project, they could possibly rely on this EIR during their decision-making process. See the preceding section for a list of public agencies' whose approval may be required and who may also be expected to use this EIR in their decision-making process.

1.6 AREAS OF CONTROVERSY

In accordance with CEQA Guidelines §15123(b)(2), the areas of controversy known to the lead agency, including issues raised by agencies and the public, shall be identified in the CEQA document. After public notification and review of the NOP/IS, the SCAQMD received six comment letters. Issues raised in the comment letters are related specifically to potential impacts

from the proposed project and were addressed in the EIR and responses to those comment letters are provided in Appendix A. "Controversy" is defined as a difference in opinion or a dispute. No such issues have been raised regarding the proposed project. Consequently, there are no areas of controversy known to the lead agency.

1.7 EXECUTIVE SUMMARY – CHAPTER 2: PROJECT DESCRIPTION

1.7.1 PROJECT LOCATION

The proposed project will occur at Tesoro's Refinery and at a separate site where Tesoro operates their SRP. Tesoro is the owner and operator of both facilities operating at two locations: (1) the main refinery operations are located in Wilmington; and (2) the SRP is located in Carson.

The Tesoro Refinery is located at 2101 East Pacific Coast Highway in the Wilmington district of the City of Los Angeles. The Refinery occupies about 300 acres of land, with the larger portion located within the jurisdiction of the City of Los Angeles and the smaller portion located within the City of Carson. The Refinery is bounded to the north by Sepulveda Boulevard, to the west by Alameda Street, to the south by the Southern Pacific Railroad tracks, and to the east by the Dominguez Channel. The Refinery is bisected by Pacific Coast Highway, with the larger portion of the Refinery to the north of Pacific Coast Highway and the smaller portion to the south.

The SRP is located at 23208 South Alameda Street in the City of Carson, north of the Refinery. Adjacent areas to the SRP are heavy industrial and include other refineries, a hydrogen plant, undeveloped lots, and container storage areas.

1.7.2 LAND USE AND ZONING

Implementation of the proposed modifications at Tesoro Refinery will occur within existing property boundaries. The Refinery is zoned for heavy industrial uses (M3-1). The land use in the vicinity of the Refinery includes oil production facilities, refineries, hydrogen plants, coke handling facilities, automobile wrecking/dismantling facilities, and other industrial facilities. The nearest residential areas to the Refinery include a residential area in the City of Long Beach, about one-half mile east of the Refinery and residential areas of Wilmington about 0.17 mile west of the southern portion of the Refinery and about 0.25 mile west of the Refinery. The Alameda Corridor, a major port access arterial, is located west of the Refinery. Other industrial uses west of the Refinery include wrecking yards, storage tanks farms and container storage areas. Industrial facilities north of the Refinery include the BP Coke Barn, other refining activities, and storage tanks farms, and an intermodal container transfer facility (ICTF). Land to the east of the Refinery includes a rail yard, the Terminal Island Freeway, a residential neighborhood and light manufacturing facilities. Land uses south of the Refinery are predominately heavy industrial with wrecking yards, a truck terminal and storage tank facilities. No schools are located within 0.25 mile of the Refinery.

A portion of the Refinery's tank farm and the SRP are located in the City of Carson. The SRP is located north of the Refinery at 23208 South Alameda Street in the City of Carson. The SRP is zoned for heavy manufacturing uses (MH) by the City of Carson's Land Use element of its General Plan. Adjacent land uses to the SRP also are heavy industrial and include other refineries, a hydrogen plant, undeveloped lots, and container storage areas. The closest residential area is about

0.5 mile east of the SRP in the City of Long Beach. No schools are located within 0.25 mile of the SRP.

1.7.3 EXISTING REFINERY CONFIGURATION AND OPERATION

Crude oils, used to produce gasoline and other petroleum products, are delivered to marine terminals in the Ports of Los Angeles and Long Beach by ship or barge, then transported to the Refinery by pipeline. Crude oil is also delivered directly to the Refinery by pipelines. Crude oil is processed in the crude unit and the DCU where it is heated and distilled into components, most of which are processed in downstream Refinery units. Most of the products leaving the crude unit and DCU are hydrotreated to remove sulfur compounds prior to further processing in the FCCU, the HCU, the alkylation unit, and the catalytic reforming units. The crude oil, along with the intermediate products, are refined into the major Refinery products which include unleaded gasoline, diesel, aviation jet fuel, other distillate fuels, petroleum coke, and sulfur. Elemental sulfur and petroleum coke are produced as a by-product of the refining process. Major processing units at the Refinery include the crude, delayed coking, catalytic reforming, hydrotreating, fluid catalytic cracking, alkylation, benzene saturation, hydrogen generation, sulfur recovery, cogeneration, and auxiliary systems. Finished products are distributed to the various terminals primarily via pipelines and trucks.

1.7.4 PROPOSED PROJECT MODIFICATIONS TO THE REFINERY

The proposed Refinery modifications are summarized in this section. Several components of the proposed project are related to replacement of existing equipment, while the balance is being proposed for modification or replacement to reduce emissions, comply with regulatory requirements, and improve process safety and reliability.

1.7.4.1 RECLAIM NO_x and SO_x Reduction

Emissions of nitrogen oxides (NO_x) and sulfur oxides (SO_x) at the Refinery and SRP are subject to SCAQMD's Regulation XX - Regional Clean Air Incentive Market (RECLAIM). RECLAIM limits total facility NO_x and SO_x emissions and offers the flexibility of trading emissions with other facilities and/or reducing NO_x or SO_x emissions within the facility. In order to comply with RECLAIM, Tesoro has been purchasing NO_x RECLAIM Trading Credits (RTCs) from the market to comply with the facility's annual allocation requirement. In lieu of continuing to purchase credits, Tesoro plans to upgrade the Refinery's cogeneration system and steam boilers. The new cogeneration system and boilers will be equipped with best available control technology (BACT) and are expected to substantially reduce NO_x emissions and minimize the need for Tesoro to purchase NO_x RTCs.

1.7.4.1.1 Cogeneration Units

Tesoro currently operates a cogeneration system that supplies a portion of electricity and steam used by the process equipment at the Refinery, while supplementing onsite generation by purchasing electricity from the Los Angeles Department of Water and Power (LADWP). The existing cogeneration system is a major source of NO_x emissions at the Refinery. Tesoro is proposing to replace the two 30 megawatt (MW) existing cogeneration units (Cogens A and B) and

their associated selective catalytic reduction (SCR) Units with one new 61.02 MW cogeneration system (Cogen C) (including NO_x control technology such as an SCR Unit). A new emergency internal combustion engine (*I.C. Engine*) will also be installed to supply power to the instruments and auxiliary equipment in the gas turbine which will allow the boilers to continue to operate and provide sufficient steam as necessary, ~~and~~ *while maintaining a safe shutdown and start up of the Refinery during a power outage. The new emergency I.C. Engine will only be constructed as part of the installation of Cogen C.* The proposed new cogeneration system would increase the maximum electrical generating capacity at the Refinery by about one megawatt while reducing NO_x emissions.

1.7.4.1.2 Steam Boilers

Currently the existing cogeneration systems and four steam boilers (Boilers 7, 8, 9, and 10) generate steam at a total rate of 734.16 million British Thermal Units per hour (mmBtu/hr) for multiple processes at the Refinery. Tesoro will replace the four existing boilers with two new boilers (Boilers 11 and 12), each with total heat input rating of no more than 400 mmBtu/hr. The new boilers will burn refinery fuel gas or natural gas and will be equipped with new SCR Units to reduce NO_x emissions.

1.7.4.1.3 Fuel Gas Treatment Unit

A new fuel gas treatment unit will be installed to remove sulfur in fuel gas to allow Tesoro to meet future regulatory requirements (BACT requirements for sulfur in fuel gas). The fuel gas treatment unit will be a custom design using hydrotreating technology to treat existing high sulfur fuel gas streams at the Refinery.

1.7.4.1.4 Ammonia Storage

Ammonia is an integral part of the SCR process for NO_x control. The proposed project includes the installation of three new SCR Units and one new, 12,000-gallon storage tank to provide an adequate supply of aqueous ammonia for the three new SCR Units – one for the Cogeneration Unit, and one for each of the two new boilers.

1.7.4.2 Liquid Petroleum Gas (LPG) Recovery

Tesoro is planning to recover liquid products from light petroleum gases at the DCU, the HCU and the FCCU as outlined in the following subsections.

1.7.4.2.1 Delayed Coking Unit (DCU) Modification

Tesoro is proposing to remove water and recover more liquid products (i.e., LPG) from process gas in the DCU and existing equipment by: 1) replacing three existing fractionator overhead accumulators with three larger vessels, 2) adding a new fractionator overhead wash water system; and 3) adding new pumps and piping as necessary. In addition, Tesoro plans to replace the deethanizer and depropanizer columns with identical columns.

1.7.4.2.2 Hydrocracking Unit (HCU) Modification

The HCU consists of a reaction section and a fractionation section. The proposed modifications will be made to the fractionation section and will include: 1) adding an amine scrubber feed knockout drum; and 2) adding booster pumps and piping. The purpose of the proposed modifications is to increase the amount of liquid recovered, reduce process gas by improving liquid/vapor separation, and reduce the potential for entrained liquids moving into the amine system.

1.7.4.2.3 Fluid Catalytic Cracking Unit (FCCU) Modification

In order to recover more liquid fuel and reduce process gas generation, two heat exchangers in the FCCU Recovery section will be replaced with more efficient heat exchangers to allow better heat transfer and better recovery of liquid fuel from process gas.

1.7.4.3 Coke Handling, Screening, and Loading System

The existing coke storage facility will be replaced with a new coke storage facility. In addition to the new coke storage facility, Tesoro is proposing to build new coke loading facilities and make modifications to the associated coke transfer equipment as necessary.

1.7.4.4 Compliance with Revised CARB Phase III - Hydrotreating Unit (HTU) Modification

The proposed modifications to the HTU-2 are designed to increase throughput to allow the unit to desulfurize more naphtha in order to meet sulfur specifications for blending into revised CARB Phase III compliant gasoline products. In order to make cleaner gasoline meeting the revised CARB gasoline specifications, the proposed project will be completed solely by modifying existing heat exchangers or adding new heat exchangers. As a result of the modifications, the proposed HTU maximum capacity is expected to increase from 23,000 BPSD to 27,000 BPSD, which allows removal of sulfur from more of the existing product streams.

1.7.4.5 Amine/Sour Water Reliability Upgrades

The proposed reliability upgrades include the installation of a new larger amine flash drum. The existing flash drum will be modified for use primarily as a sour water flash drum and as a back up to the new amine flash drum. The existing vapor recovery heat exchanger and knock out drum will also be replaced with a larger system to increase reliability of the amine system.

1.7.4.6 Recover/Treatment of Sour Gas from the Spent Acid Storage Tank and the LPG Sulfur Extraction Unit

Sour gas from the spent acid storage tank and the LPG Sulfur Extraction Unit at the Alkylation Unit will be modified to improve recovery and treatment. This proposed modification will reduce the sulfur emissions from a vent gas stream and help the Refinery improve compliance with the United States Environmental Protection Agency's (U.S. EPA) Maximum Achievable Control

Technology (MACT) Standards for Petroleum Refineries (40 Code of Federal Regulations (CFR) Part 63, Subpart CC).

1.7.4.7 Connecting Atmospheric Pressure Relief Devices to Flare

Tesoro proposes to connect pressure relief devices (PRDs) to the flare gas recovery system whenever feasible. As part of the proposed project, Tesoro will connect all of the PRDs in the FCCU to the flare gas recovery system, except for the PRDs on the main fractionator, which cannot be connected due to design constraints. This modification will assist Tesoro in complying with SCAQMD Rule 1173 - Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants.

1.7.4.8 Delayed Coker Unit (DCU) Modifications

1.7.4.8.1 Coke Drum Blowdown System Modifications

The proposed modifications to the Coke Drum Blowdown System include: 1) removing and replacing the blowdown contactor and blowdown accumulator with larger vessels; and 2) adding one new heat exchanger and condensers.

1.7.4.8.2 DCU Heater H-101 Modification

Heater H-101 is proposed to be modified to improve heat transfer efficiency by enlarging the fire box to increase the heat transfer area. Additionally, new low NOx burners will be installed to reduce NOx emissions.

1.7.4.9 Crude Oil Storage Tank

The proposed project includes the construction of one new 500,000 barrel crude oil storage tank in order to provide additional crude oil storage capacity and to provide operational flexibility.

1.7.4.10 Sulfur Recovery Plant (SRP) Claus Units 600/700 Modification

One objective of the proposed project is to increase sulfur removal capacity of the SRP Claus Units 600 and 700 by adding oxygen to the inlet air. Liquid oxygen will be purchased from a local production facility and delivered by truck to the SRP where it will be stored in one new pressurized oxygen tank. The proposed project also includes the replacement of the reaction furnace burners, modification of the existing Safety Instrumented System, upgrades to modernize the Waste Heat Boilers, and installation of one new oxygen tank (approximately 4,500 cubic-foot capacity).

1.7.5 CONSTRUCTION OF THE PROPOSED PROJECT

Construction activities for the proposed Tesoro Project are expected to begin in the first quarter of 2009 and are expected to be completed by mid-2011. Construction for each component of the proposed project will vary over the construction schedule. The construction activities for most of the components are expected to overlap from the eighth month of construction to the twelfth month of construction. Construction work shifts are expected to last about ten hours per day during most

portions of the construction schedule. During normal construction periods, one work shift per day is expected. During Refinery turnaround periods (when ~~the~~ a refinery *process unit* is shutdown), two work shifts are expected.

1.8 EXECUTIVE SUMMARY – CHAPTER 3: EXISTING ENVIRONMENTAL SETTING

This chapter presents the existing environmental setting for the proposed project, which normally constitutes the baseline physical conditions by which a lead agency determines whether an impact is significant. This EIR is focused only on the environmental topics identified in the NOP/IS (see Appendix A) that could be significantly adversely affected by the proposed project. The reader is referred to the NOP/IS for discussion of environmental topics not considered in this EIR, and the rationale for inclusion or exclusion of each environmental topic. The environmental topics identified in Chapter 3 include both a regional and local setting and are summarized in the following subsections.

1.8.1 AIR QUALITY

Over the last decade and a half, air quality has substantially improved within the SCAQMD's jurisdiction. Nevertheless, several air quality standards continue to be frequently exceeded by a wide margin. For example, of the National Ambient Air Quality Standards (NAAQS) established for six criteria pollutants, the district is in attainment for four (SO₂, NO₂, carbon monoxide (CO), and lead). The South Coast Air Basin (Basin) routinely exceeds the ambient air quality standards for ozone and particulate matter.

Chapter 3 discusses the effects of meteorological conditions, temperature and rainfall, and wind flow patterns on the existing air quality conditions in the Basin. Existing air quality will be examined regarding criteria pollutants, regional air quality, local air quality, the Refinery and SRP criteria pollutant emissions, toxic air contaminants (TACs), as well as the regulatory setting.

1.8.2 HAZARDS AND HAZARDOUS MATERIALS

The Refinery and SRP handle hazardous materials with the potential to cause harm to people, property, or the environment. An accidental release of hazardous materials at a facility can occur due to natural events, such as earthquakes, and non-natural events, such as mechanical failure or human error. Potential existing hazards from the Refinery and SRP are those associated with accidental releases of toxic/flammable gas, toxic/flammable liquefied gas, and flammable liquids. Typical hazards at a refinery include toxic gas clouds, fires, vapor cloud explosions, thermal radiation, and overpressure. State and federal laws require detailed planning to ensure that hazardous materials are properly handled, used, stored, and disposed of to prevent or mitigate injury to human health or the environment in the event that such materials are accidentally released.

1.8.3 TRANSPORTATION AND TRAFFIC

There are three major freeways which provide access to the Refinery and SRP, the Long Beach, Harbor and San Diego Freeways. Additionally, there are six major surface streets which provide arterial access to the Refinery and SRP. Alameda Street has been, and continues to be upgraded,

expanded and modified by the Alameda Corridor Transportation Authority (ACTA) to provide a dedicated roadway system for trucks and railcars leaving the Ports of Los Angeles/Long Beach to provide more efficient movements of goods and materials in to and out of the port areas.

The operating characteristics of an intersection are defined in terms of the level of service (LOS), which describes the quality of traffic flow based on variations in traffic volume and other variables such as the number of signal phases. LOS A to C operate well. LOS C normally is taken as the design level in urban areas outside a regional core. LOS D typically is the level for which a metropolitan area street system is designed. LOS E represents volumes at or near the capacity of the highway which will result in possible stoppages of momentary duration and fairly unstable traffic flow. LOS F occurs when a facility is overloaded and is characterized by stop-and-go (forced flow) traffic with stoppages of long duration.

Peak hour LOS analyses were developed for intersections in the vicinity of the Refinery and SRP. Traffic counts, including turn counts, were taken to determine the existing traffic in the Wilmington/Carson area. The LOS analysis indicates typical urban traffic conditions in the area surrounding the Refinery and SRP, with most intersections operating at LOS A during morning and evening peak hours. The LOS analysis indicates typical urban traffic conditions in the area surrounding the Refinery and SRP, with all intersections, except one, operating at LOS A to B during morning peak hours (7 am – 9 am). One intersection currently operates at LOS C during morning peak hours, Santa Fe Street and Pacific Coast Highway. All other intersections operate at LOS A or B during the morning peak hour.

The evening peak hour conditions (4 pm – 6 pm) show that all intersections operate at LOS A except for two: The Alameda Street connector with 223rd Street operates at LOS C and the intersection of Santa Fe Street and Pacific Coast Highway operates at LOS D. LOS D represents the typical design level for a metropolitan area street system.

1.9 EXECUTIVE SUMMARY – CHAPTER 4: SUMMARY OF IMPACTS AND MITIGATION MEASURES

Chapter 4 assesses the potential environmental impacts of the construction and operation of the Tesoro Reliability Improvement and Regulatory Compliance Project. Chapter 4 evaluates those impacts that are considered potentially significant under the requirements of CEQA, as determined by the NOP/IS (see Appendix A). Specifically, an impact is considered significant under CEQA if it leads to a “substantial, or potentially substantial, adverse change in the environment.” Table 1-1 (located at the end of this chapter) summarizes the air quality, hazards, and transportation/traffic impacts of the proposed project.

1.9.1 AIR QUALITY

1.9.1.1 Environmental Impacts

The SCAQMD makes significance determinations based on the maximum daily emissions during the construction period, which provides a “worst-case” analysis of the construction emissions. Similarly, significant determinations for operational emissions are based on the maximum daily emissions during the operational phase.

Construction Emissions: Construction emissions for the proposed project are summarized in Table 4-3, together with the SCAQMD's daily construction threshold levels. The construction phase of the proposed project at the Tesoro Refinery and SRP will exceed the significance thresholds for NOx. Construction emissions are expected to be less than significant for CO, VOC, SOx, particulate matter less than ten microns in diameter (PM10), and particulate matter less than 2.5 microns in diameter PM2.5. Therefore, the air quality impacts associated with construction activities are considered significant.

The peak construction emissions were modeled to determine the potential impacts on ambient air quality. Based on the Industrial Source Complex – Short Term Version 3 (ISCST3) model, the ground level concentrations of the criteria pollutants of concern will be below the significant change in air quality concentration. Therefore, no significant change in the local concentrations of criteria pollutants is expected during the construction phase.

Operational Emissions: The proposed project operational emissions are also evaluated in Chapter 4. The primary sources of emissions are from new units including the Fuel Gas Treatment Unit, Cogeneration Unit, Boilers, and Crude Oil Storage Tank. The proposed project is expected to result in a significant increase in VOC emissions associated with fugitive components (pumps, valves, flanges, etc.) and the new storage tank. Tesoro will obtain offsets for the direct VOC emission increases so that the proposed project emissions will be reduced to less than significant. In addition, the proposed project is expected to result in emission reductions associated with replacing existing less efficient equipment with new equipment. Therefore, following completion of the construction phase, the proposed project is expected to provide an overall beneficial impact on air quality.

Based on the air quality modeling and related assumptions, the cancer risks to the Maximum Exposed Individual Worker (MEIW) and the Maximum Exposed Individual Resident (MEIR) were calculated to be 3.14×10^{-6} , and 6.76×10^{-6} , respectively, or less than ten per one million. This result does not exceed the cancer risk significance threshold of ten per one million. The cancer risk at the maximum impacted sensitive receptor is 6.76×10^{-6} or 6.8 per one million.

The highest acute hazard index for the proposed project is estimated to be 0.508 for the central nervous system, while the highest chronic hazard index for the proposed project is estimated to be 0.0846 for the respiratory system. The acute and chronic hazard indices for the proposed project do not exceed the relevant significance threshold of 1.0, therefore, no significant adverse acute or chronic health impacts are expected.

1.9.1.2 Mitigation Measures

A number of feasible mitigation measures have been imposed on the proposed project to mitigate the potentially significant adverse impacts associated with construction emissions. The mitigation measures include the development of a Construction Emission Management Plan, limiting truck idling to five minutes, using electricity wherever possible, maintaining construction equipment, suspending construction activities during first stage smog alerts, developing and implementing a fugitive dust emission control plan, and using lower VOC content coatings.

No mitigation measures are required for the operation phase of the project because all emissions were determined to be less than significant, except for VOC emissions that require offsets for stationary sources. Once offset, the VOC emissions will be less than significant. Operational VOC emissions from mobile source emissions (0.2 lbs/day) do not require offsets, and are less than significant so no further mitigation is required.

1.9.1.3 Level of Significance after Mitigation

Construction emissions of NO_x will remain significant following mitigation (see Table 4-3). The construction emissions associated with CO, VOC, SO_x, PM₁₀, and PM_{2.5} are expected to be less than significant. However, construction emissions are expected to be short-term as they will be eliminated following completion of the construction phase of the proposed project. The air quality impacts associated with operation of the proposed project for both criteria and TACs are less than significant, following mitigation.

1.9.2 HAZARDS AND HAZARDOUS MATERIALS

1.9.2.1 Environmental Impacts

The proposed project will reduce the potential hazard impacts associated with the Cogeneration Unit. Potential hazard impacts due to a flash fire from the HCU and HTU will have slightly larger distances than the existing units (640 versus 680 feet and 680 versus 730 feet respectively) but these releases would remain within the confines of the Refinery. The modifications to the DCU and new Boilers are also not expected to create any new hazards that would go off-site. The potential flash fire hazards associated with the Fuel Gas Treatment Unit are expected to remain within the confines of the Refinery. The modifications to the FCCU would generate a slightly larger (540 versus 560 Feet) potential flash fire, but would not create an appreciable change in the offsite industrial impact from that which already exists.

One modified and one new unit have the ability to create a hazard that could extend off-site including the Amine/Sour Water Upgrades and the new Crude Oil Storage Tank. Upgrades to the Amine/Sour Water Unit would result in an increase in the distance that exposure to hydrogen sulfide (H₂S) could extend offsite. The new Crude Oil Storage Tank would result in an increase distance that a pool/torch fire could extend offsite. In addition, the SRP modifications have the ability to create a larger toxic vapor cloud of H₂S (2,430 versus 2,730 feet), which would extend offsite but would remain in an industrial area. Therefore, the potential hazard impacts associated with the proposed project are considered to be significant because there is the potential for some sensitive receptors to be exposed to the potential hazards that exceed the significance thresholds for H₂S and fire hazards.

The hazards associated with the use of ammonia will be decreased by the proposed project. The existing hazards associated with a release from one anhydrous ammonia storage tank are estimated to travel a maximum of about 3,940 feet. The proposed project will replace the use of anhydrous ammonia with aqueous ammonia at the Cogeneration Unit. The potential ammonia hazards associated with the aqueous ammonia tank are limited to 340 feet from the tank, which pose no new off-site hazard from ammonia storage. The hazards associated with a release from an

ammonia line at the Cogeneration Unit will decrease from 780 feet for anhydrous ammonia to 35 feet for aqueous ammonia.

Releases from new or modified equipment that result in an increase in the potential off-site exposure (based on the consequence modeling and the given hazard endpoints), do so only under “worst-case” conditions. For the “worst-case” scenarios evaluated to occur, the following conditions must be met: (1) a full rupture of the pipe occurs; (2) the release does not ignite within minutes of the rupture; (3) the wind speed is low (less than three miles per hour); and (4) the atmosphere is calm. For all four events to occur is highly unlikely and would only result in an off-site hazard (toxic or flammable vapor dispersion) for a limited number of potential releases.

Operation of the proposed project will not involve the use of flammable substances or hazardous materials that are not currently used at the Refinery and SRP nor will it involve the use of flammable substances in locations where they are not currently used. Further, the proposed project will phase out the use of anhydrous ammonia at the Cogens A and B and replace it with aqueous ammonia for Cogen C, thus, reducing hazards at the Cogeneration Unit.

1.9.2.2 Mitigation Measures

The proposed project impacts on hazards are considered to be significant. A number of existing rules and regulations apply to the Refinery, SRP, and other industrial facilities that handle, transport or store hazardous materials. Compliance with these rules and regulations is expected to minimize industry-related hazards. An RMP is required for certain chemicals at the Refinery and SRP. The RMP consists of four main parts: hazard assessment that includes an off-site consequence analysis, five-year accident history, prevention program, and emergency response program. The Refinery’s and SRP’s existing RMP will need to be reviewed and revised to include the new and modified Refinery units, and to ensure that no unexpected or adverse interactions with existing systems occur. Such reviews are required as part of the RMP, CalARP, and PSM programs for covered processes. It is expected that such reviews will take place if the threshold quantities of regulated substances are exceeded in any of the fourteen elements of the proposed project (i.e., new Cogeneration Units, new Steam Boilers, new Fuel Gas Treatment Unit, new Aqueous Ammonia Storage Tank, DCU Modification, HCU Modification, FCCU Modification, Coke Handling, Screening and Loading System, HTU Modification, Amine/Sour Water Reliability Upgrades, new Crude Oil Storage Tank, new Sour Gas Treatment Units, Connecting Atmospheric Pressure Relief Device the Flare, and the SRP modification.)

No additional feasible mitigation measures have been identified, over and above the extensive safety regulations that currently apply to the Refinery and SRP facilities.

1.9.2.3 Level of Significance Following Mitigation

Hazard impacts from the proposed project are expected to remain significant, following mitigation. Existing hazards associated with ammonia transport, handling and storage are expected to be reduced by phasing out anhydrous ammonia and replacing it with aqueous ammonia at the Cogeneration Unit. Compliance with existing regulations and implementation of the recommended safety measures would further minimize the potential impacts associated with a release, but are not expected to eliminate the potential hazard impacts. No additional feasible mitigation measures

were identified that would further reduce the significant adverse hazard impacts associated with the Amine/Sour Water Upgrades, the new Crude Oil Storage Tank and the SRP modification. Therefore, hazards and hazardous material impacts generated by the proposed project are expected to remain significant.

1.9.3 TRAFFIC AND TRANSPORTATION

The NOP/IS (see Appendix A) determined that the proposed project at the Refinery and SRP has the potential to generate significant adverse transportation and traffic impacts during construction. The traffic impacts associated with the construction phase of the proposed project are potentially significant and the impacts on the transportation system are evaluated in this section. The NOP/IS determined that the proposed project does not have the potential to generate significant adverse transportation and traffic impacts during the operational phase (see Appendix A). Therefore, operational traffic impacts were not evaluated further in this EIR.

1.9.3.1 Environmental Impacts

Construction Traffic Impacts: The construction activities associated with modifications at the Refinery will create additional traffic from travel by construction workers to and from the site, as well as transportation of materials and equipment to the Refinery. Construction at the SRP is included in the evaluation for the Refinery. The routes traveled to the SRP are the same as those traveled to the Refinery. Therefore, the analysis would be the same. The LOS analysis assumes 600 construction workers will be commuting to the Refinery, during peak construction activities. The traffic analysis indicates that no local intersections are expected to show a change in the LOS due to the construction phase of the proposed project. Further, the volume-to-capacity ratio is not expected to increase by more than two percent at any intersection that is currently operating at LOS D or worse. The volume-to-capacity ratio will increase by more than two percent at the Alameda Street/Sepulveda Boulevard Connector, Alameda Street Connector/Pacific Coast Highway, and Alameda Street/Pacific Coast Highway Connector; however, all three of these intersections are operating at LOS A and are expected to continue to operate at that level. Therefore, no significance adverse traffic impacts are expected at local intersections due to construction activities associated with the proposed project. Any transport of heavy construction equipment or oversized Refinery equipment that will require oversized or over weight transport vehicles on state highways will require a Caltrans Transportation permit.

Construction worker traffic for the proposed project will not cause the freeway LOS to degrade to LOS D. The proposed project may cause an increase of two percent at the I-710 Freeway near the Refinery which is currently operating at LOS D during evening peak hours. The northbound lanes of I-710 Freeway operate at LOS D during the evening peak hour and the proposed project could increase traffic by about 4.3 percent during the construction phase. Therefore, construction worker traffic for the proposed project could result in significant adverse impacts on the I-710 freeway in the vicinity of the Refinery and SRP during project construction.

1.9.3.2 Mitigation Measures

Feasible mitigation measures, if available, are required to address significant adverse traffic impacts on the I-710 Freeway during the construction phase of the proposed project. Because of

the temporary nature of the construction traffic and the inability to change the number of workers needed, feasible mitigation measures are limited. Tesoro is proposing to schedule the construction work shift to begin at 7:00 am so that traffic impacts during the morning peak hour will be avoided. Tesoro will encourage ridesharing to reduce single occupancy vehicle trips as well as encourage public transit use. Preferential parking for rideshare vehicles will be provided for construction workers. The traffic analysis assumes that no ridesharing will occur, i.e., average vehicle ridership (AVR) equals 1.0 and, therefore, provides a worst-case estimate of project impacts. However, ridesharing during construction activities is common and will help decrease traffic impacts. The current AVR in the Basin is approximately 1.34. The amount of ridesharing that will occur cannot be predicted so traffic impacts are assumed to remain significant. Because the traffic impacts are limited to impacts on the I-710 Freeway, no other feasible mitigation measures have been identified.

1.9.3.3 Level of Significance Following Mitigation

The potentially significant adverse transportation and traffic impacts during the construction are potentially significant for a segment of the I-710 Freeway. The potentially significant adverse transportation and traffic impacts during the construction of the proposed project are expected to be less than significant on all local intersections.

The proposed project impacts on local streets are expected to be less than significant. Construction traffic impacts are expected to remain significant for the I-710 Freeway. The construction traffic impacts will cease following completion of the construction phase. The traffic impacts associated with the operational phase of the proposed project are expected to be less than significant.

1.10 EXECUTIVE SUMMARY – CHAPTER 5: SUMMARY OF CUMULATIVE IMPACTS

CEQA Guideline §15130(a) requires an EIR to discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable, as defined in §15065(a)(3). There are a number of projects proposed for development in the vicinity of the Refinery, which may contribute cumulative impacts to those generated by the proposed project at Tesoro. The discussion in Chapter 5 lists projects which are reasonably expected to proceed in the foreseeable future, i.e., project information has been submitted to a public agency.

1.10.1 AIR QUALITY

1.10.1.1 Environmental Impacts

Construction Impacts: Construction emissions for the Tesoro proposed project would exceed the thresholds established by the SCAQMD for NO_x. Therefore, the air quality construction impacts are considered cumulatively considerable for NO_x. The construction emissions for the Tesoro proposed project construction would not exceed the thresholds established by the SCAQMD for CO, VOC, SO_x, PM₁₀ and PM_{2.5}. Per the requirements of CEQA Guidelines §15064(h)(4)), the “mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project’s incremental effects are cumulatively considerable.” Therefore, the air quality construction impacts for the proposed project are not

cumulatively considerable for CO, VOC, SO_x, PM₁₀, and PM_{2.5}. Mitigation measures to reduce air emissions associated with construction activities are necessary primarily to control emissions from heavy construction equipment and worker travel.

Operational Impacts: The proposed Tesoro project does not make a cumulatively considerable contribution to impacts related to CO, VOC, NO_x, SO_x, PM₁₀, or PM_{2.5} because the project emissions will be less than the SCAQMD CEQA significance thresholds. Further, the proposed project will result in net emission reductions of CO, NO_x, SO_x, PM₁₀ and PM_{2.5}. The proposed project VOC emissions are 0.2 pounds per day, which is well below the SCAQMD significance threshold and less than significant. Per CEQA Guidelines §15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable. Therefore, air quality impacts associated with the operation of the proposed project are not cumulatively considerable.

Toxic Air Contaminant Impacts: The impacts from toxic air contaminants are localized impacts. A number of the proposed projects in the Wilmington/Carson area are expected to result in overall emission increases. Reductions in TACs are expected from the Port Clean Air Action Plan and transportation improvement project that reduce mobile source emissions. Most of the cumulative projects that may result in emission increases are located over one mile from the Tesoro Refinery and SRP (or insufficient information on toxic emissions is available on the projects) and toxic air contaminant emissions are not expected to overlap due to distance from the Refinery and SRP and dispersion from the sources which dilutes toxic emission impacts.

Greenhouse Gases: Global climate change refers to changes in average climatic conditions on earth as a whole, including temperature, wind patterns, precipitation and storms. Global warming, a related concept, is the observed increase in average temperature of the earth's surface and atmosphere. One identified cause of global warming is an increase of greenhouse gases (GHGs) in the atmosphere. Some studies indicate that the potential effects of global climate change may include rising surface temperatures, loss in snow pack, sea level rise, more extreme heat days per year, and more drought years. Events and activities, such as the industrial revolution and the increased consumption of fossil fuels (e.g., gasoline, diesel, coal, etc.), have heavily contributed to the increase in atmospheric levels of GHGs. As reported by the California Energy Commission (CEC), California contributes 1.4 percent of the global and 6.2 percent of the national GHGs emissions.

In response to growing scientific and political concern regarding global climate change, California has recently adopted a series of laws to reduce both the level of GHGs in the atmosphere and to reduce emissions of GHGs from commercial and private activities within the State.

On December 5, 2008, the SCAQMD adopted an interim GHG Significance Threshold for projects where it is the lead agency using a tiered approach for determining significance. The objective of the SCAQMD's interim GHG significance threshold proposal is to achieve a GHG emission capture rate of 90 percent of all new or modified stationary source projects. A GHG significance threshold based on a 90 percent emission capture rate is considered be more appropriate to address the long-term adverse impacts associated with global climate change because most projects will be required to implement GHG reduction measures. Further, a 90 percent GHG emission capture rate

sets the emission threshold low enough to capture a substantial fraction of future stationary source projects that will be constructed to accommodate future statewide population and economic growth, while setting the emission threshold high enough to exclude small projects that will in aggregate contribute a relatively small fraction of the cumulative statewide GHG emissions.

The new and modified equipment built as part of the Tesoro proposed project has been evaluated for all GHG emission sources, including both energy supplied via purchased conventional power generation and with energy supplied by the installation of more energy efficient cogeneration power (combined power and steam generation). The Tesoro proposed project as proposed is estimated to result in a decrease of 61,334 metric tons per year of GHGs due to the replacement of existing boilers and cogeneration units with more efficient equipment. Reducing GHG emissions is not a significant adverse cumulative impact especially because the SCAQMD's GHG significance threshold for projects where it is the lead agency is 10,000 metric tons of CO₂ equivalent emissions per year.

Cogeneration is, in itself, one of the preeminent strategies for minimizing GHG emissions. Cogeneration is far more efficient (in both energy and GHG emissions), than separate generation of electricity and steam. Replacing the existing cogeneration unit with a new Cogeneration Unit is consistent with the California Air Pollution Control Officer's Association's (CAPCOA's) Green List of Projects and, thus, the goals of AB32.

The California Public Utility Commission (CPUC) and CEC have established emissions performance standards (EPS) for the generation of electricity. In order to evaluate compliance with the standard, the thermal output of the proposed new cogeneration unit was calculated and compared to the emissions performance standard. The efficiency of the proposed Cogeneration Unit is estimated to be 351 lbs of CO_{2e} per MW-hr which is well below the CPUC/CEC EPS of 1,100 pounds of CO₂ per MW-hr. Therefore, the proposed Cogeneration Unit will be more energy efficient than required by CPUC and CEC standards, generating lower CO₂ emissions per MW-hr than required by CPUC and CEC standards.

The proposed project is replacing older less energy efficient equipment (i.e., cogeneration units and boilers) with newer equipment and thereby reducing GHG emissions. The proposed project will reduce GHG emissions, which is consistent with the goals of AB32. The new Cogeneration Unit will be more energy efficient than the EPS standard. Therefore, the proposed project is not expected to be cumulatively considerable and does not contribute to significant adverse cumulative impacts associated GHG emissions.

1.10.1.2 Mitigation Measures

For the construction period, the mitigation measures developed as part of the proposed project (see Section 4.2.3) will be imposed on other related projects, if the SCAQMD is the lead agency and project-specific impacts are concluded to be significant. and that overlap the proposed project construction period. Mitigation measures are imposed by all lead agencies for reducing significant construction emissions from other projects (e.g., port-related development, transportation projects, and other development projects).

During operation, mitigation measures to minimize emissions associated with operation of the related projects include the use of BACT for all, new, emission sources and modifications to

existing sources. The use of BACT would control regional and localized emissions. A BACT review will be completed during the SCAQMD permit approval process for all new/modified sources.

1.10.1.3 Level of Significance Following Mitigation

The cumulative adverse air quality impacts due to construction activities associated with the proposed project are expected to exceed the SCAQMD significance threshold for NOx emissions, thus, are considered to be cumulatively considerable, even after mitigation.

The cumulative air quality impacts associated with the proposed project due to operational activities are primarily beneficial (i.e., result in emission reductions) or are substantially less than the SCAQMD significance thresholds and, therefore, are not significant and not considered to be cumulatively considerable. As a result, operational project-specific air quality impacts do not contribute to significant adverse cumulative air quality impacts. Per CEQA Guidelines §15064(h)(4), the mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

1.10.2 HAZARDS AND HAZARDOUS MATERIALS

1.10.2.1 Environmental Impacts

Although other projects, refineries, and industrial facilities exist in the general vicinity of the Refinery and SRP, the cumulative impacts from and between the onsite operation of the other industrial projects and the proposed project are not expected to be significant because it is extremely unlikely that upset conditions would occur at more than one facility at a time. It also is extremely unlikely that an upset condition at one facility would create an upset at another nearby refinery because of the distance between facilities. Refinery operations at the ConocoPhillips Carson Plant, which is located south of Sepulveda Boulevard, are the closest refinery operations to the Tesoro Refinery and the BP Refinery west of Alameda Street is the closest refinery to the SRP operations. The distance between the facilities associated with the proposed project and other nearby refinery units is about 1,100 feet, and the refineries are separated by a six lane major thoroughfare (Alameda Street). The new project-related explosion or fire hazard impacts associated with the proposed project are expected to travel less than 1,000 feet off of the Refinery property, or stay within the confines of the existing Refinery and SRP. Therefore, explosion or fire hazards are not expected to reach or overlap with hazard impacts from other local refineries or industrial projects, so hazard impacts are not expected to be cumulatively considerable.

1.10.2.2 Mitigation Measures

The proposed project impacts due to hazards are considered to be significant. A number of existing rules and regulations apply to the Refinery and SRP as well as other industrial facilities that handle, transport or store hazardous materials. Compliance with these rules and regulations is expected to minimize industry-related hazards. Compliance with these rules and regulations should also minimize the hazards at other refineries and industrial facilities. Site-specific mitigation measures for hazards may be required for the proposed project and other projects.

1.10.2.3 Level of Significance after Mitigation

The impacts of the various projects on hazards are not expected to be cumulatively considerable as hazards at or within one project area are not expected to impact or lead to hazards at other facilities.

1.10.3 TRANSPORTATION AND TRAFFIC

1.10.3.1 Environmental Impacts

Construction Impacts: The proposed project will increase the traffic in the area associated with construction workers, construction equipment, and the delivery of construction materials. The proposed project is expected to require up to about 600 construction workers during the construction phase with 248 construction workers during the peak construction month. The traffic impacts associated with the proposed project during the construction phase are less than significant at local intersections and potentially significant on the I-710 Freeway. Thus, construction traffic impacts associated with the proposed project are cumulatively considerable.

There could be cumulative construction traffic impacts associated with other industrial construction projects in the area that do not avoid peak traffic hours. Construction of the ACTA projects would require improvements to State Route 47 which could result in disruption to the local traffic circulatory system, creating detours and affecting accessibility to businesses. However, construction activities would be short-term and construction-related traffic would cease following completion of construction activities.

1.10.3.2 Mitigation Measures

Construction traffic impacts from the proposed project are expected to be significant on the I-710 Freeway. Feasible mitigation measures have not been identified for traffic impacts on the I-710 Freeway. Potentially significant construction traffic impacts will cease following the completion of the construction phase. The increase in traffic associated with operation of the proposed project is limited to one truck trip per day to the Refinery and SRP and, therefore, is less than significant.

1.10.3.3 Level of Significance after Mitigation

The proposed project could result in significant traffic impacts on the I-710 Freeway. Therefore, the construction traffic impacts are potentially cumulatively considerable on the I-710 Freeway. The proposed project is not expected to result in significant traffic during the operational phase.

1.11 EXECUTIVE SUMMARY – CHAPTER 6: SUMMARY OF ALTERNATIVES

This EIR identifies and compares the relative merits of a range of reasonable alternatives to the proposed project as required by the CEQA guidelines. According to the CEQA Guidelines, alternatives should include realistic measures to attain the basic objectives of the proposed project and provide a 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 foster informed decision-making and public participation.

Alternatives to the proposed project included Alternative 1 - No Project Alternative; Alternative 2 - Eliminate Upgrades to the Boilers; Alternative 3 - Eliminate the New Cogeneration Facilities; Alternative 4 - Eliminate the New Fuel Gas Treatment Unit; and Alternative 5 - Eliminate Crude Oil Storage Tank. Based on the analyses herein, no feasible alternatives were identified that would reduce or eliminate the potentially significant air quality or hazard impacts related to the proposed project and achieve the objectives of the proposed project.

The No Project Alternative (Alternative 1) would prevent Tesoro from: (1) reducing NO_x and SO_x emissions by replacing existing boilers and cogeneration unit with new units; (2) increasing the operation 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 new CARB gasoline specifications (revised CARB Phase III specifications); and (6) reducing the potential for atmospheric releases and related emissions from pressure relief valves in the FCCU.

Air emissions from the Refinery under Alternative 2 would be much higher for CO, NO_x, SO_x, PM₁₀, and PM_{2.5}, as well as GHG emissions, because the existing boilers would continue to operate (see Table 4-5). Therefore, Alternative 2 would not provide any of the emission benefits of the proposed project. In addition, Alternative 2 would not eliminate any significant adverse environmental impacts.

Air emissions from the Refinery under Alternative 3 are also expected to be much higher for CO, NO_x, SO_x, PM₁₀, and PM_{2.5}, as well as GHG emissions, as the existing 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 as the proposed project on air quality, hazards/hazardous materials, and traffic. Alternative 4 would result in significant impacts to air quality and traffic during construction, but would reduce the 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 project construction-related air quality and traffic impacts, but would not reduce potentially significant impacts to less than significant. Alternative 5 would eliminate the construction of the crude oil tank which would eliminate the potentially significant fire hazard associated with the new tank. Therefore, Alternative 5 is considered to be the environmental 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 eliminate

significant adverse construction air quality and traffic impacts during construction and significant hazard impacts during operation.

1.12 EXECUTIVE SUMMARY – CHAPTER 7 AND 8: REFERENCES, ACRONYMS AND GLOSSARY

Information on references cited (including organizations and persons consulted) and the acronyms and glossary are presented in Chapters 7 and 8, respectively.

TABLE 1-1
Summary of Environmental Impacts, Mitigation Measures and Residual Impacts

IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
<p>Air Quality</p> <p>The construction emissions for NOx will exceed the SCAQMD CEQA significance thresholds and are significant.</p>	<p>Develop a Construction Emission Management Plan, limiting truck idling to five minutes, using electricity wherever possible, maintaining construction equipment, suspending construction activities during first stage smog alerts, developing and implementing a fugitive dust emission control plan, and using lower VOC content coatings.</p> <p>None required.</p>	<p>Construction emissions are expected to remain significant for NOx.</p>
<p>The construction emissions of CO, VOC, SOx, PM10 and PM2.5 will not exceed SCAQMD CEQA significant thresholds and are less than significant.</p>	<p>None required.</p>	<p>Construction emissions are expected to be less than significant for CO, VOC, SOx, PM10 and PM2.5.</p>
<p>Construction ground level concentrations of criteria pollutants of concern would not exceed applicable local significance thresholds.</p>	<p>None required.</p>	<p>Concentrations of criteria pollutants of concern are less than significant.</p>
<p>Traffic impacts from the proposed project are not expected to cause CO hotspots and no significant adverse impact on ambient air quality is expected.</p>	<p>None required.</p>	<p>Concentration of CO from traffic is less than significant.</p>
<p>Operational emissions of CO, NOx, SOx, PM10 and PM2.5 are less than significant.</p>	<p>None required. Project emissions are controlled through use of BACT.</p>	<p>Mass daily emissions of CO, NOx, SOx, PM10 and PM2.5 from stationary and fugitive sources are expected to be less than significant.</p>
<p>Operational emissions of criteria pollutants are significant for VOC.</p>	<p>VOC emissions from stationary sources will be offset.</p>	<p>The VOC offsets will reduce the proposed project to less than significant.</p>

TABLE 1-1 (continued)
 Summary of Environmental Impacts, Mitigation Measures and Residual Impacts

IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
<p>Air Quality (continued) The proposed project is expected to result in a reduction in ambient air quality emissions for CO, VOC, NOx, SOx, PM10, and PM2.5. An overall air quality benefit will be created since emissions will be below ambient air quality standards and are less than significant. The cancer risk due to the operation of the proposed project is expected to be less than the significance criterion of 10 in one million, so that project impacts are less than significant.</p>	<p>None required.</p>	<p>Project emissions of CO, VOC, NOx, Sox, PM10, and PM2.5 will be below ambient air quality standards and are less than significant.</p>
<p>The proposed project's impacts associated with exposure to non-carcinogenic compounds are expected to be less than significant. The chronic hazard index and the acute hazard index are both below 1.0.</p>	<p>None required.</p>	<p>Cancer risk impacts are less than significant.</p>
<p>Hazards and Hazardous Materials</p>	<p>None required.</p>	<p>No significant non-carcinogenic health impacts are expected.</p>
<p>Upgrades to the Amine/Sour Water Unit would result in an increase in the distance that exposure to H₂S could extend offsite. Installation of the new Crude Oil Storage Tank would result in an increase in the distance that a pool/torch fire could extend offsite when compared to an existing crude oil storage tank.</p>	<p>The Refinery's existing RMP will need to be reviewed and revised to include the new and modified Refinery units, and to ensure that no unexpected or adverse interactions with existing systems occur.</p>	<p>Hazards and hazardous material impacts are expected to remain significant.</p>

TABLE 1-1 (concluded)
Summary of Environmental Impacts, Mitigation Measures and Residual Impacts

IMPACT	MITIGATION MEASURES	RESIDUAL IMPACT
Transportation and Traffic (continued) During the peak construction period, northbound freeway segment of the I-710 Freeway near the Refinery will be impacted during the evening peak hour.	Ridesharing of construction will be encouraged but cannot be guaranteed.	Construction traffic impacts during the evening peak hour are expected to remain significant.

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