

CHAPTER 1

INTRODUCTION AND EXECUTIVE SUMMARY

Introduction

Purpose/Legal Requirements

Scope and Content

Responsible and Other Agencies

Intended Uses of the EIR

Areas of Controversy

Executive Summary – Chapter 2: Project Description

Executive Summary – Chapter 3: Existing Environmental Setting

Executive Summary – Chapter 4: Environmental Impacts and

Mitigation Measures

Executive Summary – Chapter 5: Cumulative Impacts

Executive Summary – Chapter 6: Alternatives Analysis

Executive Summary – Chapter 7, 8, and 9: References Acronyms
and Glossary

[This page intentionally left blank.]

1.0 INTRODUCTION AND EXECUTIVE SUMMARY

1.1 INTRODUCTION

The Tesoro Refining & Marketing Company LLC (Tesoro) is proposing the Los Angeles Refinery Integration and Compliance Project (proposed project). In June 2013, Tesoro purchased the adjacent BP West Coast Products LLC (BP) Carson Refinery which, as part of the proposed project, will be more fully integrated with the Tesoro Los Angeles Refinery – Wilmington Operations to form the Tesoro Los Angeles Refinery (Refinery). The Refinery includes: (1) the Wilmington Operations located at 2101 East Pacific Coast Highway in the Wilmington District of the City of Los Angeles; and (2) the Carson Operations, which is the former BP Carson Refinery located at 2350 East 223rd Street in the City of Carson.

In addition to further Refinery integration, the proposed project is designed to comply with the federally-mandated Tier 3 gasoline specifications and with State and local regulations mandating emission reductions. The Los Angeles Refinery Integration and Compliance Project is expected to substantially reduce greenhouse gas (GHG), sulfur oxides (SO_x), nitrogen oxides (NO_x), and carbon monoxide (CO) at the Refinery. This will be accomplished by reconfiguring the combined Refinery complex to enable shutting down the Fluid Catalytic Cracking Unit (FCCU) at the Wilmington Operations, and by reconfiguring the combined Refinery complex to improve the gasoline to distillate production ratio from the integrated Refinery in order to expeditiously respond and adjust to ongoing changes in market demand for various types of petroleum products. Additionally, heat recovery will be optimized by installing new heat exchangers and modifying specified units to further minimize criteria pollutant and GHG emissions. All new and modified stationary sources with emissions increases will be required to comply with Best Available Control Technology (BACT) requirements in South Coast Air Quality Management District (SCAQMD) Rule 1303.

1.2 PURPOSE/LEGAL REQUIREMENTS

The California Environmental Quality Act (CEQA) (Public Resources Code §21000 et seq., and California Code of Regulations, Title 14, Division 6, Chapter 3) 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, City of Carson, and the Alameda Corridor Transportation Authority and, therefore, it is subject to the requirements of CEQA (Public Resources Code, §21080 (a)). If a proposed project is to be carried out by a nongovernmental person or entity, such as the proposed project, the lead agency will normally be the agency with general governmental powers, such as a city or county (CEQA Guidelines §15051(b)(1)). However, because the proposed project modifications will be located within both the cities of Carson and Los Angeles, each of these public agencies would only have discretionary approval authority for the components of the proposed project in their jurisdictions.

The SCAQMD has discretionary approval authority of the project components within both the City of Los Angeles and City of Carson. Because the SCAQMD is the public agency with the greatest responsibility for supervising or approving the project as a whole, it is the most appropriate public agency to act as lead agency (CEQA Guidelines §15051(b)). Therefore, as lead agency, the SCAQMD is responsible for preparing the Environmental Impact Report (EIR) for the proposed project.

In accordance with §15121(a) of the CEQA Guidelines, 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.”

To fulfill the purpose and intent of CEQA, as the lead agency for the proposed project, the SCAQMD prepared and released a Notice of Preparation and Initial Study (NOP/IS) for a 30-day public review and comment period beginning on September 10, 2014 through October 10, 2014. The NOP/IS was circulated to responsible agencies, neighboring jurisdictions, other public agencies, and interested individuals in order to solicit input on the scope of the environmental analysis to be included in the EIR.

The NOP/IS provided a preliminary analysis of environmental impacts that may be associated with the Tesoro Integration and Compliance Project (see Appendix A). Potentially significant adverse environmental impacts from the proposed project identified in the NOP/IS form the basis for and focus of the technical analyses in this EIR.

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

A total of 93 comment letters were received on the NOP/IS during the public comment period, 85 of which expressed support for the proposed project. A copy of the comment letters received and responses to individual comments are provided in Appendix A. No comments were received on the NOP/IS that identified new potentially significant environmental topics or disputed any of the conclusions for each environmental topic.

1.3 SCOPE AND CONTENT

The following discussion summarizes the scope and content of this EIR. This chapter contains a summary of the proposed actions and its consequences (CEQA Guidelines §15123), Chapter 2 contains a complete and comprehensive project description (CEQA Guidelines §15124), and Chapter 3 contains the environmental setting which describes the physical environmental conditions in the vicinity of the project and normally constitute the baseline physical conditions by which a lead agency determines whether an impact is significant (CEQA Guidelines §15125). The following environmental resources were identified in the NOP/IS as being potentially significant and are further analyzed (CEQA Guidelines §15126.2) in Chapter 4 of this document:

- Air Quality and Greenhouse Gas Emissions¹
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Noise
- Solid and Hazardous Waste
- Transportation and Traffic

Mitigation measures have been identified in Chapter 4 for any adverse impacts that exceed applicable significance thresholds (CEQA Guidelines §15126.4). Pursuant to CEQA Guidelines §15130, a discussion of potential cumulative impacts has been prepared and is provided in Chapter 5. Alternatives to the proposed project in Chapter 6 of this Draft EIR were prepared in accordance with §15126.6 of the CEQA Guidelines. Chapter 6 describes a range of reasonable alternatives that could feasibly attain the basic objectives of the proposed project as a means of eliminating or reducing some of the significant adverse environmental effects associated with the proposed project.

1.4 RESPONSIBLE AND OTHER AGENCIES

CEQA Guidelines §15381 define 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 purposes of CEQA, responsible agencies include all public agencies other than the lead agency that have discretionary approval authority over the project.” The SCAQMD is the lead agency for the proposed project. The City of Carson is a responsible agency and has discretionary authority for some aspects of the proposed project within its jurisdiction and has also been given an opportunity to review and comment of the NOP/IS and EIR for the proposed project. The Alameda Corridor Transportation Authority (ACTA), a joint powers authority of the cities of Los Angeles and Long Beach, is also a responsible agency over the proposed project as permits will be required from ACTA for the construction of pipelines along the Alameda Corridor and has also been given an opportunity to review and comment on the NOP/IS and EIR for the proposed project. While a portion of the proposed project is located in the Wilmington District of the City of Los Angeles, only ministerial permits with no discretionary approval are necessary for the proposed project from the City of Los Angeles.

No trustee agencies as defined by CEQA Guidelines §15386 have been identified with respect to the proposed project. However, notice of the proposed project has been sent to the Office of Planning and Research pursuant to Public Resources Code §21080.4 for distribution in the event trustee or other responsible agencies are identified for the proposed project. Agencies with

¹ Due to the complex physical, chemical, and atmospheric mechanisms involved in global climate change, the project’s GHG emissions and the resulting significance of potential impacts are more properly assessed on a cumulative basis. Therefore, the environmental setting and the significance of potential impacts from the proposed project’s GHG emissions is determined on a cumulative basis in Chapter 5 - Cumulative Impacts.

discretionary permitting responsibilities for the proposed project have been identified and are listed in Table 2.10-1.

1.5 INTENDED USES OF THE EIR

The Draft 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 Draft 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 the City of Carson, City of Los Angeles, and ACTA, are responsible for making land use and planning decisions related to the proposed project, it is expected that they will rely on this EIR during their decision-making process. See the preceding section for the public agencies, currently identified as responsible agencies, whose approval may be required and who may also be expected to use this EIR in their decision-making process. See also Table 2.10-1 in Chapter 2 for a list of discretionary permits and other approvals required to implement the proposed project.

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. “Controversy” is defined as a difference in opinion or a dispute. Consistent with the purpose of the NOP/IS to solicit comments or other information, responses to individual issues raised in the comment letters that are related specifically to potential impacts from the proposed project were prepared. As necessary, some issues were further addressed in this EIR. Of the 93 comment letters, 85 were letters in support of the proposed project.

Eight letters were received that provided specific comments on the NOP/IS. Comment letters were received from the City of Carson, the California Department of Transportation (Caltrans), and the Native American Heritage Commission (NAHC). The City of Carson and attorneys representing the City of Carson, requested clarification of the lead agency and asked that certain information and analyses be included in the EIR. Caltrans provided guidance on addressing construction traffic impacts. The NAHC provided guidance for evaluation of historical resources. Finally, four letters were received regarding the storage and transportation of liquid petroleum gas (LPG) in the vicinity of the Tesoro Refinery and at third party storage facilities. The NOP/IS, the comment letters received on that document, and responses to individual comments can be found in Appendix A of this EIR.

The SCAQMD held a public scoping meeting on September 24, 2014 on the proposed project at the Carson Community Center at 801 E. Carson Street, Carson, California. An additional six comment letters expressing support for the proposed project, were received at the public scoping meeting. The issues that could be considered controversial are provided in Table 1.6-1. Table 1.6-1 contains only areas of controversy raised in the comments on the NOP/IS or at the scoping meeting. No other areas of controversy have been communicated to the SCAQMD prior to release of this EIR for public comment.

TABLE 1.6-1
Summary of Potentially Controversial Topics

Key Issues Raised	EIR Sections Where Addressed
Concerns regarding the storage and transport of LPG.	Section 4.3
Air quality and greenhouse gas analysis	Section 4.2 and Section 5.3

1.7 EXECUTIVE SUMMARY – CHAPTER 2: PROJECT DESCRIPTION

1.7.1 INTRODUCTION

Tesoro is proposing the Los Angeles Refinery Integration and Compliance Project (proposed project). The proposed project is designed to better integrate the Wilmington Operations and Carson Operations. In addition, the proposed project is designed to comply with the new federally-mandated Tier 3 gasoline specifications and with State and local regulations mandating emission reductions.

On April 23, 2014, the SCAQMD released a Notice of Intent to adopt a Draft Negative Declaration for the Tesoro Storage Tank Replacement and Modification project. The tank replacement modification project was considered to be a separate project from the Tesoro Refinery Integration and Compliance Project because it could go forward with or without the currently proposed project; that is, neither project relies on the other project to be implemented and both have independent utility. However, because of the timing of construction and implementation of the two projects, it was decided to incorporate the Tesoro Storage Tank Replacement and Modification project into the currently proposed project to provide a cohesive analysis of all environmental impacts from the two projects.

1.7.2 PROJECT OBJECTIVES

There are multiple objectives for this project that include modifications to further integrate Carson and Wilmington Operations so that consolidated operation can be optimized for improved operation, reduction of GHG emissions and criteria pollutants, improved energy

recovery, and environmental compliance requirements. The project objectives include the following:

- Improving process efficiency through integration while maintaining the overall production capability of transportation fuels. Making process modifications that improve efficiency and enable shutdown of the Wilmington Operations FCCU prior to the next scheduled FCCU turnaround expected to occur in 2017, providing substantial emission reductions and reducing carbon intensity.
- Recovering and upgrading distillate range material from FCCU feeds. Tesoro proposes to achieve this objective by modifying 51 Vacuum Unit, the Mid-Barrel Distillate Treater and the Hydrocracker Unit at Carson Operations, and Hydrotreater Unit No. 4, and Hydrocracker Unit modifications at Wilmington Operations. Recovering distillate from FCCU feed enables shut down of the Wilmington Operations FCCU since the Carson Operations FCCU has sufficient capacity to process the FCCU feed that remains after distillate recovery.
- Complying with federal, state, and local regulations. Tesoro proposes to achieve this objective by: (1) meeting the U.S. EPA Tier 3 gasoline specifications; and (2) reducing Refinery NOx, SOx, and GHG emissions through proposed process modifications that improve efficiency, enable shutdown of the Wilmington Operations FCCU and lower carbon intensity.
- Improving financial viability for the newly integrated Tesoro Los Angeles Refinery and the local community. Tesoro proposes to achieve this objective by: (1) reducing future operating, capital, turnaround, and environmental compliance costs, primarily by shutting down the Wilmington Operations FCCU; (2) improving electrical supply reliability; (3) improving integrated Refinery transportation fuel production flexibility between gasoline and distillate products to respond to changes in market demand, including the capability to produce 100 percent of the Refinery gasoline production as CARB compliant gasoline; and (4) providing sustainable local jobs and tax revenue for the community.
- Integrating Carson and Wilmington Operations. Tesoro proposes to achieve this objective by installing the Interconnecting Pipelines to allow efficient transfer of hydrocarbons between the facilities to allow gasoline blending optimization, process unit feedstock optimization, and increased diesel production.
- Increasing overall Refinery processing efficiency. Tesoro proposes to achieve this objective by: (1) adding a Sulfuric Acid Regeneration Plant at the Wilmington Operations to regenerate sulfuric acid on-site; (2) adding a Wet Jet Treater to improve jet fuel quality; (3) upgrading and adding facilities to recover and treat propane for commercial sales, and (4) upgrading existing LPG rail facilities to enable fast unloading of railcars.
- Improving efficiency of water-borne crude oil receipt and marine vessel unloading. Unloading crude oil from marine vessels without delay will reduce vessel emissions at the

Port of Long Beach. Tesoro proposes to achieve this objective by constructing six new 500,000 barrel tanks at the Carson Crude Terminal and replacing two existing 80,000 barrel crude oil tanks at the Wilmington Operations with two 300,000 barrel tanks. Piping within the Carson Crude Terminal will be installed to connect the six new 500,000 barrel tanks to existing pipelines to the Carson Operations and Marine Terminal 1. The two new 300,000 barrel tanks will be connected to existing pipelines from the Wilmington Long Beach Terminal. Within the confines of the Wilmington Operations, the existing 12-inch diameter piping will be replaced with 24-inch diameter piping to connect the replacement tanks to the Wilmington Operations.

1.7.3 PROJECT LOCATION

The proposed project will occur at both the Wilmington and Carson Operations of the Tesoro Los Angeles Refinery. The Wilmington Operations are located within Wilmington, a community under the jurisdiction of the City of Los Angeles, at 2101 East Pacific Coast Highway, Wilmington, Los Angeles County, California 90744. The Carson Operations are located at 2350 East 223rd Street, Carson, California, 90810. Additionally, the Sulfur Recovery Plant (SRP) (considered to be a portion of the Wilmington Operations) is located at 23208 South Alameda Street in the City of Carson. The proposed project would include installing pipelines within the Refinery as well as under the Alameda Street and Sepulveda Boulevard adjacent to the Refinery to connect pipelines between the Wilmington and Carson Operations.

1.7.4 LAND USE AND ZONING

Implementation of the proposed project at the Wilmington and Carson Operations of the Tesoro Los Angeles Refinery will occur within an industrial area. Land uses in the vicinity of the Refinery include oil production facilities, refineries, hydrogen plants, coke handling facilities, container terminals, transportation corridors, storage tank farms, automobile wrecking/dismantling facilities, and other industrial operations. The Wilmington Operations are bounded to the north by Sepulveda Boulevard, to the west by Alameda Street; to the south by railroad tracks and to the east by the Dominguez Channel. The Wilmington Operations are zoned heavy industrial (M3-1). The Carson Operations and all adjacent properties are zoned manufacturing heavy (MH). The closest residential area is approximately 100 feet from the property line across Wilmington Avenue to the southwest of the Refinery (adjacent to the Carson Crude Terminal). The closest residential area to the proposed project locations within the Refinery is about 1,300 feet.

1.7.5 OVERVIEW OF PETROLEUM REFINING

Crude oil is a mixture of hydrocarbon compounds and relatively small amounts of other materials, such as oxygen, nitrogen, sulfur, salt, sediment, and water. Petroleum refining is a coordinated arrangement of manufacturing processes designed to produce physical and chemical changes in the crude oil to remove most of the non-hydrocarbon substances, break the crude oil into its various components, and blend them into various useful products. The overall refining process uses four kinds of techniques: 1) separation, including distilling hydrocarbon liquids

into gases, gasoline, diesel fuel, fuel oil, gas oils, and heavier residual materials; 2) cracking or breaking large hydrocarbon molecules into smaller ones by thermal or catalytic processes; 3) reforming using heat and catalysts to rearrange the chemical structure of a particular oil stream to improve its quality; and, 4) chemically combining two or more hydrocarbons to produce high-grade gasoline. Specific topics discussed in detail include types of crude oil, the refining process, and refinery optimization (see Section 2.5.1 through 2.5.3).

1.7.6 TESORO REFINERY EXISTING OPERATIONS

Currently, the Wilmington and Carson Operations function as two separate and distinct facilities with some limited integration.

1.7.6.1 Wilmington Operations

Crude oil for the Wilmington Operations is delivered via ship using the pipeline from the Tesoro Marine Terminal at the Port of Long Beach. Crude oil can also be delivered via pipeline from other onshore locations. No crude oil is transported to the Wilmington Operations via rail and there are no facilities to receive crude oil deliveries by railcar. The Wilmington Operations currently utilize 20 storage tanks to store crude oil and other heavy petroleum liquids. Crude oil is processed in the Crude Unit where it is heated and distilled into various hydrocarbon components, which are further processed in downstream Wilmington Operations units. The Wilmington Operations also receive, process, and transport other petroleum products (crude oil not included) to and from the Wilmington Operations by ship, truck, and railcar. These petroleum products include residuum, gas oil, diesel, gasoline, naphtha, transmix, and LPG.

1.7.6.2 Carson Operations

Crude oil for Carson Operations is unloaded from tankers at terminals located in the Port of Long Beach and then transferred via pipeline and stored at Port of Long Beach Terminals or the Carson Crude Terminal. No crude oil is transported to the Carson Operations via rail and there are no facilities to receive crude oil deliveries by railcar. Crude oil is sent via pipeline from the marine terminals to Carson Operations for further storage in any of nine Refinery crude oil storage tanks and then processed in the Crude Units. Crude oil can also be delivered via pipeline from other onshore locations. The Carson Operations also receive, process, and transport other petroleum products (crude oil not included) to and from the Carson Operations by ship, truck, and railcar. These petroleum products include residuum, gas oil, diesel, gasoline, naphtha, and LPG. Additionally, the Carson Operations has the Watson Cogeneration Facility that currently produces excess power, beyond the Carson Operations' needs, and sells the excess power to Southern California Edison.

1.7.6.3 Tesoro Los Angeles Refinery

The Tesoro Los Angeles Refinery consists of two adjacent facilities, Carson Operations and Wilmington Operations, which are managed as one Refinery. The Carson and Wilmington Operations have in the past and continue to produce a variety of products including unleaded gasoline, jet fuel, diesel fuel, fuel oil, petroleum gases, petroleum coke and sulfur. The Carson

Operations also produces high purity propylene as feedstock to the adjacent Ineos Polypropylene Plant, and calcined coke. Elemental sulfur and petroleum coke are produced as by-products of the refining process. Major processing units at both the Carson and Wilmington Operations include the Crude Units, the Vacuum Units, the Delayed Coker Units, hydrotreating units, reforming units, the FCCUs, the Alkylation Unit, hydrogen plants, the Sulfur Recovery Plants, and the Cogeneration Plants. The major differences between the Carson and Wilmington Operations is that the Carson Operations is a larger operation with three crude, two vacuum, and two coker units whereas the Wilmington Operations only has one crude, one vacuum, and one coker unit.

1.7.6.4 Current Los Angeles Refinery Integration

Currently Carson and Wilmington Operations are connected via Tesoro and third party pipelines that enable the transfer of intermediate and finished products between the two facilities. The Refinery optimizes crude oil and other refinery feedstock processing to produce the mixture of refined products that are marketed from the Tesoro Los Angeles Refinery. Unit turnarounds are aligned between the Carson and Wilmington Operations to minimize economic and local area impacts from shutdowns. Hydrogen use is balanced and managed across the Los Angeles Refinery for hydrotreating purposes and output of clean fuel products. Crude oil, intermediate feedstocks and products are transferred between Carson and Wilmington Operations via pipeline, as required, to optimize Refinery production to meet market demand.

1.7.6.5 Marine Terminals Associated with Los Angeles Refinery

The Refinery receives crude oil from ships which unload at three marine terminals operated by Tesoro Logistics Operations, LLC (Tesoro Logistics) in the Port of Long Beach (POLB). The unloaded crude oil is then piped to the Refinery for processing. The proposed project is not expected to result in any physical changes to the existing marine terminals. Additionally, no changes to the pipelines connecting the marine terminal to the Refinery are planned as a result of the proposed project.

1.7.7 PROPOSED PROJECT

The crude oil and feedstock processing capability at the integrated Refinery has the potential to increase by approximately two percent or 6,000 bbls/day as a result of the proposed project due to a revision of the described duty of the Wilmington Operations Coker fresh feed heater in the existing permit to conform with SCAQMD and industry standards. This permit revision has the potential to enable an increase of 6,000 bbls/day in crude oil processing capacity. To increase crude throughput capacity beyond the 6,000 bbls/day, the Refinery would need to physically modify equipment such as the Crude Units or Delayed Coker Units. No physical modifications to the Crude Units or Delayed Coker Units are included as part of the proposed project; therefore, crude throughput capacity is constrained, so no other increase in crude capacity will occur.

Modifications will be made to recover diesel and jet fuel boiling point range material, also known as distillate, from gas oil that is currently fed to the FCCUs at both Wilmington and Carson Operations. This will enable the remaining gas oil feed from the Wilmington Operations FCCU to be diverted via the proposed interconnecting piping to the Carson Operations FCCU, while maintaining the same overall level of transportation fuels production. In addition, facilities will be added to remove impurities such as sulfur, nitrogen compounds, and organic acids from distillates in order to make on-specification products. The modifications will be designed so that the combined Refinery operates within the existing capacity of the SRPs. Following project completion, when the diesel and jet range material are recovered and the remaining gas oil feed is diverted to the Carson Operations FCCU, the FCCU at Wilmington Operations will be shut down and the Refinery will be integrated as one operating Refinery.

1.7.7.1 Wilmington Operations

Process modifications to improve efficiency and achieve integration will enable shutting down the Wilmington Operations FCCU which is expected to substantially reduce emissions at the integrated Refinery. Reconfiguring the combined Refinery complex is expected to improve the gasoline to distillate production ratio and is anticipated to result in minor increases in air pollutant emissions. However, the net effect on overall emissions from the proposed project is expected to be emissions reductions at the Refinery, primarily associated with process modifications to improve efficiency and integration, enabling the shutdown of the Wilmington Operations FCCU, as well as shutdown or reduced operations of other equipment at the Refinery. Additionally, equipment production efficiency and heat recovery will be optimized for new and modified units to further reduce overall emissions and optimize energy utilization.

1.7.7.1.1 Wilmington Operations FCCU Shutdown

An FCCU cracks or converts heavy hydrocarbons into lighter, gasoline and distillate range hydrocarbons in the presence of fine particles of catalyst that are circulated throughout the process. The Refinery will modify other units to ensure there will be no loss in overall production due to the FCCU shutdown, prior to taking the FCCU offline. Midway through the proposed project, the Wilmington Operations FCCU will be shut down, the equipment will be permanently removed from service in compliance with SCAQMD-requirements, abandoned in place, and Tesoro will relinquish all relevant permits.

1.7.7.1.2 Hydrocracker Unit (HCU) Modifications

The Wilmington Operations HCU capacity is being increased to accommodate conversion of the distillate material previously routed to the Wilmington Operations FCCU. It will be recovered as HCU feed in order to reduce the amount of gas oil feed produced and to enable the shutdown of the Wilmington Operations FCCU. The reactor and fractionation sections will be modified to increase the production of ultra-low sulfur diesel and gasoline. The Wilmington Operations HCU modification will include adding new nozzles to two existing vessels, modifying the hydrogen recycle compressor internals to accommodate higher unit capacity, installing a small hydrogen booster compressor, installing or modifying as many as three heat exchangers to provide improved heat integration, installing two new electrically driven pumps, and associated

pipng and instrumentation. The proposed project currently includes increasing the permitted firing duty of two existing heaters in the Wilmington Operations HCU, with a common stack and SCR, by a total of 25 mmBtu/hr. While the Wilmington Operations HCU capacity would be increased approximately 15 percent, this modification will have no impact on the overall integrated Refinery crude throughput capacity.

To recover propane for the proposed new Propane Sales Treating Unit (PSTU) described below, the Wilmington Operations HCU fractionation section will also be modified by installing two new water cooled exchangers, one knockout drum, and associated piping and instrumentation. An existing reflux pump and two heat exchangers in the fractionation section will be removed.

1.7.7.1.3 Delayed Coker Unit (DCU) Fresh Feed Heater H-100

The Wilmington DCU fresh feed heater H-100 heats DCU charge (a mixture of crude oil, residual from the Crude Unit, slop oil (internally recycled oil and off-specification products) and FCCU main fractionator bottoms that are fed into the unit so they can be fractionated into feedstock streams for other refinery process units. The existing equipment description of the Fresh Feed Heater in the Title V permit will be revised to conform to SCAQMD/Industry standards. The description will be changed from the ‘design heat release’ basis (252 mmBtu/hr) to the industry standard ‘maximum heat release’ basis (302.4 mmBtu/hr). Revising the equipment description to maximum heat release will ensure that operating the heater at maximum heat released conforms with the SCAQMD’s expectation that equipment is operated within the maximum heat release described in the permit. Additional heat is needed at times to either lift more gas oil out of the Coker feed in downstream distillation columns or simply to process more feed through the DCU, to the physical limits of the downstream units. For example, during a Coker shutdown, residuum and crude oil inventory that are normally processed in the unit accumulate. After a shutdown, it is necessary to process feedstocks at a higher rate in order to process the inventory gains of feedstock that accumulated during a shutdown. Alternatively, higher crude rates may be processed in the DCU heater as analyzed herein. No physical modifications are planned to be made to the heater. However, modifications may be required during the permit review process. The maximum heater firing capability will remain unchanged. The number of burners (36) and the maximum heat release (8.4 mmBtu/hr) of each burner in the heater will remain the same. Although the described duty of the heater will increase to 302.4 mmBtu/hr, there will be no increase in emissions as permit conditions will be imposed to limit criteria pollutant emissions. Mass emissions of CO, NO_x, SO_x, particulate matter less than ten microns in diameter (PM₁₀), and volatile organic compounds (VOC) will be restricted in the revised permit.

The application to revise the permit description of H-100 heater was submitted in early 2014, independent of the proposed project. As a result, this component of the proposed project was not described in the NOP/IS. Upon further review, it was concluded that this change could create adverse environmental impacts that would likely occur simultaneously with the proposed project. For example, this revision to the heater equipment description has the potential to increase the crude oil throughput to the Refinery by a small amount of up to two percent (or up to 6,000 bbl/day). While the Refinery could opt to process either a small increase in crude oil throughput

or slightly heavier crude oil blend, the processing of additional crude oil blend would result in greater environmental impacts downstream of the DCU, as described in Section 4.1.2.1. Therefore, for purposes of analyzing the worst-case impacts, this document assesses an increase in crude oil throughput capacity. The increased heat release from the H-100 heater and/or increased crude oil throughput is anticipated to occur once the modified permit is issued. Including the permit revision as part of the proposed project ensures that all impacts from the modification of the Refinery are fully analyzed.

1.7.7.1.4 Catalytic Reformer Unit (CRU)-3 Modifications

The CRU-3 fractionation section will be modified to enable recovery of Hydrocracker propane from the refinery fuel gas system. The modifications to CRU-3 will include installing one new depropanizer tower that is larger than the existing tower, as many as three heat exchangers, as many as four electrically driven pumps, and associated piping and instrumentation.

1.7.7.1.5 Propane Sales Treating Unit (PSTU)

A new PSTU will be constructed at the Wilmington Operations to enable the process efficiency improvement to treat propane for sale. A PSTU conditions liquid propane for sale using absorbers and dryers to meet sales specifications. The PSTU will treat approximately 2,000 bbl/day of propane and will include eight vessels and four pumps that will be installed to purify recovered propane from the Wilmington Operations HCU and CRU-3.

1.7.7.1.6 Hydrotreater Units 1 and 2 (HTU-1 and 2) Modifications

The HTU-1 will be modified to hydrotreat approximately 7,000 bbl/day of FCCU gasoline to comply with the new federally-mandated Tier 3 gasoline specifications and to hydrotreat jet range components. The modifications to HTU-1 will include modifying or installing as many as five heat exchangers, and adding a pump and associated piping and instrumentation. Because the HTU-2 will continue to produce the same types of feedstock that it currently produces, its feedstock will be separated from HTU-1's feedstock. The HTU-2 feedstock separation modifications will include repurposing an existing diesel salt dryer to be used as a feed surge drum, installing as many as two electrically driven pumps, and associated piping and instrumentation.

The proposed modifications to HTU-1 will also allow it to start hydrotreating jet fuel, treating approximately 12,000 bbl/day to remove sulfur impurities. The modifications will include installing one new stripping steam nozzle on the stabilizer, one coalescer, one salt dryer, and condensate pot, and associated piping and instrumentation.

1.7.7.1.7 Hydrotreater (HTU-4) Modifications

HTU-4 will be modified as part of the proposed project to increase distillate yield and must be completed in order to allow for the shutdown of the Wilmington Operations FCCU, and to fully utilize the existing hydrotreating capacity to produce ultra-low sulfur diesel. There will also be modifications to recover jet fuel, and added heat integration equipment to reduce energy

consumption by producing steam in heat exchangers, providing process heat to two strippers and preheating boiler feed water. HTU-4 will process either gas oil or high sulfur diesel. The proposed modification to the HTU-4 will allow the Refinery to minimize motor fuels production disruptions during both planned and unplanned outages. Other modifications to HTU-4 include adding new nozzles on the fractionator, modifying the product coolers, installing a new surge drum, a salt dryer, a coalescer, a condensate pot, as many as four new electrically driven pumps and eleven heat exchangers, and associated piping and instrumentation.

1.7.7.1.8 New Sulfuric Acid Regeneration Plant (SARP)

The proposed new Sulfuric Acid Regeneration Plant (SARP) will be constructed at the Wilmington Operations and will remove impurities from and recycle the Wilmington and Carson Operations spent sulfuric acid to produce fresh sulfuric acid on-site rather than sending it off-site for treatment. The SARP is sized for an approximate throughput of 400 tons/day of sulfuric acid production and regeneration and will include three tanks, as many as eight electrically driven pumps, a natural gas fired 42 mmBtu/hr Decomposition furnace, a five mmBtu/hr Converter heater, a natural gas fired 20 mmBtu/hr Process Air Heater, a waste heat steam generator, as many as four blowers, as many as eight heat exchangers, four towers, one reactor, one stripper, three scrubbers, one electrically driven compressor, three drums, and associated piping and instrumentation. The fresh sulfuric acid will be sent back to the Alkylation Units for reuse. Spent sulfuric acid is currently transported off-site for recycling at a third-party vendor.

1.7.7.1.9 Wilmington Replacement Crude Oil Tanks and Other Tank Modifications

To improve the efficiency of water-borne crude oil receipt and marine vessel unloading, two new 300,000 bbl internal floating roof storage tanks (Tanks 300035 and 300036) will replace two existing 80,000 bbl fixed-roof storage tanks (Tanks 80035 and 80036) in the north tank area of Wilmington Operations. The new larger tanks will allow marine vessels to unload without undue delay, thereby reducing the time vessels are required to wait at anchorage until sufficient tankage is available for vessel discharge. The new tanks will be permitted to store the same types of products as the existing tanks. Storage capacity does not affect Refinery throughput, which is based on processing capabilities as described in Section 2.5.4.1.

The scope of this part of the proposed project will include demolishing two existing storage tanks, installing two new larger tanks in the same location as the tanks being removed, replacing 5,000 feet of 12-inch diameter piping with 24-inch diameter piping within the Wilmington Operations to allow the tank loading rate to increase from 5,000 bbl/hr to 15,000 bbl/hr. The scope includes modifying one existing tank (Tank 80038) by connecting it to a vapor recovery system. Existing Tanks 80038, 80060, 80067, and 80079 will require change of service permit modifications and annual throughput increases for each tank.

1.7.7.2 Carson Operations

The proposed Tesoro Los Angeles Refinery Integration and Compliance Project includes modifications at the Carson Operations, resulting in a combined Refinery complex and improving the gasoline to distillate production ratio. Additionally, equipment energy efficiency and heat recovery will be optimized for new or modified units, resulting in lower overall emissions.

In the NOP/IS the project description for the Carson Operations included modifications to the No. 1 and No. 2 Cokers to comply with SCAQMD Rule 1114 – Petroleum Refinery Coking Operations, which requires recovery of additional vent gases during coke drum deheading operations. Rule 1114 requires that the ejector system be installed at the next scheduled turnaround for each Coker unit. Compliance is required beginning in January 2016 for No. 2 Coker. The impacts of the Rule 1114 compliance projects were analyzed separately in the Environmental Assessment for Rule 1114 adoption (SCAQMD, 2013). As a result, because the Rule 1114 component has already been analyzed for potential environmental impacts and does not rely on any components of the proposed project, it has been removed from the proposed project. To the extent that the Rule 1114 component of the proposed project contributes to cumulative impacts, they will be evaluated in Chapter 5 of this EIR.

1.7.7.2.1 No. 51 Vacuum Unit Modifications

The No. 51 Vacuum Unit will be modified to allow increased distillate yield, or diesel production, which will require reducing vacuum gas oil production as much as 8,000 bbl/day. The No. 51 Vacuum Unit modifications will include modifying the feed heater's Title V permit described duty from 300 to 360 mmBtu/hr, installing one new sixteen-inch nozzle on the vacuum tower, as many as five new exchangers, two strainers, as many as three new electrically driven pumps, and associated piping and instrumentation. No substantial heater modifications are required to achieve a firing rate of 360 mmBtu/hr; however, burner tips may be replaced with a different design. The heater duty increase will enable increased recovery of distillate out of gas oil in the vacuum column.

1.7.7.2.2 Carson Operations FCCU Modifications

The NOP/IS presented two types of modifications to the Carson Operations FCCU, physical and operational. The physical modifications (i.e., installing a feed surge drum, as many as two pumps and two heat exchangers, and associated piping and instrumentation) have been canceled and removed from the proposed project. However, the proposed process modifications to improve efficiency and achieve integration will still be included. This will enable shutdown of the Wilmington Operations FCCU, and allow the Carson Operations FCCU to accept a portion of the Wilmington Operations gas oil feed. The throughput capability of the Carson Operations FCCU will remain unchanged. New pipelines will be routed between the Wilmington Operations and the Carson Operations FCCU feed tanks. Although physical modifications to the Carson Operations FCCU are no longer proposed, the impacts from the potential increase in utilization of the Carson Operations FCCU have been addressed in Chapter 4.

1.7.7.2.3 New Wet Jet Treater

One new 50,000 bbl/day Wet Jet Treater will be installed at Carson Operations to treat jet fuel by removing mercaptans and reducing the total acid number (TAN), or organic acid content, in the jet fuel produced in upstream units. The Wet Jet Treater will increase Refinery operating efficiency. The Wet Jet Treater includes one mercaptan removal reactor, one TAN removal reactor, two product separators, one spent caustic loading facility, as many as six associated electrically driven pumps, two salt dryers, two clay filters, and associated piping and instrumentation. Feed and fresh caustic will be routed to the new Wet Jet Treater and spent caustic and treated jet fuel will be routed to existing storage tanks. The spent caustic flow rate is conservatively estimated at approximately 11 gallons per minute (gpm). Approximately four additional railcar loads per week of spent caustic will be generated and shipped to the Gulf Coast for recycling.

1.7.7.2.4 Hydrocracker Unit (HCU) Modifications

The Carson Operations HCU capacity will be increased by approximately 10 percent. The Carson Operations HCU will be modified as part of the proposed project to increase distillate yield to allow for the shutdown the Wilmington Operations FCCU by enabling it to process the distillate recovered from the No. 51 Vacuum Unit. Processing the recovered distillate feed will require increased hydrogen gas usage to allow the modified HCU to comply with existing low sulfur diesel product specifications. The increased hydrogen gas capacity will be provided by increasing the recycle gas compressor speed. In addition, the Carson Operations HCU energy utilization efficiency will be improved by installing a steam generator. The HCU modification will include installing one new steam generator heat exchanger, an air cooler, and associated piping and instrumentation.

1.7.7.2.5 Light Hydrotreating Unit (LHU) Modifications

The LHU will be modified to more effectively remove sulfur from FCCU gasoline to comply with the new federally-mandated Tier 3 gasoline sulfur specifications. The LHU will process a higher sulfur feed material derived from existing fractionation equipment. The proposed modifications will include installing one new stripping steam nozzle on the stabilizer, as many as five new heat exchangers, one coalescer, a condensate pot, and associated piping and instrumentation.

1.7.7.2.6 Naphtha Hydrodesulfurization (NHDS) Unit Modifications

The existing Carson Operations Naphtha Hydrodesulfurization (NHDS) Unit will be modified with the installation of new equipment to allow removal of contaminants from unit feed and sulfur from pentanes. This enables flexibility for additional gasoline production to partially compensate for lost production from the Wilmington Operations FCCU. The existing Reactor Feed Heater will be retrofitted with new ultra-low NO_x burners to reduce emissions. The modifications will include repurposing and modifying the existing Isooctene debutanizer tower to separate isopentane from the Carson Operations NHDS feed. The modifications include the

addition of eight new nozzles on the debutanizer tower, installation of a caustic scrubber, two knockout drums, a product coalescer, an air cooler, an accumulator, a condensate pot, as many as 14 new heat exchangers, six electrically driven pumps, and associated piping and instrumentation.

1.7.7.2.7 Naphtha Isomerization Unit Modifications

The existing Carson Operations Naphtha Isomerization Unit will be modified to recover propane and heavier material from the Unit off-gas, enabling additional product sales. The Naphtha Isomerization Unit modifications include addition of an off gas caustic scrubber, two reactor effluent flash drums, up to two heat exchangers, four pumps, and associated piping and instrumentation.

1.7.7.2.8 Alkylation Modifications

Amylenes (C5 olefins) will be recovered from FCCU gasoline in an existing fractionation tower and converted to low vapor pressure gasoline in the modified Alkylation Unit. Alkylation Unit capacity will remain unchanged. The modifications to process amylenes will include repurposing the Depentanizer column, replacing one existing four inch nozzle with an eight-inch nozzle on the olefin feed surge drum, installing as many as six heat exchangers, one filter/coalescer, one truck loading rack, two electrically driven pumps, and associated piping and instrumentation. The modifications to process propylene and butylene will include the installation of a propylene chiller and associated piping and instrumentation.

1.7.7.2.9 Mid-Barrel Distillate Treater

The existing Mid-Barrel Distillate Treater incorporates a hydrotreater to remove sulfur from straight run diesel and converts it to ultra-low sulfur diesel. To ensure compliance with U.S. EPA mandated Tier 3 gasoline specifications, the Mid-Barrel Distillate Treater will be modified to enable it to desulfurize heavy FCCU naphtha. Interconnecting Pipelines to/from the LHU and Mid Barrel Distillate Treater will be installed. New bypass piping to recycle a portion of the product stream back to the feed system will also be installed.

1.7.7.2.10 Steam System Balance Modifications

The Carson Operations steam system demand will increase due to compliance with new federally-mandated Tier 3 gasoline specifications and amylene alkylation. The increased steam demand will be met by a combination of: installing waste heat steam generators (heat exchangers), generating more steam from the existing Watson Cogeneration Facility, and reducing steam demand from existing steam turbines.

1.7.7.2.11 New Crude Tankage

To improve the efficiency of water-borne crude oil receipt and marine vessel unloading, up to six new 500,000 barrel floating roof crude oil storage tanks will be constructed adjacent to the Carson Crude Terminal. The new tanks will allow marine vessels to unload crude oil without

undue delay, thereby reducing the time vessels are required to wait at anchorage until sufficient tankage is available for vessel discharge. This portion of the project will reduce the amount of time that vessels spend within the port and increase the amount of crude oil that can be unloaded and stored. Decreasing the amount of time the vessels spend within the port and at anchor will substantially reduce annual ship emissions. Storage capacity does not affect Refinery throughput, which is based on processing capabilities as described in Section 2.5.4.1.

1.7.7.3 Modifications to Supporting Equipment

1.7.7.3.1 Interconnecting Pipelines

To more fully integrate the Refinery, this element of the proposed project includes pipelines to transport materials to and from various refinery units, e.g., new units, and storage facilities, as well as pipelines to transport materials between the Carson Operations and Wilmington Operations. Up to 15 new pipelines are expected to transport gasoline and gasoline blending components, crude oil, gas oil, butylene, propylene, and liquid petroleum gases.

The proposed project would include installing a bundle of pipes under the Alameda Corridor and Sepulveda Boulevard as part of the work that will connect pipelines between the Wilmington and Carson Operations. The pipe “bundle” is where the pipelines come together in one place and go underground to cross adjacent streets. The pipe bundle will require a 54-inch bore using horizontal directional drilling (HDD). HDD would be used to bore underneath (approximately 80 feet in depth) South Alameda Street and East Sepulveda Boulevard.

With the exception of pipelines that will be routed underground near the Carson and Wilmington Operations Coke Barns, pipelines located outside of the HDD bore, would then be routed above ground on pipe racks or ground level pipeline supports into the respective product and supply manifolds within the Refinery property.

1.7.7.3.2 Electrical Connection to Wilmington

To more fully integrate the Refinery, up to six new 69 kV electrical cables and two new 13.8 kV cables will be routed via conduit systems and overhead transmission lines from the Carson Watson Cogeneration Facility located at the Carson Operations to the Sulfur Recovery Plant (see Figure 2-17) and Wilmington Operations. One new 69 kV substation, and at least two new transformers with associated cabling, are proposed to be installed at the Watson Cogeneration Facility. One 69 kV substation with two new 13.8 kV main substations with at least four transformers and associated switch gear and wiring will be installed at the Wilmington Operations. This portion of the proposed project will allow electricity generated at Carson Operations to be used at the Wilmington Operations.

1.7.7.3.3 LPG Rail Unloading

LPG Rail Car Unloading facilities will be modified at Carson Operations to allow increased deliveries of approximately 4,000 bbl/day of Alkylation Unit feedstocks (LPG including

propane, propylene, etc.). LPG Rail Unloading facilities will be used to transfer LPG to the Refinery to replace a portion of the Alkylation Unit feed lost by the closure of the Wilmington Operations FCCU. LPG handling at the Refinery may increase by up to ten railcars per day. Increased production of alkylate is critical for blending clean-burning gasoline due to its properties, such as low benzene and sulfur content and high octane content. The scope of work will include installing a vaporizer, a surge drum, a knockout pot, as many as four electrically driven transfer pumps, and associated piping and instrumentation. Currently, Carson Operations unloads up to 11,000 bbls/day of LPG into on-site pressurized tankage for use in the refining process. The LPG rail loading modifications will allow the Refinery to import up to about 15,000 bbl/day of LPG, resulting in the increase of about 4,000 bbl/day or 10 railcars per day at the Refinery.

1.7.8 CONSTRUCTION OF THE PROPOSED PROJECT

Construction activities for the proposed project are expected to begin in the first half of 2016 and are expected to be completed by March 2021. The construction activities for most of the components are expected to overlap from about the third quarter of 2016 to second quarter 2017. Most construction activities are expected to be completed by the end of 2018. Construction activities associated with the crude oil storage tanks are not expected to be completed until March 2021. 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 beginning at 7:00 a.m. and ending at 5:30 p.m. During Refinery turnaround periods, two work shifts are expected and work may be conducted 24 hours per day. Shifts would operate from 6:00 a.m. to 6:00 p.m. and 6:00 p.m. to 6:00 a.m.

1.7.9 OPERATION OF THE PROPOSED PROJECT

Construction of the project will not affect where the Refinery obtains crude oil. The project is not designed to enable the Refinery to change its feedstock or crude oil blend. The Refinery will continue its practice of seeking cost-effective crude oils that can be blended with other crude oils and feedstocks to create the necessary blends suitable for Refinery operations (see Section 2.5.4.1 for additional detail).

Once construction of the proposed project is completed, the existing work force at the Refinery is not expected to increase or substantially change the volume of traffic. No increase in permanent workers is expected so no increase in worker traffic is expected. Construction of the Sulfuric Acid Regeneration Plant will decrease traffic in the area because spent sulfuric acid is currently transported off-site for recycling. While truck transport will continue, installing the Sulfuric Acid Regeneration Plant will eliminate approximately 6,000 acid transport truck trip miles per month that are currently used to transport spent and regenerated sulfuric acid to and from Wilmington Operations due to the reduced distance traveled.

1.7.10 PERMITS AND APPROVALS

The proposed project will require approvals from a variety of federal, state, and local agencies as detailed in Section 2.10.

1.8 EXECUTIVE SUMMARY – CHAPTER 3: EXISTING ENVIRONMENTAL SETTING

1.8.1 INTRODUCTION

This chapter describes the existing environment in the vicinity of the Refinery that could be adversely affected by the proposed project. 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 environmental topics identified in Chapter 3 include both a regional and local setting.

1.8.2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Chapter 3 discusses the effects of meteorological conditions, temperature and rainfall, and wind flow patterns on the existing air quality conditions in the South Coast Air Basin (Basin). Existing air quality is examined for criteria pollutants, regional air quality, local air quality, the Refinery's criteria pollutant emissions, toxic air contaminants (TACs), as well as the regulatory setting.

The Tesoro Los Angeles Refinery is located within the SCAQMD's jurisdiction. Over the last two decades, air quality has substantially improved within the district. Nevertheless, several air quality standards continue to be regularly exceeded. Of the National Ambient Air Quality Standards (NAAQS) established for criteria pollutants, the Basin is designated as non-attainment for PM_{2.5}, and ozone for both state and federal standards. The Basin, including the proposed project area, is classified as attainment for the state and federal standards for nitrogen dioxide (NO₂), sulfur dioxide (SO₂), CO, sulfates, and lead except in Los Angeles County, and is classified as attainment for the federal PM₁₀ standards but non-attainment for the state PM₁₀ standards and lead in Los Angeles County. This section also shows 2012 – 2013 criteria pollutants emitted by the Refinery. This section also provides information on local toxic air contaminant concentrations in the vicinity of the Refinery and an inventory of GHG emissions in the Basin. Finally, federal, state, and local air quality regulations are identified.

1.8.3 HAZARDS AND HAZARDOUS MATERIALS

The Tesoro Los Angeles Refinery handles hazardous materials with the potential to impact 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 are those associated with accidental releases of toxic/flammable gas, toxic/flammable liquefied gas, and flammable liquids. Potential hazards at a refinery include toxic gas clouds, fires, vapor cloud explosions, thermal radiation, and overpressure. Risks are also associated with transportation, including truck transport, rail transport, and pipeline transport. This section describes existing risks at the Refinery from units that will be affected by the proposed project.

Historic operations at the Refinery have resulted in accidental releases of hazardous materials (primarily petroleum hydrocarbons) to soil and groundwater in some areas of the Refinery. 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. Local laws and regulations that address accidental release, storing, transport, and handling are also describe in the section.

1.8.4 HYDROLOGY AND WATER QUALITY

Water issues in Los Angeles County are complex and affect supply, demand and quality of water for domestic, commercial, industrial and agricultural use. Extensive urbanization in the Carson/Wilmington area has resulted in significant alteration and deterioration of the natural hydrologic environment. The Tesoro Los Angeles Refinery consumed approximately 18 million gallons of water per day in 2012/2013 from potable water, Refinery owned wells, and recycled water (see Table 3.4-1 for use details).

Wastewater streams from the Carson Operations include process wastewater, boiler and cooling tower blowdown, sanitary wastewater, and surface runoff. Process wastewater streams are treated by the Carson Operation's existing wastewater treatment facilities prior to discharge to the Los Angeles County Sanitation District (LACSD) sewer system. Wastewater from the Carson Operations is treated and sampled in compliance with the LACSD Industrial Wastewater Discharge Permit. The LACSD places limitations on wastewater parameters such as oil and grease contents, pH levels, temperature, heavy metals, organic compounds and other constituents. Wastewater that complies with the LACSD permit requirements is discharged to the sewer. Wastewater that does not comply is returned to the wastewater treatment system for further treatment. The Carson Operations is also permitted to discharge stormwater commingled with treated process water to Dominguez Channel.

The Carson Operations discharged an average of 4.07 million gallons per day of wastewater during 2012 and 2013 to the sewer system. The Carson Operation's current Industrial Wastewater Discharge Permit allows discharge of up to 5.25 million gallons per day to the LACSD sewer system.

The Wilmington Operations discharged an average of 2.88 million gallons per day of wastewater based on a 2012/2013 average. The Wilmington Operation's current Industrial Wastewater Discharge Permit allows discharge of 3.24 million gallons per day. The Wilmington Operations maintains on-site wastewater treatment equipment. Wastewater from the Wilmington Operations is treated and sampled in compliance with the LACSD Industrial Wastewater Discharge Permit.

The Tesoro Los Angeles Refinery is located on the Dominguez Channel and approximately 1.5 miles west of the Los Angeles River. The Los Angeles River and the Dominguez Channel are the major drainages that flow into the Los Angeles-Long Beach Harbor complex. Sediments and contaminants are transported into the harbor with the flows from the Los Angeles River and, to a lesser degree, the Dominguez Channel.

Runoff from the Wilmington and Carson Operations is collected, treated (if applicable), and discharged under the requirements of the existing storm water permit, National Pollutant Discharge Elimination System (NPDES) permit or the Industrial Wastewater Discharge Permit.

1.8.5 NOISE

The existing noise environment at the Refinery and in the vicinity of the Refinery is dominated by refining operations and mobile sources including trucks, cranes, locomotive engines, and other heavy industrial activities. Noise sources in the area currently include: (1) mobile and stationary sources at the Wilmington and Carson Operations; (2) rail traffic and related maintenance and service activities at adjacent rail yards; (3) noise from adjacent industrial facilities; (4) the Alameda Corridor; and (5) traffic along the State Route 102, Interstate 405, Pacific Coast Highway, and other local streets, e.g., Alameda Street, Wilmington Avenue, and Sepulveda Boulevard.

Noise-sensitive receptors are defined as residences, schools, hospitals, libraries, places of worship, and public parks. Although there are numerous sources of noise in the area, there are few sensitive receptors. The closest noise sensitive receptors to the proposed project locations within the Refinery include: (1) a residential area on the corner of Merimac Avenue and West Willard Street approximately 2,000 feet east of the Tesoro Wilmington Operations; (2) residential area near Mauretania Street and Goodrich Avenue; (3) residential areas west of the Drumm Avenue/East Sandison Street intersection; and (4) residential areas west of Wilmington Avenue near East Pacific Street. There are numerous commercial receptors located adjacent to both Wilmington and Carson Operations, as well as numerous industrial receptors.

Based on a recent noise survey conducted during August and September 2014 to determine the existing ambient noise levels in the vicinity of the Refinery, the Community Noise Equivalent Level (CNEL) in the vicinity of the closest residential areas ranges between 68 and 73 decibels (dBA). The existing CNEL at an industrial area, adjacent to the Wilmington Operations is about 76 dBA. This section also describes the various state and local noise regulations, as well as, criteria in the Noise elements in the General Plans for the cities of Los Angeles and Carson to limit excessive noise levels for a variety of land uses.

1.8.6 SOLID AND HAZARDOUS WASTE

A total of 11 Class III active landfills and two transformation facilities are located within Los Angeles County with a total disposal capacity of 43,648 tons per day and 3,240 tons per day, respectively.

In 2012, residents and businesses in Los Angeles County disposed of 8.72 million tons of solid waste at Class III landfills and transformation (i.e., refuse to energy) facilities located in and out of the County. In addition, the amount of inert waste disposed at permitted inert waste landfills totaled 89,142 tons.

Presently, two transformation facilities operate in Los Angeles County with a combined average daily tonnage of 1,825 tons per day in 2012, or about 569,539 tons per year. It is expected that these two facilities will continue to operate at their current permitted daily capacity during the planning period of 2012 through 2027.

Los Angeles County Department of Public Works conducted a survey requesting landfill operators in the County to provide updates to their estimated remaining disposal capacity. Based on the results of the survey and considering permit restrictions, the total remaining permitted Class III landfill capacity in the County is estimated at 129.2 million tons as of December 31, 2012.

The average amount of solid waste generated by the Tesoro Carson and Wilmington Operations during 2012/2013 was an average of 39,099 tons per year of solid waste during 2012/2013.

Two hazardous waste landfill facilities within California are the Chemical Waste Management (CWM) Kettleman Hills facility in King's County, and the Clean Harbors Environmental Services facility in Buttonwillow (Kern County). On May 21, 2014 DTSC finalized a permit modification which allowed the Kettleman Hills facility to increase its capacity by about five million cubic yards. Buttonwillow is a 320-acre landfill operated by Clean Harbors Environmental Services and can accept in excess of 200 loads of waste per day. Buttonwillow has a remaining capacity of approximately 8,890,000 cubic yards or approximately 40 years.

1.8.7 TRANSPORTATION AND TRAFFIC

This section provides an overview of regional and local traffic circulation and facilities in the vicinity of the proposed project. The operating characteristics of an intersection are defined in terms of the level of service (LOS), as represented by intersection volume to capacity (V/C) ratio. LOS describes the quality of traffic flow based on variations in traffic volume and other variables such as the number of signal phases. For signalized intersections, it is measured from LOS A (excellent conditions) to LOS F (very poor conditions). Intersections that operate at LOS A to C operate well. Level C normally is taken as the design level in urban areas outside a regional core. Level D typically is the level for which a metropolitan area street system is designed. Level 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. Level 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 13 intersections in the vicinity of the Refinery. The LOS analysis indicates typical urban traffic conditions in the area surrounding the Refinery, with all intersections operating at Levels A to D during morning and evening peak hours. One intersection currently operates at LOS D (without the proposed project), Wilmington Avenue/Interstate 405 southbound ramps during the morning peak hour. All other intersections operate at LOS A to C during both morning and evening peak hours. This section also provides an overview of applicable state and local traffic laws, ordinances, and General Plan goals.

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

Chapter 4 assesses the potential environmental impacts of the construction and operation of the Tesoro Los Angeles Refinery Integration and 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 1.9-1 (located at the end of this chapter) summarizes the impacts of the proposed project.

The proposed project has potential direct impacts to environmental resources (i.e., air quality, hazards and hazardous materials, hydrology and water quality, noise, solid and hazardous waste, and transportation and traffic). In addition, the proposed project may have indirect impacts on upstream or downstream equipment by causing increased utilization from operational changes, even though the equipment is operating within permit limits and no permit modification would be required. Due to the nature of Refinery operations, all equipment activity levels may continue to fluctuate on a monthly or even daily basis. As discussed in Section 2.5.4 and associated subsections, while the proposed project does not affect the types of crude oils processed at the Refinery and thus will not have impacts due to changes in crude oils, the proposed project may affect downstream unit processing rates. Those indirect impacts are expected to occur in the following units; Wilmington Operations units downstream of the Coker (from H-100 duty increase and potential crude capacity increase), Hydrotreating Unit No. 3, Catalytic Reforming Unit No. 2, and tanks; and, Carson Operations FCCU, Cogen, and tanks. The impacts associated with these indirect impacts are also evaluated in the EIR.

1.9.1 AIR QUALITY

1.9.1.1 Environmental Impacts

Project-specific air quality impacts associated with increases and decreases in emissions of air contaminants (both criteria air pollutants and TACs) during the construction and operation phases of the proposed project are discussed in Chapter 4, as well as impacts to sensitive receptors.

Construction emissions were calculated for peak day construction activities in each month construction is expected to occur. Construction activities associated with the modifications to the Refinery would result in emissions of CO, VOC, NO_x, SO_x, PM₁₀, and PM_{2.5}. The peak construction phase of the proposed project will exceed the regional significance threshold for VOC and NO_x. The largest source of emissions is associated with construction equipment. Therefore, unmitigated air quality impacts associated with construction are considered significant.

The Localized Significance Threshold (LST) analysis at sensitive receptors for construction CO, NO₂, PM₁₀, and PM_{2.5} emissions was conducted and indicates that NO₂ emissions are expected

to exceed significance thresholds due to construction activities associated with the proposed project. The maximum exceedances occur approximately 1,300 feet west of the Wilmington Operations. Therefore, the localized air impacts from proposed project would be considered significant during construction.

Operational emissions associated with the proposed project include stationary and mobile source emissions. Emission increases are expected from the new SARP, PSTU, crude storage tanks, as well as fugitive emissions associated with modifications to existing units (e.g., HTU-1, HTU-2, HTU-4, No. 51 Vacuum Unit, LPG Rail Unloading, etc.). Emission increases are also associated with mobile sources including locomotive engine and truck emissions. The proposed project includes the shutdown of the Wilmington Operations FCCU, which is a major source of emissions. The proposed project is expected to generate emission reductions of CO providing an emissions benefit and a less than significant increase in VOC, NO_x, SO_x, PM₁₀, and PM_{2.5} emissions. Additionally, mobile source criteria pollutant and GHG emission reductions from marine vessels are expected to occur from improving the unloading rate of crude oil deliveries at the Marine Terminal. Therefore, no significant adverse operational air quality impacts are expected from the proposed project.

Due to the complexity and duration of the Refinery integration, some project components are expected to be implemented prior to the shutdown of the Wilmington Operations FCCU (referred to as the Interim Operations Scenario). To assess the interim impact of the proposed project, the project components that will be operational in advance of the shutdown of the Wilmington Operations FCCU have been evaluated. Project components included in the Interim Operations Scenario include the Wilmington Operations DCU H-100 Heater Duty Bump, and fugitive emissions from the Wilmington Operations HCU and Carson HCU Mods, LHU Mods, and Mid Barrel Distillate Treater. The expected interim emissions are less than significant.

An additional transitional period is expected to occur to facilitate the integration of the Refinery and the shutdown of the Wilmington Operations FCCU. The transitional period is expected to be approximately 90 days prior to the Wilmington Operations FCCU shutdown, when Refinery units will become operational while the Wilmington Operations FCCU remains operating. The transitional period is expected to create a temporary increase in emissions that when combined with the concurrent on-going construction of other portions of the proposed project will have significant air quality impacts). The transitional period operational emissions increase will cease and become the reduced emissions discussed previously following the shutdown of the Wilmington Operations FCCU and completion of the proposed project.

There are substantial emission reductions in CO from the proposed project, which will provide a beneficial air quality impact. NO_x, SO_x, PM₁₀, and PM_{2.5} will have local emissions benefits, but will be regionally neutral as RECLAIM (RTCs) and Emission Reduction Credits (ERCs) will be retained or generated. VOC emission increases from direct stationary sources associated with the proposed project will be offset using concurrent emission reductions or ERCs as required by SCAQMD Regulation XIII for emission increases greater than one pound per day from newly permitted and modified existing permitted emission sources. Use of emission offsets will reduce potential air quality impacts associated with emission increases from stationary sources, including fugitive emissions. Equipment that will use concurrent emission reductions will be

restricted by SCAQMD permit conditions to ensure the Wilmington Operations FCCU is shutdown to provide the necessary offsets.

Dispersion modeling was used to calculate ambient air concentrations of the criteria pollutants from the project sources which emit CO, NO_x, SO_x, PM₁₀, and PM_{2.5} emissions during operation of the proposed project and to determine the localized impacts. Based on the AERMOD air dispersion model results, the ground-level concentrations of the criteria pollutants of concern will be below SCAQMD CEQA significance thresholds. Therefore, no significant adverse localized air quality impacts are anticipated to occur from the operation of the proposed project.

To provide a comprehensive analysis of toxic air contaminants and non-cancer toxic air contaminant impacts, risks were calculated using currently adopted guidance. Based on the air quality modeling and related assumptions, the incremental cancer risk to the Maximum Exposed Individual Worker (MEIW) associated with TAC emissions from the proposed project was calculated to be 9.2 in one million. The incremental cancer risk to the Maximum Exposed Individual Resident (MEIR) associated with TAC emissions from the proposed project was calculated to be 3.6 in one million. The incremental cancer risk to the nearest non-residential sensitive receptor associated with the proposed project was calculated to be 2.1 in one million. The predicted cancer risks does not exceed the cancer risk significance threshold of 10 per million; therefore, the carcinogenic health risks are considered to be less than significant.

The maximum chronic hazard index (MCHI) is located just east of the southern portion of the facility. The MCHI for the proposed project is 0.127, which is below the 1.0 significance threshold. Therefore, the chronic hazards generated by the proposed project are considered to be less than significant.

The maximum 8-hour chronic hazard index is located on the northwestern boundary of the Wilmington Operations. The maximum 8-hour chronic hazard index for the proposed project is 0.108, which is below SCAQMD's chronic hazard index significance threshold of 1.0. Therefore, the peak chronic non-cancer health hazards generated by the proposed project are considered to be less than significant.

The maximum acute hazard index (MAHI) is located just west of the southern portion of the facility. The MAHI for the proposed project is 0.052, which is below the 1.0 significance threshold. Therefore, the acute hazards generated by the proposed project are considered to be less than significant.

1.9.1.2 Mitigation Measures

Feasible mitigation measures are required to minimize the significant air quality impacts associated with the construction phase of the proposed project as the emissions of VOC, CO, and NO_x are considered significant. Mitigation measures A-1 through A-9 have been imposed which include maintaining a Construction Management Program that incorporates the imposed mitigation measures and Best Management Practices. Mitigation measures include requirements

for: prohibiting truck and construction equipment idling in excess of five minutes at the Refinery, maintaining construction equipment to optimize emissions, requiring the use of on-road heavy-duty trucks greater than 19,500 pounds or greater that are compliant with EPA 2007 on-road emissions standards, utilizing electric welders where feasible, utilizing on-site power where available, using equipment rated 50 and greater equipped with Tier 4 or equivalent engines, and suspending all construction activities that generate air pollutant emissions during first stage smog alerts. Additionally, Tesoro will implement selective catalytic reduction catalyst change outs as specified in mitigation measure A-9. The mitigation measures are expected to reduce construction emissions; however, construction emissions are expected to remain significant.

During the 90-day transitional period, when construction activities are on-going, VOC, CO, and NO_x emissions will remain significant. Therefore, the 90-day transitional period combined with construction activities associated with the proposed project are expected to cause significant adverse construction air quality impacts and no additional feasible mitigation has been identified that would reduce the localized impacts during construction.

No mitigation measures are required for the operational phase because no significant air quality impacts were identified. Emissions of CO were calculated to be emission reductions. VOC, NO_x, and SO_x, PM₁₀, and PM_{2.5} emissions were calculated to be less than significant. BACT will be required for all new and modified sources with emissions increases.

1.9.1.3 Level of Significance after Mitigation

Regional construction emissions for the proposed project for VOC and NO_x are expected to remain significant following mitigation. The regional construction emissions associated with CO, SO_x, PM₁₀, and PM_{2.5} are expected to remain less than significant following mitigation. Construction emissions are expected to be short-term and they will be eliminated following completion of the construction phase.

Localized significant impacts from construction activities were analyzed for CO, NO₂, PM₁₀, and PM_{2.5}. The construction activities associated with the proposed project are expected to cause a significant impact on ambient air quality. While mitigation measures have been imposed, construction air quality impacts would remain significant.

The proposed project is not expected to have significant adverse CO, NO_x, SO_x, VOC, PM₁₀, or PM_{2.5} emission impacts during operation. Further, ambient air quality modeling indicates that the proposed project emissions of CO, NO₂, PM₁₀, and PM_{2.5} during operation of the proposed project would not cause or contribute to an exceedance of any ambient air quality standard. Therefore, the operation of the proposed project is not expected to cause a significant adverse impact on ambient air quality and no mitigation measures are required.

The proposed project was analyzed for cancer and non-cancer human health impacts and determined to be less than significant. The estimated cancer risk due to the operation of the proposed project is expected to be less than the significance criterion of 10 in one million. The chronic and acute hazard indices are expected to be below 1.0. Therefore, the proposed project

is not expected to cause a potentially significant adverse impact associated with exposure to TAC.

1.9.2 HAZARDS AND HAZARDOUS MATERIALS

1.9.2.1 Environmental Impacts

1.9.2.1.1 On-site Hazards

The potential hazards associated with the proposed project are common to most oil processing facilities worldwide, and are a function of the materials being processed, processing systems, procedures used for operating and maintaining the facility, and hazard detection and mitigation systems. The hazards that are likely to exist are identified by the physical and chemical properties of the materials being handled and the process conditions. For hydrocarbon fuel and petrochemical facilities, the possible hazards are: toxic gas clouds (e.g., gas with hydrogen sulfide, sulfur dioxide, or sulfur trioxide); flash fires; torch fires; pool fires; boiling liquid expanding vapor explosions (BLEVEs); and, vapor cloud explosions.

In order to determine the hazards from the existing and proposed units and modifications, the CANARY consequence analysis models were used. See Chapter 3.3 and Appendix C for more details on the model and related assumptions. The maximum vulnerability zones (also referred to as hazard zones) for the existing equipment and proposed changes were evaluated for the new or modified units associated with the proposed project. The maximum hazard zone identifies the area where the injury thresholds would be potentially exceeded in the event of an upset. For each potential release, the distance to the significance threshold level was determined before and after the proposed project modifications (where applicable). For new units, the distance to the threshold level for each release was determined.

The new and modified units that have the ability to create a hazard that could extend further off-site include the Naphtha Isomerization Unit and new crude tanks at the Carson Operations, and the Sulfuric Acid Recovery Plant at the Wilmington Operations. The hazards associated with the Interconnecting Pipelines would also extend off-site as portions of the pipeline are located off-site. The hazards associated with the Naphtha Isomerization Unit, new crude tanks, and Interconnecting Pipelines would only impact the roadways adjacent to the Refinery or other industrial areas (e.g., other refineries, rail yards). The hazards associated with the Sulfuric Acid Regeneration Plant are potentially significant in the event of a worst-case release of sulfur dioxide and could extend up to about 1,905 feet. Although the hazard would avoid residential areas, several houses are located within industrial areas and the projected sulfur dioxide hazard zone, so there could be impacts to residents in the event of a worst-case release. Therefore, the hazard impacts associated with the proposed project are potentially significant.

1.9.2.1.2 Transportation Hazards

The proposed project would increase the transport of fresh and spent caustic trucks using railcars specifically designed for caustic transport. Using the maximum estimated total combined truck

mileage of 45 miles per day, the potential for an accident involving a caustic truck is 0.000002 (45 miles per day / 1 million miles x 0.04 accidents/million miles driven) or approximately one accident every 555,556 years. Though it is difficult to compare hazardous and non-hazardous transport risk, the differences appear to be significant enough to conclude that the magnitude of non-hazardous transport accidents dominates highway transport risk. The specific hazardous material trucking regulations discussed in Section 3.3.7 and additional care provided by carriers and shippers of hazardous materials appear to be reducing the accident rate for hazardous material shipments. Because hazardous materials are currently transported by truck, the consequences of an accident would not change. Therefore, the probability for an adverse impact from truck transport of hazardous materials is extremely low and the potential hazard impact related to truck transport from the proposed project is less than significant.

The proposed project is expected to increase the shipment of caustic by rail. The approximately 110,880 gallons (2,640 barrels) of spent caustic per week will be loaded onto railcars for transport to the Gulf Coast for regeneration. Therefore, the proposed project will add about four railcars per week of spent caustic acid to existing trains that are currently transporting spent caustic from the Refinery. Using the maximum estimated trips travel to the state line of 277 miles per railcar for four railcars, the potential for a serious incident involving a caustic railcar is 0.00007 (1,110 miles per day / 1 million miles x 0.08 accidents/million railcar miles) or approximately one accident every 11,760 years. Because hazardous materials are currently transported by rail, the consequences of an accident would not change. Therefore, the probability for an adverse impact from rail transport of spent or fresh caustic from the proposed project is extremely low and less than significant.

The proposed project is also expected to increase the number of LPG railcars by a maximum of 10 per day. These additional LPG railcars will be transported in railcars specifically designed to transport LPG and added to existing rail shipments. Using the maximum estimated trips travel of 605 miles per day per railcar for 10 railcars, the potential for a serious incident involving a LPG railcar is 0.0002 (6,050 miles per day / 1 million miles x 0.03 accidents/million railcar miles) or approximately one accident every 6,081 years. Therefore, the probability for an adverse impact from rail transport of LPG is extremely low and the potential hazard impact related to rail transport from the proposed project is less than significant.

1.9.2.1.3 Hazard Impacts During Construction

In the event contaminated soil or groundwater is encountered, exposure is expected to be limited to on-site construction workers. Construction workers at the Refinery and other locations are protected by numerous existing rules, regulations and requirements and have been professionally trained to safely work around the potentially hazardous conditions that exist within a refinery. Compliance with these laws and internal Refinery safety procedures will ensure that any worker exposure is less than significant. Because the nearest residential receptors are located 1,000 and 2,000 feet from the two locations where hydrocarbon exceeds the SCAQMD Rule 1166 50 ppm requirement, it is unlikely that they will be exposed to hydrocarbons exceeding 50 ppm.

1.9.2.2 Mitigation Measures

There are a number of rules, regulations, and laws governing the refinery operations that will minimize the potential adverse impacts associated with hazards at the facility and which would minimize the hazards associated with the Naphtha Isomerization Unit, new crude storage tanks, SARP, and Interconnecting Pipelines. Mitigation measure HHM-1 would require the applicant to demonstrate compliance with applicable hazardous material rules and regulations prior to the startup of the new or modified units, to include, at minimum, an Emergency Action Plan as required by the Fire Department addressing spill, fire, and explosion hazards and relative risk of upset to adjacent land uses; PSM requirements under 40 CFR Part 1910, Section 119, and Title 8, CCR, Section 5189; and Article 2, Chapter 6.95 of the California Health and Safety Code that require facilities that handle listed regulated substances to develop RMPs to prevent accidental releases of these substances prior to commencement of operations. Other than mitigation measure HHM-1, no other feasible mitigation measures have been identified, over and above the extensive safety regulations that currently apply to the Tesoro Refinery.

1.9.2.3 Level of Significance after Mitigation

The impacts of the proposed project on hazards associated with the Naphtha Isomerization Unit, new crude tanks, SARP, and Interconnecting Pipelines are expected to be significant. Compliance with existing PSM, RMP, and CalARP regulations and implementation of the recommended safety measures would minimize the potential impacts associated with a release, but are not expected to eliminate the potential hazard impacts. No feasible mitigation measures were identified to further reduce significant adverse hazard impacts. Therefore, hazards and hazardous material impacts generated by the proposed project are expected to remain significant.

With respect to potential worker exposure to soil and groundwater contamination, compliance with existing regulations and implementation of the proposed project safety measures are intended to minimize the potential impacts associated with excavation. Such compliance is expected to reduce the potential hazard impacts associated with hydrocarbon-contaminated soil and groundwater. Therefore, hazards and hazardous material impacts generated by excavation activities associated with the proposed project are expected to be less than significant.

1.9.3 HYDROLOGY AND WATER QUALITY

1.9.3.1 Environmental Impacts

Water demand during construction is limited to water applied for dust suppression and water needed to perform hydrostatic testing. The maximum total daily potable water demand during construction is expected to be a maximum of 40,000 gallons per day (gpd), which is less than the significance threshold of 262,820 gpd. Therefore, the proposed project will have less than significant impacts on water supply during construction.

The water used for the hydrostatic testing tanks and associated piping will be Refinery wastewater that is diverted for testing prior to discharge to the industrial sewer system. Using diverted wastewater will not increase the amount of wastewater generated by the Refinery, but

will vary the discharge rate during construction. It is expected that for a total of approximately four to six weeks distributed over the construction period, a temporary daily increase in water discharge will occur at the completion of hydrostatic testing. No permit modification or new wastewater treatment facilities are needed to accommodate the temporary increase in discharge of wastewater during testing from the Carson or Wilmington Operations.

The Refinery currently uses on average about 13.8 million gpd of fresh/potable water and about 4.5 million gpd of reclaimed water in its operations. The direct water demand of the proposed project is expected to require an estimated increase in water demand of 76.5 gallons per minute (110,160 gpd). An additional 81,115 gpd of water demand is associated with the indirect effects of the proposed project. The combined total of the proposed project direct and indirect water demand is 191,275 gpd which is less than the significance threshold of 262,820 gpd. The Refinery has adjudicated water rights that allow the production of up to 2.8 billion gallons of water per year from its wells. Therefore, the proposed water supply impacts are expected to be less than significant.

The proposed project is expected to reduce overall wastewater generated during operation at the Refinery by an estimated 55.1 gpm (77,344 gpd). This is due, in large part, to the shutdown of the Wilmington Operations FCCU. While there will be wastewater increases from some operations, such as the SARP, the proposed project will reduce wastewater generation, and adequate capacity in the existing wastewater treatment facilities is available. Therefore, no new wastewater treatment facilities are needed and the existing facilities are adequate to meet the needs of the proposed project. As such, the proposed project impacts to water quality would be less than significant.

1.9.3.2 Mitigation Measures

No significant impacts associated with water demand and wastewater discharge are expected from the proposed project, so no mitigation measures are required.

1.9.3.3 Level of Significance after Mitigation

The proposed project impacts on hydrology and water quality are expected to be less than significant.

1.9.4 NOISE

1.9.4.1 Environmental Impacts

Proposed project construction is anticipated to increase noise levels temporarily at noise-sensitive receptors in the vicinity of the Tesoro Los Angeles Refinery, as heavy construction equipment is required during construction activities associated with the proposed project. Noise from construction activities is generated by a broad array of construction equipment. These noise sources will operate primarily during daylight hours and will be a source of noise over the construction period.

Three dimensional noise models of the proposed project were created using the noise modeling software, SoundPLAN. Actual noise monitoring in the vicinity of the Refinery was used to estimate baseline noise levels. The noise model was used to determine the potential proposed project noise impacts during construction and operational activities.

The noise impacts associated with construction activities would add less than 3.0 dBA to the adjacent residential communities, including all noise-sensitive receptors. The noise levels at the closest residential areas are expected to increase from 0.1 to 0.9 dBA depending on the location and the time of day. An increase of 0.9 dBA is less than the significance threshold of 3.0 dBA. The proposed project noise impacts during the construction phase are expected to be less than significant.

The proposed project will add equipment to the existing Refinery so that there will be additional noise sources at the facility. Additional noise sources associated with the proposed project generally include process equipment components such as valves, flanges, vents, pumps, air coolers, scrubber, as well as new equipment associated with the Wet Jet Treater, PSTU and SARP.

The noise model predicted that the CNEL levels within residential areas would increase by less than 3.0 dBA as a result of the operation of the proposed project. The only noise increase (0.1 dBA) is the residential area west of Alameda Street, north of Pacific Coast Highway. The noise levels associated with the operation of the proposed project is expected to be similar or the same as existing noise levels at all residential receptors adjacent to the Refinery. The noise increases at all receptor locations are predicted to be less than 3.0 dBA and, therefore, noise impacts associated with the operation of the proposed project would be less than significant.

Construction of the proposed project would involve equipment and activities that may have the potential to generate groundborne vibration. Vibration impacts were evaluated using the Federal Transit Administration published standard vibration levels and peak particle velocities for construction equipment operations. The estimated vibration from construction activities is less than the FTA vibration impact level, so no significant vibration impacts are expected during the construction period. Equipment associated with operation of the proposed project is not expected to generate detectable groundborne vibration during normal operation because new and modified equipment is not expected to have oscillating parts that have the potential to generate groundborne vibration.

1.9.4.2 Mitigation Measures

No significant adverse impacts associated with noise or vibration are expected from the proposed project during construction or operational phases, so no mitigation measures are required.

1.9.4.3 Level of Significance after Mitigation

The noise and vibration impacts of the proposed project during construction and operational activities are expected to be less than significant.

1.9.5 SOLID AND HAZARDOUS WASTE

1.9.5.1 Environmental Impacts

Solid waste (i.e., construction debris and uncontaminated soil) generated during construction of the proposed project that may require disposal will be stored on the Refinery property prior to disposal at one of the landfills in southern California. The landfills in southern California have the capacity to accept the solid waste produced during the construction phase of the proposed project on a one-time basis. In addition, because a percentage of this solid waste has economic value (steel) or can be recycled (concrete), the amount of solid waste generated on a daily basis is expected to be relatively small compared to the total amount of solid waste generated in Los Angeles County. Therefore, the proposed project is not expected to result in a significant impact on solid waste during the construction phase.

Site preparation, grading, and construction activities for the proposed project have the potential to encounter contaminated soils. The project estimates that a total of approximately 290,148 cubic yards of contaminated soil may require removal and disposal: of that, approximately 83,213 cubic yards would be hazardous materials, and approximately 206,953 cubic yards would be non-hazardous materials. In the event that the material still requires disposal (i.e., cannot be treated/remediated), the Kettleman Hills facility has sufficient available capacity (5,000,000 cubic yards) and the Clean Harbors Buttonwillow facility has available capacity (over 8,000,000 cubic yards) to accept the total amount of estimated one-time contaminated soil waste generated by construction activities associated with the proposed project. Since the amount of disposal capacity necessary to dispose of contaminated soils is well below the capacity of the available Class I landfills, no significant adverse hazardous waste impacts will occur from the proposed project.

Once the proposed project becomes operational, the average annual amounts of solid waste are not expected to change because there would be no increase in the number of workers and refinery units do not typically generate solid waste.

Operation of the proposed project may generate solid or hazardous waste streams; however, those waste streams are expected to be reused or recycled. Spent caustic will be generated by the Wet Jet Treater and from scrubbers on the SARP. Spent caustic will be recycled off-site and would not require disposal.

Periodic maintenance of the storage tanks could generate sludge during tank cleaning operations which occur once every ten to 20 years. The sludge would be recycled on-site in the DCU; therefore, no increase in waste disposal would be expected from operation of the new and modified storage tanks.

While operation of the proposed project may generate solid or hazardous waste streams, those waste streams are expected to be reused or recycled. Therefore, operation of the proposed project is not expected to require additional waste disposal capacity and will not interfere with the Tesoro Refinery's ability to comply with existing federal, state, and local regulations for

solid and hazardous waste handling and disposal. Therefore, significant solid and hazardous waste impacts are not expected from construction and operation of the proposed project

1.9.5.2 Mitigation Measures

No significant adverse impacts associated with solid or hazardous waste are expected from the proposed project during construction or operational phases, so no mitigation measures are required.

1.9.5.3 Level of Significance after Mitigation

No significant adverse solid or hazardous waste impacts are expected.

1.9.6 TRANSPORTATION AND TRAFFIC

1.9.6.1 Environmental Impacts

Initial construction activities for the proposed project are expected to begin in the third quarter of 2016 and are expected to be completed by second quarter of 2021. The construction activities for most of the components of the proposed project are expected to overlap in the first three years (peak construction period). 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 some of the Refinery Units are shut down), two work shifts are expected and work may be conducted 24 hours per day. Shifts would operate from 6:00 a.m. to 6:00 p.m. and 6:00 p.m. to 6:00 a.m.

Construction conditions are analyzed for the construction phase with the maximum number of construction trips during the construction period. The traffic analysis is based on the preliminary construction schedule that included a total of 950 workers, 875 day shift workers and 75 night shift workers. Following the traffic study, the construction schedule has been refined and the number of workers has decreased to 696. The decrease in total trips is within the margin of accuracy. The traffic analysis is based on up to 950 construction workers travelling to and from the proposed project site during the highest trip-generation phase of construction of the proposed project. In addition to worker trips, 120 truck trips would be generated during the peak trip-generating construction phase throughout the work day.

Caltrans began a major construction project to modify the Interstate 405/Wilmington Avenue interchange starting November 2013, and continuing during the baseline conditions of the proposed project. The interchange construction is expected to finish in late 2016 or early 2017, potentially overlapping with the near-term construction period of the proposed project, which would result in significant construction traffic impacts. LOS analysis was conducted to evaluate existing plus construction intersection conditions during the a.m. and p.m. peak hours. The LOS at all intersections is expected to be LOS A, B or C at all intersections, except Wilmington Ave./Interstate 405 Southbound Ramps during the morning peak hour. The construction-related

trips are forecast to result in a significant impact during construction conditions at the Wilmington Ave/Interstate 405 Southbound Ramps.

Following construction, no increase in the number of workers required to operate the Refinery is expected. Therefore, there would be no long-term parking or traffic impacts associated with the proposed project.

1.9.6.2 Mitigation Measures

Mitigation measure TT-1 will be imposed to reduce the proposed project's construction-related trips on the Wilmington Avenue/Interstate 405 Southbound Ramps intersection prior to the completion of the Interstate 405/Wilmington Avenue Interchange Project. Mitigation measure TT-1 requires the applicant to implement a traffic management plan to address project traffic impacts prior to the completion of the improvements at the Wilmington Avenue/Interstate 405 Southbound Ramps intersection. The traffic plan will require that project workers be advised of the construction schedule and potential restrictions and closures associated with the Interchange Modification Project and will be required to avoid the Wilmington Avenue/Interstate 405 Southbound Ramps intersection during morning peak travel periods by traveling either outside of the morning peak travel time or along alternative routes. Additionally, construction workers shall be encouraged to participate in ridesharing to lessen the number of vehicles transiting to the Refinery.

1.9.6.3 Level of Significance after Mitigation

The impacts of the proposed project on traffic and circulation are expected to be less than significant following implementation of mitigation measure TT-1 because traffic will be routed to avoid the Interstate 405/Wilmington Avenue Interchange Project.

1.9.7 SIGNIFICANT UNAVOIDABLE IMPACTS

CEQA requires an EIR to discuss significant environmental effects and irreversible environmental changes which would result from a proposed project, should it be implemented. It was determined that implementation of the proposed project would result in potentially significant adverse impacts on air quality during construction and temporary exceedance of the localized significance thresholds. Long-term operational air quality impacts are not expected to have a significant adverse impact on the environment but would, in fact, provide beneficial local air quality impacts by reducing overall emissions of CO, NO_x, and SO_x, as well as GHG emissions. Therefore, the proposed project is not expected to have long-term adverse environmental impacts on air quality.

The proposed project could result in significant impacts related to the "worst case" hazard impacts associated with the proposed modifications to the Naphtha Isomerization Unit, the proposed new crude tanks, SARP, and Interconnecting Pipelines. Compliance with existing PSM, RMP, and CalARP regulations and implementation of the recommended safety measures would minimize the potential impacts associated with a release, but are not expected to eliminate

the potential hazard impacts. The feasible mitigation measures identified would not reduce the significant adverse hazard impacts to less than significant.

Traffic levels are expected to increase during construction and generate potentially significant adverse traffic impacts. Feasible mitigation measures are expected to reduce traffic impacts to less than significant. Operational traffic levels are expected to remain essentially the same as existing levels. Therefore, no significant adverse impacts for traffic are expected during operation of the proposed project.

The proposed project involves modifications to an existing Refinery, located within an industrial area, which has been operating since the early 1900s. Therefore, there is no major commitment of nonrenewable resources or changes that would commit future generations to specific uses of the environment associated with the proposed project.

1.9.8 ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT

The analysis provided in Section 4.10 summarizes the NOP/IS, which concluded that the following environmental topics would be less than significant: aesthetics; agriculture and forestry resources, biological resources, cultural resources; energy; geology and soils; land use and planning; mineral resources; population and housing; public services and recreation.

1.9.9 GROWTH INDUCING IMPACTS

The proposed project would help ensure the efficient manufacture of petroleum products at an existing Refinery that has been used for refining purposes since the early 1900s. As a development project occurring in an urban, industrialized, and generally built-out environment, the proposed project would increase long-term stability and the availability of petroleum products. The proposed project is expected to require up to 696 construction workers that would be largely be drawn from the local existing workforce pool. No new employees are expected during operation of the proposed project. The proposed project could result in an increase in the import or refining of about 6,000 bbl/day of crude oil, but would not result in a substantial increase in the production of petroleum products (e.g., gasoline and diesel fuels) to allow significant population growth. The proposed project would not employ activities or uses that would result in growth inducement, such as the development of new infrastructure (i.e., new roadway access or utilities) that would directly or indirectly cause the growth of new populations, communities, or currently undeveloped areas. Likewise, the proposed project would not result in an expansion of existing public service facilities (e.g., police, fire, libraries, and schools) or the development of public service facilities that do not already exist.

1.10 EXECUTIVE SUMMARY – CHAPTER 5: CUMULATIVE IMPACTS

State CEQA Guidelines §15130 requires that an EIR include a reasonable analysis of the significant cumulative impacts of a proposed project. Cumulative impacts are defined by CEQA as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (State CEQA Guidelines §15355). 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 Integration and Compliance Project. 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 and is publicly available. Identified impacts from cumulative projects listed in Table 5.1.1 were combined with the proposed project's construction and operational impacts to assess cumulative impacts associated with the proposed project. The cumulative analysis is summarized in the following subsections.

1.10.1 AIR QUALITY

1.10.1.1 Environmental Impacts

1.10.1.1.1 Construction Impacts

The proposed project would contribute to potentially significant cumulative construction air quality impacts if project-specific construction emissions are considered to be cumulatively considerable as defined by CEQA Guidelines §15064(h)(1). Because the proposed project's construction emissions exceed the project-specific VOC and NO_x thresholds, it is considered cumulatively considerable and cumulatively significant when considered in combination with related projects. Since CO, SO_x, PM₁₀, and PM_{2.5} construction emissions do not exceed their respective project-specific thresholds, they are not considered to be cumulatively considerable and, therefore, are not considered to contribute to cumulative construction impacts. This conclusion is consistent with CEQA Guidelines §15064(h)(4), which states, "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."

1.10.1.1.2 Operational Impacts

The proposed project includes the shutdown of the Tesoro Wilmington Operations FCCU, which is a major source of emissions. As discussed in Section 4.2.2.2, peak daily emissions associated with the proposed project also would result in emission increases from new and modified units, increased mobile source emissions, and increased utilization of some equipment. The overall change in emissions associated with implementing the proposed project is a reduction in CO emissions and a less than significant increase in VOC, NO_x, SO_x, PM₁₀ and PM_{2.5} emissions. As a result, criteria pollutant emissions from the proposed project operation are not considered to be cumulatively considerable and, therefore, are not considered to contribute to cumulative operational emission impacts.

1.10.1.1.3 Toxic Air Contaminants

A health risk assessment was performed to determine if TAC emissions generated by the proposed project would exceed the SCAQMD thresholds of significance for cancer risk and hazard indices. The maximum cancer risk from the proposed project for the resident (MEIR) was determined to be 3.6 in one million. The maximum cancer risk to a sensitive receptor was estimated to be 2.1 in one million. The maximum cancer risk at the worker receptor (MEIW)

was estimated to be 9.2 in one million. The estimated cancer risk at all of the receptors was below the 10 in one million threshold. In addition, the noncancer risks were determined to be 0.127, 0.108, and 0.052 for the maximum chronic, maximum 8-hr chronic, and acute hazard indices, respectively, which were also determined to be below the significance threshold of 1.0. Therefore, TAC emissions from the proposed project operation would not make a cumulatively considerable contribution to cumulatively significant impacts for carcinogenic and non-carcinogenic health impacts. Note that the HRA did not include the emission reductions associated with the shutdown of the Wilmington Operations FCCU and only included estimated increases associated with the modification of existing and construction of new units, thus providing a conservative analysis of TAC emissions and related health risk. Therefore, the TAC emission impacts associated with the proposed project are not considered to be cumulatively considerable and are not considered to contribute to cumulative health risk impacts.

1.10.1.2 Mitigation Measures and Cumulative Impacts

The proposed project's construction emissions are cumulatively considerable and cumulatively significant when considered in combination with related projects. Mitigation measures A-1 through A-9 will be imposed on construction activities associated with the proposed project. However, after mitigation, construction emissions are expected to remain above SCAQMD thresholds for VOCs and NO_x. Therefore, the construction of the proposed project would make a cumulatively considerable and unavoidable contribution to a cumulative significant impact during construction activities. While increases in operational emissions of VOC, NO_x, SO_x, PM₁₀, and PM_{2.5} emissions are expected, which are less than significant, the proposed project is expected to result in reductions in CO emissions providing beneficial air quality impacts. Therefore, operation emissions from the proposed project are not significant, not cumulatively considerable, and are not considered to contribute to cumulative significant impacts for operational emissions, ambient air quality, or exposure to TACs and no mitigation measures are required.

1.10.1.3 Greenhouse Gases

1.10.1.3.1 Greenhouse Gas Emissions from Construction

Construction equipment is assumed to be operational up to ten hours per day, five days per week during most of the construction period. Also, during peak construction periods, two 12-hour work shifts are expected seven days per week. Emission factors for construction equipment were taken from the Construction Equipment Emissions tables in CARB's Offroad Inventory Model. Estimated GHG emissions from construction equipment are included in Table 5.2-1, with more detailed calculations in Appendix B-1.

The project will also include construction equipment working off-site. Emission factors for off-site construction equipment were taken from CARB's EMFAC 2011 Inventory Model. The SCAQMD significance threshold for GHG emissions combines construction emissions amortized over 30 years with operational emissions. The total GHG construction emissions associated with the proposed project are estimated to be 23,173 metric tons over the entire

construction period, or 772 metric tons per year amortized over 30 years, which is less than significant.

1.10.1.3.2 Greenhouse Gas Emissions from Operations

The proposed project will result in both GHG emission increases and reductions. GHG emission increases would be associated with the DCU H-100 duty bump, increased utilization of HCU H-300/301, the No. 51 Vacuum Unit Heater, the NHDS Heater, and the proposed new SARP. The reduction in GHG emissions are associated with the shutdown of the FCCU at the Wilmington Operations. The proposed project is expected to result in an overall GHG emission reduction of approximately 66,139 metric tons per year providing a reduction of local GHG emissions. However, per the requirements of AB 32, the number of GHG allowances in California's Cap-and-Trade Program is reduced each year by the California Air Resources Board. An individual project that reduces GHG emissions may reduce local GHG emissions, but will not have an impact on the overall pool of allowances in the GHG Cap-and-Trade Program. Thus, the proposed project is considered to have no effect on state-wide GHG emissions. CEQA Guideline §15130(a) indicates that an EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. Where a lead agency is examining a project with an incremental effect that is not cumulatively considerable, a lead agency need not consider the effect significant, but must briefly describe the basis for concluding that the incremental effect is not cumulatively considerable. "The mere existence of cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable" (CEQA Guidelines §15064(h)(4)). Therefore the project's contribution to GHG emissions is not cumulatively considerable and thus not significant because the GHG emissions from the Refinery would be less than the existing emissions if the proposed project is implemented (CEQA Guidelines §15130).

1.10.2 HAZARDS AND HAZARDOUS MATERIALS

1.10.2.1 Environmental Impacts

1.10.2.1.1 Construction

A number of cumulative projects have the potential to uncover contaminated soils during construction activities. The construction hazard impacts were considered to be less than significant or mitigated to less than significant for all of the related cumulative projects.

1.10.2.1.2 Operations

All storage tanks are required to provide secondary containment facilities (e.g., berms) that would contain 110 percent of the volume of the storage tanks, which assures that spills remain on-site and not overlap with hazards at other facilities.

New units have the potential to generate off-site impacts that could potentially expose off-site receptors to new hazards, e.g., the SARP (exposure to SO₂), and the new crude storage tanks at the Carson Operations (pool fire), as well as the new Interconnecting Pipelines (flash fire), and

modifications to the Naphtha Isomerization Unit (flash fire). Although the project-related hazard impacts would generally be limited to industrial areas, the hazards are potentially significant. Therefore, hazards from the proposed project are considered to be cumulatively considerable and, therefore, are considered to contribute to significant adverse cumulative hazard impacts during operation.

The proposed project would decrease the transportation hazards associated with sulfuric acid as sulfuric acid would be regenerated on-site. However, the proposed project will increase the transportation of LPG via rail and increase the transport of caustic and spent caustic via truck and rail. The proposed project was considered to be less than significant for the transport of hazardous materials by truck and rail. Therefore, the proposed project is not cumulatively considerable as it relates to hazardous material transport and does not contribute to significant adverse hazardous material transport impacts.

1.10.2.2 Mitigation Measures and Cumulative Impacts

The impacts of the proposed project on hazards associated with the Naphtha Isomerization Unit, new crude tanks, and Interconnecting Pipelines are considered significant and are cumulatively considerable. Compliance with existing regulations (e.g., PSM, RMP, and CalARP requirements) and implementation of mitigation measure HHM-1 would further minimize the potential impacts associated with a release, but are not expected to eliminate the potential hazard impacts. No feasible mitigation measures were identified to further reduce significant adverse hazard impacts. Therefore, cumulative hazard impacts would remain significant after implementing the mitigation measures identified for the proposed project.

1.10.3 HYDROLOGY AND WATER QUALITY

1.10.3.1 Environmental Impacts

Water quality impacts associated with the related projects are not expected to result in cumulative impacts. All projects would be required to comply with stormwater pollution prevention requirements during project operation and construction as well as NPDES requirements for commercial and industrial facilities required to obtain such permits. Compliance with existing stormwater and wastewater discharge requirements is expected to ensure cumulative water quality impacts are less than significant.

1.10.3.1.1 Water Demand

The proposed project is expected to increase water demand by about 191,275 gpd which is less than the significance threshold of 262,820 gpd. The incremental increase in water use from the proposed project is expected to be produced by the privately-owned wells (i.e., from the available 2.82 billion gallons per year of adjudicated water rights). The existing water supply can meet the water demand of the proposed project and the daily water use associated with the proposed project is less than 262,820 gpd. Therefore, the proposed project water supply impacts are expected to be less than significant.

Since the Refinery has sufficient adjudicated water rights to support the proposed project's increase in water demand and water demand impacts are less than significant, the proposed project's water demand impacts are not cumulatively considerable. Therefore, the proposed project impacts on water demand are not considered to contribute to cumulative water demand impacts.

1.10.3.1.2 Water Quality

The proposed project is expected to reduce overall wastewater generated at the Refinery. The proposed project will result in an estimated reduction in wastewater of over 79,000 gpd associated with the shutdown of the Wilmington Operations FCCU. Because the proposed project reduces wastewater and demand on wastewater treatment facilities, the proposed project impacts on water quality are not cumulatively considerable and do not contribute to cumulative water quality impacts.

1.10.3.2 Mitigation Measures and Cumulative Impacts

Mitigation is not required because the impacts of the proposed project on water demand and water quality are not cumulatively considerable.

1.10.4 NOISE

1.10.4.1 Environmental Impacts

1.10.4.1.1 Construction

Construction noise is generally site-specific and localized to the vicinity of each related project. Construction of some of the cumulative projects that are near the proposed project could occur concurrently. The proposed increase in noise associated with the proposed project construction activities are expected to increase from 0.1 to 0.9 dBA depending on the location of the sensitive receptor (residential areas) and the time of day. The increase in noise would be less than the significance threshold of 3.0 dBA and less than significant. The Wilmington/Carson area in the vicinity of the proposed project contains a number of heavy industrial facilities, as well as transportation corridors that generate noise. Accordingly, because construction noise impacts are substantially less than the 3.0 dBA significance threshold, noise levels decrease with distance, and the cumulative projects are not expected to contribute to significant adverse cumulative construction noise impacts, and are not expected to overlap with noise in the immediate vicinity of the Refinery, construction noise impacts from the proposed project are not considered to be cumulatively considerable and, therefore, do not contribute to significant adverse cumulative construction noise impacts.

1.10.4.1.2 Operations

Operational noise is generally site-specific, and localized to the vicinity of each related project. Although a project's operations could affect the noise environment in its immediate vicinity, the

cumulative projects are not expected to have a significant cumulative impact on ambient noise due to the distance between the projects.

The operational noise impacts associated with the proposed project modifications were determined to be less than significant. Equipment and activities related to the proposed project would increase overall CNEL sound levels by up to 0.1 dBA at the nearest residences, which shows that noise levels from the refinery equipment subsides quickly with distance from the Refinery. Operational noise is generally site-specific, and localized to the vicinity of each related project. Although a project's operations could affect the noise environment in its immediate vicinity, the cumulative projects are not expected to contribute to significant adverse cumulative noise impacts during operation due to the distance between the projects. Because operational noise impacts are substantially less than the 3.0 dBA noise significance threshold, noise impacts from the proposed project are not considered to be cumulatively considerable and do not contribute to significant adverse cumulative noise impacts during operation.

1.10.4.2 Mitigation Measures and Cumulative Impacts

Mitigation is not required because the noise impacts of the proposed project are less than significant. No significant adverse cumulative noise impacts during operation are expected.

1.10.5 SOLID AND HAZARDOUS WASTE

1.10.5.1 Environmental Impacts

1.10.5.1.1 Construction

Solid Waste: The proposed project includes the demolition and removal of two existing storage tanks and affected existing piping at the Wilmington Operations. The tanks and piping are constructed of steel and are expected to be recycled. The concrete foundations that support the existing tanks would generate an estimated 265 cubic yards that would be transported off-site for crushing and recycling or disposal at inert or municipal landfills.

The proposed project has the potential to generate up to 206,953 cubic yards of non-hazardous construction soil waste, which can be disposed of in Class III landfills. The total remaining permitted Class III landfill capacity in southern California is estimated to be approximately 129.2 million tons (about 2,584 million cubic yards). Landfills in southern California have the capacity to accept the solid waste produced during the construction phase of the proposed project on a one-time basis. Therefore, because the proposed project's solid waste impacts during construction activities are less than significant, they are not considered to be cumulatively considerable and are not considered to contribute to significant adverse cumulative solid waste impacts.

Hazardous Waste: An estimated 83,213 cubic yards of soil from the proposed project may be considered hazardous waste. Tesoro would consider the type and extent of contamination and explore the variety of options available for disposal and remediation, which could include in situ,

on-site, and off-site treatment (e.g., incineration, soil vapor extraction, bioremediation). In the event that the material still requires disposal (i.e., cannot be treated/remediated), the Kettleman Hills facility has sufficient available capacity (5,000,000 cubic yards) and the Clean Harbors Buttonwillow facility has available capacity (over 8,000,000 cubic yards) to accept the total amount of estimated one-time contaminated soil waste generated by construction activities associated with the proposed project. The proposed project impacts on solid/hazardous waste are not considered to be cumulatively considerable and are not considered to contribute to cumulative solid/hazardous waste impacts.

1.10.5.1.2 Operations

Solid Waste: The discussion of potential solid waste impacts from the proposed project in Section 4.6.3 indicated that the average annual amounts of solid waste are not expected to change because there would be no change in the number of refinery workers and refinery units do not typically generated solid waste. Therefore, solid waste impacts from the proposed project during operations are not considered to be cumulatively considerable and do not contribute to significant adverse solid waste impacts during operation.

Hazardous Waste: The proposed project will result in an increase in spent catalyst associated with the operation of the SARP and spent caustic associated with operation of the Wet Jet Treater and SARP. Both of these waste streams are expected to be recycled and, therefore, would not impact solid or hazardous waste landfill facilities. The operation of the proposed project may generate solid or hazardous waste streams, but those waste streams are expected to be reused or recycled into the DCUs. The operation of the proposed project is not expected to require additional waste disposal capacity and is not expected to interfere or undermine the Tesoro Refinery's ability to comply with existing federal, state, and local regulations for solid and hazardous waste handling and disposal. Therefore, the proposed project impacts on hazardous waste during operations are not considered to be cumulatively considerable and are not considered to contribute to significant adverse cumulative hazardous waste impacts.

1.10.5.2 Mitigation Measures and Cumulative Impacts

Mitigation is not required because the solid/hazardous waste impacts of the proposed project are less than significant. No significant adverse cumulative solid/hazardous waste impacts are expected.

1.10.6 TRANSPORTATION AND TRAFFIC

1.10.6.1 Environmental Impacts

1.10.6.1.1 Construction

The LOS at all intersections during the proposed project construction activities is expected to be LOS A, B or C at all intersections, except Wilmington Ave./Interstate 405 SB Ramps during the morning peak hour. The construction-related trips are forecast to result in a significant impact during construction conditions at the Wilmington Avenue/Interstate 405 SB Ramps, as this

intersection is currently under construction. Once the construction activities at the Wilmington Ave./Interstate 405 interchange itself are complete, traffic impacts due to construction of the proposed project would be less than significant. The proposed project assumes the interchange is under construction concurrently with construction of the proposed project, which results in significant impacts and mitigation measure TT-1 has been imposed. Therefore, the proposed project traffic impacts during construction activities are mitigated to less than significant, are not cumulatively considerable, and are not considered to contribute to significant adverse cumulative traffic impacts during construction.

1.10.6.1.2 Operations

The proposed project operations would not increase the number of on-site workers after the construction phase, however approximately nine additional truck round-trips per work day would result from the proposed project to support its operations. The cumulative impacts of the proposed project and related projects have been estimated in the traffic analysis (see Section 4.7 and Appendix E for further details). In year 2021, assuming a 0.4 percent growth in traffic, no intersections in the traffic study would operate below LOS C. Therefore, the proposed project operational traffic impacts, along with other related projects, are not cumulatively considerable and are not considered to contribute to cumulative significant adverse traffic impacts during operation of the proposed project.

1.10.6.2 Mitigation Measures and Cumulative Impacts

Mitigation measure TT-1 is required in order to reduce the proposed project's construction-related trips on the Wilmington Avenue/Interstate 405 SB Ramps intersection prior to the completion of the Interstate 405/Wilmington Avenue Interchange Project. TT-1 requires the applicant to implement a traffic management plan that requires project workers to avoid the Wilmington Avenue/Interstate 405 SB Ramps intersection during morning peak travel periods (while that onramp is under construction) by traveling either outside of the morning peak travel time or along alternative routes. The impacts of the proposed project on traffic and circulation are expected to be less than significant following implementation of mitigation measure TT-1. Therefore, construction traffic impacts from the proposed project are not cumulatively considerable and would not contribute to significant adverse cumulative construction traffic impacts.

1.11 EXECUTIVE SUMMARY CHAPTER 6: ALTERNATIVES ANALYSIS

1.11.1 ENVIRONMENTAL IMPACTS OF ALTERNATIVES

Alternatives evaluated in the EIR included: Alternative 1 – No Project Alternative; Alternative 2 – Fluid Feed Hydrodesulfurization Fractionator at Carson Operations and a New Diesel Hydrotreater at Wilmington Operations; Alternative 3 – New Carson Hydrotreater at Carson Operations; Alternative 4 – Interconnecting Pipeline and New Gasoline Hydrotreater at Carson Operations; and Alternative 5 – Alternative Construction Schedule.

1.11.1.1 Alternative 1 – No Project Alternative

The No Project Alternative would not result in further integration of the Wilmington and Carson Operations. Under the No Project Alternative, modifications to the Wilmington Operations would not move forward including modifications to the HCU, CRU-3, HTU-1, HTU-2, HTU-4, DCU Heater H-100, and crude tanks. The new PSTU, and SARP also would not be constructed and the Wilmington Operations FCCU would not be shut down. Modifications to the Carson Operations would also not occur including modifications to No. 51 Vacuum Unit, HCU, LHU, NHDS Unit, Naphtha Isomerization Unit, Alkylation Unit, Mid-Barrel Distillate Treater. The new Wet Jet Treater and six new crude tanks at the Carson Operations would not be installed. Interconnecting pipelines, electrical connections and modifications to the LPG Rail Car Unloading facilities would also not occur.

The No Project Alternative would continue the operation of the Wilmington and Carson Operations under their current configurations and it would not achieve any of the proposed project objectives such as: (1) improving the efficiency of the Refinery, allowing the shutdown of the Wilmington FCCU; (2) reducing overall emissions from the Refinery, including GHG emissions; (3) recovering and upgrading distillate range materials from FCCU feeds; (4) complying with federal, state, and local regulations; (5) improving the financial viability of the Refinery; better integration of the Carson and Wilmington Operations; and (6) improving the efficiency of water-borne crude oil receipt and marine vessel unloading. Not only would Alternative 1 not achieve any of the proposed project objectives, but because portions of Alternative 1 do not include the regulatory compliance projects, it may not be considered a feasible alternative as Tesoro would be in violation of regulatory mandates if not implemented.

Although Alternative 1 would eliminate all the significant and less than significant impacts that would occur under the proposed project, the locally beneficial impacts of the proposed project would also be eliminated. The Wilmington FCCU would not be shut down because none of the refinery modifications needed for that to occur would be implemented. Finally, the beneficial aspects of the proposed project associated with reduced annual ship emissions due to the increased crude offloading rate (see Table 4.2-9 and 4.2-11) would also be eliminated. Similarly, the overall reduction in wastewater generated during operation of the proposed project (over 79,000 gpd reduced) (see Table 4.4-2) would not occur. Consequently, Alternative 1 would continue current operational emissions, which would be substantially higher for most pollutants than operational emissions under the proposed project as the local emission reduction benefits associated with the proposed project would not be achieved (see Table 6.4-2).

1.11.1.2 Alternative 2 – Fluid Feed Hydrodesulfurization Fractionator at Carson Operations and a New Diesel Hydrotreater at Wilmington Operations

Alternative 2 includes installing one new Fractionator at the tail end of the Carson Operations Fluid Feed Hydrodesulfurization (FFHDS) Unit and one new Diesel Hydrotreater at Wilmington Operations to achieve the project objective of recovering and upgrading distillate range material from FCCU feed. The new FFHDS Fractionator and Diesel Hydrotreater would be constructed instead of making modifications to the Wilmington Operations HCU and HTU-4, and No. 51 Vacuum Unit and HCU at the Carson Operations. Under Alternative 2, the remainder of the

proposed project components would remain unchanged, including the shutdown of the FCCU at the Wilmington Operations.

Alternative 2 would result in significant adverse impacts to air quality during construction and hazards during operation and would require the construction of two new refinery units (FFHDS Fractionator and Diesel Hydrotreater). Construction of the new Refinery units would potentially result in higher air quality, water quality, and hazard impacts than the proposed project. Alternative 2 would not reduce any of the potentially significant proposed project impacts to less than significant.

Alternative 2 would achieve most of the objectives of the proposed project, including: (1) improving the efficiency of the Refinery, allowing the shutdown of the Wilmington FCCU; (2) reducing overall emissions from the Refinery, including GHG emissions; (3) recovering and upgrading distillate range materials from FCCU feeds; (4) complying with federal, state, and local regulations; (5) improving the financial viability of the Refinery; (6) better integration of the Carson and Wilmington Operations; and (7) improving the efficiency of water-borne crude oil receipt and marine vessel unloading. However, Alternative 2 would not achieve the objectives of reducing overall emissions from the Refinery as a whole, as would the proposed project.

1.11.1.3 Alternative 3 – New Hydrotreater at Carson Operations

Alternative 3 would include the installation of one new Gasoline Hydrotreater at Carson Operations as an option to achieve the project objective of meeting U.S. EPA Tier 3 gasoline specifications of 10 ppm average sulfur content. Under Alternative 3, the new Gasoline Hydrotreater/SHU would be built instead of making modifications to HTU-1 and HTU-2 at the Wilmington Operations and LHU, NHDS Unit, and the Mid-Barrel Treater at the Carson Operations. The remainder of the project components would remain unchanged, including the shutdown of the FCCU at the Wilmington Operations.

Alternative 3 would result in significant impacts to air quality during construction and would result in greater operational GHG and criteria pollutant emissions associated with the two new heaters as compared to the proposed project. In addition, Alternative 3 also would result in significant adverse hazard impacts during operation. Alternative 3 would have greater impacts than the proposed project on operational air quality and wastewater impacts and it would not reduce any of the potentially significant adverse impacts of the proposed project to less than significant.

Alternative 3 would achieve most of the objectives of the proposed project, including: (1) improving the efficiency of the Refinery, allowing the shutdown of the Wilmington FCCU; (2) reducing overall emissions from the Refinery, including GHG emissions; (3) recovering and upgrading distillate range materials from FCCU feeds; (4) complying with federal, state, and local regulations; (5) better integration of the Carson and Wilmington Operations; and (6) improving the efficiency of water-borne crude oil receipt and marine vessel unloading. Alternative 3 would require the installation of two new heaters, which means that this alternative

would not achieve as effectively as the proposed project the objective of reducing overall emissions from the Refinery as a whole, including GHG emissions.

1.11.1.4 Alternative 4 – Interconnecting Pipeline and New Gasoline Hydrotreater at Carson Operations

Alternative 4 would include the installation of the Interconnecting Pipeline and one new Gasoline Hydrotreater/SHU at Carson Operations as an option to achieve the project objective of meeting U.S. EPA Tier 3 gasoline specifications of 10 ppm average sulfur content. Alternative 4 would eliminate all of the other proposed project components and the Wilmington Operations FCCU would remain operational.

Alternative 4 would result in significant impacts to air quality during construction and hazards during operation; however, the impacts are expected to be less than the proposed project. Alternative 4 would eliminate the significant VOC construction air quality impacts and most of the hazard impacts. NOx emissions associated with the construction phase would remain significant under Alternative 4. The hazard impacts associated with the Interconnecting Pipelines would remain significant under Alternative 4; however, Alternative 4 would eliminate the potentially significant hazards associated with Naphtha Isomerization Unit, new crude tanks, and SARP. Alternative 4 would have greater impacts than the proposed project on operational air quality and wastewater impacts as the FCCU would not be shut down under Alternative 4 and it would not reduce any of the potentially significant adverse impacts of the proposed project to less than significant.

Alternative 4 would not accomplish the major objectives of the proposed project. Alternative 4 would meet the objective of better integration of the Carson and Wilmington Operations by constructing the Interconnecting Pipeline and complying with federal, state, and local regulations. However, Alternative 4 would not meet any of the other objectives of the proposed project including: (1) improving the efficiency of the Refinery, allowing the shutdown of the Wilmington FCCU; (2) reducing overall emissions from the Refinery, including GHG emissions; (3) recovering and upgrading distillate range materials from FCCU feeds; and (4) improving the efficiency of water-borne crude oil receipt and marine vessel unloading. The beneficial aspects of the proposed project associated with reduced ship emissions due to the increased crude offloading rate (see Table 4.2-9 and 4.2-11) would also be eliminated. Consequently, Alternative 4 would result in increased operational emissions over the proposed project as the local emissions benefits associated with the proposed project would not be achieved.

1.11.1.5 Alternative 5 – Alternative Construction Schedule

Alternative 5 includes a modified construction schedule (compare Figure 6.3-1 with Figure 2-18) so that construction of the proposed project components does not overlap as much as they do under the proposed project. Construction of a number of units would be delayed to later in the proposed project schedule. These units include the LPG Rail Unloading facilities, Naphtha HDS Unit, Mid-Barrel Treater, and HTU-1 and HTU-2 modifications. The shutdown of the Wilmington Operations FCCU would also be delayed another four years.

Alternative 5 would ultimately result in the same impacts as the proposed project in the areas of hazards, hydrology and water quality, noise, traffic and transportation, and solid and hazardous waste. Alternative 5 would reduce the peak construction emission impacts associated with the proposed project, but the construction emission impacts associated with NO_x would remain significant. In addition, under Alternative 5 the Wilmington Operations FCCU would be shut down in 2021 instead of 2017, resulting in four additional years of operating the FCCU, which means that emissions from the FCCU would be unchanged from 2017 through 2021 and emissions would be substantially greater than what they would be under the proposed project. Alternative 5 would ultimately result in the same hazard impacts as the proposed project as all project components would be included in Alternative 5. Therefore, hazard impacts would remain significant. After all components of the proposed project are completed in 2021, Alternative 5 would have the same potentially less than significant and significant adverse environmental impacts as the proposed project.

Alternative 5 would achieve most the objectives of the proposed project, although there would be an approximately five-year delay in achieving some of the objectives, which would include: (1) improving the efficiency of the Refinery, allowing the shutdown of the Wilmington FCCU; (2) reducing overall emissions from the Refinery, including GHG emissions; (3) recovering and upgrading distillate range materials from FCCU feeds; (4) better integration of the Carson and Wilmington Operations; and (5) improving the efficiency of water-borne crude oil receipt and marine vessel unloading. Alternative 5 would not achieve the objective of improving the efficiency and enabling the shutdown of the Wilmington Operations FCCU by 2017. It would also delay a significant amount of local emission reductions, resulting in an additional five years of operation at increased emission rates. Under Alternative 5, it is assumed that the project components that would allow for the compliance with the U.S. EPA Tier 3 gasoline sulfur requirements would occur prior to 2017 so this objective would be achieved.

1.11.2 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires identification of the environmentally superior alternative in an EIR. There is no set methodology for comparing the alternatives or determining the environmentally superior alternative under CEQA. Therefore, the number of significant adverse impacts for each of the proposed project and alternatives are compared. The alternative with the least number of significant unavoidable impacts is considered the Environmentally Superior Alternative.

The proposed project and Alternatives 2 through 5 would result in significant adverse impacts on two environmental resource areas (air quality during construction and operational hazard impacts). Alternative 1, the No Project Alternative would eliminate all adverse significant impacts making it the environmentally superior alternative. But none of the project objectives will be achieved, including improving local air quality by shutting down the Wilmington Operations FCCU.

Alternatives 2 and 3 would likely result in equivalent or more significant environmental impacts than the proposed project as additional new Refinery units would be constructed. However, under Alternatives 2 and 3 the Wilmington Operations FCCU would be shutdown, which is

expected to provide air emission, GHG, and waste water reductions. Both alternatives would also improve the efficiency of water-borne crude oil receipt and marine vessel unloading reducing the time it takes for marine vessels to unloading and reducing overall marine vessel emissions. After the No Project Alternative, Alternatives 2 and 3 would be the environmental superior alternatives.

The proposed project is preferred because it would most effectively attain all project objectives. None of the project alternatives would eliminate the potentially significant adverse construction air quality and hazard impacts, except Alternative 1, No Project Alternative. Alternative 3 would be similar in operational impacts to the proposed project and have less construction impacts, but would not eliminate significant project impacts or achieve all the project objectives.

1.12 EXECUTIVE SUMMARY – CHAPTER 7, 8, AND 9: 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. Chapter 9 contains a glossary of technical terms used in the EIR.

TABLE 1.9-1

Summary of Environmental Impacts, Mitigation Measures and Residual Impacts

Impact	Mitigation Measures	Residual Impacts
Air Quality		
The construction phase of the proposed project will exceed the regional significance thresholds for VOC and NOx.	<p>A-1 Maintain a Construction Management Program,</p> <p>A-2 Prohibit vehicles from idling in excess of five minutes,</p> <p>A-3 All on-road heavy duty diesel trucks or equipment with a GVWR of 19,500 pounds or greater shall comply with EPA 2007 on-road emission standards,</p> <p>A-4 Prohibit construction equipment from idling longer than five minutes,</p> <p>A-5 Utilize electric welders in areas served by electricity,</p> <p>A-6 Utilize on-site power where available instead of temporary generators,</p> <p>A-7 For off-road equipment rated at greater than 50 hp, the project proponent shall use equipment that meets Tier 4 emission standards,</p> <p>A-8 Suspend all construction activities that generate air pollutant emissions during first stage smog alerts, and</p> <p>A-9 Tesoro will implement early SCR catalyst change-outs as specified in Table 4.2-14 to improve NOx reductions.</p>	Construction emissions for VOC, CO, and NOx are expected to remain significant following mitigation.

TABLE 1.9-1 (Continued)

Impact	Mitigation Measures	Residual Impacts
The construction emissions of CO, SOx, PM10 and PM2.5 will not exceed SCAQMD CEQA regional significant thresholds and are less than significant.	None required.	Construction emissions of CO, SOx, PM10, and PM2.5 are expected to remain less than significant following mitigation.
Construction impacts for NO ₂ would exceed applicable localized significance thresholds.	See Mitigation Measures A-1 thru A-9 summarized above.	Concentrations of NO ₂ from construction activities are expected to cause a significant impact to applicable localized significance thresholds and no additional mitigation has been identified that would reduce the localized air quality impacts during construction. Construction impacts for CO, PM10, and PM2.5 would be less than significant.
Operational emissions of CO, VOC, NOx, SOx, PM10 and PM2.5 are less than significant.	None required. Project emissions are controlled through BACT and emission offsets.	The proposed project is expected to result in a reduction in mass daily emissions of CO from stationary sources providing beneficial air quality impacts. VOC, NOx, SOx, PM10 and PM2.5 emission increases would be less than significant.
Ambient air quality modeling indicates that the project operational emissions of NO ₂ , CO, PM10, and PM2.5 will be less than the applicable localized significance threshold and are less than significant.	None required.	Project emissions of NO ₂ , CO, PM10, and PM2.5 associated with the operation of the proposed project will be less than the applicable localized significance thresholds and are less than significant.
The cancer risk due to the operation of the proposed project is expected to be less than the significance threshold of 10 per million, so that project impacts are less than significant.	None required.	Cancer risk impacts are less than significant.

TABLE 1.9-1 (Continued)

Impact	Mitigation Measures	Residual Impacts
The proposed project's impacts associated with exposure to non-carcinogenic TACs are expected to be less than the chronic hazard index and the acute hazard index significance threshold of 1.0.	None required.	Non-carcinogenic health impacts are less than significant.
Hazards and Hazardous Materials		
During construction, hazards and hazardous material impacts generated by excavation activities are expected to be less than significant.	None required.	Construction related hazards and hazardous material impacts are expected to be less than significant.
Hazard impacts of the proposed project during operation associated with the Naphtha Isomerization Unit, new crude tanks, SARP, and Interconnecting Pipelines are expected to be significant.	HHM-1 Prior to the commencement of operations associated with new and modified project components, the applicant shall demonstrate to the Los Angeles City and County Fire Departments compliance with applicable hazardous material rules and regulations, to include, at minimum, an Emergency Action Plan as required by the Fire Department addressing spill, fire, and explosion hazards and relative risk of upset to adjacent land uses.	Hazards and hazardous material impacts generated by the proposed project are expected to remain significant after mitigation.
Hydrology and Water Quality		
Water demand during construction is limited to water applied for dust suppression and water needed to perform hydrostatic testing of new tanks and pipelines, and is expected to be less than significant.	None required.	Construction water demand impacts are less than significant.

TABLE 1.9-1 (Continued)

Impact	Mitigation Measures	Residual Impacts
The existing water supply can meet the water demand of the proposed project of 191,275 gpd and the daily water demand associated with operation of the proposed project is less than the significance threshold of 262,820 gpd.	None required.	Operational water demand impacts are less than significant.
Wastewater from construction of the proposed project is expected to be discharged in compliance with the existing IWDPs for the Refinery. Therefore, no water quality impacts are expected.	None required.	Construction wastewater impacts are less than significant.
Once operational, the proposed project would result in an overall reduction in wastewater of over 79,000 gpd, primarily due to the shutdown of the Wilmington Operations FCCU.	None required.	Operational wastewater impacts are less than significant.
Noise		
Construction activities would result in noise increases from 0.1 to 0.9 dBA which is less than the significance threshold of 3.0 dBA.	None required.	Construction noise impacts are less than significant.
Operational noise increases at all receptor locations are predicted to be a maximum of 0.1 dBA which is less than the 3.0 dBA significance threshold. Therefore, noise impacts associated with the operation of the proposed project would be less than significant.	None required.	Operational noise impacts are less than significant.

TABLE 1.9-1 (Concluded)

Impact	Mitigation Measures	Residual Impacts
Vibration impacts during construction and operational activities were evaluated and predicted to be less than the Federal Transit Administration vibration impact threshold.	None required.	Vibration impacts associated with construction and operational equipment are less than significant.
Solid and Hazardous Waste		
No significant solid or hazardous waste impacts associated with construction activities are expected as local landfills can handle the one-time receipt of solid or hazardous waste from construction.	None required.	Solid and hazardous waste impacts associated with construction activities are less than significant.
The operation of the proposed project may generate solid or hazardous waste streams, which are expected to be reused or recycled. No significant solid and hazardous waste impacts are expected.	None required.	Solid and hazardous waste impacts associated with operation of the proposed project are less than significant.
Transportation and Traffic		
Construction-related trips are forecast to result in a significant impact during construction conditions at the Wilmington Ave/Interstate 405 SB Ramps under their pre-construction configuration.	TT-1 Requires the Refinery to implement a traffic management plan to address project traffic impacts at the Wilmington Avenue/Interstate 405 Southbound Ramps intersection.	Construction traffic impacts are less than significant after mitigation.