

CHAPTER 5.0

CUMULATIVE IMPACTS

A. INTRODUCTION

There are a number of projects proposed for development in the vicinity of the Equilon Refinery and its associated terminals that may contribute to cumulative impacts to those generated by Equilon's proposed project. These include extensive improvements to the Ports of Long Beach and Los Angeles, and the Alameda Corridor Transportation Authority projects, as well as the reformulated fuels modifications planned by other petroleum refineries in the South Coast Air Basin. Figure 5-1 shows the locations of the southern California refineries. The reformulated fuels modifications are to be completed in order to supply reformulated gasoline as required by Executive Order D-5-99 and the resulting CARB RFG Phase 3 requirements by December 31, 2002. The discussion below lists projects which are reasonably expected to proceed in the foreseeable future, i.e., project information has been submitted to a public agency. Cumulative construction impacts were evaluated if the major portion of construction is expected to occur during the same construction period as Equilon's RFG Phase 3 project, i.e., 2001 and 2002.

Public agencies were contacted to obtain information on projects within the areas of the proposed project. Figure 5-2 identifies by number the location of each of the projects (within the Wilmington area) discussed below. The number is used to identify the related projects throughout the discussion of cumulative impacts. Localized impacts were assumed to include projects which would occur within the same timeframe as the Equilon RFG Phase 3 project and within the same general locations as the Refinery and Terminals. These projects generally include the RFG Phase 3 project at the Ultramar refinery, the RFG Phase 3 project at the Tosco refinery, the RFG Phase 3 project at the ARCO refinery, portions of the Port 2020 Plan, and the Alameda Corridor projects. Regional impacts were assumed to include projects throughout the Basin, e.g., all refineries. A number of related projects have been identified. However, it should be noted that detailed information on some of these projects is not available so that construction emissions, operational emissions, and other impacts cannot always be quantified. Where project-specific data are available, it is used in the cumulative analyses. Where project-specific data are not available, a qualitative analysis has been completed.

Some of the resources affected by the proposed Equilon project would primarily occur during the construction phase, e.g., traffic. Other impacts would primarily occur during the operational phase, e.g., hazards and hazardous materials. Other impacts would occur during both phases, e.g., air quality and noise.

Figure 5-1 goes here

Figure 5-2 goes here

B. OTHER EQUILON PROJECTS

On March 31, 2001, the U.S. EPA and the Department of Justice announced a settlement agreement had been reached with Equilon, among other refiners, to assure compliance with major provisions of the Clean Air Act. The settlement will reduce NO_x, SO_x, and particulate emissions from about nine refineries, including the Equilon Los Angeles Refinery. The consent decree resolves certain violations associated with: (1) New Source Review standards requiring facilities to apply BACT or LAER when “grandfathered” units are expanded in a way that increases emissions; (2) new source performance standards and other pollution control practices applicable to certain units, including the flaring of sulfur gases during process upsets; (3) leak detection and repair requirements governing fugitive emissions from process components including valves, pumps, flanges; and (4) benzene emissions from wastewater treatment plants.

Physical changes to the Equilon Los Angeles Refinery are minor and most of the portions of the consent decree that affect the Refinery are administrative (e.g., recordkeeping) requirements. The administrative requirements that apply to the Refinery include: (1) conducting an audit to verify compliance with the benzene NESHAPs requirements; (2) labeling storm water drains; (3) changing out the primary carbon canisters on wastewater treatment system components when a VOC reading of 50 ppm is detected (instead of the current standard of 500 ppm); (4) all sources are subject to NSPS Subpart J so an NSPS report is required for all combustion sources; and (5) auditing the acid gas flaring at the Sulfur Recovery Plant, determining the cause of flaring, and implementing corrective measures to reduce flaring. Portions of the consent decree that affect the Equilon Los Angeles Refinery that may result in physical changes to the Refinery are as follows:

1. The Refinery will conduct a trial run of a de-NO_x and de-SO_x catalyst at the FCCU. If successful, this will result in emission reductions from the FCCU.
2. A Merichem stream that currently goes to a boiler will need to be re-routed and treated.

These Refinery changes are expected to be initiated within the next two years. No major construction activities are expected because the first modification only involves conducting trial runs using a new catalyst. The second modification would require that new valves and potentially some piping be installed within the Refinery to re-route the Merichem stream. The details of these modifications are not currently available so a detailed review of their impacts is speculative at this time. Additional CEQA review may be necessary when the details of the Refinery modifications are developed. However, the overall impacts of these Refinery modifications are expected to be beneficial and primarily result in decreased operational emissions.

C. LOCAL REFINERIES

1) Ultramar

The Ultramar refinery is located at 2042 East Anaheim Street in the Wilmington district of the City of Los Angeles. The Ultramar refinery is about one-half mile south of the Equilon Refinery. In order to produce the RFG Phase 3 project gasoline Ultramar has proposed both new and modified refinery units. The units will be constructed entirely at the refinery (SCAQMD, 2000c). The Ultramar's RFG Phase 3 project would include the following new equipment:

- Merox Treater
- Sour Water Stripper – (storage tank, stripper and vapor recovery system)
- Storage Tanks
- Boiler
- Flare
- Cooling Tower

Modifications to the following units are proposed:

- Fluid Catalytic Cracking Unit (FCCU) – (new Gas Concentration Unit Debutanizer, new primary absorber and stripper, new accumulators, pumps, reboiler, distillation columns, vessels and heat exchangers)
- Fluid Catalytic Cracking Unit Liquefied Gas Merox Unit – (new liquefied petroleum gas (LPG) dryer and Selective Hydrogenation Unit, convert existing dryer column to depropanizer)
- Light Ends Recovery Unit – (new debutanizer and depentanizer, convert existing depropanizer to recover butane in Butamer Unit; new vessels, pumps and fin-fans)
- Naphtha Hydrotreater Unit – (modify compressor, new heat exchangers and pumps)
- Olefin Treater – (convert to hydrotreater; new reactor, new stripper, new compressor, changes to piping and new catalyst)
- Gas Oil Hydrotreater – (new pumps, new compressors and modify heater)
- Platformer – (new compressor and depropanizer)
- Butamer Unit – (new column, new heat exchangers, vessels and pumps)
- Storage Tanks
- Flare System

Associated modifications and additions to storage facilities, pipelines and support facilities are also expected (SCAQMD, 2000c).

2) Exxon-Mobil

The Exxon-Mobil refinery is located at 3700 W. 190th Street in Torrance, about two and a quarter miles from the Equilon Carson Terminal (approximately seven miles northwest from the Equilon Refinery). The refinery loading rack is located within refinery property

boundaries. The RFG Phase 3 project includes modifications and/or additions to the following equipment:

- Light Fluid Catalytic Cracking Unit– Unsaturated Gas Plant Debutanizer
- Light Hydrocracker – Stabilizer, Gasoline Component Isolation Piping
- Deisobutanizer Tower – Butane Handling
- Alkylation Feed – Hydrotreating
- Liquefied Petroleum Rail Facilities – Vessels, Loading and Additional Track
- Fuel Ethanol Storage – Tanks, Rail and Off-loading Facilities
- Gasoline Storage – Tanks
- Fluid Catalytic Cracking Unit – Hydrotreater Reactors and Heater Modifications
- Alkylate – Additive Water Wash System and Merox System
- Sulfur Contamination Elimination – Overhead Compressor Modifications
- Light Fluid Catalytic Cracking Unit Gasoline – Splitter Modifications
- Torrance Loading Rack (add fuel ethanol off-loading rack; modify vapor recovery unit, piping, and manifolds)
- Vernon Terminal (add rail car off-loading system, two truck off-loading areas, gasoline tank, lighting area and drainage system; modify rail spur, loading rack, vapor recovery unit, vapor destruction unit, and two storage tanks)
- Anaheim (Atwood) Terminal (add two truck off-loading areas, storage tank, lighting area and drainage system; modify truck rack)

Associated modifications and additions to storage facilities, pipelines and support facilities are also expected (SCAQMD, 2000d).

The Exxon-Mobil Southwestern marine terminal is located at 799 South Seaside Avenue on Terminal Island in the Port of Los Angeles. The Southwestern marine terminal consists of approximately 14 acres and has four berths (238, 239, 240B and 240C). RFG Phase 3 projects proposed to take place at the Southwestern marine terminal include the addition of a truck loading rack, a vapor combustor, area lighting, and a drainage system; and the modification of two tanks (SCAQMD, 2000d). Exxon-Mobil's distribution terminals are located in Vernon, Anaheim (Atwood) and Terminal Island in the Port of Los Angeles. The Torrance refinery and loading rack, and the Vernon and Anaheim distribution terminals are located a sufficient distance from Exxon-Mobil that cumulative localized impacts are not expected to occur.

3) Tosco

The Tosco Refinery has proposed the CARB Phase 3 Project. The Tosco refinery (formerly Unocal) consists of facilities at two locations (Wilmington and Carson) approximately three miles apart. The two sites are integrated and raw, intermediate, and finished materials are transferred between sites primarily by pipelines. Finished products are transferred from the Los Angeles refinery via the Torrance Tank Farm pipeline to distribution terminals in the southern California area or to interstate pipelines. The RFG Phase 3 project will only involve physical changes to the Tosco Wilmington Plant,

located at 1660 W. Anaheim Street, Wilmington, California, 90745, approximately three miles southwest from the Equilon Refinery.

Tosco has proposed to modify existing process units at its Wilmington Plant (SCAQMD, 2000b). No new process units are proposed at the Refinery. Modifications to the following units are proposed:

- Alkylation Unit (fractionation equipment, refrigeration compressor system, pumps, heaters and exchangers)
- Acid Plant (vapor recovery system)
- Butamer Unit (pumps)
- Catalytic Light Ends Fractionation Unit (fractionation equipment, pumps and piping)
- Rail Car Offloading Facilities
- Butane Storage Tank System
- Storage Tank System
- Utilities (the nitrogen, steam, water, condensate, electrical, hydrocarbon relief, and fresh/spent acid systems)

Associated modifications and additions to storage facilities, pipelines and support facilities are also expected (SCAQMD, 2000b).

In addition, Tosco has been issued permits for an Ethanol Import and Distribution Project. In order to produce gasoline without MTBE as required by the Governor's Executive Order and to remain compliant with State and Federal reformulated fuel standards, Tosco will replace MTBE with ethanol. This project is comprised of modifying existing facilities to permit ethanol to be received into the Marine Terminal for transshipment through the Wilmington Plant for ultimate blending into gasoline at existing, offsite marketing terminals. A Negative Declaration has been completed (SCAQMD, 2000c) and approved for this project. Construction related to this project has been completed. Because this project was found not to have any significant effect on the environment during operation, no cumulative impacts are expected.

4) Chevron

The Chevron refinery is located at 324 West El Segundo Boulevard in El Segundo, California, about six and one-half miles northwest of the Equilon Carson Terminal (nine miles northwest of the Equilon refinery). The Chevron refinery has proposed to make changes to the reconfiguration of the Refinery by modifying existing process operating units, constructing and installing new equipment, and providing additional ancillary facilities in order to produce the RFG Phase 3 reformulated gasoline (SCAQMD, 2000f). The proposed new refinery units include:

- Isomax Complex (distillation column, steam reboilers and overhead condensers)
- Tertiary Amyl Methyl Ether Plant (steam reboilers and overhead condensers)
- Pentane Storage Sphere
- Pentane Sales rail loading facilities and railcar storage area

- Tertiary Amyl Methyl Ether Unit (distillation column, reflux pumps, steam reboilers and overhead condensers)
- No. 1 Naphtha hydrotreater (under Option A: one furnace, compressors, exchangers, and pumps. Under Option B: compressors, exchangers, and pumps).
- Fluid Catalytic Cracking Unit Depropanizer
- Fluid Catalytic Cracking Unit Debutanizer
- Fluid Catalytic Cracking Unit Deethanizer (vessels, pumps and exchangers)
- Fluid Catalytic Cracking Unit Propylene Caustic Treating Facilities
- Fluid Catalytic Cracking Unit Butene Caustic Treating Facilities
- Fluid Catalytic Cracking Unit Amine Absorber
- Fluid Catalytic Cracking Unit Relief System (headers)
- Fluid Catalytic Cracking Unit Wet Gas Compressor Interstage System Upgrades (two exchangers and one vessel)
- Alkylation Plant (two contactors and an acid settler)
- Cooling Tower
- Trim coolers for existing Distillation Columns
- Iso-octene Plant (pressure vessels, exchangers and pumps)
- Two floating roof gasoline component storage tanks

Modifications to existing refinery units are proposed for the following:

- Tertiary Amyl Methyl Ether Unit (Depentanizer column)
- No. 1 Naphtha hydrotreater (under Option A: modify one furnace; under Option B: modify two furnaces)
- Deethanizer (column)
- Relief Systems (vapor recovery facilities and flare)
- Main air blower rotor replacement
- Wet Gas Compressor Rotor and Gearbox Upgrade
- Recommission Existing Out-of-Service Deisobutanizer
- Retraying Distillation Columns
- MTBE storage tank

Chevron is also proposing to add ethanol storage and blending facilities at its Van Nuys, Huntington Beach and Montebello Terminals.

Due to the distance separating the Chevron refinery from the Equilon facilities, no cumulative impacts are expected during the construction or operation of the proposed project.

5) ARCO

The ARCO refinery is located at 1801 E. Sepulveda Boulevard in Carson. A small portion of the ARCO refinery is directly across the street from Equilon's northern most boundary. The majority of the ARCO refinery is located approximately one-half mile northeast of the Equilon refinery. The ARCO Carson terminal is located at 2149 E. Sepulveda Boulevard, the Marine Terminal 2 is located at 1300 Pier B Street within the

Port of Long Beach. The proposed project will also require changes to ARCO's other southern California area distribution terminals located in South Gate, Rialto, Long Beach and Signal Hill. The ARCO refinery has proposed to make changes to the reconfiguration of the Refinery by modifying existing process operating units, constructing and installing new equipment, and providing additional ancillary facilities in order to produce the RFG Phase 3 reformulated gasolines (SCAQMD, 2000g). The proposed new refinery units include:

- Fluid Catalytic Cracking Unit Gasoline Fractionation (Option #1) – rerun bottoms splitter (splitter tower, heat exchangers, etc.)

Modifications to existing refinery units are proposed for the following:

- Light Hydro Unit (modify heat exchangers; new exchangers, piping pumps and control systems)
- Isomerization Sieve (convert unit to hydrotreater; modifications to heat exchangers, piping and control systems; new reactor, exchangers, pumps and control systems)
- No. 3 Reformer Fractionator and Overhead Condenser (piping and control systems; new pumps)
- Gasoline Fractionation Area (retraying, piping and control systems)
- Fluid Catalytic Cracking Unit Gasoline Fractionation (Option #2) – convert gasoline fractionation area depentanizer to a Fluid Catalytic Cracking Unit bottoms splitter (retraying; new exchangers, flash drum, and product cooling)
- North hydrogen plant (new feed drum, pump and vaporizer)
- MTBE Unit (Option #1) – convert into ISO Octene Unit (modify heat exchangers, piping and control systems; new reactive, steam heater and heat exchangers)
- MTBE Unit (Option #2) – convert into Selective Hydrogenation Unit (modify stripper, reboiler, piping and control systems; new heat exchangers)
- Cat Poly Unit – modify to a Dimerization Unit Hydrotreater reactor system (modify piping and control systems; new pumps, heat exchangers, vessels, piping and control systems)
- Mid-Barrel Unit – modify to a Gasoline Hydrotreater (modify feed and product piping, hydrogen supply system and heat exchanger, controls systems)
- Tank Farm – piping modifications
- Pentane railcar loading facility – modify for pentane off-loading (new repressurizing vaporizer system and two railcar spots)
- Propylene railcar loading facility – modify for butane off-loading

Associated modifications and additions to storage facilities, pipelines and support facilities also are expected (SCAQMD, 2000g).

D. PROJECTS NEAR THE EQUILON REFINERY/WILMINGTON TERMINAL/ MARINE TERMINAL

Other proposed projects within the general Wilmington/Carson area are described below.

6) Port of Los Angeles/Port of Long Beach 2020 Plan

Activity at the ports of Los Angeles and Long Beach is projected to double by the year 2020 (ACTA, 1992). The 2020 Plan is a long-range, joint-planning effort of the Port of Los Angeles, the Port of Long Beach, and the U.S. Army Corps of Engineers to meet expected trade needs of the region and the nation through the year 2020. It is a phased program of existing facility optimization, dredging, landfilling, and facilities construction, which in total will expand the Port complex by 2,400 acres of new land and 600 acres of development on existing land. (L.A. Harbor Dept., 1993). The Alameda Corridor Transportation Authority ("ACTA") improvements are considered mitigation measures for the adverse effects of the projected growth in port activity on regional rail and truck transportation systems. See below for further discussion of the ACTA projects.

The Port of Long Beach is planning a variety of improvements as supported by the Port of Long Beach Facilities Master Plan. The Facilities Master Plan describes growth strategies for the Port through the year 2020. The Port plans to rebuild existing facilities and add the equivalent of 1,100 acres of new container cargo space and 400 acres of other types of terminal space to meet future needs. The Port of Long Beach plans to expand several existing marine container terminals. The Port is currently in the process of developing a 150 acre container terminal at Pier S, and has approval to begin Berth T121 Facility modifications. The Port of Long Beach is in the process of preparing an EIR for the expansion of the existing marine container terminal at Piers D, E and F, and has completed the Draft EIR for the Piers G and J Terminal Development project. The U.S. Navy is also currently involved in developing a container terminal, liquid bulk facility and satellite launch facility at the Long Beach Naval Complex (Dames and Moore, 2000).

The Port of Los Angeles is continuing to plan and work on a variety of improvements which were begun as part of the 2020 Plan. These projects include dredging and filling to provide access to a proposed dry bulk terminal and a proposed container terminal at Pier 300, and dredging and filling to provide access to proposed liquid bulk terminals and a proposed container terminal at Pier 400. The terminals at Pier 300 would be built on existing land, while the terminals at Pier 400 would be constructed on new landfilled area created from dredge material generated during dredging activities (USACE, 1992).

The Port of Los Angeles is also planning a channel deepening project. In 1992, the United States Army Corps of Engineers (USACE) and the Los Angeles Harbor Department (LAHD) approved the Deep Draft Navigation Improvements Project EIS/EIR to optimize navigation channels in the Outer Los Angeles Harbor and use dredge material to create approximately 600 acres of new land (Pier 400). That project is presently under construction. Included in that planning effort was an assumption that in order to accommodate the anticipated cargo through San Pedro Bay, not only new land would be required, but navigation channels and other existing facilities would need to be optimized. In accordance with these improvements, the LAHD has been upgrading facilities at the Port, including the 212-215 Container Terminal Project, Evergreen Container Terminal Expansion, the Terminal Island Container Terminal Transfer Facility,

the Pier 300 Container Terminal Project and Intermodal Facility, the West Basin Transportation Improvements Project, the Badger Avenue Bridge Replacement Project, and the Alameda Corridor Project. In January 1998, the Port approved the Channel Deepening Project EIR that addressed deepening the main channel, associated channels and turning basins. Dredging and disposal for the Channel Deepening Project are expected to begin after July of 2001 and to be completed after December of 2002. Dredging will occur 24 hours per day. Wharf upgrades are expected to be ongoing, during and after the dredging project (USACE, 2000a).

In general, many of the 2020 improvements will take place within the harbor area and will include dredging to create additional land. However, the regional, transportation-related projects (which are discussed in detail below), are included as mitigation measures for the 2020 Plan and would occur in the vicinity of the Equilon refinery.

7) Alameda Corridor Transportation Authority (ACTA)

The Alameda Corridor Transportation Authority is an inter-agency, inter-governmental commission which is the lead agency for a number of projects designed to improve highway and railroad access to the Ports of Los Angeles and Long Beach by making a substantial number of improvements along Alameda Street between the harbor area and downtown Los Angeles to consolidate truck and railroad traffic. Alameda Street runs adjacent to the western boundary of the Equilon Refinery. ACTA has prepared an EIR that was finalized in December of 1992, and certified in January of 1993.

In general, Corridor projects include consolidation of the routes currently used by three different common rail carriers, widening Alameda Street to six lanes with left turn pockets and new signalization, grade separation of cross traffic at numerous street intersections, grade separation of train from vehicular traffic, and construction of sound barriers. Traffic conflicts at approximately 200 street-level railroad crossings will be eliminated as a direct result of this program, allowing trains to travel more quickly and easing traffic congestion. The corridor generally parallels Alameda Street along most of the route (www.ACTA.org, July 2000).

Work on a new triple rail bridge over the Los Angeles river began April 1997, and it was dedicated as the project's first completed structure in November 1998. Engineering and additional construction work continue along the route. Work commenced on the Mid-Corridor segment in January 1999, with large scale construction on the trench beginning in mid-1999. The mid-corridor trench project is scheduled for completion in early 2002 (www.ACTA.org, July 2000).

South of the 91 Freeway, roadway improvements to the Corridor, which follows Alameda Street and Henry Ford Avenue, are part of the Ports Access Demonstration Project ("PADP"), while railroad work, grade separations and overcrossings are ACTA projects. Upon completion of the improvements, portions of Alameda Street (from Henry Ford Avenue to the Artesia Freeway) and Henry Ford Avenue (from Alameda Street to the

Terminal Island Freeway) will become state highways (Personal Communication, Doug Failing, Caltrans, October 2000). Depending on the governmental agency involved and the funding available, different segments of Alameda Street will be under construction at different times; work will not necessarily progress linearly along Alameda Street.

The southern section of the Alameda Corridor project stretches about seven miles from the end of the ports' rail lines north to State Route 91 in Compton. Several segments of the ACTA/PADP improvements will be located in the vicinity of the Carson/Wilmington areas and may be possibly under construction at the same time as the RFG Phase 3 projects. These are described below:

Dominguez Channel Project:

Three railroad bridges will be constructed over the Dominguez Channel. A bridge north of Sepulveda Boulevard will replace storage tracks impacted by the Corridor project. Adjustment to this structure will be a second four-track bridge that will allow trains on the expressline to travel at great speeds and service local industries. A three-track bridge over the channel, south of Pacific Coast Highway, will replace an existing single-track bridge at the location and allow trains to travel at greater speeds (www.ACTA.org, July 2000).

Construction on the Dominguez Channel Project began in July of 1999. The West Basin Branch of the railroad track has been completed, crossing Henry Ford Avenue just south of the Dominguez Channel Bridge. The track alignment was moved slightly north to allow for completion of construction in the Dominguez Channel. Construction on the Dominguez Channel Project is expected to be completed in February of 2002 (www.ACTA.org, and Harley Martin, ACTA, Personal Communication, January 2001).

Henry Ford Avenue Grade Separation:

This project includes construction of a mile-long, two-track railroad bridge over the Dominguez Channel and the Terminal Island freeway ramps; replacement of a highway bridge over the channel to six lanes from four lanes; widening of the Henry Ford Avenue on-ramps and off-ramps at State Route 47 to three lanes from two (www.ACTA.org, July 2000).

Construction on the Henry Ford Avenue Grade Separation started in October of 1999. Henry Ford Avenue is closed south of Pier A Way to Anchorage Road to accommodate continuing construction activity on Henry Ford Avenue. A new Henry Ford Avenue Detour Road is open to provide access to Anchorage Road, Shore Road and the nearby Wilmington marinas. Residents and business owners may use this temporary traffic configuration until construction is complete, in approximately September 2002 (www.ACTA.org, and Harley Martin, ACTA, Personal Communication, January 2001).

Alameda Street Widening:

The widening of Alameda Street near the Refinery has been completed. Work continues on the widening of Alameda Street from four lanes to six lanes, from Del Amo Boulevard north to State Route 91 in Compton. The improvement and realignment work on Alameda Street is scheduled to continue through September 2001 together with other Los Angeles County Port Access Demonstration Projects (www.ACTA.org, and Harley Martin, ACTA, Personal Communication, January 2001).

Henry Ford Avenue Widening:

ACTA is responsible for widening Henry Ford Avenue south of Anaheim Street which is currently under construction. Widening Henry Ford Avenue from Anaheim Street north to Alameda Street is a PADP (Henry Ford Units 3 and 5). This project is under the jurisdiction of the City of Los Angeles, Bureau of Engineering which is currently in the process of bidding the project. The project would widen Henry Ford to about 105 feet with two lanes of traffic in each direction and turn lanes. The construction will be staged so that Henry Ford will be open during construction (i.e., one side of the street will be under construction while the other side is being used for traffic). The project is estimated to be completed in about April 2002 (John Korous, ACTA, Personal Communication, November 2000).

Pacific Coast Highway Grade Separation:

Another PADP project is the construction of a grade separation of Pacific Coast Highway at Alameda Street and the railroad tracks. The project includes constructing an elevated bridge along Pacific Coast Highway so that traffic would be routed over the railroad tracks at Alameda. Pacific Coast Highway would be elevated from west of Alameda to about the Dominguez Channel (John Korous, ACTA, Personal Communication, November 2000). The main entrance to the Equilon Refinery is on Pacific Coast Highway so that access to the Refinery will be altered by this project. A frontage road that provides access to the Refinery is proposed as part of this project. This project will significantly alter traffic flow within the vicinity of the Refinery and is expected to be concurrent with the Equilon proposed project. This project is under the jurisdiction of Caltrans.

Street Improvements by Other Agencies:

Bridges will be built at four locations where trains and vehicles now cross at the same level, causing delays to both. The locations are Laurel Park Road, Del Amo Boulevard, Sepulveda Boulevard and Pacific Coast Highway. In addition, Alameda Street is being widened to from four lanes to six lanes. These projects

are the responsibility of the County of Los Angeles, the City of Los Angeles, and the City of Carson (www.ACTA.org, July 2000).

8) City of Long Beach

The City of Long Beach has several projects planned for the near future. An EIR is being prepared to study the impacts of constructing a Carnival Cruise Terminal at the port. Upon approval, this project would take approximately two years to complete. In support of the Carnival Cruise Terminal, the RMS Queen Mary Seaport project has been approved. This project will consist of a variety of retail and entertainment uses and parking structures (Angela Reynolds, City of Long Beach, Personal Communications, November 2000).

There are also two projects planned for downtown Long Beach. The Downtown Mall Redevelopment project consists of developing commercial and residential space. Construction of the proposed project is expected to occur during 2001 and take about one year. Development of the residential units and office building or hotel known as the Camden Project in the downtown area is also expected to break ground by year end, with construction expected to last one and one-half years (Angela Reynolds, City of Long Beach, Personal Communications, November 2000).

E. PROJECTS NEAR THE CARSON TERMINAL

9) Sepulveda Boulevard Improvement

The City of Carson has plans to construct a Sepulveda Boulevard overpass (over Alameda). The Sepulveda Boulevard grade separation and improvements near the Refinery (northern boundary) are currently underway and are expected to be completed or near completion prior to the commencement of the proposed project. The project is expected to take about two years for construction (Carson Anderson and Patricia Elkins, City of Carson, Personal Communication, July 2000).

10) 223rd Street Re-Development Projects

The City of Carson is planning to turn the portion of 223rd Street, between Lucerne and Alameda into mostly a large section of auto dealerships (Carson Anderson, City of Carson, Personal Communication, January 2001). Two major facility expansions are currently proposed, and two others are in planning.

Westrux International, at 1505 E. 223rd Street, has City funding allowing it to acquire land for future expansion of its truck sales and service facility. A proposal to start work on the expansion is expected sometime in 2001. It is expected that the expansion would take approximately 24 months to complete (Carson Anderson, City of Carson, Personal Communication, January 2001).

The Carson Toyota Car Sales facility (1355-1463 E. 223rd Street) is currently in negotiations to buy land for the expansion of its facility. The scope for this project is approximately two to two and one-half years (Carson Anderson, City of Carson, Personal Communication, January 2001).

Also along the auto row, Cormier Chevrolet plans to expand its existing facility and Nissan is proposing to build a new facility. These projects are in the planning stages and are expected to commence (upon approval) sometime in 2002 (Carson Anderson, City of Carson, Personal Communication, January 2001).

11) California State University Dominguez Hills Sports Complex

California State University Dominguez Hills (CSUDH) in partnership with Anschutz L.A. Soccer is proposing to develop and operate a National Training Center/Sports Complex (Complex). On January 31, 2001, the Draft Environmental Impact Report for this project was released for public review. The Complex would feature state-of-the-art venues that would serve as a primary training center for top amateur and professional athletes in soccer, tennis, track and field, cycling, basketball, volleyball and women's field hockey. The primary project would be located on approximately 85 acres of property in the western portion of the CSUDH campus, near the intersection of Victoria Street and Avalon Boulevard. Proposed facilities would include two adjacent stadiums with associated support facilities and parking. The soccer stadium would include permanent seating for approximately 20,000 people, expandable to 27,000. Proposed facilities may include numerous new fields and training areas, as well as lockers, coaching, administrative support and athlete housing. The other proposed stadium would serve major tennis tournaments and would include permanent seating for approximately 8,000 people, expandable to 13,000, and might include 18 new tennis courts (www.csudh.edu/admfin/proposal/proposal.htm).

Construction of the soccer stadium is planned to begin in mid-2001. Construction of the tennis stadium could begin within three months after work has begun on the soccer stadium. Construction of all components including practice courts and fields, renovations in the Campus Improvement Area, the jogging trail, and other ancillary uses is anticipated to last approximately 15 months. The estimated completion and opening date of the project is late 2002 (CSU Board of Trustees, 2001).

12) Watson Land Company Project

The Watson Land Company has plans to build an approximately 182,000 square foot industrial building on the northwest corner of 223rd Street and Westward Avenue. The proposal is in plan check and the project is proposed to begin construction this year (Carson Anderson, City of Carson, Personal Communication, January 2001). Across the street, another building (approximately 93,000 square feet) has also been proposed.

13) Former Proposed Metro 2000 Site

About eight years ago the Metro 2000 complex was proposed. It was to be a 1,500,000 square foot factory outlet mall, located in the City of Carson at Del Amo and the I-405 Freeway, about one mile west of the Equilon Carson Terminal and about four miles northwest of the Equilon Refinery. This project has recently been scaled down to a strip type mall with theatres. The developer is still in discussion with the City regarding details of the project. The site was previously a landfill and cleanup will be required. An EIR will also be required (Carson Anderson, City of Carson, Personal Communication, 2001).

14) Other City of Carson Projects

The City of Carson has several other projects proposed to take place within approximately one mile of the Equilon Refinery and Terminals. These include, but are not limited to:

Proposal to develop several acres of vacant land into housing along Avalon, between 228th and 231st Streets.

Proposal to construct an 89 unit apartment building on the northwest corner of 223rd Street and Avalon (643 223rd Street). Plans have been sent to the planning commission and construction is proposed to begin fall of 2001.

At 444 E. Carson Street construction of a 7,000 square foot Auto Zone store is scheduled to begin in spring of 2001.

At the southeast corner of Carson Street and Alameda Street, behind the Dominguez Water Company, a 12 lot subdivision of single family homes has been proposed. Plans were scheduled to be submitted to the City of Carson Planning Commission by March, with construction proposed to start late summer of 2001 and ending spring of 2002.

F. PROJECTS NEAR THE SIGNAL HILL TERMINAL

The following projects are currently planned or under construction in the City of Signal Hill:

At 1600-1800 Willow Street, the Town Center West commercial center project is currently under construction. Section 1 consists of a 7.4-acre retail commercial center that will include a supermarket, a sit-down restaurant, a drive-through restaurant, a combination auto service station and convenience store and retail building (totaling 83,500 square feet). Section 2 consists of a 148-unit senior housing development on 4.7 acres.

At Hill Street and Hathaway Avenue, the Hilltop Area Specific Plan project has begun construction. This project consists of 270 single-family housing units, 44 duplexes and 150 multi-family housing units (totaling 464 housing units). Entitlements have been granted for 216 units. The remaining 248 units must receive separate Site Plan and Design Review approval. There are currently 34 units under construction.

The Bixby Ridge project is roughly bordered by Cherry Avenue on the west, Hill Street on the east, Panorama Drive to the north, 21st to the south, and Stanley Avenue on the southeast. The project consists of 188 single-family dwelling units on approximately 39 acres of land on the east flank of the city's main hill. Forty-five homes have been completed, 16 more are under construction and plans for another 71 have been approved.

At 2200 Temple Avenue, a 1,575 square foot community building for Discovery Well Park. Groundbreaking was held February 24, 2001.

At 2567 Temple Avenue, renovation and expansion has begun of the building at the Southwest corner of Willow Street and Temple Avenue.

At 19th and Orizaba Avenue, Phase I of the Del's Developers project is under construction. This phase consists of six single-family residential dwellings.

At 1948 and 1950 Orizaba Avenue, Phase II of the Del's Developers project is proposed. This phase consists of four detached single-family dwelling units.

At Orizaba Avenue and Pacific Coast Highway, renovation has begun of a 20,000 square foot building for a boat, watercraft, all-terrain vehicle and motorcycle sales facility. The sales building is located at 1830 Orizaba Avenue and the service dealership is located at 3001 Pacific Coast Highway.

At 2801 Pacific Coast Highway, a new 2,500 square foot building for a produce/deli-market is currently under construction.

At 1906 St. Louis Avenue, a proposal for construction of a 1,700 square foot two-story residence on a vacant lot is currently in plan check.

At 2501 and 2525 Cherry Avenue a major seismic retrofit on commercial buildings is currently in progress

At 2901 Pacific Coast Highway, renovation and remodeling of the old convalescent hospital has begun. Re-roof, clean-up and front façade permits have been issued.

G. PROJECTS NEAR THE VAN NUYS TERMINAL

There was no indication of significant projects taking place or planned to take place near the Van Nuys Terminal.

H. PROJECTS NEAR THE COLTON AND RIALTO TERMINALS

The following projects are currently planned or under construction in the City of Rialto:

A five-acre truck terminal facility is proposed at the southeast corner of Willow and Santa Ana Avenues, approximately three-quarters of a mile southwest of the Colton and Rialto Terminals sites. The building plans are currently in plan check.

An unattended commercial fueling facility is proposed at the southeast corner of Riverside and Slover Avenues approximately one-quarter of a mile south of the Terminals.

An 18-acre Oil Dominion Freight truck terminal is currently under construction at the southwest corner of Willow and Slover Avenues, approximately one-half mile southwest of the Terminals.

An office and warehouse storage facility is proposed for the east side of Lilac Avenue, south of Santa Ana Avenue, approximately three-quarters of a mile southwest of the Terminals.

A 112,000 square-foot distribution center is proposed at the northwest corner of Riverside Avenue and Agua Mansa Road, approximately 1.75 miles south of the Terminals.

A steel fabrication facility is proposed at the northwest corner of Willow Avenue and Jurupa Avenue, approximately 1.25 miles southwest of the Terminals.

I. AIR QUALITY

CONSTRUCTION IMPACTS

Air quality impacts due to construction at the Equilon Refinery for the modifications required as a result of the consent decree plus the construction at all local refineries for their RFG Phase 3 projects are expected to be temporarily significant and the SCAQMD thresholds will be exceeded. There will be construction emissions associated with other projects in the area including the Alameda Corridor and other transportation-related projects, but these emissions were not estimated in environmental documents and/or sufficient public information does not exist to estimate these emissions. The air quality impacts due to construction will be significant and exceed the SCAQMD thresholds of significance, however, they will be temporary. It should be noted that the construction

emissions will be spread throughout the basin and not emitted in one localized area, although a number of the projects (Tosco, ARCO, Ultramar, and Equilon) are located within or near the Wilmington area.

Emissions from construction of the RFG Phase 3 projects will be from two main sources, vehicles used by commuting workers, and use of heavy equipment. All refineries are expected to be undergoing construction during the same time period. The construction phase of the proposed Equilon project will exceed the significance thresholds for CO, VOC, NOx and PM10 (see Chapter 4, Table 4-4). Therefore, the air quality impacts associated with construction activities are considered significant. A large portion of the total emissions is associated with on-site construction equipment and mobile sources (trucks and worker vehicles). It is expected that the other refineries would have similar RFG Phase 3 construction emission impacts during the same timeframe as the Equilon projects as all refineries and terminals are required to phase out the use of MTBE by December 31, 2002. Mitigation measures to reduce emissions associated with construction activities are necessary primarily to control emissions from heavy construction equipment and worker travel.

Emissions associated with the construction on Pacific Coast Highway of an overpass of Alameda Street could occur during construction of the proposed project producing additional construction emissions. The estimated construction emissions for the construction of the overpass are not available but are expected to produce cumulative emissions with the construction of the proposed project as the construction schedules may overlap.

Construction emissions associated with the Port of Los Angeles Channel Deepening Project would vary depending on the depth the channel is deepened. The project has a 50-foot deep alternative, a 53-foot deep alternative and a 55-foot deep alternative. For each alternative, emissions would increase with depth, i.e., require more dredging. Emissions also vary within each alternative, depending on which disposal site is chosen. Since the dredge and disposal volumes for the 55-foot deep alternative would be greater than those associated with the 50-foot deep and 53-foot deep alternatives, total construction emissions would generally be greater than those associated with the shallower alternatives (USACE, 2000a).

The Port of Long Beach Piers G and J terminal development project would be constructed in four phases over an 11-year period. A number of construction activities would overlap. Construction emissions for all four phases would exceed the SCAQMD daily significance thresholds for all pollutants except for SOx. The Port of Long Beach Piers G and J terminal development project has proposed several mitigation measures to reduce air quality impacts during the construction period. After implementation of the proposed mitigation measures, however, construction air quality impacts would remain significant (Dames and Moore, 2000).

Table 5-1 summarizes the available estimated construction emissions of the related projects. On a cumulative basis, construction emissions would exceed the thresholds established by the SCAQMD assuming they occur at the same time. Therefore, the cumulative air quality construction impacts are considered significant.

OPERATIONAL IMPACTS - CRITERIA POLLUTANTS

During operation, the Refinery modifications associated with the consent decree, the transportation improvement projects and the various refinery RFG Phase 3 projects are all expected to reduce overall mobile source emissions. However, there are localized increases for certain air pollutants.

Direct stationary emission sources are generally subject to regulation. The emissions associated with the proposed project modifications are shown in Chapter 4, Table 4-6. Stationary emission sources include combustion sources and fugitive emissions. The operation of the Equilon RFG Phase 3 project will exceed the significance thresholds for the CO, VOC NO_x, SO_x and PM₁₀ for non-RECLAIM sources and pollutants. Therefore, the air quality impacts associated with operation emissions from the proposed project are significant. Mitigation measures to reduce air emissions associated with the operational phase of the proposed project are required.

Operational emissions associated with the Tosco Ethanol Import and Distribution Project will not exceed the SCAQMD significance thresholds and are considered less than significant. Based on the analysis, no mitigation measures were required for operational emissions.

Operational emissions associated with the ARCO CARB Phase 3 project were determined to be less than significant for CO, NO_x, SO_x, and PM₁₀. Operational VOC emissions are expected to exceed the SCAQMD significance thresholds and are considered significant. The VOC emission increases are primarily due to butane and pentane loading into railcars at the Refinery, pentane loading into marine tankers, the new pentane storage tank at Marine Terminal No. 2, and loading ethanol into tanker trucks at the Hathaway terminal.

Operational emissions associated with the Ultramar CARB Phase 3 Project are expected to be significant for VOC and NO_x emissions, while emissions of CO, SO_x and PM₁₀ are less than significant.

Operational emissions associated with the Mobil CARB Phase 3 Project are expected to be less than significant for NO_x and SO_x emissions associated with RECLAIM sources. The proposed project is expected to result in significant air quality impacts associated with VOC and non-RECLAIM NO_x emissions.

TABLE 5-1

**AVAILABLE CUMULATIVE PROJECT
PEAK DAY CONSTRUCTION EMISSIONS
(pounds per day)**

ACTIVITY	CO	VOC	NOx	SOx	PM10
Equilon RFG Phase 3 Project	1,425	756	1,145	94	479
ARCO CARB Phase 3 Project	756	149	746	54	246
Tosco CARB Phase 3 Project	989	170	702	74	122
Tosco Ethanol Import & Dist. Project	9	-54	10	--	57
Ultramar CARB Phase 3 Project	628	291	488	69	95
Mobil CARB Phase 3 Project	12,139	1,530	1,635	131	552
Port of LA Channel Deepening Project (mitigated peak daily emissions)	1,218	307	7,089	213	186
Port of Long Beach Pier G & J Project (mitigated peak daily emissions)					
Phase I	1,097	368	665	56	2,369
Phase II	1,758	214	884	88	2,312
Phase III	1,265	414	901	75	3,365
Phase IV	1,743	360	778	65	2,657
SCAQMD Threshold Level	550	75	100	150	150
Significant?	YES	YES	YES	YES	YES

Implementation of the Los Angeles and Long Beach Harbors 2020 improvements will allow doubling of cargo handling through the port, resulting in a significant increase in truck and rail traffic in the vicinity of the port. Construction of the Alameda Corridor improvements is intended to mitigate the impact of the increase in port-related traffic. The improved efficiency of the consolidated railway along the Alameda Corridor is expected to reduce emissions of locomotive exhaust over the No Project alternative. Elimination of railway/roadway intersections through consolidation of rail traffic and construction of grade separations will reduce motor vehicle idling emissions and improve the efficiency of truck transport.

Data show that by completion of the Port of Los Angeles Channel Deepening Project, operation of each of the proposed scenarios would produce less emissions for a given throughput of cargo, versus future baseline conditions (USACE, 2000a).

The Port of Long Beach Piers G and J terminal development project would increase overall on-site operational activities. However, annual vessel calls would decrease by approximately five vessels after all phases of the project are built. The amount of emission reductions due to this decrease is proportionally very small, and was not included in the emissions inventory. The number of trucks used to transport cargo containers is also expected to decrease, thus reducing the associated emissions. This would provide partial offsets for increased on-site operational activities. The Port of Long Beach Piers G and J terminal development project has proposed several mitigation measures to reduce air quality impacts during project operations. After implementation of the proposed mitigation measures, however, operational air quality impacts for NOx would remain significant (Dames and Moore, 2000).

The RFG Phase 3 projects at all of the local refineries will increase the criteria pollutants emitted from the refineries. The emissions data from all other refinery projects are not yet available. It is expected that, due to the large number of changes at the refineries that are concentrated in the Wilmington/Carson areas, the localized operational impacts will be significant. The cumulative emissions are summarized in Table 5-2.

On a regional basis, the RFG Phase 3 project fuels produced by the refineries are expected to result in a reduction in emissions from mobile sources that utilize the reformulated fuels. Table 5-3 summarizes the expected emission decreases from the mobile sources which use the reformulated fuels.

Air quality impacts associated with operation of the six RFG Phase 3 projects are considered significant for CO, VOCs, NOx, SOx, and PM10 since SCAQMD mass emissions thresholds are expected to be exceeded. Although operations will exceed significance thresholds, there will be large regional benefits from the use of the reformulated fuels by mobile sources. Emissions of mobile sources will be reduced for NOx and VOCs counteracting the emissions being produced by the refineries and providing a large environmental benefit. The emission reductions are expected to be far greater than the direct cumulative emissions. In addition, the RFG Phase 3 compliant fuels are expected to result in a 7.2 percent reduction in potency-weighted emissions of toxic air contaminants from mobile sources using the fuel providing additional emissions benefits. Therefore, the overall impact of the RFG Phase 3 projects within the basin will have a cumulative beneficial effect on air quality.

TABLE 5-2

**CUMULATIVE PROJECT
STATIONARY AND INDIRECT SOURCES
OPERATIONAL EMISSIONS
(pounds per day)**

SOURCE	CO	VOC	NO_x	SO_x	PM₁₀
Total Equilon CARB RFG Phase 3	2,133.4	467.5	2,002.6 ⁽¹⁾	70.7	56.8
Tosco Ethanol Import & Dist. Proj.	9	-54 ⁽²⁾	10	--	1
Tosco CARB RFG Phase 3	134	116	503	402	43
ARCO	42	86	49	0	57
Ultramar Phase 3 Project	230	70	175	5	35
Mobil Phase 3 Project	29	288	138	12	103
Port of Long Beach Pier G & J (after mitigation)	11	5	132	13	-2040 ⁽³⁾
SCAQMD Thresholds	550	55	55	150	150
Significant?	YES	YES	YES	YES	NO

⁽¹⁾ The emission increases assume a worst-case analysis. Actual emissions from the affected stationary source combustion units are expected to be limited to 40 tons per year over baseline (last two years) conditions.

⁽²⁾ Negative numbers represent emission reductions.

⁽³⁾ Emissions are due to the decreased number of trucks associated with the proposed project.

OPERATIONAL IMPACTS - TOXIC AIR CONTAMINANTS

In order to determine the cumulative impacts of toxic air contaminants, the emissions from the implementation of the proposed project were analyzed. This is referred to as the post-project scenario and includes all the existing emission sources at the Equilon Refinery plus the proposed modified emission sources associated with the revised reformulated fuels program. In addition, the potential cumulative impacts associated with the overlap of emissions from other refineries were addressed in the analysis provided below.

TABLE 5-3
CARB PHASE 3 EXPECTED EMISSION CHANGES
(Tons per Day)

POLLUTANT	1998 Average In-Use Fuel		Future Representative In-Use Fuel Based on Flat Limits		Difference
	2005	2012	2005	2010	2005
NOx	2.1	1.7	-16.6	-13.6	-18.7
Exhaust Hydrocarbons	-16.0	-9.3	-16.5	-9.6	-0.5
Evaporative Hydrocarbons	-14.4	-11.3	-14.4	-11.3	0
Total Hydrocarbons	-30.4	-20.6	-30.9	-20.9	-0.5

Negative numbers indicate emission reductions
 Source: CARB, 1999

Refinery Post-Project Scenario

A comprehensive air dispersion modeling analysis and an HRA were performed for the projected Refinery and Wilmington Terminal emissions following completion of the proposed project. This section discusses the results of the air dispersion modeling and health risk assessment. The procedures used to complete the projected HRA are the same as those used to complete the project specific HRA (see Chapter 4, Section A - Air Quality). Further details of the HRA are contained in Volume II which should be consulted for further details.

Hazard Identification: The list of TACs evaluated in the post-project scenario are the same as those identified in the baseline assessment (see Table 3-9).

Emission Estimations and Sources: The estimated mass emissions of toxic air contaminants were based on a combination of the most recent AB2588 Air Toxics Inventory Report and engineering estimates that reflect operation of the proposed project. For further details on the emission estimates see Chapter 4, Section A - Air Quality and Volume II.

HRA Methodology: The source parameters for the post-project scenario were used as input to the ISCST3 model to determine unitized ground-level concentrations. The output from the ISCST3 model was combined with estimated emissions for each TAC in the ACE2588 model. The ACE2588 model calculated the health risks associated with the post-project scenario. The ISCST3 model used the same assumptions as the baseline model for receptor grids, meteorological data, and so forth. The ACE2588 model used the same assumptions for the post-project scenario as the baseline model for multi-

pathway analysis, pathways to exposures, and default exposure assumptions. The model was used to identify the MEIR and MEIW for the post-project scenario. The ACE2588 model calculated both carcinogenic and non-carcinogenic health impacts.

Post-Project HRA Results - Carcinogenic Health Impacts

Maximum Exposed Individual Risk

The predicted maximum cancer risk at the MEIR area due to exposure to projected post-project emissions was calculated to be 6.04×10^{-6} or six per million. The location of the MEIR is the same as the baseline assessment and is shown in Figure 3-2. Table 5-4 provides the breakdown of the cancer risk at the MEIR by exposure pathway. There are many sources that contribute to the cancer risk and the risk is not dominated by any one source. About 21 percent of the cancer risk at the MEIR is attributed to emissions from sources 97, 98, 99 and 100 (internal combustion engines that produce electricity for the Refinery) and about 10 percent from source 13 (includes the crude unit and delayed coking unit). Emissions of chromium are responsible for about 37 percent of the MEIR risk, followed by 1,3-butadiene (20 percent), and selenium (11 percent). Exposure via the inhalation pathway accounts for most of the cancer risk (95 percent) (see Table 5-4).

The one per million cancer risk isopleth for the post-project Wilmington Plant scenario is shown in Figure 5-3. This isopleth was calculated based on the same assumptions used to calculate the residential cancer risk including a 70-year exposure and multi-pathway assumptions.

Maximum Exposed Individual Worker

The predicted maximum cancer risk at the MEIW area due to exposure to projected post-project emissions was calculated to be 5.4×10^{-6} or five per million. The location of the MEIW is the same as that for the baseline scenario and is shown in Figure 3-2. The cancer risk estimates are shown in Table 5-4. About 43 percent of the cancer risk at the MEIW is attributed to emissions from area source number 5 which includes fugitive emissions from FCCU. Other sources that contribute to the cancer risk include about 14 percent from source 69 (the FCCU B4 heater) and about 13 percent from 98 (IC engine). Exposure via the inhalation pathway accounts for most of the cancer risk (98 percent) (see Table 5-4).

Figure 5-3 goes here

TABLE 5-4

CUMULATIVE REFINERY SCENARIO

Exposure Pathway	Maximum Exposed Individual Resident	Maximum Exposed Individual Worker
Inhalation	5.76E-06	5.25E-06
Dermal	8.56E-09	6.81E-08
Soil Ingestion	2.05E-07	7.43E-08
Water Ingestion	0.00E+00	0.00E+00
Ingestion of Homegrown Produce	6.54E-08	4.21E-08
Animal Product Ingestion	0.00E+00	0.00E+00
Ingestion of Mother's Milk	0.00E+00	0.00E+00
Total Cancer Risk	6.04E-06	5.43E-06

Sensitive Receptors

The maximum cancer risk to a sensitive receptor was estimated to be 7.7×10^{-6} or approximately eight per million at a school located east of the Refinery and east of the Terminal Island Freeway. The risk at sensitive receptors drops off quickly as the second highest cancer risk at a sensitive receptor is 3.9×10^{-6} or about four per million. This risk estimate for sensitive receptors is overly conservative as it is based on a 70-year continuous exposure period.

Cancer Burden

The cancer burden for the area surrounding the Refinery was calculated using the same assumptions as the baseline cancer burden calculations. The total excess cancer burden within the area of influence was predicted to be 0.457 and 0.028 for the residential and occupational populations, respectively. (See Volume II for further details.)

Acute Hazard Index

The highest total acute hazard index for any single toxicological endpoint was estimated to be 0.73, at an occupational receptor, for the respiratory system. Nickel contributes the most (62 percent) to the acute hazard index, followed by selenium (20 percent).

Chronic Hazard Index

The highest chronic hazard index for any single toxicological endpoint was estimated to be 0.52, at an occupational receptor for the respiratory system. Nickel contributes the most (95 percent) to the chronic hazard index.

The cumulative impacts associated with the post-project scenario at the Refinery would be below the significance criteria for cancer risk of 10×10^{-6} and below the significance criteria for hazard indices of 3.0. Therefore, significant adverse cumulative impacts are not expected from the Equilon Refinery.

Carson Terminal Post-Project Scenario

The maximum proposed project impacts were added to the baseline HRA in order to estimate the maximum predicted health risks following implementation of the proposed project.

Maximum Exposed Individual Risk

The predicted maximum cancer risk at the MEIR area due to exposure to projected post-project emissions was estimated to be 6.67×10^{-6} or about seven per million ($6.4 \times 10^{-6} + 2.7 \times 10^{-7}$). Benzene emissions from storage tanks and fugitive emission sources account for more than 90 percent of the cancer risk. The location of the MEIR is the same as the baseline assessment and is shown in Figure 3-3.

Maximum Exposed Individual Worker

The predicted maximum cancer risk at the MEIW area due to exposure to projected post-project emissions was estimated to be 5.7×10^{-7} or about 0.6 per million ($5.1 \times 10^{-7} + 6.00 \times 10^{-8}$). Benzene emissions from storage tanks and fugitive emission sources account for more than 90 percent of the cancer risk.

Sensitive Receptors

The maximum cancer risk to a sensitive receptor was estimated to be 1.9×10^{-6} or approximately two per million at the Dolphin Park Day Care facility. This risk estimate is overly conservative as it is based on a 70-year continuous exposure period.

Cancer Burden

The maximum potential cancer risk calculated at a residential receptor is 6.67×10^{-6} . Assuming all 4,075 people within the zone of impact are exposed to this maximum cancer risk, the cancer burden for the residential population is 0.027.

For workers within the area of influence, the estimated worker population is 2,100. Assuming all of these workers are exposed to the maximum cancer risk of 5.7×10^{-7} , the resulting cancer burden for the worker population is 0.0012.

Acute Hazard Index

The highest total acute hazard index for any single toxicological endpoint was estimated to be about 0.42 (0.42 + 0.0017), at an occupational receptor, for the respiratory system. Benzene contributes the most (more than 90 percent) to the acute hazard index.

Chronic Hazard Index

The highest chronic hazard index for any single toxicological endpoint was estimated to be 0.07 (0.07 + 0.0005), at an occupational receptor for the central nervous system.

Signal Hill Terminal Post-Project Scenario

The maximum proposed project impacts were added to the baseline HRA in order to estimate the maximum predicted health risks associated with the Signal Hill Terminal following implementation of the proposed project.

Maximum Exposed Individual Risk

The predicted maximum cancer risk at the MEIR area due to exposure to projected post-project emissions was estimated to be 1.01×10^{-6} or about one per million ($6.12 \times 10^{-7} + 3.97 \times 10^{-7}$).

Maximum Exposed Individual Worker

The predicted maximum cancer risk at the MEIW area due to exposure to projected post-project emissions was estimated to be 6.28×10^{-7} or about 0.6 per million ($3.97 \times 10^{-7} + 2.31 \times 10^{-7}$).

Acute Hazard Index

The highest total acute hazard index for any single toxicological endpoint was estimated to be about 0.003 (0.00253 + 0.000528).

Chronic Hazard Index

The highest chronic hazard index for any single toxicological endpoint was estimated to be 0.003 (0.000974 + 0.00232).

The maximum predicted health risks are below the 10 per million significance threshold for cancer risk and the 1.0 significance threshold for the acute and chronic hazard indices. Therefore, the proposed project impacts for toxic air contaminants at the Signal Hill Terminal are less than significance.

Van Nuys Terminal Post-Project Scenario

The maximum proposed project impacts were added to the baseline HRA in order to estimate the maximum predicted health risks associated with the Van Nuys Terminal following implementation of the proposed project.

Maximum Exposed Individual Risk

The predicted maximum cancer risk at the MEIR area due to exposure to projected post-project emissions was estimated to be 4.15×10^{-7} or about 0.4 per million ($3.16 \times 10^{-7} + 9.94 \times 10^{-8}$).

Maximum Exposed Individual Worker

The predicted maximum cancer risk at the MEIW area due to exposure to projected post-project emissions was estimated to be 2.49×10^{-7} or about 0.2 per million ($1.50 \times 10^{-7} + 9.94 \times 10^{-8}$).

Acute Hazard Index

The highest total acute hazard index for any single toxicological endpoint was estimated to be about 0.002 ($0.00173 + 0.000313$).

Chronic Hazard Index

The highest chronic hazard index for any single toxicological endpoint was estimated to be 0.001 ($0.000672 + 0.000594$).

The maximum predicted health risks are below the 10 per million significance threshold for cancer risk and the 1.0 significance threshold for the acute and chronic hazard indices. Therefore, the proposed project impacts for toxic air contaminants at the Van Nuys Terminal are less than significance.

Colton Terminal Post-Project Scenario

The maximum proposed project impacts were added to the baseline HRA in order to estimate the maximum predicted health risks associated with the Colton Terminal following implementation of the proposed project.

Maximum Exposed Individual Risk

The predicted maximum cancer risk at the MEIR area due to exposure to projected post-project emissions was estimated to be 1.41×10^{-6} or about 1.4 per million ($2.61 \times 10^{-7} + 1.15 \times 10^{-6}$).

Maximum Exposed Individual Worker

The predicted maximum cancer risk at the MEIW area due to exposure to projected post-project emissions was estimated to be 1.39×10^{-6} or about 1.4 per million ($2.38 \times 10^{-7} + 1.15 \times 10^{-6}$).

Acute Hazard Index

The highest total acute hazard index for any single toxicological endpoint was estimated to be about 0.003 ($0.00163 + 0.00143$).

Chronic Hazard Index

The highest chronic hazard index for any single toxicological endpoint was estimated to be 0.01 ($0.00898 + 0.00103$).

The maximum predicted health risks are below the 10 per million significance threshold for cancer risk and the 1.0 significance threshold for the acute and chronic hazard indices. Therefore, the proposed project impacts for toxic air contaminants at the Colton Terminal are less than significance.

Rialto Terminal Post-Project Scenario

The maximum proposed project impacts were added to the baseline HRA in order to estimate the maximum predicted health risks associated with the Rialto Terminal following implementation of the proposed project.

Maximum Exposed Individual Risk

The predicted maximum cancer risk at the MEIR area due to exposure to projected post-project emissions was estimated to be 4.17×10^{-6} or about four per million ($3.8 \times 10^{-6} + 3.65 \times 10^{-7}$).

Maximum Exposed Individual Worker

The predicted maximum cancer risk at the MEIW area due to exposure to projected post-project emissions was estimated to be 8.97×10^{-7} or about 0.9 per million ($5.32 \times 10^{-7} + 3.65 \times 10^{-7}$).

Chronic Hazard Index

The highest chronic hazard index for any single toxicological endpoint was estimated to be 0.004 (0.0021 + 0.00217).

The maximum predicted health risks are below the 10 per million significance threshold for cancer risk and the 1.0 significance threshold for the chronic hazard indices. Therefore, the proposed project impacts for toxic air contaminants at the Rialto Terminal are less than significance.

Mormon Island Marine Terminal Post-Project Scenario

The cumulative health risks associated with the Mormon Island Marine Terminal were not calculated because the proposed project is expected to result in a reduction in total VOC emissions (see Appendix B). The proposed project is expected to change the service on two tanks, one currently storing gasoline and one currently storing MTBE, to ethanol. Dome roofs will be added to these tanks to prevent contamination of ethanol with rainwater. Therefore, the overall impacts associated with these projects will be a reduction in the emissions of toxic air contaminants. It should be noted that in Chapter 4, Tables 4-5 and 4-9 only emission increases (associated with the ethanol tank) were included to provide a conservative analysis of the air quality impacts. However, the overall emissions related to the proposed project are expected to be less (about 8,405 pounds per year) than the current operations. Therefore, cumulative emissions of toxic air contaminants associated with the proposed project are expected to be less than significant.

Overlap of Impact Areas with Other RFG Phase 3 Projects

The one per million cancer risk isopleth for Equilon is expected to overlap with the one per million isopleth for other refineries in the Wilmington/Carson areas. Detailed data on the toxic air contaminant emissions from other refinery CARB Phase 3 projects is not currently available so a quantitative analysis cannot be made. The RFG Phase 3 compliant fuels are expected to result in a 7.2 percent reduction in potency-weighted emissions of toxic air contaminants providing emissions benefits for toxic air contaminants. Therefore, the overall impact of the RFG Phase 3 projects within the basin is expected to have a cumulative beneficial effect on air quality.

The potential for emissions associated with the Signal Hill, Van Nuys, Rialto and Colton Terminals to overlap with other portions of the RFG Phase 3 projects are not expected to be significant since few changes are required to the Equilon Terminals so that few emissions are expected.

MITIGATION MEASURES

The mitigation measures to minimize emissions associated with operation of the related projects include the use of BACT for all new emission sources and modifications to existing sources. The use of BACT would control localized emissions. A BACT review will be completed during the SCAQMD permit approval process for all new/modified sources. In addition, the related refinery projects would provide regional emission benefits by reducing emissions from mobile sources that use the reformulated fuels.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

Although the cumulative air quality impacts due to construction and operation of the RFG Phase 3 projects exceed the SCAQMD significance thresholds, the positive benefits attributed to the use of reformulated fuels by mobile sources are expected to outweigh the adverse impacts of the proposed projects.

J. GEOLOGY/SOIL

Pursuant to CEQA Guidelines §15130(a), an EIR is required to discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. An impact is considered "cumulatively considerable" when the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects and the effects of probable future projects (PRC §21083(b) and CEQA Guidelines §15065(c)). The proposed project's impacts on geology/soil were considered to be less than significant. As discussed in the following subsections, no significant adverse cumulative geology/soils impacts are expected from the proposed project and related projects. The proposed project's impacts are not cumulatively considerable.

PROJECT IMPACTS

Seismicity

The proposed project and related projects are subject to groundshaking, as are most areas of California. The related projects would increase the number of facilities and structures subject to earthquake damage, and thus increase the potential impacts during an earthquake. Assuming adherence to the applicable building codes, Seismic Safety Plans, and Uniform Building Codes, the cumulative impacts from a major earthquake would be reduced, but not eliminated. All projects would require geotechnical evaluation by the local agency (usually the city in which they are located) responsible for issuing building permits and a civil or structural engineer to assure the project design complies with appropriate building and safety regulations. The cumulative seismic impacts are considered to be less than significant with adherence to appropriate building codes.

The Port of Los Angeles Channel Deepening Project Draft EIR indicates that geologic hazards such as earthquake-induced fault rupture, liquefaction, settlement, seiches or tsunamis would have no impact on dredging in the port. The potential risks from ground shaking or fault rupture to structures and people also are not considered significant, because: (1) appropriate engineering practices would be used for construction, which would limit the amount of damage that would occur; (2) relatively few people would be present on the site at any given time since it is primarily a storage area; and (3) damage, should it occur, would be limited to structures such as cranes, wharves, and pavement, which can be readily repaired or replaced, if needed (USACE, 2000a).

Any one of the Port of Long Beach Phase III slip fill options would alter the existing geologic environment at that location by filling existing submerged areas. However this alteration to existing topography would not significantly adversely affect the geologic environment or geologic processes such as landslides or erosion. Due to the distance to the nearest fault, the potential for ground rupture at piers G and J is insignificant. The Port of Long Beach as a whole has a high potential for soil liquefaction. Therefore, the Draft EIR for the Channel Deepening Project considered the geologic impacts to be potentially significant. Mitigation measures have been proposed to reduce the effects of filling settlement and liquefaction resulting from seismic activity. Although mitigation measures have been identified to lessen significant impacts, the seismic hazards related to future earthquake activity in the region represent a potential for unavoidable significant adverse impacts to future development of the piers G and J area (Dames and Moore, 2000).

Contaminated Soils

All of the related projects, and in particular, portions of the roadway and railway improvements that will require excavation, have the potential to unearth contaminated soils. The Alameda Corridor project, since it involves lands with a variety of ownerships, presents a number of unknowns.

The Equilon RFG Phase 3 projects involve the addition of new equipment to an existing refinery and existing terminals so major grading/trenching is not expected to be required and is expected to be limited to minor foundation work and minor trenching for piping modifications. Previous construction activities have been conducted at the refinery and its terminals, and contaminated soils have been uncovered. Given the heavily industrialized nature of the refinery site and that refining activities have been conducted at the site since the 1920s, contaminated soils may be uncovered during construction activities. It is not uncommon for a refinery, its related terminals and other types of industrial properties to contain contaminated soils and ground water. No significant impacts are expected as a result of the potential for contaminated soils to be excavated during construction of the proposed project since there are numerous local, state (Title 22 of the California Code of Regulations) and federal rules which regulate the handling, transportation, and ultimate disposition of these soils.

The Alameda Corridor's Final EIR states: "Sites along the corridor that would be disturbed by corridor construction and that are known to contain contaminated soil or ground water would be cleaned prior to or during construction of the project. Clean-up activities would be conducted in accordance with all applicable regulations and guidelines governing the removal and disposal of hazardous materials. In most cases these clean-up efforts would remediate the problem and no further work would be required. However, in some cases continued monitoring of particular sites may be required to ensure that no migration of existing contamination has occurred subsequent to the primary clean-up operations. Responsibility for clean up (including Phase I assessments) and monitoring of individual sites has not been established" (ACTA, 1992).

Further clarification is offered in the Alameda Corridor Final EIR: "It was assumed for concept estimating purposes that the properties to be acquired for the project had already been cleared of any contaminants. The record of known contaminated sites on file with the State were [sic] used as a basis for locating existing contaminant sources along the corridor. In later stages of design, additional geotechnical work would be carried out to better identify sources and locations of contaminants along the corridor. The issue of contamination removal would then be identified in more detail. Responsibilities for cleanups would be established in the purchase and sale agreement" [for acquisition of right of way] (ACTA, 1992).

The overall impact of the related projects on soil contamination would be considered beneficial since remediation would remove or reduce soil contamination in the area. Soil remediation is regulated by numerous regulatory agencies including the Department of Toxic Substances Control division of the California EPA, the State Regional Water Quality Control Board, local health departments, and the SCAQMD. Compliance with all applicable rules and regulations would mitigate impacts to a level of insignificance.

MITIGATION MEASURES

The potentially significant impacts related to geologic hazards are expected to be minimized through compliance with the Uniform Building Code Zone 4 requirements that minimize the potential impacts of an earthquake on the proposed projects.

A number of existing rules regulate the disposal and treatment of contaminated soils including Title 22 of the California Code of Regulations. Compliance with existing regulations should provide adequate mitigation for handling and disposal of contaminated soils.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

No significant adverse cumulative impacts to geology/soils are expected to occur from the combined construction or operation of the projects discussed above. This conclusion is consistent with CEQA Guidelines §15130(a) which state in part "Where a lead agency is examining a project with an incremental effect that is not 'cumulatively considerable,'

a lead agency need not consider that effect significant, but shall briefly describe its basis for concluding that the incremental effect is not ‘cumulatively considerable.’ Therefore, since the project-related geology/soils impacts do not exceed the SCAQMD’s significance criteria, cumulative geology/soils impacts are not expected from implementation of the proposed project. Implementation of the mitigation measures are expected to reduce impacts to less than significant for geology/soils.

K. HAZARDS AND HAZARDOUS MATERIALS

PROJECT IMPACTS

Although other refineries exist in the general vicinity of Equilon and its related terminals, the cumulative impacts from and between the onsite operation of the refineries' RFG Phase 3 projects are not expected to be significant because it is extremely unlikely that upset conditions would occur at more than one refinery at a time. It also is extremely unlikely that an upset condition at one refinery would create an upset at another nearby refinery because of the distance between refineries.

The hazard impacts associated with the Equilon CARB Phase 3 project are considered potentially significant because modifications to HTU2 could increase the potential hazard zone an additional 200 feet west of Alameda, under a “worst-case” release scenario. This hazard is not expected to overlap with other reformulated fuels projects creating significant cumulative impacts as the location of the other refineries and terminals are located a sufficient distance (at least one-half mile) from this hazard zone.

The reformulated fuels projects in general will eliminate the use of MTBE and replace it with ethanol. The overall hazards associated with the handling and transport of ethanol are expected to be less than those associated with MTBE. Ethanol has a lower vapor pressure than MTBE. Therefore, a release of ethanol would travel a smaller distance and disperse more quickly than a release of MTBE given the same conditions. In addition, toxicity of ethanol is less than the toxicity of MTBE, therefore the health impacts in the event of a release of ethanol also are expected to be less than the health impacts associated with an MTBE release.

The Port of Los Angeles Channel Deepening Project is primarily a dredging project. The process of dredging does not involve the handling of hazardous materials. Therefore, this action would not create hazard footprints. Impacts from dredging would be less than significant. Hazardous materials may be shipped by containers, which may become involved in an accident or otherwise be released thereby posing a hazard to the public. It is estimated that five to 10 percent of cargo containers hold hazardous materials. The storage, separation, and handling of hazardous materials in containers is governed by 49 CFR part 176. Hazardous materials can be shipped, transported, handled and stored as long as they are in full compliance with all local, state and federal regulations (USACE, 2000a).

Cargo containers with hazardous materials can become involved in accidents including fires, explosions, and releases of flammable and/or toxic gases. Some minor accidents have occurred at the Port of Los Angeles during transportation, handling and storage, but none has been considered serious or affected members of the public. Because of governing regulations, a fire or explosion would only be expected to cause local impacts and not adversely affect members of the public. A release of a toxic material could impact a slightly large area depending on the material released, however, packaging constraints would still limit the potential adverse impacts to a relatively small area (USACE, 2000a).

Based on Port of Los Angeles accident history of containers containing hazardous materials, the probability of an accident occurring is classified as “periodical.” The potential consequence of such accidents is classified as “slight,” which falls within the “acceptable” risk category established by the Los Angeles County Fire Department, and significant impacts to public health and safety are not expected (USACE, 2000a).

Construction of the Port of Long Beach Piers G and J Terminal Development Project would be contained within the confines of piers G and J. The construction would occur in phases over a temporary period of approximately 11 years. Construction activities would occur at least one-half mile away from population centers and visitor-serving uses. Accordingly, no significant construction hazards are expected. The marine terminal facilities would involve the storage and transport of containers by ship, train, and truck, some of which may carry hazardous materials. Facilities personnel would be trained in emergency response and evacuation procedures by the employer. The piers G and J project would not result in significant impacts on public health and safety (Dames and Moore, 2000).

The Marine Terminal is located within the Port of Los Angeles and subjected to review under the risk management portion of the Port’s Master Plan (Los Angeles Harbor Department, 1983). This Plan identifies hazards within the Port, provides land use goals, and identifies emergency response procedures for facilities within the Port. The Plan contains policies to guide the future development of the Port in an effort to eliminate the danger of accidents to vulnerable resources. This will be achieved mainly through physical separation, as well as through facility design factors, fire protection, and other risk mitigation measures. The Marine Terminal Operations Manual, Oil Spill Response Manual and Spill Prevention Control and Countermeasures Plan in compliance with Coast Guard requirements, details procedures for preventing and controlling drips and spills during marine activities including ship offloading.

The Refinery, Marine Terminal and truck terminals have spill containment systems in place to reduce the impacts of spills of petroleum products. The Marine Terminal uses a water collection and treatment system to prevent discharges of petroleum products to the Los Angeles Harbor. Drip pans and funnels drain to collection areas to contain leaks. Ship washings and ballast water are stored in two tanks for further treatment and disposal to the Los Angeles County Sanitation District wastewater treatment plant. Spills that

would reach the water are controlled by deploying the oil booms available at the Marine Terminal, prior to any loading or off-loading activities. Additional spill equipment is available through commercial contracts with suppliers that specialize in spill cleanup. Commercial contractors that specialize in oil cleanup are employed to place any additional booms or equipment, and to remove oil from the water and adjacent areas, in the event of a spill.

MITIGATION MEASURES

The proposed project impacts on hazards are potentially significant. A number of existing rules and regulations apply to the Equilon facilities and other refineries. Compliance with these rules and regulations minimizes refinery-related hazards. Compliance with these rules and regulations should also minimize the hazards at other refineries. Site-specific mitigation measures may be required for other projects.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

The hazard impacts associated with the Equilon CARB Phase 3 project are considered potentially significant because modifications to HTU2 could increase the potential hazard zone an additional 200 feet west of Alameda, under a “worst-case” release scenario. This hazard is not expected to overlap with hazards associated with other projects creating significant cumulative impacts as the location of the other projects with potential hazards are located a sufficient distance from the Equilon Refinery. Therefore, the cumulative impacts from hazards are considered to be less than significant.

L. NOISE

Pursuant to CEQA Guidelines §15130(a), an EIR is required to discuss cumulative impacts of a project when the project’s incremental effect is cumulatively considerable. An impact is considered “cumulatively considerable” when the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects and the effects of probable future projects (PRC §21083(b) and CEQA Guidelines §15065(c)). The proposed project’s impacts on noise were considered to be less than significant.

CONSTRUCTION IMPACTS

Construction phases of each of the related projects are expected to generate localized, short-term noise impacts, some of which may be mitigated during construction by the use of muffling devices, restriction of work hours, etc. Construction activities associated with pile driving for the 2020 Plan are expected to be significant.

Construction of the Alameda Corridor is expected to generate noise levels as high as 90 dBA at a distance of 50 feet during excavation phases. The cumulative construction impacts associated with the related refinery projects are not expected to be significant or

exceed noise ordinances. However, the cumulative noise impacts due to certain Alameda Corridor projects and 2020 Plan construction are considered significant. Construction activities are expected to be limited to daytime hours which would reduce the potential for impacts on residential areas.

Dredging associated with the Port of Los Angeles Channel Deepening Project is only expected to result in a one dBA increase, which would not be perceptible. This is considered to be a short-term, insignificant impact. The only significant noise impact related to the project is in relation to the Southwest Slip Fill Site. Construction activities at this site would exceed the construction thresholds. The increased noise would be a temporary but significant impact at the 10-12 Knoll Hill residences. Although two feasible mitigation measures were identified, and the impact remains temporarily significant to the Knoll Hill residents (USACE, 2000a). The construction work at the Equilon Mormon Island Marine Terminal will be located a sufficient distance from the Port activities that cumulative noise impacts are not expected.

There are no sensitive noise receptors inside the noise exposure area associated with the Port of Long Beach Piers G and J Terminal Development Project. The proposed project would generate less than significant noise impacts (Dames and Moore, 2000). Cumulative noise impacts during the construction period are expected to be significant primarily due to construction along Alameda Corridor and the other related transportation improvements.

OPERATIONAL IMPACTS

The operational impacts of the related refinery projects are not expected to be significant. Most of the Wilmington area is industrialized and the cumulative increase in noise is not expected to adversely affect residential areas since they are located a sufficient distance from the sites of activity. Also, sufficient distance exists between the refineries to prevent overlap of noise impacts. The Equilon terminals are also located in industrialized areas, and no significant adverse cumulative noise related impacts are expected.

Existing noise levels from traffic in the vicinity are already considered unacceptable for certain residential areas. The build out of the 2020 Plan and Alameda Corridor projects are expected to result in noise impacts residential areas adjoining Alameda Street (USACE, 1990).

Operation of the Alameda Corridor will concentrate train and motor vehicle noise along the corridor while reducing overall noise on other highways and railways. The day-night average noise levels along the Alameda Corridor are expected to result in an increase of about eight to nine dBA at residential receptors along the Alameda Corridor between the Ports and the Intermodal Container Transfer Facility (USACE, 1990). Therefore, the cumulative noise impacts are considered significant due to the impacts associated with the Alameda Corridor.

Overall, operational noise at the port following the Port of Los Angeles Channel Deepening Project is expected to improve slightly since channel deepening would result in a slight decrease in the number of vessel calls. The only exception is in relation to the Southwest Slip Fill Site. Operations at this site would at times significantly impact about five residents. The Los Angeles Harbor Department has long-range plans to acquire these residences; once this has occurred, impacts would cease. Until then, no feasible mitigation measures were identified, and the impact remains significant (USACE, 2000a).

Cumulative noise impacts during the operation of the proposed projects are potentially significant since traffic will be concentrated along Alameda Street resulting in a permanent increase in noise along this transportation corridor.

MITIGATION MEASURES

The mitigation measures to reduce noise impacts are outlined in the Alameda Corridor Final EIR (ACTA, 1992), which is the main contributor to potentially significant adverse cumulative noise impacts, and include noise barriers and construction of portions of the Corridor below grade.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

The cumulative noise impacts on construction and operation remain significant for the construction of the Port 2020 Plan, Alameda Corridor modifications, and other transportation improvement projects. The noise impacts associated with the Equilon project alone are expected to be less than significant.

M. SOLID/HAZARDOUS WASTE

Pursuant to CEQA Guidelines §15130(a), an EIR is required to discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. An impact is considered "cumulatively considerable" when the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects and the effects of probable future projects (PRC §21083(b) and CEQA Guidelines §15065(c)). The proposed project's impacts on solid/hazardous waste were considered to be less than significant. As discussed in the following subsections, no significant adverse cumulative noise impacts are expected from the proposed project and related projects. The proposed project's solid/hazardous waste impacts are not cumulatively considerable.

Hazardous Waste: The cumulative projects have the potential to generate hazardous waste either through remediation activities or through the discovery of contaminated soils. The impacts of the proposed project on the generation of hazardous waste are considered to be less than significant (see Chapter 4, Section E – Solid/Hazardous Waste). A number of the related projects, including other refineries and terminals, and

the Alameda Corridor project have the potential to generate hazardous waste either through remediation activities or through the discovery of contaminated soils. The total amount of hazardous waste generated cannot be predicted at this time because the extent of contamination and the type of remediation activities required have not been defined in many cases. The impacts would be considered adverse but not significant since the existing hazardous waste facilities likely have sufficient capacity to handle the one-time deposition of hazardous wastes that would be generated, e.g., contaminated soils. However, the additional waste streams may impact the dwindling capacity of the certain landfills.

Additional catalyst could be generated by some of the Refinery projects and CARB Phase 3 projects. The catalysts are generally sent to regenerators or recycling facilities for reclamation of the heavy metal content and are not expected to contribute to landfill capacity.

Non-Hazardous Solid Waste: The impacts of the proposed project on the generation of solid non-hazardous waste are considered to be less than significant (see Chapter 4, Section E – Solid/Hazardous Waste). Non-hazardous solid wastes are also generally generated in administrative offices of the various related project facilities. The related projects are not expected to result in changes to the administrative operations, therefore, no increase in the generation of non-hazardous solid wastes is expected and no significant impacts are expected.

MITIGATION MEASURES

The proposed project's impacts on solid/hazardous waste were less than significant. A number of existing rules and regulations apply to the discovery, remediation, transportation and ultimate disposal of hazardous waste. Compliance with these rules and regulations minimizes impacts associated with the generation of hazardous waste. Site-specific mitigation measures may be required for other projects. Since no cumulative solid/hazardous waste impacts were identified for the Equilon proposed project, no mitigation measures are required.

LEVEL OF SIGNIFICANCE

The cumulative impacts on solid/hazardous waste are considered to be less than significant. The proposed project's solid/hazardous waste impacts are not cumulatively considerable.

N. TRANSPORTATION/TRAFFIC

Pursuant to CEQA Guidelines §15130(a), an EIR is required to discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable. An impact is considered "cumulatively considerable" when the incremental effects of an individual project are considerable when viewed in connection with the effects of past

projects, the effects of other current projects and the effects of probable future projects (PRC §21083(b) and CEQA Guidelines §15065(c)). The proposed project's impacts on transportation/traffic were considered to be less than significant, following mitigation. The following section addresses the transportation/traffic impacts associated with the related projects and general growth in the area.

CONSTRUCTION IMPACTS

Construction of the RFG Phase 3 fuels projects at the various refineries are expected to occur at the same time. Several Alameda Corridor projects in various stages of development may affect or be affected by the Corridor improvements, including the PADP projects. Construction of the ACTA projects would require complete reconstruction of the combined highway facilities on Alameda Street, the SPTC San Pedro Branch railroad and Pacific Coast Highway. Extensive disruption to the local traffic circulatory system would occur, creating detours and affecting accessibility to businesses (including the Equilon Refinery and Wilmington Terminal) and residences. Most construction locations would be subject to traffic disruption for between two and three years over the course of the 10- to 12-year construction period expected for the ACTA projects (ACTA, 1992). The construction effects could be severe.

Once the Alameda Corridor improvements have been completed, there would be a region wide reduction in emissions from train and vehicular travel, due to improved traffic circulation and less idling time. Despite the roadway improvements proposed, there would be residual adverse effects at some intersections, due to background growth in regional traffic and the fact that the improved highway would attract traffic. It would fall to local jurisdictions to make improvements to the local streets affected.

The Port of Los Angeles Channel Deepening Project Draft EIR determined that there would be no significant traffic impacts associated with construction of the project and no mitigation measures were required (USACE, 2000a).

Construction of the Port of Long Beach Piers G and J Terminal Development Project would result in temporary adverse impacts on the roadways in the immediate project vicinity. This impact would be due to traffic generated by construction workers' vehicles and trucks transporting soil, fill material, and equipment to and from the project site. It is estimated that over a two-year period during construction, there would be approximately 43 round-trip truck trips per day (five per hour during an eight hour work day) hauling fill material; approximately 260 daily trips transporting construction equipment and materials during the most active construction periods; and 300 construction worker trips during the peak construction period. These impacts are considered to be adverse short-term impacts, and mitigation measures would be implemented to minimize them (Dames and Moore, 2000).

The traffic analysis conducted for the Equilon RFG Phase 3 project indicates that only two intersections show any change in LOS due to the construction phase of the proposed

project. The traffic change at these intersections (Alameda Street/Anaheim Street and Santa Fe/Pacific Coast Highway) are not considered to be significant since free-flowing traffic would continue. The LOS at other intersections near the Equilon Refinery is not expected to change. Therefore, the proposed project impacts on traffic during the construction phase would be considered less than significant. Cumulative construction traffic impacts are also expected to be less than significant due to the distance between the Equilon Refinery and the other project locations.

OPERATIONAL IMPACTS

Table 5-10 shows the projected LOS analysis and volume to capacity ratios due to general growth in the area. These ratios were calculated assuming an ambient traffic growth of one percent per year annual traffic growth rate from year 2000 to year 2020 and no changes in existing intersection geometrics. Cumulative impacts are not expected to result in a change in LOS at the following intersections:

- Alameda Street/I-405
- Alameda Street /223rd Ramp
- Alameda Street /Sepulveda Boulevard.
- ICTF Entry/I-405 Ramps/Wardlow/223rd Street (a.m. peak hour)
- Alameda Street/Pacific Coast Highway (a.m. peak hour)
- Wilmington Avenue/Dominguez Street (a.m. peak hour)

Ten intersections show a change due to long term growth in the area. The change at the following intersections are considered less than significant impacts since free-flowing traffic would continue:

The a.m. peak hour at:

- Alameda Street/Anaheim Street (from LOS B to LOS C)
- Wilmington Avenue/Sepulveda Boulevard (from LOS A to LOS B)
- Santa Fe Avenue/Pacific Coast Highway (from LOS B to LOS C)
- Wilmington Avenue/Carson Street (from LOS B to C)
- Wilmington Avenue/I-405 NB Ramp (from LOS B to C)
- Wilmington Avenue/I-405 SB Ramp (from LOS A to C)

The p.m. peak hour at:

- ICTF Entry/I-405 Ramps/Wardlow Road/223rd Street (from LOS A to LOS B)
- Alameda Street/Pacific Coast Highway (from LOS B to LOS C)
- Wilmington Avenue/Sepulveda Boulevard (from LOS A to LOS C)
- Wilmington Avenue/Dominguez Street (from LOS B to C)
- Wilmington Avenue/I-405 NB Ramp (from LOS B to C)

TABLE 5-5

**CUMULATIVE OPERATIONAL TRAFFIC IMPACTS - 2020
LEVEL OF SERVICE ANALYSIS AND VOLUME-TO-CAPACITY RATIOS**

INTERSECTION	BASELINE ⁽¹⁾				IMPACTS			
	A.M LOS	Peak Hour V/C	P.M LOS	Peak Hour V/C	A.M LOS	Peak Hour V/C	P.M LOS	Peak Hour V/C
Alameda Street/I-405	A	0.362	A	0.382	A	0.452	A	0.448
Alameda Street/223 rd Ramp	A	0.294	A	0.327	A	0.342	A	0.383
ICTF entry/I-405 Ramps/ Wardlow Road/223 rd Street	A	0.497	A	0.549	A	0.586	B	0.649
Alameda Street/Sepulveda Boulevard	A	0.395	A	0.432	A	0.465	A	0.509
Alameda St./Pacific Coast Highway	A	0.497	B	0.617	A	0.588	C	0.730
Alameda Street/Anaheim Street	B	0.623	B	0.690	C	0.737	D	0.819
Wilmington Avenue/223 rd Street	E	0.924	E	0.988	F	1.099	F	1.175
Wilmington Avenue/ Sepulveda Boulevard	A	0.563	A	0.595	B	0.666	C	0.704
Santa Fe Avenue/Pacific Coast Highway	B	0.648	B	0.693	C	0.768	D	0.822
Wilmington Avenue/Carson Street	B	0.668	B	0.674	C	0.792	D	0.808
Wilmington Avenue/ Dominguez Street	A	0.425	A	0.521	A	0.512	B	0.622
Wilmington Avenue/I-405 NB Ramp	B	0.601	B	0.614	C	0.717	C	0.731
Wilmington Avenue/I-405 SB Ramp	A	0.594	C	0.774	C	0.702	E	0.927

Notes: (1) = based on 2000 traffic data.

V/C = Volume to capacity ratio (capacity utilization ratio)

LOS = Level of Service

The change at the following intersections are considered significant impacts since traffic flow would be adversely impacted:

The a.m. peak hour at:

- Wilmington Avenue/223rd Street (from LOS E to LOS F)

The p.m. peak hour at:

- Alameda Street/Anaheim Street (from LOS B to LOS D)
- Wilmington Avenue/223rd Street (from LOS E to LOS F)
- Santa Fe/Pacific Coast Highway (from LOS B to LOS D)
- Wilmington Avenue/Carson Street (from LOS B to D)
- Wilmington Avenue/I-405 SB Ramp (from LOS C to E)

The proposed Equilon RFG Phase 3 project is expected to increase the number of tanker calls to the Port by about six ships per year. This will result in a small incremental increase in ship calls to the San Pedro Ports which are estimated to be about 7,000 vessel arrivals per year (ACE, 1990). Therefore, no significant impact to the Long Beach/Los Angeles Harbor system is expected. The Tosco Refinery is expected to decrease the number of their tanker calls to the Port by 11 ships per year (SCAQMD, 2001), and the ARCO Refinery is expected to decrease the number of its tanker calls to the Port by at least 14 ships per year (SCAQMD, 2000g). The Ultramar and Mobil refineries are also expected to have changes in the number of tanker calls into the ports of Los Angeles and Long Beach, but the amount of increase/decrease has yet to be determined, and will be addressed in their respective EIRs. The overall changes in marine traffic associated with the RFG Phase 3 traffic are not expected to be significant as the overall traffic is expected to be less.

The proposed Equilon RFG Phase 3 project is expected to increase the number of railcars to the Carson Terminal to deliver ethanol. The Tosco and ARCO RFG Phase 3 projects will also increase the railcar traffic to each refinery. The overall rail traffic represents a small portion of the overall rail traffic in the area and is not expected to be significant. Further, with construction of the Alameda Corridor, rail traffic is expected to be consolidated along the Corridor, which will increase the efficiency of rail transport of materials to and from the Wilmington area.

MITIGATION MEASURES

Mitigation measures have been developed for the proposed project as well as the other projects to reduce the traffic impacts to the Wilmington area. Traffic Control Plans will be required for construction of the various pipeline routes in order to minimize traffic impacts. The Traffic Control Plan would specify: the permitted hours of construction (generally off-peak hours); the method of safeguarding traffic flow; the method of re-routing or detouring traffic if necessary; the placement of traffic control devices (including signs, flashing arrows, traffic cones and delineators, barricades, etc.) and flaggers (if needed); and temporary modifications to existing signals and signal timing (if necessary). The Traffic Control Plan will need to be approved by the local cities to ensure that public safety will not be endangered, and traffic impacts will be reduced to a minimum.

LEVEL OF SIGNIFICANCE AFTER MITIGATION

The cumulative impacts on construction traffic are expected to be mitigated to a level of insignificance due to implementation of the above mitigation measures. The cumulative impacts on traffic following construction are expected to be significant at five intersections.

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