

6.0 CUMULATIVE IMPACTS

6.1 Introduction

An EIR shall discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable as defined in CEQA Guidelines §15065(c). This assessment of cumulative impacts in the proposed project areas includes a discussion of the potential cumulative effects of past, present, and probable future projects that may produce related or cumulative impacts. The cumulative impacts analyses in this section have addressed the following:

- Do the impacts of individual projects, when considered together, compound or increase other environmental impacts?
- Will cumulative impacts result from individually minor but collectively significant projects taking place over a period of time?

According to §15130(b) of the CEQA Guidelines, "The discussion of cumulative impacts shall reflect the severity of the impacts and their likelihood of occurrence, but the discussion need not provide as great detail as is provided for the effects attributable to the project alone."

The environmental disciplines evaluated in this EIR are included in this section together with proposed appropriate mitigation measures for potential cumulative impacts.

6.2 Proposed Projects

Based upon information received from Chevron, local planning agencies, and individuals contacted to compile data for this section, projects with the potential to have cumulative impacts with the proposed project are discussed in this section. Three categories of cumulative developments were assessed: 1) other planned Refinery developments during the same timeframe as the proposed project, 2) new development in nearby communities, and 3) other local refineries required to meet CARB Phase 3 regulations.

6.2.1 Other Chevron Refinery Projects During the Same Timeframe as the Proposed Project

Several Refinery modifications and additions are proposed or in progress, most of which are minor modifications/additions whose purpose is to reduce criteria pollutant or TAC emissions, improve efficiency and reliability, or update equipment to current industry standards. The following is a summary of the other Refinery projects expected to occur at the same time as the proposed project.

- Installing new electrical substations to reduce the number and severity of power outages. This addition would reduce the amount of flaring due to upsets in the Refinery.

- Installing an Isomax flare gas recovery compressor to recover routine releases to the Isomax flare system. This addition would reduce the amount of material flared under most operating conditions, thus reducing Refinery emissions.
- Upgrading the instrumentation in the No. 2 Crude Unit to the Refinery's state-of-the-art electronic controls.
- Improving the cutpoint between the gas oil and residuum fractions in the No. 2 Crude Unit.
- Replacing the F-201 residuum stripper furnace with a new, state-of-the-art furnace equipped with BACT for criteria pollutants.
- Replacing the convection section of an existing furnace in the F-501C Coker.
- Replacing existing turbine-driven overhead compressor at the FCC Unit with a new motor-driven compressor. The new compressor will meet SCAQMD BACT requirements.
- Installing a new spent catalyst distributor in the FCC Unit regenerator to improve contact between the spent catalyst and air. It is expected that the installation of the new spent catalyst distributor will reduce the emissions of NO_x and CO.
- Installing equipment such as new scrubbers to remove VOCs from the CO₂ vent streams at the Steam Naphtha Reformer and Steam Methane Reformer.
- Installing a new sulfur loading rack near the existing liquid sulfur storage tanks.
- Replacing the Steam Naphtha Reformer furnace with a new, larger furnace.

These other Refinery projects would be part of normal Refinery operations and no additional personnel or specialized equipment would be required to make the modifications/additions. These Refinery projects were considered as part of the existing Refinery for analysis of potentially significant impacts for the environmental issue areas discussed in Section 4.0.

6.2.2 New Development Near the Refinery

The following projects are in various stages of planning, permitting, and construction within the City of El Segundo (Huerta, 2001).

- Development of the El Segundo Media Center, a 45-acre mixed-use commercial/retail complex, is planned along the 700 block of North Nash Street, approximately 0.75 mile northeast of the Refinery. An EIR is currently being prepared for this project. Construction is expected to start sometime in 2002.
- Southern California Edison submitted an application to demolish two existing oil storage tanks at the power facility at 501 Vista Del Mar, approximately 100 to 200 feet west of the Refinery. The demolition project is part of the plan to repower the facility. Dynergy is in the process of preparing an Application for Certification for

submittal to the California Energy Commission. This certification process generally takes a minimum of one year. Construction is not expected to start at this facility until sometime in 2003.

- The Los Angeles Department of Water and Power is proposing modifications to Scattergood generating station located 100 to 200 feet northwest of the Refinery. Construction activities are scheduled to begin in early 2001 and be completed in mid-2001.

6.2.3 Proposed Projects Near the Van Nuys Terminal

Based on review of planning records at the Los Angeles Planning Department, the following project in the vicinity of the Van Nuys Terminal is in planning review within the City of Los Angeles.

- A day care facility expansion plan has been approved by the planning department and is awaiting approval from the planning commission. This facility is located approximately 0.5 miles southeast of the Van Nuys Terminal at 14701 Burbank Boulevard. Construction is expected in June 2001.

6.2.4 Proposed Projects Near the Montebello Terminal

The following project in the vicinity of the Montebello Terminal is in planning review within the City of Montebello (Duong, 2000).

- A large warehouse at 815 West Olympic, approximately 0.75 miles northeast of the Montebello Terminal, is currently in site plan review. Construction is expected to begin in late 2001.

6.2.5 Proposed Projects Near the Huntington Beach Terminal

The following project in the vicinity of the Huntington Beach Terminal is in engineering review within the City of Huntington Beach (Ramos, 2000).

- The city is proposing to construct a 45-acre sports complex with associated parking area on the south side of Talbert Avenue, approximately 300 feet southwest of the Huntington Beach Terminal. The final construction/engineering plans are expected to be completed in mid-2001 and construction is expected to begin in late 2001.

6.2.6 Other Local Refineries and Terminals Required to Meet CARB Phase 3 Regulations

Five other refineries in the Los Angeles Basin are also required to meet the CARB Phase 3 requirements by December 31, 2002. The other refineries are in the same general portion of the region, within several miles of the coast, and include Mobil, Tosco, ARCO, Equilon, and Ultramar. Although in the same general area, no cumulative air quality impacts due to projects at these other refineries are expected as emissions are expected to be reduced due to the lower vapor

pressure of ethanol and the reduction of fugitive components due to BACT controls. Other operational changes, such as an increase in truck trips to the terminals for the delivery of ethanol, would be negligible and are not expected to create cumulative impacts. In addition, project construction is expected to be relatively small compared to the earlier (e.g. CARB Phase 2) Reformulated Fuel Projects. Chevron's Refinery is located six miles northwest from the nearest refinery (Mobil in Torrance) that is also required to meet CARB Phase 3 regulations. The known terminal improvements are relatively minor projects at existing terminals. Due to the locations, assumed schedules, and small incremental changes in operations, the Chevron project is not expected to interact with the other refinery and terminal projects or create significant cumulative impacts.

6.2.6.1 Mobil Torrance Refinery

The Mobil Torrance Refinery is located approximately six miles southeast of the Chevron Refinery. To comply with the new CARB Phase 3 gasoline and MTBE phase-out requirements, Mobil is proposing to construct one new processing unit and modify several existing processing units. In addition, Mobil is proposing to modify existing storage tanks and construct new storage tanks, construct rail car loading/unloading facilities, and construct tanker truck loading/unloading facilities. Modifications at the terminals include construction of new storage tanks and modification of rail facilities and other terminal loading/unloading equipment. The proposed Mobil project will not alter the Torrance Refinery's current crude oil throughput capacity (SCAQMD, 2001a).

6.2.6.2 Tosco Los Angeles Refinery Wilmington Plant

The Tosco Los Angeles Refinery is approximately nine miles southeast of the Chevron Refinery. To comply with CARB Phase 3 requirements, Tosco plans to modify a number of process units: the Alkylation Unit (new and modified refrigeration equipment, new refrigeration compressor system), the Acid Plant (new vapor recovery system), the Catalytic Light Ends Fractionation System (new fractionation equipment), and the Butamer Unit. New and modified pumps and heat exchangers will be installed at several of the modified process units. Associated support facilities, such as utilities and interconnecting piping, also will be modified. Some storage tanks also will change service. There will be no increase in refinery throughput (SCAQMD, 2001b).

6.2.6.3 ARCO Carson Refinery

The ARCO Refinery in Carson is roughly 12 miles southeast of the Chevron Refinery. ARCO's CARB Phase 3 project consists almost entirely of modifications to existing process units, although there also is some new equipment associated with these modifications. Refinery changes include: conversion of the Isomerization Sieve Unit to a Hydrotreater; modification of the Mid-Barrel Unit to a Gasoline Hydrotreater; a new FCC Unit Rerun Bottoms Splitter; modification of a Cat Poly Unit to a Dimerization Unit; conversion of the MTBE Unit into an ISO Octene Unit; and modifications to a Reformer Fractionator, Light Hydro Unit, and SFIA Debutanizer. Most of the

above modifications involve new heat exchangers, pumps, and control systems. There will also be modifications to facilities and equipment for pentane loading and butane loading and offloading, as well as changes in storage tankage, piping, utilities, and other support equipment (SCAQMD 2000a).

Modifications also will be required to five distribution facilities and one marine terminal. The distribution terminals are located in the cities of Carson, Long Beach, Signal Hill, South Gate, and Rialto. The primary modifications at these terminals include the conversion of existing storage tanks to fuel ethanol service, piping and other modifications for receiving and blending ethanol, and the construction of a new pentane storage tank at the marine terminal.

6.2.6.4 Ultramar Wilmington Refinery

The Ultramar refinery is about 13 miles southeast of the Chevron Refinery. Ultramar plans a combination of new and modified refinery units. Changes are proposed at the Alkylation Unit (new column, condensers, accumulators); Sulfur Recovery Unit Complex (new Amine Regeneration Unit, Tail Gas Treating Unit, and thermal oxidizer); Merox Treater; Sour Water Stripper; FCC Unit (new debutanizer, primary absorber and stripper, distillation column, and accumulator); LPG Merox Unit (new LPG Dryer and Selective Hydrogenation Unit); Light Ends Recovery Unit (new debutanizer and depentanizer); Naphtha Hydrotreater Unit; Olefin Treater (conversion to hydrotreater); Platformer (new compressor and debutanizer); Butamer Unit (new column); Gas Oil Hydrotreater; and Flare System. Many of the above modifications include new heat exchangers, pumps, vessels, compressors, etc. There will also be modifications and additions to storage facilities, pipelines, and support facilities (SCAQMD 2000b).

6.2.6.5 Equilon Wilmington Refinery

The Equilon (formerly Texaco) Refinery is located about 12 miles southeast of the Chevron Refinery. Equilon's CARB Phase 3 project includes both new and modified equipment. New equipment includes changes to the Alkylation Unit (new contactor and settler, and refrigeration unit); C4 Isomerization (new vessels, stabilizer, gas scrubber, and drier); Hydrotreater Unit No. 2 (new Olefins Saturation Reactor, pretreatment reactor, stripper reboiler); Hydrotreater Unit No. 4 (diesel side stripper, feed steam preheater); CDS Tech Unit (columns, reactors, stabilizer, absorbers, condensers); and Catalytic Reformer Unit (sulfur guard reactor). New pumps, piping, heat exchangers, compressors, etc. are associated with many of the above refinery unit changes.

Modifications to a number of units also are proposed including: Alkylation Unit (cooling tower, effluent treating vessels); Fractionator Changes (HCU Fractionator, and several debutanizers, depropanizers, and deisobutanizers); Hydrotreater No. 4 (main reactor); Catalytic Reforming Unit No.2 (debutanizer); and changes to the refinery flare, vapor recovery systems, and storage tanks. In addition, modifications will be needed to pipelines, and support facilities such as utilities.

Modifications will also be required at several of the Equilon terminals, including Carson, Signal Hill, Colton/Rialto, Van Nuys, and Wilmington. These changes include new storage tanks and modifications to piping, valves, flanges, and loading racks (SCAQMD 2000c).

6.3 Cumulative Effects

The cumulative effects of the new development in communities near the project sites and the proposed project are assessed in the following subsections.

6.3.1 Air Quality

6.3.1.1 Construction Impacts

Air quality impacts due to construction at the refineries for their CARB Phase 3 projects are expected to be temporarily significant since the SCAQMD thresholds are expected to be exceeded for CO, VOC, NO_x, SO_x and PM₁₀. These impacts will be temporary, as they will last only during construction. It should be noted that four of the refineries are relatively close to each other and the projects will, for the most part, occur at the same time. Neither the Chevron nor the Mobil facilities are near the other four refineries, and they are approximately six miles from each other.

Emissions from construction of the CARB Phase 3 projects will result primarily from off-road mobile source equipment and on-road motor vehicles. All refineries are assumed to be performing construction activities during roughly the same time period. The construction emissions of the Chevron proposed project will exceed the significance thresholds for CO, VOC, NO_x and PM₁₀, as shown in Table 4.1-20. Therefore, the air quality impacts associated with construction activities are considered significant.

The emissions from construction associated with the Chevron project are primarily from six main sources: 1) onsite fugitive dust from grading and excavation; 2) onsite exhaust emissions (CO, VOC, NO_x, SO_x, and PM₁₀) from construction equipment; 3) onsite VOC emissions from asphaltic paving and painting; 4) offsite exhaust emissions from truck traffic and worker commute trips; 5) offsite road dust associated with traffic to and from the construction site; 6) and offsite fugitive dust (PM₁₀) from trucks hauling materials, construction debris, or excavated soils from the site.

It is expected that the other refineries would have similar CARB Phase 3 construction emission impacts. Mitigation measures to reduce air emissions associated with construction activities are necessary primarily to control emissions from off-road mobile source equipment and on-road motor vehicles.

On a cumulative basis, construction emissions are expected to exceed the SCAQMD thresholds for all pollutants, assuming they occur at the same time. Therefore, the cumulative air quality construction impacts are considered significant.

The majority of the projects described in Section 6.2 are unlikely to create cumulative construction impacts in combination with the proposed project because their schedules would not overlap with that of the proposed project (January 2002 through September 2003). As the Chevron Refinery is approximately six miles from the nearest other refinery, construction emissions are not expected to overlap. However, construction schedules for the following projects will overlap with those of the proposed project or have not been determined, creating the potential for construction of these projects to overlap with the proposed project:

- The Southern California Edison/Dynegy project to the west of the Refinery.
- The El Segundo Media Center, approximately 0.75 mile northeast of the Refinery.
- The sports complex south of the Huntington Beach Terminal.
- The warehouse 0.75 mile northeast of the Montebello Terminal.
- Two marine terminal rehabilitation or conversion projects in the Port of Los Angeles.

Significant cumulative impacts may occur due to construction of these projects, if they were to overlap with construction of Chevron's proposed project. However, the impacts are expected to be localized and temporary in nature, and within the normal amount of construction activity that occurs daily in these highly industrial areas.

6.3.1.2 Operational Impacts – Criteria Pollutants

The operational criteria emissions associated with the Chevron CARB Phase 3 project are shown in Table 4.1-6 and Table 6.3-1 below. The emission sources associated with the Chevron project are comprised of fugitive emissions and combustion sources. The significance threshold is expected to be exceeded for VOC, NO_x, SO_x, and PM₁₀. The increased VOC emissions are

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primarily due to marine tanker deliveries, fuel ethanol tanker truck loading, and component fugitive emissions. The increased NO_x emissions are primarily due to marine tanker deliveries, fuel ethanol tanker truck deliveries to terminals, and locomotives. The increased SO_x emissions are primarily due to marine tanker deliveries and modifications to the FCC. The increased PM₁₀ emissions are primarily due to marine tanker deliveries, modifications to the FCC, and ethanol tanker truck deliveries to terminals.

**Table 6.3-1
Summary of Cumulative Project Daily Operational Emissions (Mitigated)**

Project	Emissions (lb/day)				
	CO	VOC	NO _x	SO _x	PM ₁₀
Chevron CARB Phase 3 Reformulated Gasoline Project	394393	348347	3,1383432	2337	843
Mobil CARB Phase 3 Reformulated Gasoline Project	29	289	138	12	103
Ultramar CARB Phase 3 Reformulated Gasoline Project	230	70	175	5	35
Tosco CARB RFG Phase 3 Project	134	116	503	402	43
Tosco Ethanol Import and Distribution Project	9	-54	10	--	1
ARCO CARB Phase 3/MTBE Phase-out Project	42	86	49	10	57
Remaining refinery (Equilon)*	167	171	801	553	216
TOTAL	1,0051,004	1,0261,025	4,8144,808	3,319	1,298
SCAQMD Threshold Level	550	55	55	150	150
Significant?	YES	YES	YES	YES	YES
* Data are not available for this refinery CARB Phase 3 project. A conservative assumption has been made that this project would have the same emissions as the average of the five projects for which data are available.					

The operational emissions of the Mobil CARB Phase 3 project are anticipated to exceed the significance thresholds for VOC and NO_x. The increased VOC emissions are primarily due to gasoline marine tanker loading, fuel ethanol tanker truck loading, and component fugitive emissions. The increased NO_x emissions are primarily due to fuel ethanol tanker truck deliveries to terminals, and increased usage at the Torrance Refinery of the onsite switch engine for the railcars delivering fuel ethanol.

The operational emissions of the Ultramar CARB Phase 3 project are anticipated to exceed the significance thresholds for VOC and NO_x. The increase in VOC emissions are primarily due to component fugitive emissions. NO_x emissions are primarily from tanker trucks and railcars.

The operational emissions of the Tosco CARB Phase 3 project are anticipated to exceed the significance thresholds for VOC and NO_x. The increase in VOC emissions are primarily associated with modifications to the storage tanks. NO_x emissions are primarily from railcar emissions. Mitigation measures to reduce air emissions associated with the operational phase of the proposed project are necessary to control VOC emissions.

Operational emissions associated with the Tosco Ethanol Import and Distribution Project (a separate element of Tosco's overall CARB Phase 3 efforts), 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 are anticipated to exceed significance thresholds for VOC. Mitigation measures to reduce air emissions associated with the operational phase of the proposed project are proposed to control VOC emissions.

Although operational emissions associated with the CARB Phase 3 projects at the refineries are anticipated to exceed significance thresholds, there will be regional benefits from the use of the reformulated fuels by mobile sources. On a regional basis, the CARB 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.

Marine vessel and railroad emissions from the various CARB Phase 3 projects are not expected to have substantial cumulative impacts on a regional basis. Marine vessel-related emissions for importing fuel ethanol to be used in the various CARB Phase 3 projects will largely replace current emissions from the marine vessel calls associated with MTBE imports that will be discontinued. Because less ethanol is needed for oxygenation of gasoline than MTBE, there generally will be fewer vessel trips to import ethanol than there are currently for importing MTBE.

The amount of rail traffic associated with fuel ethanol importation for CARB Phase 3 would be minimal compared to the volume of daily rail traffic in the Los Angeles area.

Other identified projects, such as the proposed power plants near the Refinery, would generate long-term emissions from operations. Since these projects will be subject to SCAQMD permitting and/or other State permitting requirements, it is expected that emissions will be adequately controlled and offset in order to minimize significant long-term adverse cumulative impacts to air quality.

The cumulative emissions associated with the CARB Phase 3 projects at the five refineries for which data are currently available, will exceed the CO, VOC, NO_x, SO_x and PM₁₀ significance thresholds. Assuming the cumulative total emissions of the five refineries for which data are

available are increased by 20% when all six refineries are considered, CO, VOC, NO_x, SO_x and PM₁₀ are expected to be significant.

6.3.1.3 Operational Impacts – Toxic Air Contaminants

The operational TAC emissions associated with the CARB Phase 3 projects are anticipated to increase at each of the refineries for specific pollutants. In order to evaluate the cumulative impacts of the TACs, the locations and extents of the anticipated impacts were reviewed. The refinery located nearest to the Chevron El Segundo Refinery is the Mobil Torrance Refinery, about six miles from Chevron-El Segundo. The other four refineries (Tosco, ARCO, Ultramar and Equilon) are further than Mobil from the Chevron El Segundo Refinery. Because of the distances of the other refineries from Chevron, TAC emissions from these refineries are not anticipated to impact the vicinity of the El Segundo Refinery.

Based on review of the location and extent of the zones of impact (one per million cancer isopleth) for the Chevron El Segundo Refinery and the other refineries, no overlap is anticipated. Therefore, the impacts of TAC emissions from the Chevron El Segundo Refinery comprise the cumulative impacts at this location.

The most recent Chevron El Segundo Refinery HRA was submitted to the SCAQMD on December 18, 2000. The HRA reported a maximum cancer risk of 2.9 per million, a maximum acute hazard index of 0.29 and a maximum chronic hazard index of 0.13. The location of the peak receptor is a commercial receptor located north of the facility at UTM 369300E, 3753600N. The HRA prepared for the CARB Phase 3 project identifies the maximum risk to be 0.005 per million at a routine grid receptor located northeast of the facility at 374000E, 3753000N, as presented in Appendix B. The maximum acute and chronic hazard indices are predicted to be 0.03 and 0.03, respectively. The cumulative impacts associated with the post-project scenario will be below the significance criteria for cancer risk of ten per one million, and below the significance criteria for hazard indices of 1.0. Therefore, significant cumulative impacts are not expected from the Chevron El Segundo Refinery.

The HRA for the Montebello Terminal that was approved on May 12, 1999 reported a maximum cancer risk of 7.5 per million, a maximum acute hazard index of 0.01 and a maximum chronic hazard index of 0.18. The Tier 2 analysis prepared for the CARB Phase 3 project identifies the maximum risk to be 0.21 per million. The maximum acute and chronic hazard indices are predicted to be 0.00009 and 0.0003, respectively. The cumulative impacts associated with the post-project scenario will be below the significance criteria for cancer risk of ten per one million, and below the significance criteria for hazard indices of 1.0. Therefore, significant cumulative impacts are not expected from the Montebello Terminal.

The Huntington Beach Terminal has not been required to submit an HRA due to low facility emissions. The Tier 2 analysis prepared for the CARB Phase 3 project identifies the maximum risk to be 0.11 per million. The maximum acute and chronic hazard indices are predicted to be

0.00004 and 0.0001, respectively. The cumulative impacts associated with the post-project scenario will be below the significance criteria for cancer risk of ten per one million, and below the significance criteria for hazard indices of 1.0. Therefore, significant cumulative impacts are not expected from the Huntington Beach Terminal.

Since the overall toxic emissions due to the CARB Phase 3 project decreases for the Van Nuys Terminal, a cumulative analysis is not required for this terminal.

Therefore, the overall cumulative air quality TAC impacts of the CARB Phase 3 projects within the Los Angeles Basin are expected to be minimal.

6.3.2 Biological Resources

The proposed project is not expected to create significant impacts to biological resources. With the exception of the Refinery, none of the project sites currently sustain significant biological resources. The Refinery maintains a small, undeveloped area which is inhabited by the El Segundo blue butterfly. As discussed in Section 4.2, neither direct nor indirect impacts are expected because construction would occur on previously disturbed land approximately 0.5 mile away from the butterfly sanctuary. Furthermore, the butterfly sanctuary is surrounded by existing commercial and industrial development. Based on these considerations, no cumulative impacts to biological resources are expected to occur from the combined construction or operation of the proposed project and the other planned developments.

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 biological resources impacts do not exceed the SCAQMD's significance criteria, significant cumulative adverse biological resources impacts are not expected from the implementation of the proposed project.

6.3.3 Cultural Resources

As discussed in Sections 3.3 and 4.3, there are no known cultural resources that extend on and beyond the project sites with the potential exception of the Huntington Beach Terminal. As discussed in Section 3.3, the SCCIC record search identified one archaeological site, CA-ORA-372 (also known as CA-ORA-595 and CA-ORA-363), within the Huntington Beach Terminal boundaries. This archaeological site is described as highly disturbed. With the implementation of the mitigation measures included in Section 4.3, no significant impacts to cultural resources are expected as a result of the proposed project. Based on these considerations, no significant cumulative adverse impacts to cultural resources are expected to occur from the combined construction or operation of the proposed project and the other planned developments.

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 cultural resources impacts do not exceed the SCAQMD’s significance criteria, significant cumulative adverse cultural resources impacts are not expected from the implementation of the proposed project.

6.3.4 Geology and Soils

The proposed project is not expected to create significant impacts to geology or soils as described in Section 4.4. Also, as described in Section 4.4, the potential for earthquake-induced liquefaction exists at the Van Nuys Terminal. Mitigation has been proposed to reduce this impact below the level of significance. No unique geologic resources are located at the Refinery or the terminal sites. Seismic hazards will be minimized at the project sites using proper design and construction standards. No cumulative impacts to geologic structures or processes are expected to occur from the combined construction or operation of the proposed project with the projects discussed in Section 6.2.

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, significant cumulative adverse geology/soils impacts are not expected from the implementation of the proposed project.

6.3.5 Hazards and Hazardous Materials

Most of the cumulative projects that could potentially contribute to cumulative impacts discussed in Section 6.2 pose no substantial hazards or risk of upset because they do not utilize hazardous materials to a significant degree. For example, the proposed commercial developments in El Segundo and the residential, commercial, and warehouse developments near the terminals do not utilize hazardous materials that would potentially have a significant impact beyond their property lines.

There are a number of other refineries engaged in conversion to CARB Phase 3 production but all are more than six miles of the Chevron Refinery.

The major potential impact from the proposed project will be due to the possible failure of the 30,000-bbl pentane storage tank at the Refinery. The “worst-case” impact zone for this storage tank is about 2.5 kilometers. This is based on the highly unlikely U.S. EPA “worst-case” assumption that 30,000 bbl of pentane would be vaporized and mixed with air so that the entire amount was between the upper and lower explosive limit. This mass would then explode at 10

percent of the efficiency of TNT. A more likely accident scenario at the Refinery would be a spill to a containment dike followed by a fire. This would have an impact distance of about 337 meters, which would not extend beyond the property line. Also, fire suppression systems will be in place to mitigate fires.

With regard to the terminals, Chevron has proposed modifications at terminals in Van Nuys, Montebello, and Huntington Beach. One new risk created by the project at the three terminals is due to potential ethanol truck accidents. A major truck fire has a projected impact distance of about 130 meters. A limited spill and fire has an impact of about 21 meters. Neither scenario creates a significant adverse cumulative impact with other projects in the local area. Ethanol tank fires are a potential new risk at Montebello. The impact of tank fires at either location extends to a distance of approximately 200 meters. The warehouse project in Montebello (Section 6.2.4) is about 1,200 meters distance and would not have a potential cumulative impact. The sports complex in Huntington Beach (Section 6.2.5) is approximately 100 meters from the terminal but would not have hazards associated with it that create a potential significant adverse cumulative impact.

Based on the above considerations, there would be no significant adverse cumulative impacts related to an increased risk from catastrophic failures associated with this project.

6.3.6 Hydrology/Water Quality

Water demand of the proposed project is considered insignificant. The existing water supply and disposal systems are adequate to meet the demands of the proposed project and the projects considered as part of the cumulative impacts discussion. Therefore, it is expected that there will be no significant adverse cumulative impacts on water resources, including impacts to groundwater quality and surface water quality, from the proposed project when considered with other projects.

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 hydrology/water quality impacts do not exceed the SCAQMD's significance criteria, significant adverse cumulative hydrology/water quality impacts are not expected from the implementation of the proposed project.

6.3.7 Land Use and Planning

Projects discussed in Section 6.2 generally involve modifications to existing commercial facilities or new developments in areas zoned for the proposed uses. For example, the proposed El Segundo Media Center will be located in an area zoned for mixed commercial uses and the proposed sports complex in Huntington Beach will be located in an area zoned for recreational

purposes. Additionally, many of the related projects in the vicinity of the Refinery and the terminals are in various stages of construction and have gone through the approval process at the local agency level. Therefore, no change to land use patterns is expected to result from the individual projects or from the projects considered together. Land use impacts on a regional scale are not expected to occur.

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 land use impacts do not exceed the SCAQMD’s significance criteria, significant adverse cumulative land use impacts are not expected from the implementation of the proposed project.

6.3.8 Noise

Increased noise levels as a result of construction of the proposed project are expected to be insignificant. Construction of the individual projects in combination with the proposed project will contribute to increased noise on a short-term basis. For proposed project operations, mitigation measures have been proposed to reduce noise impacts from new and modified equipment at the Refinery to below the significance level. Considering the existing noise levels in the mostly industrialized areas where the Refinery and Van Nuys and Huntington Beach Terminals are located, the cumulative impacts from noise are not expected to be significantly adverse.

Operation of the rail spur at the Montebello Terminal is expected to create a significant impact. This impact is expected to occur for 20 minutes per day Monday through Friday between 9:00 AM and 11:00 AM. No other projects have been identified that would create cumulative significant impacts in combination with the proposed rail spur operation at the Montebello Terminal.

6.3.9 Public Services

As discussed in Section 4.9, no significant impact to fire protection services is likely to occur as a result of the proposed project additions/modifications at the Refinery or the terminals and other projects discussed in Section 6.2 as the infrastructure exists to support these actions. No significant adverse cumulative impact to fire services is expected because the region is already heavily developed and urbanized with a large number of resources.

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 public service impacts do not exceed the SCAQMD’s significance criteria, significant adverse cumulative public service impacts are not expected from the implementation of the proposed project.

6.3.10 Solid/Hazardous Waste

Both non-hazardous and hazardous waste landfills used by the Refinery generally have expected life capacities ranging from 20 to 30 years. Although Chevron will implement waste minimization techniques to ensure that waste impacts from the proposed project remain insignificant, landfills in the region have finite capacities. The incremental waste that will be generated by the proposed project over the life span of the disposal facilities is negligible compared to the capacity; therefore, no significant adverse cumulative impacts are anticipated to result.

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 solid/hazardous waste impacts do not exceed the SCAQMD’s significance criteria, significant adverse cumulative solid/hazardous waste impacts are not expected from the implementation of the proposed project.

6.3.11 Transportation/Circulation

As discussed in Section 4.11, the proposed project is not expected to create long-term impacts to traffic in the area of Refinery or the terminal sites. Additionally, with the exception of one intersection near the Refinery, the short-term construction impacts are considered insignificant and are not expected to affect traffic patterns in these areas, even if related projects in these areas were to overlap with the proposed project construction.

Significant temporary construction impacts are expected to occur at the Refinery during the PM peak period (4:00 to 6:00 PM) at one of the intersections near the Refinery. Cumulative effects on traffic and circulation in the vicinity of Refinery will be significantly adverse during the temporary construction period.

As discussed in Section 4.11, the weekday (Monday through Friday) rail car deliveries to the Montebello Terminal will result in a total of ~~2820~~ minutes of vehicular delay due to the blockage of Vail Avenue. However, the proposed project operations at the Montebello Terminal and the other projects discussed in Section 6.2 are not expected to create significant adverse cumulative impacts to transportation/circulation.

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 transportation/circulation impacts due to rail car deliveries to the Montebello Terminal do not exceed the SCAQMD’s significance criteria, significant adverse cumulative solid/hazardous waste impacts are not expected from the implementation of the proposed project.

6.4 Mitigation Measures

Cumulative impacts from individual projects considered together may affect air quality and transportation/circulation. Mitigation measures for these environmental topics are provided in Section 4.

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