

CHAPTER 2

Summary of Environmental Impacts

This chapter provides a summary of the environmental impacts of the Project, as identified and analyzed in this EIR. Table 2-1 includes statements of impact and related mitigation measures. Statements of Project-specific impacts and mitigation measures have been extracted from the analysis set forth in Chapter 4 of this document; statements of cumulative impacts and mitigation measures have been extracted from Chapter 5. The information in Table 2-1 is arranged in four columns: 1) environmental impacts; 2) level of significance without mitigation; 3) adopted or recommended mitigation measures; and 4) level of significance with mitigation measures applied.

**TABLE 2-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE VALERO BENICIA CRUDE BY RAIL PROJECT**

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Air Quality			
Impact 4.1-1a: Construction of the Project would contribute to an existing or projected air quality violation.	Potentially Significant	<p>Mitigation Measure 4.1-1: Implement BAAQMD Basic Mitigation Measures. Valero and/or its construction contractors shall comply with the following applicable BAAQMD basic control measures during Project construction:</p> <ul style="list-style-type: none"> • All exposed dirt non-work surfaces (e.g., parking areas, staging areas, soil piles, and graded areas, and unpaved access roads) shall be watered two times a day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California of Regulations). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • A publicly visible sign with the telephone number and person to contact at the City of Benicia regarding dust complaints shall be posted throughout construction. Valero and/or contractor shall respond and take corrective action within 48 hours of notification by the City. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations. 	Less than Significant
Impact 4.1-1b: Operation of the Project would contribute to an existing or projected air quality violation.	Potentially Significant	None available.	Significant and Unavoidable
Impact 4.1-2: The Project could result in a cumulatively considerable net increase in criteria pollutant and ozone precursor emissions.	Potentially Significant	None available.	Significant and Unavoidable
Impact 4.1-3: The Project could expose sensitive receptors to substantial pollutant concentrations.	Less than Significant	None required	Less than Significant
Impact 4.1-4: The Project could generate objectionable odors affecting a substantial number of people.	Less than Significant	None required	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE VALERO BENICIA CRUDE BY RAIL PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources			
Impact 4.2-1: The Project could have a substantial adverse effect on nesting birds in the Sulphur Springs Creek riparian corridor.	Potentially Significant	Mitigation Measure 4.2-1: Project construction activities should avoid the nesting season of February 15 through August 31, if feasible. If seasonal avoidance is not possible then no sooner than 30 days prior to the start of any Project activity a biologist experienced in conducting nesting bird surveys shall survey the Project area and all accessible areas within 500 feet. If nesting birds are identified, the biologist shall implement a suitable protective buffer around the nest and no activities shall occur within this buffered area. Typical buffers are 250 feet for songbirds and 500 feet for raptors, but may be increased or decreased according to site-specific, Project-specific, activity-specific considerations such as visual barriers between the nest and the activity, decibel levels associated with the activity, and the species of nesting bird and its tolerance of the activity. Construction activities that are conducted within a reduced buffer shall be conducted in the presence of a qualified full-time biological monitor.	Less than Significant
Impact 4.2-2: The Project could have a substantial adverse effect on the Sulphur Springs Creek riparian corridor.	Potentially Significant	Implement Mitigation Measure 4.8-1	Less than Significant
Impact 4.2-3: The Project could have a substantial adverse effect on federally protected wetlands.	Potentially Significant	Implement Mitigation Measure 4.8-1	Less than Significant
Impact 4.2-4: The Project could interfere with wildlife movement in the Sulphur Spring Creek riparian corridor	Less than Significant	None required	Less than Significant
Impact 4.2-5: The Project may not be in conformance with applicable habitat conservation plans.	No impact	None required	No impact
Impact 4.2-6: The Project could have a substantial adverse effect on special-status wildlife species in the Suisun Marsh disturbed by an increased frequency (high traffic volumes) of tank cars through the marsh.	Less than Significant	None required	Less than Significant
Impact 4.2-7: In the event of a train accident that involves a relatively large amount of oil spilled from one or more tank cars, the Project could have a substantial adverse effect on special-status natural communities and special-status species, including those present in the Suisun Marsh.	Less than Significant	None required	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE VALERO BENICIA CRUDE BY RAIL PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
Impact 4.2-8: The Project could have a substantial adverse effect on federally protected wetlands.	Less than Significant	None required	Less than Significant
Impact 4.2-9: The Project may not be in conformance with applicable habitat conservation plans.	Less than Significant	None required	Less than Significant
Cultural Resources			
No impacts			
Energy Conservation			
Impact 4.4-1: Construction and operation and maintenance of the Project would result in consumption of energy and could cause adverse effect on local and regional energy supplies or requirements.	Potentially Significant	Implement Mitigation Measure 4.1-1	Less than Significant
Impact 4.4-2: Transportation energy usage for the Project could result in wasteful or unnecessary consumption of energy.	Less than Significant	None required	Less than Significant
Geology and Soils			
Impact 4.5-1: The Project would not expose people or structures to potential adverse effects involving rupture of a known earthquake fault.	Less than Significant	None required	Less than Significant
Impact 4.5-2: The Project would not expose people or structures to potential adverse effects involving strong seismic ground shaking.	Less than Significant	None required	Less than Significant
Impact 4.5-3: The Project would not expose people or structures to potential adverse effects involving seismic-related ground failure, including liquefaction	Potentially Significant	Mitigation Measure 4.5-1: Consistent with the geotechnical investigations and deformation analysis conducted to evaluate the potential for liquefaction hazards, the Valero Benicia Refinery shall incorporate into the final project design all recommendations to overcome lateral displacement, horizontal ground separation, and vertical settlement as provided by the licensed geotechnical engineer. Specifically, the Valero Benicia Refinery, in its design of the railroad project element located in areas identified as underlain by liquefiable or problematic	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE VALERO BENICIA CRUDE BY RAIL PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Geology and Soils (cont.)			
Impact 4.5-3 (cont.)		soils, shall design for total seismic lateral displacements of 8 inches to 39 inches. Railroad ties and slabs shall be analyzed to evaluate the effect of up to a 6 inch wide horizontal ground separation and all recommendations to overcome such horizontal ground separation provided by the licensed geotechnical engineer incorporate into the final project design. A differential settlement of 2 inches across the gage width shall be analyzed to evaluate rail car tipping potential and all recommendations provided by the licensed geotechnical engineer incorporate into the final project design. All geotechnical design shall comply with seismic design requirements of CBC. Mitigation Measure 4.5-2: Valero Benicia Refinery shall include into its current track inspection program, regular and, in the event of a seismic incident with potential for track damage, post-earthquake inspections of the proposed track sections to ensure compliance with Federal Railroad Administration (FRA) track safety standards. Additionally, in the event of an incident with potential for track damage, such as an earthquake and associated secondary ground failure (such as liquefaction or lateral spreading) track inspection shall occur after the occurrence and before the operation of any train over that track.	
Impact 4.5-4: The Project would not expose people or structures to potential adverse effects involving landslides.	Less than Significant	None required	Less than Significant
Impact 4.5-5: The Project would not result in substantial soil erosion or loss of topsoil.	Less than Significant	None required	Less than Significant
Impact 4.5-6: The Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in liquefaction.	Less than Significant	None required	Less than Significant
Impact 4.5-7: The Project would be located on expansive soil.	Less than Significant	None required	Less than Significant
Greenhouse Gas Emissions			
Impact 4.6-1: The Project would generate direct and indirect GHG emissions.	Less than Significant	None required	Less than Significant
Hazards and Hazardous Materials			
Impact 4.7-1: The Project could pose a significant hazard to the public or environment during operation of the Project or routine transport or disposal of hazardous materials.	Less than Significant	None required	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE VALERO BENICIA CRUDE BY RAIL PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Impact 4.7-2: The Project could pose significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Less than Significant	None required	Less than Significant
Impact 4.7-3: The Project could create a hazard to the public or environment through reasonably foreseeable upset or accident conditions during train maneuver at the rail unloading facility.	Less than Significant	None required	Less than Significant
Impact 4.7-4: The Project could create a hazard to the public or the environment through reasonably foreseeable upset or accident conditions during the line hookup and crude oil transfer from a tank car at the unloading facility.	Less than Significant	None required	Less than Significant
Impact 4.7-5: The Project could create a hazard to the public or the environment through reasonably foreseeable upset or accident conditions due to corrosion of process related equipment handling crude oil.	Less than Significant	None required	Less than Significant
Impact 4.7-6: Operation of the Project could emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school.	Less than Significant	None required	Less than Significant
Impact 4.7-7: The Project could impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	Potentially Significant	Implement Mitigation Measure 4.11-4	Less than Significant
Impact 4.7-8: Operation of the Project could expose people or structures to significant risk, injury, or loss from wildland fires.	Less than Significant	None required	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE VALERO BENICIA CRUDE BY RAIL PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Hydrology and Water Quality			
Impact 4.8-1: The Project would not violate any water quality standards or otherwise substantially degrade water quality.	Potentially Significant	Mitigation Measure 4.8-1: The Applicant and/or its contractor shall prepare and implement a storm water management plan (SWMP) for construction of the Project. The Project is covered under the Applicant's National Pollutant Discharge Elimination System (NPDES) permit and storm water pollution prevention plan (SWPPP). A notice of intent (NOI) application and notice of termination (NOT) application are not required. Implementation of the SWMP shall start with the commencement of construction and continue through the completion of the Project. The SWMP shall identify pollutant sources (such as sediment) that may affect the quality of storm water discharge and implement best management practices (BMPs) consistent with the California Stormwater Quality Association's BMP Handbook for Construction to reduce pollutants in storm water. The Applicant or the construction contractor shall install erosion and storm water control measures on the construction site such as installation of a silt fence and other BMPs, particularly at locations close to storm drains and water bodies. The BMPs shall also include practices for proper handling of chemicals such as avoiding fueling at the construction site and overtopping during fueling and installing spill containment pans.	Less than Significant
Impact 4.8-2: The Project could require withdrawal of groundwater or result in a substantial increase in impervious surface area within the Refinery.	Less than Significant	None required	Less than Significant
Impact 4.8-3: The Project could alter streams or the existing drainage within the Refinery.	Less than Significant	None required	Less than Significant
Impact 4.8-4: The Project could substantially change runoff flow rates or increase the potential for flooding.	Less than Significant	None required	Less than Significant
Impact 4.8-5: The Project could increase storm water runoff.	Less than Significant	None required	Less than Significant
Impact 4.8-6: The Project could place structures within a 100-year flood hazard areas at risk.	Less than Significant	None required	Less than Significant
Impact 4.8-7: The Project could place people or structures within inundation areas for flooding.	Less than Significant	None required	Less than Significant
Land Use and Planning			
Impact 4.9-1: The Project would not physically divide an established community.	Less than Significant	None required	Less than Significant
Impact 4.9-2: The Project would be in conformance with applicable regional or local plans and policies adopted for the purpose of avoiding or mitigating environmental effects.	Less than Significant	None required	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE VALERO BENICIA CRUDE BY RAIL PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Noise			
Impact 4.10-1: Operation and maintenance of the Project could result in exposure of persons to noise levels in excess of standards established by the City of Benicia.	Less than Significant	None required	Less than Significant
Impact 4.10-2: The Project would result in the generation of ground borne vibration.	Less than Significant	None required	Less than Significant
Impact 4.10-3: Operation of the Project could result in exposure of persons to a permanent increase in ambient noise levels.	Less than Significant	None required	Less than Significant
Impact 4.10-4: Construction of the Project would not result in a substantial temporary or periodic increase in ambient noise levels.	Less than Significant	None required	Less than Significant
Transportation and Traffic			
Impact 4.11-1: The Project would not cause intersection operations to degrade to worse than LOS D, would not cause a substantial increase in traffic volumes at intersections already operating at LOS F with the Project, would not cause a substantial increase in average vehicle delay at train crossings, and would not cause an increase in the queue length caused by trains crossing Park Road that substantially impedes other traffic (such as traffic on the I-680 mainline, or at an adjacent upstream intersection wherein traffic not destined over the Park Road crossing is unable to continue along the travel way).	Less than Significant	None required	Less than Significant
Impact 4.11-2: The Project would not conflict with the Solano County Congestion Management Program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.	Less than Significant	None required	Less than Significant

TABLE 2-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE VALERO BENICIA CRUDE BY RAIL PROJECT

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Transportation and Traffic (cont.)			
Impact 4.11-3: The Project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment), or due to the proposed increased frequency/length of train crossings.	Less than Significant	None required	Less than Significant
Impact 4.11-4: The Project would not result in inadequate emergency access.	Potentially Significant	<p>Mitigation Measure 4.11-4:</p> <ul style="list-style-type: none"> Coordinate with the City of Benicia Fire Department to finalize the City of Benicia Fire Department/Valero Benicia Refinery Fire Department Operation Aid Agreement ("Agreement") to be implemented in the event an emergency occurs during a Project train crossing. The "Agreement" shall provide methods of adequately informing the Fire Department of the expected train crossing schedule and alternate routes to access the Park Road and Bayshore Road industrial areas during the event that a train crosses Park Road. In order to inform Benicia Dispatch of a train crossing during an emergency, Valero shall provide, install, and maintain camera(s) at specified location(s) determined by the City, with coordination from Valero. The camera shall meet the City's standards and have a real-time connection to Benicia Dispatch. The camera connection will signal to Benicia Dispatch that emergency responders shall use East 2nd Street as the identified alternative route to the Park Road and Bayshore Road industrial areas. East 2nd Street was identified for its direct access to area and the Opticom system in place at all signalized intersections. The camera must be installed and operational prior to commencement of the Project or certificate of occupancy. In order to minimize potential impacts associated with utilizing the alternative route, Valero shall provide the necessary devices for the City's emergency response vehicles that are not equipped for the Opticom system. The emergency response vehicles identified to receive a device shall be those without the necessary device as of the date the "Agreement" is executed. Valero shall be responsible for the maintenance of the camera during the life of the Project. Utilize the Refinery's existing onsite emergency response team to assist with responding to off-site emergencies within the Park Road and Bayshore Road industrial areas as requested by the City of Benicia Fire Department under the existing mutual aid agreement, if an emergency occurs during the event of a train crossing on Park Road. The procedures for the occurrence of this support by the Valero Refinery Fire personnel are outlined in the proposed Benicia Fire-Valero Fire Operational Aid Agreement. 	Less than Significant
Transportation and Traffic (cont.)			
Impact 4.11-5: The Project would not conflict with adopted policies, plans or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.	Less than Significant	None required	Less than Significant

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