4.7 LAND-BASED TRANSPORTATION

Section 4.7 provides a detailed description of the existing land transportation system in the vicinity of the Amorco Marine Oil Terminal (Amorco Terminal) and the potential effects on land transportation and traffic that may occur with the implementation of the Amorco Marine Oil Terminal Lease Consideration Project (Project). Assessment of vessel traffic is addressed as part of Section 4.1, Operational Safety/Risk of Accidents.

4.7.1 CONCEPTS AND TERMINOLOGY

Traffic is typically measured and averaged over a 24-hour period. This average daily traffic (ADT) is often based on an actual 24-hour traffic count taken during mid-week. In some cases, traffic is measured at various times during the day and extrapolated to the ADT. Seasonal variations may also be taken into account by collecting data during different months of the year.

The capacity of a roadway segment or intersection is the maximum rate of vehicular traffic flow under prevailing traffic, design, and operational conditions. Factors affecting capacity include: traffic controls, lane widths, grades, the amount of truck and bus traffic, the availability of on-street parking, parking turnover, and turn movements. Capacity is commonly defined for hourly periods of time. However, for generalized planning purposes, it is useful to define capacity as the maximum volume of traffic that a roadway may be expected to carry during a 24-hour period to maintain a level of service (LOS). Daily capacities, as defined by the Transportation Research Board in the *Highway Capacity Manual*, (2000) for various facilities under ideal conditions are listed in Table 4.7-1.

The LOS of a roadway segment or intersection is a qualitatively defined measure of prevailing traffic, design, and operational conditions. The LOS, denoted alphabetically from A to F (best to worst), is a summary evaluation of the degree of congestion, roadway design constraints, delay, accident potential, and driver discomfort experienced during a given period of time (peak hour for intersections and 24 hours for roadway segments). While LOS A is the most desirable operational condition for a roadway or intersection, LOS C is considered a benchmark for planning purposes. In heavily urbanized areas, LOS D is an accepted, though undesirable, condition for peak hour travel, particularly on freeways. The LOS may be quantitatively calculated by a number of methods that generally compare vehicle counts with the physical and operational capacity of the roadway under study. For roadway segments and controlled intersections, the volume/capacity (V/C) ratio is indicative of the LOS. Traffic LOS definitions are explained in Table 4.7-2.

Table 4.7-1: Daily Capacities for Major and Minor Arterials

Facility Geometrics	Capacity in Vehicles Per Day (LOS E)[1]
8-lane Divided Regional Arterial	80,000
8-lane Divided Major Arterial	72,000
6-lane Divided Major Arterial	54,000
4-lane Divided Major Arterial	36,000
4-lane Undivided Major Arterial	30,000
2-lane Undivided Major Arterial	15,000
4-lane Minor Arterial	24,000
2-lane Minor Arterial	12,000

Source: Transportation Research Board 2000
[1]LOS = Level of Service

Table 4.7-2: Summary of Levels of Service (LOS) for Intersections

LOS	Flow Type	Delay	Maneuverability	V/C[1] Ratio
A	Stable flow	Very slight or no delay. If signalized, conditions are such that no approach phase is fully utilized by traffic and no vehicle waits longer than one red indication.	Turning movements are easily made, and nearly all drivers find freedom of operation.	0.00 – 0.60
B	Stable flow	Slight delay. If signalized, an occasional approach phase is fully utilized.	Vehicle platoons are formed. Many drivers begin to feel somewhat restricted within groups of vehicles.	0.61 - 0.70
C	Stable flow	Acceptable delay. If signalized, a few drivers arriving at the end of a queue may occasionally have to wait through one signal cycle.	Backups may develop behind turning vehicles. Most drivers feel somewhat restricted.	0.71 - 0.80
D	Approaching unstable flow	Tolerable delay. Delays may be substantial during short periods, but excessive backups do not occur.	Maneuverability is severely limited during short periods due to temporary backups.	0.81 - 0.90
E	Unstable flow	Intolerable delay. Delay may be considerable (up to several signal cycles).	There are typically long queues of vehicles waiting upstream of the intersection.	0.91 - 1.00
F	Forced	Excessive delay.	Jammed conditions. Backups from other locations restrict or prevent movement. Volumes may vary widely, depending on the downstream backup conditions.	Varies

Source: Transportation Research Board 2000
[1]V/C = volume/capacity ratio

4.7.2 ENVIRONMENTAL SETTING

4.7.2.1 Roadway Transportation System

The Amorco Terminal is located off of Interstate 680 (I-680) near the Marina Vista Road exit. The entrance to the Amorco Terminal, Amorco Road, connects to Marina Vista Road, approximately 0.5 mile west of I-680. At Amorco Road, Marina Vista Road is a narrow, two-lane paved roadway with dirt shoulders. Various locations along Marina Vista Road have a physical divider separating westbound and eastbound lanes. Approximately 0.5 mile west of the Amorco Road/Marina Vista Road intersection, Marina Vista Road becomes a one-way road westbound as it approaches downtown, and Escobar Street parallels Marina Vista Road eastbound. While Marina Vista Road is lightly traveled in the vicinity of Amorco Road, trucks make up a large portion of the traffic volume, reflecting the industrial nature of the land use in the area.

The city of Martinez has jurisdiction of Marina Vista Road. The posted speed limit on the stretch of Marina Vista Road near Amorco Road varies from 25 to 35 miles per hour. Table 4.7-3 depicts 24-hour vehicle counts to the west and east of I-680, respectively. Marina Vista Road becomes Waterfront Road approximately 0.5 mile east of I-680.

Table 4.7-3: 24-Hour Vehicle Counts on Marina Vista Road West of Interstate 680 and Waterfront Road East of Interstate 680 (2002)

Roadway	Eastbound Traffic Total	Eastbound Peak Hour	Westbound Traffic Total	Westbound Peak Hour	Total Both Directions
Marina Vista Road	4,337	(AM) 295	5,594	(AM) 641	9,931
		(PM) 644		(PM) 303	
Waterfront Road	2,184	(AM) 311	2,185	(AM) 179	4,369
		(PM) 163		(PM) 258	

Source: CSLC 2011a

There are no truck trips attributable to Amorco's Terminal operations. All Amorco Terminal employee and associated delivery vehicles enter through the Amorco Terminal entrance (Amorco Road) off Marina Vista Road and park inside the facility. Amorco Terminal receives crude oil over the wharf and transfers it by pipeline to storage tanks closer the Golden Eagle Refinery (Refinery). Since tanker truck loading or offloading is not used, there is no truck traffic associated with the Amorco Terminal.

4.7.2.2 Railroad System

No rail or rail spur is associated with the Amorco Terminal. However, railroad tracks run parallel to Marina Vista Road and must be crossed to enter Amorco Terminal. These tracks carry freight and Amtrak San Joaquin (service from San Francisco to Bakersfield,

10 trains per day) and follow the southern shore of the Carquinez Strait. Railroad traffic can temporarily block access to Amorco Terminal. Another set of tracks, which cross the Carquinez Strait between the east and west spans of the Benicia Bridge, are elevated and have no impact on access to Amorco Terminal. These tracks carry freight and Amtrak Capitol Corridor (service from San Jose to Sacramento, 24 trains per day), California Zephyr (service from Chicago to Emeryville, two trains per day), and Coast Starlight (service from Seattle and Washington, 2 trains per day).

4.7.3 REGULATORY SETTING

Federal and State laws that may be relevant to the Project are identified in Table 4-1. Local laws, regulations, and policies are discussed below.

Interstate highways, state routes, and bridges are governed by the Federal Highway Administration and California Department of Transportation; county roads are governed by Contra Costa County; and other local streets and highways are governed by local cities. In all cases, specific standards apply with respect to the planning, design, and operation of roadways and intersections. Not all governing agencies impose the same criteria (e.g., cross sections and rights-of-way for the same street may differ from jurisdiction to jurisdiction). Rail facilities are regulated in the State by the California Public Utilities Commission (CPUC). Train operations are also subject to CPUC guidelines. The design and operation of railroad grade crossings are subject to Federal Railroad Administration guidelines. Numerous other federal agencies also have regulatory authority over rail transportation.

TRANSPAC, Central County Action Plan for Routes of Regional Significance

Regional Transportation Planning Committees work cooperatively to establish overall goals, set performance measures (i.e., Multi-modal Transportation Service Objectives) for designated Routes of Regional Significance, and outline a set of projects, programs, measures, and actions that will support achievement of the objectives. Interstate 680 is a route of regional significance through Contra Costa County.

City of Martinez

The city of Martinez Downtown Specific Plan (2006) Circulation (Section 13) identifies the Marina Vista/Escobar route as one of the three principal through streets, due largely to the fact that that these are the only routes to and from downtown with straightforward connections to the regional highway system. The other principal through streets are Alhambra/Berrellesa and Court/Pine/Pacheco. These three Gateway Corridors are designated as arterials in the city of Martinez General Plan Transportation Element.

4.7.4 IMPACT ANALYSIS

4.7.4.1 Significance Criteria

For the purposes of this analysis, an impact was considered to be significant and to require mitigation if it would result in any of the following:

- Generate project-related traffic that would cause LOS to drop below standards established by the local jurisdictions, if project-generated traffic cannot be minimized at these critical locations through development and implementation of a traffic control plan and/or appropriate improvements to accommodate facility operations
- Design elements of the project, or project construction, would result in conditions increasing the risk of accidents for vehicular or non-distance, sharp curves, or large speed differentials between construction-related and general-purpose traffic
- Generate parking demand that exceeds parking supply
- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance of safety of such facilities
- Substantially affect emergency response capabilities to effectively mitigate spills and other accident conditions

4.7.4.2 Assessment Methodology

Environmental impacts are discussed in this section relative to the roadways in the vicinity of the Project. Because there would be no construction associated with continued operation of the Amorco Terminal, there would be no changes to the existing conditions as a result of lease renewal.

4.7.4.3 Impacts Analysis and Mitigation Measures

The following subsections describe the Project's potential impacts on land-based transportation. Where impacts are determined to be significant, feasible mitigation measures are described that would reduce or avoid the impact.

Proposed Project

Impact Land Transportation (LT)-1: Generate project-related traffic that would cause LOS to drop below standards established by local jurisdictions; increase risk of accidents due to design elements of the project; generate significant parking demand; conflict with adopted policies, plans, or programs regarding land-based transportation; or substantially affect emergency response capabilities. (No impact.)

Under the new lease, Amorco Terminal operations would continue as at present. No vehicular activity is associated with the existing Amorco Terminal operations beyond employees and associated delivery vehicles; hence, no impacts would result from continued operations. Over the 30-year life of the lease, no modifications to the Amorco Terminal are proposed. Amorco Terminal operations would not conflict with any adopted transportation plans, policies, and programs or affect emergency response capabilities. All parking would remain on-site.

Mitigation Measure: No mitigation required.

Alternative 1: No Project

Impact LT-2: Generate project-related vehicular traffic resulting from the dismantling of existing structures. (Less than significant.)

Under the No Project Alternative, the Amorco lease would not be renewed and the existing Amorco Terminal would be decommissioned with its components abandoned in place, removed, or a combination thereof. Decommissioning would likely be accomplished primarily via the water, with materials, other than those that can be used at the Refinery, taken away via barge. If any materials were relocated by land, they would likely be relocated via heavy truck to the Golden Eagle Refinery. Based on prior experience, a construction crew of 25 workers would be anticipated. During decommissioning and removal, estimated to last 90 days, five trucks are assumed on a daily basis and when two-way trips and passenger-car equivalents are calculated, Amorco Terminal demolition could add as many as 70 ADT. Impacts resulting from increased traffic due to Project decommissioning would be less than significant because removal would be short-term, and truck trips would be scheduled to avoid peak traffic hours. Therefore, decommissioning and removal activities would result in a negligible increase in vehicular traffic. Because the Amorco Terminal would no longer be operational, daily vehicular supply trips and employee trips associated with the Terminal would cease. There would be little to no differential on surface street traffic with elimination of the Amorco Terminal.

Mitigation Measure: No mitigation required.

Impact LT-3: Generate project-related traffic that would cause LOS to drop below standards established by local jurisdictions; increase risk of accidents due to design elements of the project; generate significant parking demand; conflict with adopted policies, plans, or programs regarding land-based transportation; or substantially affect emergency response capabilities. (Potentially significant.)

To operate at its current capacity without the Amorco Terminal, Tesoro Refining and Marketing Company, LLC may need to arrange for crude/product delivery by truck, pipeline, and/or rail transfers from other marine oil terminals in the San Francisco Bay

Area to the Golden Eagle Refinery. If the Refinery were to receive truck shipments, it would likely be short-term, as receipt of crude oil via tanker truck would require placing 350 tanker trucks on the road for every unit train delivery of crude oil that is received at locations outside the Refinery. Crude oil transportation by rail car would involve constructing additional rail lines and associated handling facilities. Pipeline delivery would require construction of new pipelines and/or the purchase of existing pipeline capacity from other local petroleum refinery competitors. Short-term traffic impacts would result from the modifications at other Bay Area marine oil terminals; however, such modifications would require a separate environmental review under the California Environmental Quality Act (CEQA). Short-term and long-term impacts associated with pipeline and/or railroad construction and operation are addressed below.

Short-term Impacts

Pipeline and/or rail construction would require both materials deliveries and construction workers, thereby creating a small increase in localized traffic. Based on prior experience, it is estimated that construction may require 25 workers daily, and up to 10 trucks to bring construction supplies and remove any cut material and debris, as necessary. Assuming that each haul truck is equivalent to two passenger cars and that each vehicle makes two trips (coming and going), the construction ADT volume would be 90. Depending on the chosen route and the LOS on access roads, this temporary additional volume could result in significant impacts if these vehicles are forced onto roads operating at unacceptable levels (i.e., LOS E or F).

A second potential area of temporary, potentially significant impacts is where pipelines or rail lines come into proximity with roads. Installation of pipeline and/or rail crossings may necessitate the closure of half or all road lanes during construction. Similarly, if the line parallels or is constructed within the confines of any roads, one or more lanes may be closed. A lane closure can have a significant impact if it causes congestion that extends back to the previous intersection and reduces the traffic-carrying capacity of that intersection. Closing one lane of a two-lane road causes a reduction of more than 50 percent because not only the number of lanes is reduced by half, but the speed in the vicinity of the closure may be reduced due to traffic-control mechanisms (cones, flagmen, etc.) and the “rubbernecking” phenomenon (the tendency of motorists to want to see what is causing an impairment). Alternative routing of traffic during construction along a roadway segment may mitigate congestion. However, the increase in traffic on nearby adjacent roads typically causes traffic slowing and backups on those roads and would only slightly mitigate the problems associated with roadway construction.

Long-term Impacts

Traffic along Marina Vista Road and the roads in the vicinity of the new pipeline and/or railroad alignments would be the same as baseline conditions in the long term. The occasional trips associated with inspection and maintenance would be negligible.

Therefore, there would be no long-term impacts to land-based transportation under this alternative.

Alternative 2: Restricted Lease Taking Amorco Out of Service for Oil Transport

Impact LT-4: Generate project-related traffic that would cause LOS to drop below standards established by local jurisdictions; increase risk of accidents due to design elements of the project; generate significant parking demand; conflict with adopted policies, plans, or programs regarding land-based transportation; or substantially affect emergency response capabilities. (Potentially significant.)

Refer to Impact LT-3.

4.7.5 SUMMARY OF FINDINGS

Table 4.7-4 includes a summary of anticipated impacts to land-based transportation and associated mitigation measures.

Table 4.7-4: Summary of Land-based Transportation Impacts and Mitigation Measures

Impact	Mitigation Measure(s)
Proposed Project	
LT-1: Generate project-related traffic that would cause LOS to drop below standards established by local jurisdictions; increase risk of accidents due to design elements of the project; generate significant parking demand; conflict with adopted policies, plans, or programs regarding land-based transportation; or substantially affect emergency response capabilities.	No mitigation required.
Alternative 1: No Project	
LT-2: Generate vehicular traffic resulting from the dismantling of existing structures.	No mitigation required.
LT-3: Construction of pipeline or rail improvements could potentially increase traffic substantially in relation to existing traffic load and capacity of the street system.	Should this alternative be selected, mitigation measures would be determined during a separate environmental review under CEQA.
Alternative 2: Restricted Lease Taking Amorco Out of Service for Oil Transport	
LT-4: Construction of pipeline or rail improvements could potentially increase traffic substantially in relation to existing traffic load and capacity of the street system.	Should this alternative be selected, mitigation measures would be determined during a separate environmental review under CEQA.