3.0 ALTERNATIVES AND CUMULATIVE PROJECTS

The California Environmental Quality Act (CEQA) requires the California State Lands Commission (CSLC), as the CEQA lead agency, to analyze (1) alternatives to a proposed project that could feasibly achieve the objectives of the project while substantially reducing significant environmental effects, and (2) cumulative impacts. This section describes the alternatives considered for the Tesoro Avon Marine Oil Terminal Lease Consideration Project (Project) and evaluates their environmental impacts in comparison to those from the proposed Project. The section concludes with an analysis of potential cumulative impacts, or "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (State CEQA Guidelines, § 15355).

3.1 SELECTION OF ALTERNATIVES

3.1.1 Alternatives and Screening Development

An important aspect of the environmental review process is the identification and assessment of reasonable alternatives that have the potential to avoid or reduce the significant impacts of a proposed project to allow for a comparative analysis for consideration by decision makers. The State CEQA Guidelines provide the following guidance for evaluating alternatives in Environmental Impact Reports (EIRs).

- An EIR need not consider every conceivable alternative to a project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. (§ 15126.6, subd. (a).)

- The discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. (§ 15126.6, subd. (b).)

- In selecting a range of potential reasonable alternatives to the proposed project, the Lead Agency shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. Among the factors that a Lead Agency may use to eliminate alternatives from detailed consideration are: (i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts. (§ 15126.6, subd. (c).)

- The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the
3.0 Alternatives and Cumulative Projects

alternative shall be discussed, but in less detail than the significant effects of the project as proposed. (§ 15126.6, subd. (d).)

CEQA also requires an EIR to evaluate a “no project” alternative. The purpose of describing and analyzing a no project alternative is to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the project. The analysis of the no project alternative must discuss the existing conditions at the time the Notice of Preparation is published, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved.

3.1.2 Alternatives Screening Method

Alternatives to the proposed Project were selected based on input from the EIR study team, the Applicant (Tesoro Refining and Marketing Company LLC [Tesoro]), the public, and local and State jurisdictions during scoping and agency consultations. The alternatives screening process consisted of three steps:

Step 1: Define the alternatives to allow comparative evaluation.

Step 2: Evaluate each alternative in the context of the following criteria:

- the extent to which the alternative would accomplish most of the basic goals and objectives of the Project (the Project objective is defined in Section 1.2);
- the extent to which the alternative would avoid or lessen one or more of the identified significant environmental effects of the Project;
- the potential feasibility of the alternative, taking into account site suitability, economic viability, availability of infrastructure, general plan consistency, and consistency with other applicable plans and regulatory limitations; and
- the requirement of the State CEQA Guidelines to consider a “no project” alternative and to identify, under specific criteria, an “environmentally superior” alternative. For example, pursuant to State CEQA Guidelines section 15126.6, subdivision (e), “if the environmentally superior alternative is the ‘no project’ alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.”

Step 3: Determine the suitability of the proposed alternative for full analysis in the EIR based on Steps 1 and 2 above. If the alternative is unsuitable, eliminate it, with appropriate justification, from further consideration.

Feasible alternatives that did not clearly offer the potential to reduce significant environmental impacts, and infeasible alternatives, were removed from further analysis. In the final phase of the screening analysis, the environmental advantages and disadvantages of the remaining alternatives were carefully weighed with respect to
potential for overall environmental advantage, technical feasibility, and consistency with
the Project and public objectives.

If an alternative clearly does not provide any environmental advantages as compared to
the proposed Project, it is eliminated from further consideration. At the screening stage,
it is not possible to evaluate potential impacts of the alternatives or the proposed Project
with absolute certainty. However, it is possible to identify elements of the proposed
Project that are likely to be the sources of impact. A preliminary assessment of potential
significant effects of the proposed Project resulted in identification of the following
environmental resource areas for which potential Project-related impacts may occur:

- Operational Safety/Risk of Accidents
- Biological Resources
- Water Quality
- Air Quality
- Greenhouse Gas Emissions
- Geology, Sediments, and Seismicity
- Cultural Resources
- Land Use/Recreation (oil spill impacts)
- Noise
- Land-based Transportation
- Visual Resources, Light and Glare
- Commercial and Sport Fisheries
- Integrity of Avon Terminal
- Environmental Justice

For the screening analysis, the technical and regulatory feasibility of various potential
alternatives was assessed at a general level. Specific feasibility analyses are not
needed for this purpose. The assessment of feasibility was directed toward reverse
reason, that is, an attempt was made to identify anything about the alternative that
would be infeasible on technical or regulatory grounds. CEQA does not require
elimination of a potential alternative based on cost of construction and
operation/maintenance. For the proposed Project, those issues relate to:

- engineering feasibility and feasibility of implementation;
- reasonableness when compared to other alternatives under consideration; and
- adequacy of the alternative to meet the Project’s purpose and need.

Those alternatives that were found to be technically feasible and consistent with the
Applicant’s objectives were reviewed to determine if the alternative had the potential to
reduce the environmental impacts of the proposed Project. Table 3-1 summarizes the
evaluation and selection of alternatives for this EIR.

<table>
<thead>
<tr>
<th>Alternatives Eliminated from Consideration</th>
<th>Alternatives Evaluated in this EIR</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Consolidation Terminal</td>
<td>• No Project</td>
</tr>
<tr>
<td>• Deep-water Port Consolidation</td>
<td>• Restricted Lease taking Avon Terminal Out of Service for Oil Transport</td>
</tr>
<tr>
<td>• Limitations of Terminal for Emergency Product Transfer Use Only</td>
<td></td>
</tr>
<tr>
<td>• Alternative Lease Term with Phase Out</td>
<td></td>
</tr>
<tr>
<td>• Trucking-only</td>
<td></td>
</tr>
</tbody>
</table>
3.0 Alternatives and Cumulative Projects

Those Project alternatives listed in the first column have been eliminated from further consideration (see rationale in Section 3.2). Alternatives in the second column are described in Section 3.3, and evaluated in detail in Section 4.0, Environmental Impact Analysis.

This EIR alternatives analysis includes alternatives that potentially would result in greater environmental impacts to some issue areas, or would transfer a similar level of environmental impacts to other existing marine terminal facilities, as compared with the proposed Project. These alternatives are included for analysis to demonstrate that, regardless of lease renewal, similar levels of impacts may occur in meeting the refining needs of the San Francisco Bay Area (Bay Area) region by increased activities at other Bay Area marine oil terminals and associated refineries.

3.2 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FULL CONSIDERATION

3.2.1 Consolidation Terminal

A potential alternative to the proposed future use of the Avon Marine Oil Terminal (Avon Terminal) is a consolidated marine oil terminal, where petroleum and product are offloaded and onloaded at a central facility and delivered to and from refineries, storage terminals, and other facilities in the Carquinez Strait and east Bay Area via smaller marine vessels or pipelines. The Draft EIR/Environmental Impact Statement (EIS) for the San Francisco to Stockton Phase III (John F. Baldwin) Navigation Channel Project, published by the U.S. Army Corps of Engineers (USACE) in 1997, presented the Richmond Marine-Link Pipeline System (RMLPS) as an alternative to channel deepening and continued dredging within San Pablo Bay and Carquinez Strait. This RMLPS proposal was withdrawn by its proponent, Wickland Pipelines LLC, in February 1999, due to a lack of potential user participation.

The RMLPS was proposed as a consolidated facility. The pipeline systems associated with the RMLPS were intended to provide flexibility in the areas of cargo handling and transportation cost control, reduce vessel-to-vessel lightering of crude oil at Anchorage 9, and reduce tanker traffic in the greater San Francisco Bay and Carquinez Strait. This would have been possible because the pipeline system would have allowed tankers of up to 300,000 dead weight tons (long tons) to proceed at high tide (when ships drafting 48 to 49 feet can pass through the 45-foot-deep channel to Richmond) to the new RMLPS marine terminal, and off-load in the natural 53- to 55-foot depths of the berth at a new deep-water wharf.

The west end of the RMLPS pipeline would have commenced within the Richmond city limits at a new deep-water wharf to be constructed at Point Molate, north of the Chevron Richmond Long Wharf. The pipeline would have connected to a new tank farm on the San Pablo peninsula, either at Point San Pablo or Point Orient, and continued along the
3.0 Alternatives and Cumulative Projects

3.1 Consideration Projects

3.1.1 Point Molate

The California Statewide Environmental Impact Report (SEIR) indicates that the Point Molate site would have been transferred from the RMLPS consolidated terminal. During the process of transferring Point Molate from the RMLPS, the site was declared under the jurisdiction of a new entity, the California Energy Commission.”

3.1.2 Tesoro Avon

The Tesoro Avon Marine Oil Terminal Leases Consideration Project Final EIR indicates that the Avon site’s future was uncertain. As per the SEIR, the Avon site would be transferred from the RMLPS to a new, privately owned entity.”

3.1.3 Richmond

The Richmond GATE Oil Terminal’s future was uncertain as per the report. The GATE project would be replaced by a new facility. The new facility was set to be transferred to a new entity that would operate the terminal.”

3.1.4 Richmond

The Richmond LEIF Oil Terminal’s future was uncertain as per the report. A new terminal would be built and operated by a new entity.”

3.2 Alternatives and Cumulative Projects

3.2.1 Alternative to Use of Existing Bay Area Marine Oil Terminals

As compared to use of other existing Bay Area marine oil terminals for replacement of the Avon Terminal, the RMLPS consolidated terminal, as a new facility, would have generated a greater number of environmental impacts in the Point Molate area. In comparison with the alternatives, potential impacts would be transferred from Avon to that new location. Also, with both the RMLPS and Long Wharf operating in proximity to each other, consideration would need to be given to the potential for increased risk of vessel collisions. Since the RMLPS is no longer a viable option for a new Bay Area terminal, and because there is a potential for a greater risk of significant environmental impacts, the RMLPS consolidated terminal has been eliminated from further consideration as a viable alternative.

3.2.2 Deep-water Port Consolidation

The concept of an offshore port located outside of San Francisco Bay was also considered. This would involve development of a port several miles off the California coastline to minimize the potential for spills that would impact San Francisco Bay shorelines, and to reduce the number of tankers entering U.S. ports and related risks of environmental damage. One such offshore terminal, the Louisiana Offshore Oil Port, operates in deep water 18 miles offshore. The port consists of three single-point mooring buoys used for the offloading of crude tankers, and a marine terminal consisting of a two-level pumping platform and a three-level control platform. The onshore oil storage facility, the Clovelly, Louisiana facility 25 miles inland, is connected to the port complex by a 48-inch-diameter pipeline (LOOP LLC 2014).

While such concepts appear to have potential to reduce near-shore tanker accidents, significant questions remain unanswered as to the feasibility and environmental and economic benefits of these facilities off the coast of California. As such, this concept was eliminated from further analysis as an alternative in this EIR.

3.2.3 Limitations of Avon Terminal for Emergency Product Transfer Use Only

For consideration of emergency use only, the Avon Terminal would not be used for day-to-day operations, but would be retained in a state of readiness with all equipment operational. Under emergency conditions, use of the Avon Terminal would be restricted for use by any tanker or barge that would require unloading of its contents. While reduced use of the Avon Terminal would decrease the risk of spills, it would not necessarily cause a proportionate decrease in vessel calls or throughput. The Avon Terminal would still present a continuous potential for a pipeline spill release. In addition, the method used to replace the throughput (pipelines with connections to other terminals) could shift the risk to other regional terminals. It would also be difficult to maintain the existing level of training and experience of personnel now working at the
3.0 Alternatives and Cumulative Projects

Avon Terminal, as well as raise questions as to who would maintain and operate such a facility. It is unlikely that the Avon Terminal would be able to operate efficiently or economically, nor would there be any environmental benefit gained by limiting usage only to emergency oil transfer use; therefore, this alternative has been eliminated from further consideration as a viable alternative.

3.2.4 Alternative Lease Term with Phase Out

An alternative lease option would involve granting a shorter-term lease to Tesoro, in the event that Tesoro would phase out its operation of the Avon Terminal. The alternatives considered in this document are designed to focus on avoiding, or substantially lessening, significant effects of the Project, but to still meet Project objectives that allow the Golden Eagle Refinery (Refinery) to continue to operate. With a phase-out of operations of the Avon Terminal, Tesoro would be required to find another means of exporting refined petroleum products and importing feedstocks to maintain Refinery operations. This is similar to the No Project alternative, except that Tesoro would be granted a specific phase-out period and conditions under lease, rather than having no lease (as with the No Project alternative). The terms under which the CSLC would implement a phase-out of operations would need to be specifically developed for this facility; as such, discussion of a short-term lease is not considered further in this document.

3.2.5 Trucking-only Alternative

This alternative would involve using only trucks to export product from and import product to the Refinery. A minimal number of trucks currently export and import materials to the Refinery. However, the additional number of trucks likely needed under this alternative would require repairs of additional roadways and roadway improvements for transfer of product to and from the Refinery. Avon Terminal throughput has ranged from to 5.1 to 12.8 million barrels per year (bpy) (between 13,972 and 35,068 barrels per day [bpd]) over the past 5 years. Since the average truck carries approximately 200 barrels per tandem tanker truck, as many as 175 tandem tanker trucks per day, or approximately 63,875 trucks per year, would be required to make up the difference in product for the Refinery without the Avon Terminal. The installation of additional access gates and parking capacity to allow appropriate entering and exiting of the facility would be required. In addition, pumps and piping to transfer the contents of trucks would be needed. Due to the number of truck trips, this alternative would exceed the capacity of the local roadway systems, have significant air quality impacts, and create a significant safety risk, and would not be economically practical. As a result, this alternative was eliminated from further consideration.
3.0 Alternatives and Cumulative Projects

3.3 ALTERNATIVES EVALUATED IN THIS EIR

3.3.1 No Project

Under the No Project alternative, Tesoro’s Avon Terminal lease would not be renewed, and the existing Avon Terminal would be subsequently decommissioned with its components abandoned in place, removed, or a combination thereof. The decommissioning of the Avon Terminal would be governed by an Abandonment and Restoration Plan and an Abandonment Agreement, both of which would require CSLC staff review and approval. Decommissioning of the Avon Terminal would include, but not be limited to, the following actions:

- magnetic survey of seafloor, multi-beam survey and/or side-scan sonar;
- abandon and/or remove all Avon Terminal components above and below the seafloor, including pipelines;
- site clean-up verification using such means as side-scan sonar, remotely operated vehicles, and video; and
- completion of a Phase 1 Site Assessment (and more detailed assessment, if needed). Based on the results, a Site Closure Plan would be prepared for approval by appropriate agencies.

The Avon Terminal operates primarily (approximately 90 percent of current operations) as an export facility transferring petroleum products (including premium fuel oil, gas oil, diesel, and cutter stock) from Tesoro’s Golden Eagle Refinery. As shown in Section 2.4.11 in Section 2.0, Project Description, Avon Terminal export volumes have ranged from 4.6 to 11.8 million bpy over the past 5 years. Under the No Project alternative, Tesoro would have to pursue other means of export to continue to meet existing regional demands and the current throughput from the Avon Terminal. Options that Tesoro might pursue include:

- transitioning the import-only Tesoro Amorco Marine Oil Terminal (Amorco Terminal) to absorb export operations from the Avon Terminal;
- land-based alternatives such as pipeline, rail, or truck transportation; or
- some combination of these alternatives.

All of these alternatives would require the construction or modification of facilities and infrastructure, as well as lengthy and complex regulatory processes, and subsequent environmental review.

Transitioning of Amorco Terminal

Under the No Project alternative, Tesoro might pursue transitioning the Amorco Terminal to absorb export and import operations from the Avon Terminal, thereby...
increasing the throughput at the Amorco Terminal. Currently the Amorco Terminal operates as an import-only facility, and thus would only be capable of absorbing the increased throughput if the wharf were to be substantially upgraded and expanded to accommodate export operations, as well as meet the current combined throughput capacities for both terminals. Such required modifications to the Amorco Terminal would include, but would not be limited to:

- expand the Amorco Terminal wharf area to accommodate additional tankers required for all exports and imports currently conducted at the Avon Terminal;
- install associated export equipment, including pumps, generators, recovered oil tanks, control building, etc.;
- construct new piping manifolds;
- install a Marine Vapor Recovery system to comply with Bay Area Air Quality Management District Rule No. 44;
- expand fire and spill response systems; and
- install 10 to 15 new pipelines from the Golden Eagle Refinery to the Amorco Terminal for exported products and utilities (i.e., many of the current lines running from the Refinery to the Avon Terminal would need to be installed to serve the Amorco Terminal).

New pipeline connections between the Amorco Terminal and the Refinery as well as construction at the Amorco Terminal would require: CEQA evaluation to analyze the impacts from accommodating the Avon Terminal’s exporting capacity and expanding import operations at the Amorco Terminal; local and State permitting; land-availability evaluations; and acquisition of easements or rights-of-way.

Land-based Alternatives

Tesoro may consider land-based alternatives such as pipeline connections to other Bay Area terminals, rail car, and truck transportation, or a combination thereof, to absorb petroleum export and import operations from the Avon Terminal. The CSLC may have no jurisdiction over any of these land-based forms of transportation (except for pipeline, road, or railway construction underneath and/or across water bodies under CSLC jurisdiction); therefore, construction and operation of such facilities would be subject to substantial environmental review and permitting by other local and State agencies.

Pipeline shipments of gasoline or diesel products may require construction of new pipelines and/or the purchase of existing pipeline capacity from other local petroleum refinery competitors. The Refinery currently has two pipeline connections to the Plains All America Martinez Terminal (Plains Terminal). One of these is a Kinder Morgan pipeline that can transport 4,500 barrels per hour (bph) of gasoline. However, Tesoro’s contractual usage is limited on this pipeline. The second pipeline is a proprietary line.
3.0 Alternatives and Cumulative Projects

from Tesoro’s Tract 3 to the Plains Terminal. This pipeline can transfer between 2,000 and 3,000 bph of gasoline or diesel. Tesoro can also transfer up to 5,000 bph of gasoline or diesel products via a Kinder Morgan pipeline located at the southern end of the Tesoro Refinery.

If the Avon Terminal were decommissioned, the Refinery may be able to increase use of the Kinder Morgan pipelines for increased export operations of hydrocarbon products. Additionally, there may be some ability to increase shipment and storage capacity at the Plains Terminal for eventual export of product as well. However, with regard to either of these options: (1) available pipeline capacities would be subject to market conditions and competition for contracted use by Tesoro competitors, and (2) significant new pipeline installations and connection modifications would be required.

In addition to new or modified pipelines, additional storage tanks may be required at the Refinery to absorb export operations from the Avon Terminal, as well as expansion of existing storage capacity at other refineries, or increased pipeline capacity at those facilities. Pipelines capable of handling this capacity may be viable from an environmental perspective. However, prior to construction and use of any new pipelines, lengthy and complex regulatory processes, land-availability evaluations, and acquisition of easements or rights-of-way would be required. In general, any modifications to other Bay Area marine oil terminals would require substantial environmental review and permitting. Since specific modifications are assumed on a general basis, brief analyses are presented in Section 4.0, Environmental Impact Analysis.

There are two rail lines into the Refinery, which are currently used for shipment via railcar. If developed as part of the No Project alternative, rail lines and associated handling facilities would require additional construction. As stated above, the Avon Terminal export volumes have ranged from 4.6 to 11.8 million bpy over the past 5 years. Since the average railcar holds approximately 700 barrels, up to 50 rail cars per day would be required to make up the approximately 35,000 barrel per day difference without the Avon Terminal (assuming no other non-marine sources were used in combination with rail transportation). The required number of railcars would fluctuate dynamically, as Refinery throughput varies.

The Refinery currently only uses rail cars to transfer liquid petroleum gas, liquid carbon dioxide, sulfuric acid, anhydrous ammonia, and catalytic cracking catalyst. Therefore, additional rail car loading racks, as well as associated vapor recovery systems, pumps, and piping, would need to be installed to transfer products currently exported by the Avon Terminal. Since significant additional labor effort and logistics would likely be required for the use of railcars for product exports, Tesoro would likely use rail transportation in combination with trucks and pipelines to meet existing regional product demands.
3.0 Alternatives and Cumulative Projects

For the purposes of this EIR, it is assumed that the No Project alternative would result in a decommissioning schedule for the Avon Terminal. The potential implementation of one or more future crude oil or product alternatives to the Golden Eagle Refinery would be the subject of a subsequent application to agencies having jurisdiction pertinent to the proposed alternative. Decommissioning, abandonment, and/or deconstruction of the Avon Terminal or any other proposed reuse of the Avon Terminal would require a separate CEQA review by the CSLC. Since details associated with decommissioning, abandonment, and/or deconstruction would need to be developed if they were to occur, for the purposes of this EIR, impacts are discussed herein only generally.

3.3.2 Restricted Lease Taking Avon Terminal Out of Service for Oil Transport

Under this alternative, Tesoro’s Avon Terminal lease would be renewed with modification to restrict its allowed use such that the existing Terminal would be left in place, taken out of service, and placed into caretaker status for any petroleum product transfer, and not decommissioned or demolished. No environmental impacts would be associated with these activities. Since the structure of the Avon Terminal would remain in place, Tesoro would retain the option to apply to bring it back into service for oil transport at some time in the future, should the need arise. Any future change in use of the Avon Terminal would require a lease action and potential separate CEQA review by the CSLC. Alternative uses for the Avon Terminal could include:

- use of the Avon Terminal as a staging area for dredging operations, maintenance and upgrades to other terminals, or training exercises;
- the option for Tesoro to bring the Avon Terminal back into service as a fully operational petroleum product transfer facility; or
- sale of the Avon Terminal to another entity for the above, or for other uses.

As with the No Project alternative, Tesoro might absorb import operations from the Avon Terminal by transitioning the Amorco Terminal to import and export operations, or consider alternative means of traditional crude oil transportation, such as a pipeline and/or rail transportation, or use some combination of these sources.

3.3.3 Environmentally Superior Alternative (Summary)

State CEQA Guidelines section 15126.6, subdivision (e)(2) states:

The "no project" analysis shall discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services. If the environmentally superior alternative is the “no project” alternative, the
3.0 Alternatives and Cumulative Projects

EIR shall also identify an environmentally superior alternative among the other alternatives." (Emphasis added.)

The EIR’s Environmentally Superior Alternative is discussed in Section 5.0, Other Required CEQA Sections, after the analyses of potential significant environmental effects associated with the proposed Project have been addressed (see Sections 4.0 through 4.11).

3.4 CUMULATIVE RELATED PROJECTS

This discussion identifies other related past, present, and future projects near the location of the proposed Project and alternatives. State CEQA Guidelines section 15355 requires that an EIR consider cumulative impacts of a project when the project’s incremental effect is cumulatively considerable, as identified in section 15065, subdivision (c). 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. As defined in State CEQA Guidelines section 15355, a cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR, together with other projects causing related impacts. An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.

3.4.1 Boundary of Cumulative Projects Study Area

The study area for the proposed Project includes the San Francisco Bay to San Pablo Bay regions, Carquinez Strait, and the outer coast of California (refer to Section 1.0, Introduction). Since the geographical region that could be affected by the Project is the same, the cumulative projects study area coincides with the Project study area, and is comprised of the following components, presented in Section 3.4.2: foreseeable projects in the general vicinity of the Avon Terminal, and projects in or near the shipping lanes used by other carriers for transport of petroleum or other goods and materials within the Carquinez Strait, San Pablo Bay, and San Francisco Bay.

Most vessel traffic in the study area is not the responsibility of Tesoro. However, these vessels could have an accidental spill/release of oil in the San Francisco Bay, San Pablo Bay, or outer coast en route to the Avon Terminal. A general overview of cumulative impacts is presented in Sections 4.1 through 4.11, including a description of the existing environment and impact analysis within each environmental discipline. A description of the regional characteristics of transport in the San Francisco Bay and San Pablo Bay regions, and outer coast is presented in Section 3.4.3.
3.4.2 Description of Cumulative Projects

Projects in Vicinity

Marine Oil Terminals

All marine oil terminals fall under the Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS), which are codified in the California Code of Regulations, Title 24, Chapter 31F – Marine Oil Terminals (Cal. Code Regs., tit. 24, § 3101F et seq.). MOTEMS requires that all marine oil terminals be audited every 4 years and inspected on a periodic interval, dependent upon the condition of the facility, to determine compliance with the most recent standards. As a result of the inspections and audits, deficiencies that require repair, rehabilitation, or retrofit are identified; follow-up actions must then be taken by the terminal operator, including preparation of plans, obtaining required permits, and implementation of corrections. MOTEMS improvements are categorically exempt from CEQA, as specified in State CEQA Guidelines section 15301, subdivision (d), for repairs to existing facilities.

Shell Martinez Marine Oil Terminal (Shell Terminal). The Shell Terminal has operated at its current location offshore of the city of Martinez, Contra Costa County, since 1915. The Shell Terminal is a tanker and barge petroleum loading/unloading facility used to receive raw materials for the Shell Martinez Refinery and for exports of its refined products. In 2011, the CSLC, as CEQA lead agency, certified a Final EIR (State Clearinghouse [SCH] No. 2004072114) in conjunction with its approval of a new 30-year lease of approximately 20 acres of California sovereign land, on which the Shell Terminal is located.

Shell completed a MOTEMS initial audit in 2008 and a subsequent MOTEMS audit in 2011. As a result of these audits, several deficiencies were identified requiring repair, rehabilitation, or retrofit. Many of these deficiencies have been completed, including renovation of the fender systems at the main berths. Projects remaining to be addressed include an ongoing project to perform seismic upgrades to pile-to-pile cap connections on the timber approach trestle and two long-term capital projects in the planning and design phase that involve a seismic upgrade of the loading platforms.

The Shell Terminal docking facility has four berths—Berths #1 and #2 located on the north side (channel side) and Berths #3 and #4 located on the south side (inland side). The north side of the Shell Terminal normally maintains a minimum draft of 38 feet Mean Lower Low Water (MLLW), and has not been historically dredged. The southern berths are normally used for barges and are not currently in use due to the accumulation of silt. These berths were dredged to -20 feet MLLW in 1989 and Shell currently has no plans for dredging them. Should dredging be required during the lease period, Shell would pursue the appropriate plans and permits.
3.0 Alternatives and Cumulative Projects

Plains All American Martinez Marine Oil Terminal (Plains Terminal). The Plains Terminal is a 225-acre site located in the city of Martinez, in the lower Suisun Bay. Originally, Urich Oil leased the parcel location in 1973 and operations began in 1974. Since 1974, the lease has been amended several times as ownership has changed. Most recently, the terminal was acquired by Plains. In 2005, the CSLC, as CEQA lead agency, certified a Final EIR (SCH No. 2001042022), in conjunction with its staff approval of a new 20-year lease of approximately 5 acres of California sovereign land, on which the terminal is located. The Plains Terminal’s upland property contains storage tanks, an inactive truck loading rack, inactive rail spur, pumps and associated pipelines, vapor collection and combustion systems, and an office building. The wharf is a single-vessel docking facility with associated pumps, pipelines, electrical utilities, and other mechanical equipment. Cargo pumps for vessel unloading are located in the upland portion of the facility, about 1 mile from the wharf (CSLC 2011).

The Plains Terminal also completed a MOTEMS initial audit in 2008, and a subsequent MOTEMS audit in 2011, which identified several deficiencies requiring repair, rehabilitation, or retrofit. Numerous deficiencies have since been addressed, such as firewater system upgrades, and others remain to be completed.

Tesoro Amorco Marine Oil Terminal (Amorco Terminal). The Amorco Terminal has operated at its current location offshore of the city of Martinez, Contra Costa County, since 1923. The Amorco Terminal is a tanker and barge petroleum unloading facility used to facilitate the transfer of crude oil feedstocks from tanker vessels to Tesoro’s Amorco Tank Farm (Tank Farm) immediately upland; feedstocks are later transferred via pipelines from the Tank Farm to Tesoro’s Golden Eagle Refinery. In 2014, the CSLC, as CEQA lead agency, certified a Final EIR (SCH No. 2012052030) in conjunction with its staff approval of a new 30-year lease of approximately 14.9 acres of California sovereign land on which the Amorco Terminal is located.

The Amorco Terminal docking facility has a single active berth—located on the eastern end of the wharf. The ship berthing area north of the Amorco Terminal is dredged periodically to maintain a depth of approximately 48 feet below MLLW, although the Amorco Terminal’s operating limits indicate that a minimum water depth of 44 feet must be maintained. Bathymetric surveys are conducted quarterly and maintenance dredging is only conducted as required to maintain minimum required depths. The last Amorco dredging event, conducted in 2005, entailed removal of 500 cubic yards of spoils. Scheduled maintenance dredging is known sufficiently in advance and Tesoro would continue to comply with applicable permits to ensure appropriate assessments are conducted prior to conducting maintenance-related dredging. Dredged spoils are tested and managed according to permits issued by jurisdictional agencies, including the CSLC, USACE, San Francisco Bay Conservation and Development Commission (BCDC), and San Francisco Bay Regional Water Quality Control Board (SFBRWQCB).
The Amorco Terminal also completed a MOTEMS initial audit in 2008 and a subsequent MOTEMS audit in 2011. Several deficiencies were identified during these audits, and have since been corrected, including seismic structural, berthing system, and fire suppression system upgrades.

**Chevron Richmond Long Wharf Marine Oil Terminal.** In 2007, the CSLC, as CEQA lead agency, certified a Final EIR (SCH No. 98112080) and approved a 30-year lease for the Chevron Richmond Long Wharf Marine Oil Terminal. The project was to maintain the current operation and viability of the Chevron Richmond Refinery by continuing current Chevron Richmond Long Wharf Marine Terminal operations through which the Chevron Richmond Refinery both receives its raw materials and exports its refined products. The Chevron Richmond Refinery uses the Richmond Long Wharf Marine Terminal to receive all its crude oil, and some intermediate feed and blending stocks. In addition, the Chevron Richmond Refinery uses the Richmond Long Wharf Marine Terminal to ship products and intermediate stocks to domestic and foreign markets.

The Richmond Long Wharf Marine Oil Terminal was originally constructed in 1902 as a wooden structure supported on timber piles, but was modified in 1946 with the construction of a concrete wharf and causeway structure supported on deeper, concrete piles. Three buildings and a concrete-repaired Richmond Long Wharf were also built in 1946. In 1974, the Richmond Long Wharf was modified to accommodate larger vessels: Berth #1 was expanded and Berth #4 was extensively modified. Over the years, improvements have continued. Recent improvements include a southern capstan platform added to Berth #4 in 1986, a breasting dolphin at Berth #3 in 1990, and a voice-communication system installed in 1991. In 2000, a major structural rebuild program was completed that would enable the structure to withstand a 475-year return period seismic event resulting in minor, repairable damage with no oil spills. Since 2008, the Richmond Long Wharf has also undergone significant pipeway seismic retrofits, fender system rebuilds, concrete structural repairs and electrical infrastructure rebuilds to address deficiencies identified in its MOTEMS audits.

**Shore (Selby) Marine Oil Terminal.** In 2012, the CSLC, as CEQA lead agency, certified a Final EIR (SCH No. 2007112108) and approved a 30-year lease for the Shore Marine Oil Terminal. Shore Terminals LLC (Shore, aka NuStar, or Selby) is an independent, privately owned transshipper of petroleum products. The project was to continue operation of its marine oil terminal located on the south shore of the Carquinez Strait, just west of the Carquinez Bridge in Contra Costa County.

The original lease (PRC 5735.1) was issued to former owner Wickland in 1981 for an initial term of 25 years with a provision for a preferential right of renewal for a lease term not less than 20 years. Wickland assigned its interest to Shore Terminals in September 1998, and Valero L.P. purchased Shore Terminals in July 2005. The new lease allows Shore to continue current transfer operations of petroleum products from the wharf to its...
3.0 Alternatives and Cumulative Projects

upland main terminal storage facility until 2036. Shore does not own products transshipped through the facility, but simply warehouses products for its customers to store and transport to and from the site.

The Shore Marine Oil Terminal is subject to the MOTEMS and completed its required MOTEMS initial audit, which was submitted to the CSLC Marine Facilities Division for review and approval in February 6, 2010. Several deficiencies were identified during this audit, and have since been corrected, including installation of 60-second actuators, cameras on the wharf, and a sonar current meter with feed to the control room.

**WesPac Energy–Pittsburg Terminal.** WesPac Energy–Pittsburg LLC (WesPac) proposes to modernize and reactivate the existing oil storage and transfer facilities located at the NRG Energy, Inc. (NRG, formerly GenOn Delta, LLC) Pittsburg Generating Station. The proposed WesPac Energy–Pittsburg Terminal (Terminal) would be designed to receive crude oil and partially refined crude oil from trains, marine vessels, and pipelines, store oil in existing or new storage tanks, and then transfer oil to nearby refineries. For the delivery of crude oil and partially refined crude oil by train, a new Rail Transload Operations Facility (Rail Transload Facility) would be constructed on a 9.8-acre vacant rail yard, to be leased from BNSF Railway Company (BNSF). The proposed project would involve the repair, upgrade, and replacement of existing facilities and equipment to bring facilities into compliance with MOTEMS and with applicable regulatory requirements.

The city of Pittsburg, as the CEQA lead agency, published a Draft EIR (SCH No. 2011072053) in June 2012 and a Recirculated Draft EIR in July 2013 that analyzed a revised project description (addition of a new method for oil delivery via rail, which was originally excluded from the project analysis). Based on the comments received, the city of Pittsburg has determined that additional information will need to be added to one or more sections of the Draft EIR to ensure the most comprehensive environmental analysis. To accomplish this, the document will be revised accordingly and a new public comment period will begin after the revisions have been completed.

**Shell Crude Tank Replacement.** Shell’s Martinez Refinery is located approximately 25 miles northeast of San Francisco, adjacent to the city of Martinez. The primary processing area of the Shell Martinez Refinery is between Pacheco Boulevard and Marina Vista, and the wastewater treatment plant and wharf operations are between Marina Vista and the Carquinez Strait. Approximately 20 percent of the refinery is located within the corporate limits of the city of Martinez and the remainder is in an unincorporated area of Contra Costa County; however, all of the Project components would be constructed within the unincorporated area of the county.

In 2011, Contra Costa County, as the CEQA lead agency, certified a Final EIR (SCH No. 2010022034) and approved the replacement of crude oil storage tanks, increases to

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- crude oil shipments received at Shell Martinez Refinery's marine oil terminal, and implementation of criteria pollutant and greenhouse gas emission reduction components proposed as measures to reduce Project emissions to or below applicable CEQA thresholds.

Martinez Marina

The Martinez Marina and Yacht Club are located west of the Avon Terminal, in the Carquinez Strait. The Martinez Marina has been in operation since the 1950s. In 1993, the city of Martinez adopted a Marina Master Plan that called for upgrades, including installation of a new boat launch ramp; deepening of existing water channels for boats; and installation of a new bait shop, additional boat storage, and a new waterfront restaurant. Marina progress to date includes: removal of the old ferry pier, construction of Ferry Point Plaza, installation of the new boat launch, initial dredging of the marina entrance, and removal of underground storage tanks. The next phase will include more dredging, break-water wall repair, and entrance reconfiguration. This is a multi-phase project that will take place over the next several years, and is contingent upon the availability of public and private funding. In addition, the Yacht Club offers a variety of amenities and services to its members, including a store, kitchen, outdoor seating and barbeque area, showers, dance floor, bar, television and wireless internet media, and views of the Carquinez Strait.

San Francisco Bay to Stockton Phase III – John F. Baldwin Navigation Channel Project

This project involves the assessment of the feasibility of deepening a 65-mile-long, 35-foot-deep draft navigation channel, extending from the San Francisco Bay entrance to the Port of Stockton. In July 2002, the USACE and Port of Stockton executed a Pre-construction Engineering and Design (PED) Agreement, initiating the first phase of the channel-deepening assessment, which focused on potential saltwater-intrusion issues and project economics. As a result of this first phase, the Port of Stockton and USACE found sufficient evidence to support the continuation of the study and the initiation of a General Reevaluation Report, and executed a revised PED Agreement in April 2004.

The Port of Stockton, as the CEQA lead agency, issued a Notice of Preparation (NOP) for the San Francisco Bay to Stockton (John F. Baldwin and Stockton Ship Channels) Navigation Project in March 2008, and again in July 2008 (SCH 2008032043).

The USACE San Francisco District and Port of West Sacramento (2011) prepared a Draft Supplemental EIS/Subsequent EIR for the Sacramento River Deep Water Ship Channel (EIS No. 20110055), although the project is currently on hold. The U.S. Environmental Protection Agency (USEPA) submitted comments primarily related to the use and disposal of generated dredge spoils from the project and water quality impacts. The Central Valley Regional Water Quality Control Board has placed severe restrictions on all dredging activities occurring within the Delta; restrictions that, if unchanged, will...
make the project very difficult to construct, including required operations and maintenance on the existing channel.

San Francisco Water Emergency Transit Authority Ferry Expansion (Antioch to San Francisco)

The San Francisco Water Emergency Transit Authority (WETA) was established by Senate Bill (SB) 976 to replace the existing Water Transit Authority. SB 1093 was later passed to further detail the mandate of WETA. WETA is tasked to provide emergency response during times of disaster by providing improved infrastructure through the use of water-based response. WETA’s main priorities are the creation of an Emergency Water Transportation System Management Plan for the Bay Area. Part of its focus is on developing a more comprehensive ferry system, which includes adding 7 new routes and up to 31 new ferries. One of the new routes will run between San Francisco, Martinez, and Antioch (refer to Figure 1-1 in Section 1.0, Introduction).

Military Ocean Terminal Concord

Military Ocean Terminal Concord (MOTCO), which is located approximately 4.5 miles east of the Avon Terminal (refer to Item 14 on Figure 1-1), was formerly a part of the Naval Weapons Station Seal Beach Detachment Concord. Prior to that, it was known as Concord Naval Weapons Station. MOTCO consists of an approximately 115-acre inland area and an approximately 6,526-acre tidal area, which includes 2,045 acres of offshore islands. The inland area is within the boundaries of the city of Concord and neighbors the unincorporated community of Clyde. The tidal area is part of unincorporated Contra Costa County, and is adjacent to the city of Pittsburg and the unincorporated community of Bay Point. Five of MOTCO’s seven offshore islands are located within Solano County. The inland and tidal areas are connected by a stretch of Port Chicago Highway. The tidal area contains approximately 5 miles of shoreline and facilities for reception, staging, and loading of ammunition; railroad and truck classification yards; and three ocean terminal piers. Its purpose is to allow the Department of Defense operations plan for the Pacific Rim. MOTCO operates three ocean terminal piers and a U.S. Army-owned rail system that connects with two major public rail lines. The long-term vision for MOTCO is to transform the facility into a versatile, modern, and efficient seaport capable of receiving, staging, and onward-moving of ammunition and general cargo, as necessary to meet Department of Defense requirements.

San Francisco Bay and Delta Sand Mining Project

In 2012, the CSLC, as CEQA lead agency, certified a Final EIR (SCH No. 2007072036), in conjunction with its renewal of 10-year leases for mining construction-grade sands from three main areas, including the Central Bay Lease, located primarily west of Angel Island and Alcatraz Island; the Suisun Bay/Delta Lease, located north of Bay Point and extending east toward Antioch; and the Middle Ground Shoal Lease, located offshore of
3.0 Alternatives and Cumulative Projects

MOTCO. Sands are mined using a trailing-arm hydraulic suction dredge and barge. Sands are then typically transported and offloaded at one of several sites located throughout San Francisco Bay, San Pablo Bay, and the Delta. Approximately 2 million cubic yards (mcy) of sand are proposed to be mined each year.

Projects In or Near Bay Area Shipping Lanes

Long-term Management Strategy Program

The Long-term Management Strategy (LTMS) program is designed to provide a regional plan for the disposal of dredged material from the San Francisco Bay over the next 50 years. The LTMS program began in January 1990 as a federal/State partnership among the four agencies that have regulatory authority for dredged material in the San Francisco Bay: the USACE, USEPA, SFBRWQCB, and BCDC. These four lead agencies share responsibility for managing the various components of the LTMS. The LTMS Final EIR/EIS indicates that approximately 6 mcy of sediment must be dredged and disposed of each year from shipping channels and related navigational facilities in the Bay Area. The estimated total volume of dredged material that would require disposal over the 50-year LTMS planning horizon is approximately 300 mcy. The policy alternatives involve different volumes of dredged sediment being disposed at in-Bay, ocean, and upland/wetland reuse sites. Under current regulatory conditions, 80 percent or more of the dredged material would continue to be disposed of at designated sites in the Bay, with only a small percentage of material disposed of outside the estuary at the new offshore ocean site or used in “beneficial reuse” applications, such as wetlands restoration.

Delta Dredged Sediment LTMS Program

In late 2004, local sponsors of Delta dredging projects and the USACE met to explore the feasibility of developing an LTMS for dredging and dredged materials placement, or reuse, in the Delta. A similar process was used to develop a collaborative, coordinated approach to dredging and sediment management in the San Francisco Bay Estuary. In 2007, the USACE, California Bay-Delta Authority, USEPA, Department of Water Resources (DWR), State Water Resources Control Board, Delta Protection Commission, and Central Valley Regional Water Quality Control Board signed the charter to develop and implement a long-term plan.

The Delta is the source of California’s two largest water-distribution systems: The Central Valley Water Project, operated by the U.S. Bureau of Reclamation, and the State Water Project, operated by the DWR. Maintaining high-quality water in the Delta is critical for drinking-water supplies, agricultural irrigation, and ecosystem function. The Sacramento and San Joaquin River channels also provide important shipping access to the ports of Sacramento and Stockton.
In recent years, conflicts about levee rehabilitation, dredging, and placement of dredged sediments have been increasing. There is an ongoing need to dredge Delta channels for navigation, water conveyance, flood control, and levee maintenance. At the same time, there are increasing regulatory concerns about the potential impacts to water quality and the ecosystem from levee work, dredging activities, and dredge materials placement and reuse. In the last several years, agencies, political leaders, and the public have become increasingly concerned about the urgent need for levee rehabilitation in the Delta. One possible contributor to Delta levee rehabilitation is sediment management and reuse from dredging activities. At the same time, the Delta environment is showing signs of major stress and dysfunction, as evidenced by the rapid decline of pelagic species in recent years. Concerns about the complex and sensitive environment in the Delta have resulted in stringent regulatory requirements for dredging and sediment reuse and placement in the Delta. These two apparently conflicting objectives, protection of the Delta environment and increased dredging and sediment reuse and placement, highlight the need for better coordination and management of Delta dredging and sediment management and reuse requirements.

Mare Island Reuse Project (formerly Naval Shipyard Mare Island)

Mare Island was the nation’s first naval shipyard on the West Coast, established in 1854 and ultimately closed in 1996. Mare Island is located on the western edge of the city of Vallejo, in southwestern Solano County. Mare Island is approximately 3.5 miles long and 1 mile wide, and occupies approximately 5,460 acres, of which 1,650 acres are developed uplands. Tidal and non-tidal wetlands comprise the remaining acreage. The Mare Island naval facility was transferred to the city of Vallejo in May 2002. Conversion of the Naval Shipyard Mare Island and related properties from military to civilian use continues under the direction of the city’s economic development division. Today, the Island is home to more than 85 businesses, Touro University (which educates over 900 full-time students at its campus), nearly 2,000 jobs, and approximately 3.5 million square feet (ft\(^2\)) of occupied commercial space. Lennar Mare Island has entitlements for over 7 million ft\(^2\) of industrial/office product (with a workable inventory of approximately 5.5 million ft\(^2\)). Mare Island has approximately 960 buildings that comprise about 10.5 million ft\(^2\) of industrial, office, residential, commercial, and recreational facilities.

3.4.3 Regional Characteristics of Crude/Product in the San Francisco Bay and Along Coastal Shipping Lanes off Northern California

Many types of marine vessels call at terminals in the greater Bay Area, including passenger vessels, cargo vessels, tankers, tow/tug vessels, dry cargo barges, and tank barges. The USACE, Marine Exchange, CSLC, and U.S. Coast Guard track vessel transits into the San Francisco Bay; however, data tracked are generally limited to inbound/arrival information from outside to inside the San Francisco Bay, and do not include vessel transit information for transits originating in the San Francisco Bay.
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Table 4.1-1 in Section 4.1, Operational Safety/Risk of Accidents, presents USACE data on inbound vessel visits to the Bay Area during 2012. The number of outbound transits is expected to be similar. Excluding San Francisco Harbor, over 37,000 vessel calls occurred at terminals in the Bay Area in 2012. Of these, 758 vessels paid calls in the Suisun Bay Channel. The Suisun Bay Channel includes the general area of Tesoro’s Avon Terminal.

Of six anchorages located in the Bay, Anchorage 9, located south of the Bay Bridge between San Francisco and Oakland, had the majority (439 of the total 612) of arrivals. Some tankers bound for the Avon Terminal occasionally transfer oil, or conduct lighterage (lightering) operations, from one vessel to another at Anchorage 9, to reduce the draft of the vessel prior to its destination.

Vessels enter and leave the Golden Gate entrance to San Francisco Bay through the Traffic Separation Scheme, which consists of a circular Precautionary Area with three traffic lanes (northern, main or western, and southern) exiting the Precautionary Area. A detailed description of the regulated navigation areas is included in Section 4.1, Operational Safety/Risk of Accidents.

The CSLC Marine Facilities Division, with a regional office in Hercules, tracks ship and barge calls to those marine oil terminals for which the CSLC has jurisdiction. Table 3-2 summarizes CSLC data for 2008 and 2013. The 2013 data indicate a decrease of 40 vessels, when compared to 2008, to Tesoro’s Avon Terminal. Anticipated vessel traffic over a 30-year lease term ranges from 70 to 120 vessels per year, as analyzed in this EIR.

Table 3-2: Vessel Calls to Marine Oil Terminals in San Francisco Bay (2008 and 2013)

<table>
<thead>
<tr>
<th>Marine Oil Terminals</th>
<th>2008</th>
<th>2013</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Tankers</td>
<td>Barges</td>
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<tr>
<td>Shell</td>
<td>67</td>
<td>130</td>
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<tr>
<td>Tesoro Amorco</td>
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<tr>
<td>Tesoro Avon</td>
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<td>Phillips 66 Rodeo (formerly ConocoPhillips)</td>
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<td>179</td>
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<tr>
<td>Phillips 66 Richmond</td>
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<td>177</td>
</tr>
<tr>
<td>Plains All American Martinez</td>
<td>87</td>
<td>119</td>
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<tr>
<td>Shores Terminals Crockett</td>
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<tr>
<td>Plains All American Richmond</td>
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<tr>
<td>Chevron</td>
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<td>370</td>
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<tr>
<td>BP West Coast Richmond</td>
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<td>8</td>
</tr>
<tr>
<td>BP Lubricants</td>
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<td>12</td>
</tr>
</tbody>
</table>
### Marine Oil Terminals

<table>
<thead>
<tr>
<th>Marine Oil Terminals</th>
<th>2008</th>
<th></th>
<th>2013</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tankers</td>
<td>Barges</td>
<td>Total</td>
<td>Tankers</td>
</tr>
<tr>
<td>Kinder Morgan Richmond</td>
<td>5</td>
<td>0</td>
<td>5</td>
<td>10</td>
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<tr>
<td>Valero</td>
<td>134</td>
<td>22</td>
<td>156</td>
<td>99</td>
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<tr>
<td>IMTT Richmond</td>
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<td>443</td>
<td>448</td>
<td>9</td>
</tr>
<tr>
<td>G.P. Resources - North</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total all Marine Oil Terminals</strong></td>
<td><strong>963</strong></td>
<td><strong>1,900</strong></td>
<td><strong>2,863</strong></td>
<td><strong>901</strong></td>
</tr>
</tbody>
</table>

Sources: CSLC 2011, CSLC 2013a, CSLC 2014