

3.0 ALTERNATIVES AND CUMULATIVE PROJECTS

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

11 3.1 SELECTION OF ALTERNATIVES

12 3.1.1 Alternatives and Screening Development

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

- 18 • An EIR need not consider every conceivable alternative to a project. Rather, it
19 must consider a reasonable range of potentially feasible alternatives that will
20 foster informed decision making and public participation. An EIR is not required
21 to consider alternatives which are infeasible. (§ 15126.6, subd. (a).)
- 22 • The discussion of alternatives shall focus on alternatives to the project or its
23 location which are capable of avoiding or substantially lessening any significant
24 effects of the project, even if these alternatives would impede to some degree the
25 attainment of the project objectives, or would be more costly. (§ 15126.6, subd. (b).)
- 26 • In selecting a range of potential reasonable alternatives to the proposed project,
27 the Lead Agency shall include those that could feasibly accomplish most of the
28 basic objectives of the project and could avoid or substantially lessen one or
29 more of the significant effects. Among the factors that a Lead Agency may use to
30 eliminate alternatives from detailed consideration are: (i) failure to meet most of
31 the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant
32 environmental impacts. (§ 15126.6, subd. (c).)
- 33 • The EIR shall include sufficient information about each alternative to allow
34 meaningful evaluation, analysis, and comparison with the proposed project. If an
35 alternative would cause one or more significant effects in addition to those that
36 would be caused by the project as proposed, the significant effects of the

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

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

9 **3.1.2 Alternatives Screening Method**

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

14 **Step 1:** Define the alternatives to allow comparative evaluation.

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

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

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

32 Feasible alternatives that did not clearly offer the potential to reduce significant
33 environmental impacts, and infeasible alternatives, were removed from further analysis.
34 In the final phase of the screening analysis, the environmental advantages and
35 disadvantages of the remaining alternatives were carefully weighed with respect to

1 potential for overall environmental advantage, technical feasibility, and consistency with
 2 the Project and public objectives.

3 If an alternative clearly does not provide any environmental advantages as compared to
 4 the proposed Project, it is eliminated from further consideration. At the screening stage,
 5 it is not possible to evaluate potential impacts of the alternatives or the proposed Project
 6 with absolute certainty. However, it is possible to identify elements of the proposed
 7 Project that are likely to be the sources of impact. A preliminary assessment of potential
 8 significant effects of the proposed Project resulted in identification of the following
 9 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

10 For the screening analysis, the technical and regulatory feasibility of various potential
 11 alternatives was assessed at a general level. Specific feasibility analyses are not
 12 needed for this purpose. The assessment of feasibility was directed toward reverse
 13 reason, that is, an attempt was made to identify anything about the alternative that
 14 would be infeasible on technical or regulatory grounds. CEQA does not require
 15 elimination of a potential alternative based on cost of construction and
 16 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.

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

Table 3-1: Summary of Alternative Screening Results

Alternatives Eliminated from Consideration	Alternatives Evaluated in this EIR
<ul style="list-style-type: none"> • Consolidation Terminal • Deep-water Port Consolidation • Limitations of Terminal for Emergency Product Transfer Use Only • Alternative Lease Term with Phase Out • Trucking-only 	<ul style="list-style-type: none"> • No Project • Restricted Lease taking Avon Terminal Out of Service for Oil Transport

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

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

12 **3.2 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FULL** 13 **CONSIDERATION**

14 **3.2.1 Consolidation Terminal**

15 A potential alternative to the proposed future use of the Avon Marine Oil Terminal (Avon
16 Terminal) is a consolidated marine oil terminal, where petroleum and product are
17 offloaded and onloaded at a central facility and delivered to and from refineries, storage
18 terminals, and other facilities in the Carquinez Strait and east Bay Area via smaller
19 marine vessels or pipelines. The Draft EIR/Environmental Impact Statement (EIS) for
20 the San Francisco to Stockton Phase III (John F. Baldwin) Navigation Channel Project,
21 published by the U.S. Army Corps of Engineers (USACE) in 1997, presented the
22 Richmond Marine-Link Pipeline System (RMLPS) as an alternative to channel
23 deepening and continued dredging within San Pablo Bay and Carquinez Strait. This
24 RMLPS proposal was withdrawn by its proponent, Wickland Pipelines LLC, in February
25 1999, due to a lack of potential user participation.

26 The RMLPS was proposed as a consolidated facility. The pipeline systems associated
27 with the RMLPS were intended to provide flexibility in the areas of cargo handling and
28 transportation cost control, reduce vessel-to-vessel lightering of crude oil at Anchorage
29 9, and reduce tanker traffic in the greater San Francisco Bay and Carquinez Strait. This
30 would have been possible because the pipeline system would have allowed tankers of
31 up to 300,000 dead weight tons (long tons) to proceed at high tide (when ships drafting
32 48 to 49 feet can pass through the 45-foot-deep channel to Richmond) to the new
33 RMLPS marine terminal, and off-load in the natural 53- to 55-foot depths of the berth at
34 a new deep-water wharf.

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

1 shorelines of San Pablo Bay and Carquinez Strait, terminating in Pittsburg at the
2 existing Pacific Gas and Electric Company power plant.

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

13 **3.2.2 Deep-water Port Consolidation**

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

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

28 **3.2.3 Limitations of Avon Terminal for Emergency Product Transfer Use Only**

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

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

6 **3.2.4 Alternative Lease Term with Phase Out**

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

20 **3.2.5 Trucking-only Alternative**

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

1 **3.3 ALTERNATIVES EVALUATED IN THIS EIR**

2 **3.3.1 No Project**

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

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

18 The Avon Terminal operates primarily (approximately 90 percent of current operations)
19 as an export facility transferring petroleum products (including premium fuel oil, gas oil,
20 diesel, and cutter stock) from Tesoro’s Golden Eagle Refinery. As shown in Section
21 2.4.11 in Section 2.0, Project Description, Avon Terminal export volumes have ranged
22 from 4.6 to 11.8 million bpy over the past 5 years. Under the No Project alternative,
23 Tesoro would have to pursue other means of export to continue to meet existing
24 regional demands and the current throughput from the Avon Terminal. Options that
25 Tesoro might pursue include:

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

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

33 Transitioning of Amorcó Terminal

34 Under the No Project alternative, Tesoro might pursue transitioning the Amorcó
35 Terminal to absorb export and import operations from the Avon Terminal, thereby

1 increasing the throughput at the Amorco Terminal. Currently the Amorco Terminal
2 operates as an import-only facility, and thus would only be capable of absorbing the
3 increased throughput if the wharf were to be substantially upgraded and expanded to
4 accommodate export operations, as well as meet the current combined throughput
5 capacities for both terminals. Such required modifications to the Amorco Terminal would
6 include, but would not be limited to:

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

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

24 Land-based Alternatives

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

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

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

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

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

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

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

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

10 **3.3.2 Restricted Lease Taking Avon Terminal Out of Service for Oil Transport**

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

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

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

29 **3.3.3 Environmentally Superior Alternative (Summary)**

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

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

1 *EIR shall also identify an environmentally superior alternative among the other*
2 *alternatives.”* (Emphasis added.)

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

7 **3.4 CUMULATIVE RELATED PROJECTS**

8 This discussion identifies other related past, present, and future projects near the
9 location of the proposed Project and alternatives. State CEQA Guidelines section 15355
10 requires that an EIR consider cumulative impacts of a project when the project’s
11 incremental effect is cumulatively considerable, as identified in section 15065,
12 subdivision (c). Where a lead agency is examining a project with an incremental effect
13 that is not “cumulatively considerable,” a lead agency need not consider that effect
14 significant, but shall briefly describe its basis for concluding that the incremental effect is
15 not cumulatively considerable. As defined in State CEQA Guidelines section 15355, a
16 cumulative impact consists of an impact that is created as a result of the combination of
17 the project evaluated in the EIR, together with other projects causing related impacts.
18 An EIR should not discuss impacts that do not result in part from the project evaluated
19 in the EIR.

20 **3.4.1 Boundary of Cumulative Projects Study Area**

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

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

1 **3.4.2 Description of Cumulative Projects**

2 **Projects in Vicinity**

3 Marine Oil Terminals

4 All marine oil terminals fall under the Marine Oil Terminal Engineering and Maintenance
5 Standards (MOTEMS), which are codified in the California Code of Regulations, Title
6 24, Chapter 31F – Marine Oil Terminals (Cal. Code Regs., tit. 24, § 3101F et seq.).
7 MOTEMS requires that all marine oil terminals be audited every 4 years and inspected
8 on a periodic interval, dependent upon the condition of the facility, to determine
9 compliance with the most recent standards. As a result of the inspections and audits,
10 deficiencies that require repair, rehabilitation, or retrofit are identified; follow-up actions
11 must then be taken by the terminal operator, including preparation of plans, obtaining
12 required permits, and implementation of corrections. MOTEMS improvements are
13 categorically exempt from CEQA, as specified in State CEQA Guidelines section 15301,
14 subdivision (d), for repairs to existing facilities.

15 **Shell Martinez Marine Oil Terminal (Shell Terminal).** The Shell Terminal has
16 operated at its current location offshore of the city of Martinez, Contra Costa County,
17 since 1915. The Shell Terminal is a tanker and barge petroleum loading/unloading
18 facility used to receive raw materials for the Shell Martinez Refinery and for exports of
19 its refined products. In 2011, the CSLC, as CEQA lead agency, certified a Final EIR
20 (State Clearinghouse [SCH] No. 2004072114) in conjunction with its approval of a new
21 30-year lease of approximately 20 acres of California sovereign land, on which the Shell
22 Terminal is located.

23 Shell completed a MOTEMS initial audit in 2008 and a subsequent MOTEMS audit in
24 2011. As a result of these audits, several deficiencies were identified requiring repair,
25 rehabilitation, or retrofit. Many of these deficiencies have been completed, including
26 renovation of the fender systems at the main berths. Projects remaining to be
27 addressed include an ongoing project to perform seismic upgrades to pile-to-pile cap
28 connections on the timber approach trestle and two long-term capital projects in the
29 planning and design phase that involve a seismic upgrade of the loading platforms.

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

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

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

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

27 The Amorcó Terminal docking facility has a single active berth—located on the eastern
28 end of the wharf. The ship berthing area north of the Amorcó Terminal is dredged
29 periodically to maintain a depth of approximately 48 feet below MLLW, although the
30 Amorcó Terminal's operating limits indicate that a minimum water depth of 44 feet must
31 be maintained. Bathymetric surveys are conducted quarterly and maintenance dredging
32 is only conducted as required to maintain minimum required depths. The last Amorcó
33 dredging event, conducted in 2005, entailed removal of 500 cubic yards of spoils.
34 Scheduled maintenance dredging is known sufficiently in advance and Tesoro would
35 continue to comply with applicable permits to ensure appropriate assessments are
36 conducted prior to conducting maintenance-related dredging. Dredged spoils are tested
37 and managed according to permits issued by jurisdictional agencies, including the
38 CSLC, USACE, San Francisco Bay Conservation and Development Commission
39 (BCDC), and San Francisco Bay Regional Water Quality Control Board (SFBRWQCB).

1 The Amorco Terminal also completed a MOTEMS initial audit in 2008 and a subsequent
2 MOTEMS audit in 2011. Several deficiencies were identified during these audits, and
3 have since been corrected, including seismic structural, berthing system, and fire
4 suppression system upgrades.

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

15 The Richmond Long Wharf Marine Oil Terminal was originally constructed in 1902 as a
16 wooden structure supported on timber piles, but was modified in 1946 with the
17 construction of a concrete wharf and causeway structure supported on deeper, concrete
18 piles. Three buildings and a concrete-repaired Richmond Long Wharf were also built in
19 1946. In 1974, the Richmond Long Wharf was modified to accommodate larger vessels:
20 Berth #1 was expanded and Berth #4 was extensively modified. Over the years,
21 improvements have continued. Recent improvements include a southern capstan
22 platform added to Berth #4 in 1986, a breasting dolphin at Berth #3 in 1990, and a
23 voice-communication system installed in 1991. In 2000, a major structural rebuild
24 program was completed that would enable the structure to withstand a 475-year return
25 period seismic event resulting in minor, repairable damage with no oil spills. Since 2008,
26 the Richmond Long Wharf has also undergone significant pipeway seismic retrofits,
27 fender system rebuilds, concrete structural repairs and electrical infrastructure rebuilds
28 to address deficiencies identified in its MOTEMS audits.

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

35 The original lease (PRC 5735.1) was issued to former owner Wickland in 1981 for an
36 initial term of 25 years with a provision for a preferential right of renewal for a lease term
37 not less than 20 years. Wickland assigned its interest to Shore Terminals in September
38 1998, and Valero L.P. purchased Shore Terminals in July 2005. The new lease allows
39 Shore to continue current transfer operations of petroleum products from the wharf to its

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

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

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

21 The city of Pittsburg, as the CEQA lead agency, published a Draft EIR (SCH No.
22 2011072053) in June 2012 and a Recirculated Draft EIR in July 2013 that analyzed a
23 revised project description (addition of a new method for oil delivery via rail, which was
24 originally excluded from the project analysis). Based on the comments received, the city
25 of Pittsburg has determined that additional information will need to be added to one or
26 more sections of the Draft EIR to ensure the most comprehensive environmental
27 analysis. To accomplish this, the document will be revised accordingly and a new public
28 comment period will begin after the revisions have been completed.

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

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

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

5 Martinez Marina

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

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

21 This project involves the assessment of the feasibility of deepening a 65-mile-long, 35-
22 foot-deep draft navigation channel, extending from the San Francisco Bay entrance to
23 the Port of Stockton. In July 2002, the USACE and Port of Stockton executed a Pre-
24 construction Engineering and Design (PED) Agreement, initiating the first phase of the
25 channel-deepening assessment, which focused on potential saltwater-intrusion issues
26 and project economics. As a result of this first phase, the Port of Stockton and USACE
27 found sufficient evidence to support the continuation of the study and the initiation of a
28 General Reevaluation Report, and executed a revised PED Agreement in April 2004.
29 The Port of Stockton, as the CEQA lead agency, issued a Notice of Preparation (NOP)
30 for the San Francisco Bay to Stockton (John F. Baldwin and Stockton Ship Channels)
31 Navigation Project in March 2008, and again in July 2008 (SCH 2008032043).

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

1 make the project very difficult to construct, including required operations and
2 maintenance on the existing channel.

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

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

14 Military Ocean Terminal Concord

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

33 San Francisco Bay and Delta Sand Mining Project

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

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

5 **Projects In or Near Bay Area Shipping Lanes**

6 Long-term Management Strategy Program

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

23 Delta Dredged Sediment LTMS Program

24 In late 2004, local sponsors of Delta dredging projects and the USACE met to explore
25 the feasibility of developing an LTMS for dredging and dredged materials placement, or
26 reuse, in the Delta. A similar process was used to develop a collaborative, coordinated
27 approach to dredging and sediment management in the San Francisco Bay Estuary. In
28 2007, the USACE, California Bay-Delta Authority, USEPA, Department of Water
29 Resources (DWR), State Water Resources Control Board, Delta Protection
30 Commission, and Central Valley Regional Water Quality Control Board signed the
31 charter to develop and implement a long-term plan.

32 The Delta is the source of California’s two largest water-distribution systems: The
33 Central Valley Water Project, operated by the U.S. Bureau of Reclamation, and the
34 State Water Project, operated by the DWR. Maintaining high-quality water in the Delta is
35 critical for drinking-water supplies, agricultural irrigation, and ecosystem function. The
36 Sacramento and San Joaquin River channels also provide important shipping access to
37 the ports of Sacramento and Stockton.

1 In recent years, conflicts about levee rehabilitation, dredging, and placement of dredged
2 sediments have been increasing. There is an ongoing need to dredge Delta channels
3 for navigation, water conveyance, flood control, and levee maintenance. At the same
4 time, there are increasing regulatory concerns about the potential impacts to water
5 quality and the ecosystem from levee work, dredging activities, and dredge materials
6 placement and reuse. In the last several years, agencies, political leaders, and the
7 public have become increasingly concerned about the urgent need for levee
8 rehabilitation in the Delta. One possible contributor to Delta levee rehabilitation is
9 sediment management and reuse from dredging activities. At the same time, the Delta
10 environment is showing signs of major stress and dysfunction, as evidenced by the
11 rapid decline of pelagic species in recent years. Concerns about the complex and
12 sensitive environment in the Delta have resulted in stringent regulatory requirements for
13 dredging and sediment reuse and placement in the Delta. These two apparently
14 conflicting objectives, protection of the Delta environment and increased dredging and
15 sediment reuse and placement, highlight the need for better coordination and
16 management of Delta dredging and sediment management and reuse requirements.

17 Mare Island Reuse Project (formerly Naval Shipyard Mare Island)

18 Mare Island was the nation's first naval shipyard on the West Coast, established in 1854
19 and ultimately closed in 1996. Mare Island is located on the western edge of the city of
20 Vallejo, in southwestern Solano County. Mare Island is approximately 3.5 miles long
21 and 1 mile wide, and occupies approximately 5,460 acres, of which 1,650 acres are
22 developed uplands. Tidal and non-tidal wetlands comprise the remaining acreage. The
23 Mare Island naval facility was transferred to the city of Vallejo in May 2002. Conversion
24 of the Naval Shipyard Mare Island and related properties from military to civilian use
25 continues under the direction of the city's economic development division. Today, the
26 Island is home to more than 85 businesses, Touro University (which educates over 900
27 full-time students at its campus), nearly 2,000 jobs, and approximately 3.5 million
28 square feet (ft²) of occupied commercial space. Lennar Mare Island has entitlements for
29 over 7 million ft² of industrial/office product (with a workable inventory of approximately
30 5.5 million ft²). Mare Island has approximately 960 buildings that comprise about 10.5
31 million ft² of industrial, office, residential, commercial, and recreational facilities.

32 **3.4.3 Regional Characteristics of Crude/Product in the San Francisco Bay and** 33 **Along Coastal Shipping Lanes off Northern California**

34 Many types of marine vessels call at terminals in the greater Bay Area, including
35 passenger vessels, cargo vessels, tankers, tow/tug vessels, dry cargo barges, and tank
36 barges. The USACE, Marine Exchange, CSLC, and U.S. Coast Guard track vessel
37 transits into the San Francisco Bay; however, data tracked are generally limited to
38 inbound/arrival information from outside to inside the San Francisco Bay, and do not
39 include vessel transit information for transits originating in the San Francisco Bay.

1 Table 4.1-1 in Section 4.1, Operational Safety/Risk of Accidents, presents USACE data
 2 on inbound vessel visits to the Bay Area during 2012. The number of outbound transits
 3 is expected to be similar. Excluding San Francisco Harbor, over 37,000 vessel calls
 4 occurred at terminals in the Bay Area in 2012. Of these, 758 vessels paid calls in the
 5 Suisun Bay Channel. The Suisun Bay Channel includes the general area of Tesoro's
 6 Avon Terminal.

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

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

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

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

Marine Oil Terminals	2008			2013		
	Tankers	Barges	Total	Tankers	Barges	Total
Shell	67	130	197	65	109	174
Tesoro Amorco	82	3	85	74	0	74
Tesoro Avon	30	80	110	54	16	70
Phillips 66 Rodeo (formerly ConocoPhillips)	77	179	256	66	125	191
Phillips 66 Richmond	0	177	177	0	114	114
Plains All American Martinez	87	119	206	34	79	113
Shores Terminals Crockett	34	24	58	43	32	75
Plains All American Richmond	10	333	343	6	344	350
Chevron	410	370	780	402	233	635
BP West Coast Richmond	22	8	30	32	5	37
BP Lubricants	0	12	12	1	11	12

Marine Oil Terminals	2008			2013		
	Tankers	Barges	Total	Tankers	Barges	Total
Kinder Morgan Richmond	5	0	5	10	0	10
Valero	134	22	156	99	99	198
IMTT Richmond	5	443	448	9	368	377
G.P. Resources - North	--	--	--	6	30	36
Total all Marine Oil Terminals	963	1,900	2,863	901	1,565	2,466

Sources: CSLC 2011, CSLC 2013a, CSLC 2014

1

PAGE INTENTIONALLY LEFT BLANK