Section 2.4

Cumulative Impacts

2.4 CUMULATIVE IMPACTS

Cumulative impacts are those that result from past, present, and reasonably foreseeable future actions, combined with the potential impacts of proposed project. A cumulative effect assessment looks at the collective impacts posed by individual land-use plans and projects. Cumulative impacts can result from individually minor, but collectively substantial, impacts taking place over a period of time.

Cumulative impacts to resources in the study area may result from residential, commercial, industrial, and highway development, These land-use activities can degrade habitat and species diversity through consequences such as displacement and fragmentation of habitats and populations, alteration of hydrology, contamination, erosion, sedimentation, and disruption of migration corridors, changes in water quality, and introduction or promotion of predators. They can also contribute to potential community impacts identified for the project, such as changes in community character, traffic patterns, housing availability, and employment.

CEQA Guidelines, Section 15130, describes when a cumulative impact analysis is warranted and what elements are necessary for an adequate discussion of cumulative impacts. The definition of cumulative impacts, under CEQA, can be found in Section 15355 of the CEQA Guidelines. A definition of cumulative impacts under NEPA can be found in 40 CFR 1508.7, of the CEQ Regulations.

To reduce redundancy within this section, the alternatives are again grouped within the following discussion, as applicable. The build alternatives refer to all build alternatives as discussed in Chapter 1 (North- and South-side Alignment Alternatives and Rehabilitation Alternative). References to the Bridge Replacement Alternatives, refers to the North- and South-side Alignment Alternatives. Only the Build Alternatives have the potential to result in cumulative impacts. The No Action Alternative would not result in any changes to the existing environment and would not contribute to cumulative impacts on any resource.

2.4.1 Related Development Projects

2.4.1.1 Methodology

Both the FHWA methodology and CEQA Guidelines list two methods of identifying related development projects. One method is based on adopted projections within a given geographic area included in an adopted general plan or certified environmental document. The other method is based on a list of past, present, and reasonably foreseeable future projects that could result in cumulative impacts in combination with the project analyzed in the environmental document.

For this Draft EIR/EA, the primary method of analyzing cumulative impacts is based on the second method. The related projects considered for this analysis have been proposed by public agencies, the Ports and adjacent cities. The projects have been proposed by formal public notices (Notice of Intent, Notice of Preparation), have pending environmental documentation, and/or are awaiting regulatory reviews or approvals. Exhibit 2.4-1 shows the project study area and the approximate locations of the projects considered within this cumulative impacts analysis. The related projects were selected for analysis because they are located within close proximity of the proposed project and/or a have the potential to impact similar resources. The potential impacts of the related projects, when considered in conjunction with the proposed project, could result in cumulative adverse impacts to resources within the study area. Related projects include, but are not limited to, other transportation projects, container terminals, schools, hotels, commercial and residential developments, and manufacturing and warehouse facilities.

Fifty-eight (58) related projects and their associated potential impacts are considered within this cumulative impact analysis. These projects may potentially result in impacts when considered cumulatively with the effects of the Build Alternatives. Table 2.4.1-1 provides a project description, the project status and associated relevant environmental factors. Identification of relevant environmental factors was based on the review of available environmental documentation, conceptual plans or applications and consultation with project applicants and government agencies. For projects with no environmental documentation or where resources were not analyzed, general assumptions were made where possible to assess if the project would have the potential to contribute to a cumulative impact.

2.4.2 Potential Cumulative Impacts

The CEQ regulations governing implementation of NEPA (40 CFR 1508.7) define a cumulative impact as:

> *The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant action taking place over a period of time.*

The analysis of the cumulative effects of the proposed project also follows the guidelines in the CEQ handbook entitled "Considering Cumulative Effects under the National Environmental Policy Act" (January 1970).

Based on the CEQ discussion of cumulative effects, the following principles can be applied to the assessment of cumulative effects of the proposed project:

- Cumulative effects typically are caused by the aggregate effects of past, present, and reasonably foreseeable future actions. These are the effects (i.e., past, present, and future) of the proposed action on a given resource and the effects (i.e., past, present, and future), if any, caused by all other related actions that affect the same resource.
- When other related actions are likely to affect a resource that is also affected by the proposed action, it does not matter who (i.e., public or private entity) has taken the related action(s).
- The scope of cumulative effects analyses can usually be limited to reasonable geographic boundaries and time periods. These boundaries should extend only as far as the point at which a resource is no longer substantially affected or where the effects are so speculative as to no longer be truly meaningful.
- Cumulative effects can include the effects (i.e., past, present, and future) on a given resource caused by similar types of actions (e.g., air emissions from several individual highway projects) and/or the effects (i.e., past, present, and future) on a given resource caused by different types of actions (e.g., air emissions and traffic from several different development projects).

The analysis that follows considers the potential cumulative effects, if any, which would result from construction and operation of the proposed project, combined with construction and operation of the related projects, listed in Table 2.4.1-1. Additional discussion of cumulative impacts pursuant to CEQA is provided in Chapter 3.

2.4.3 Environmental Resources for which No Adverse Cumulative Impacts would Result

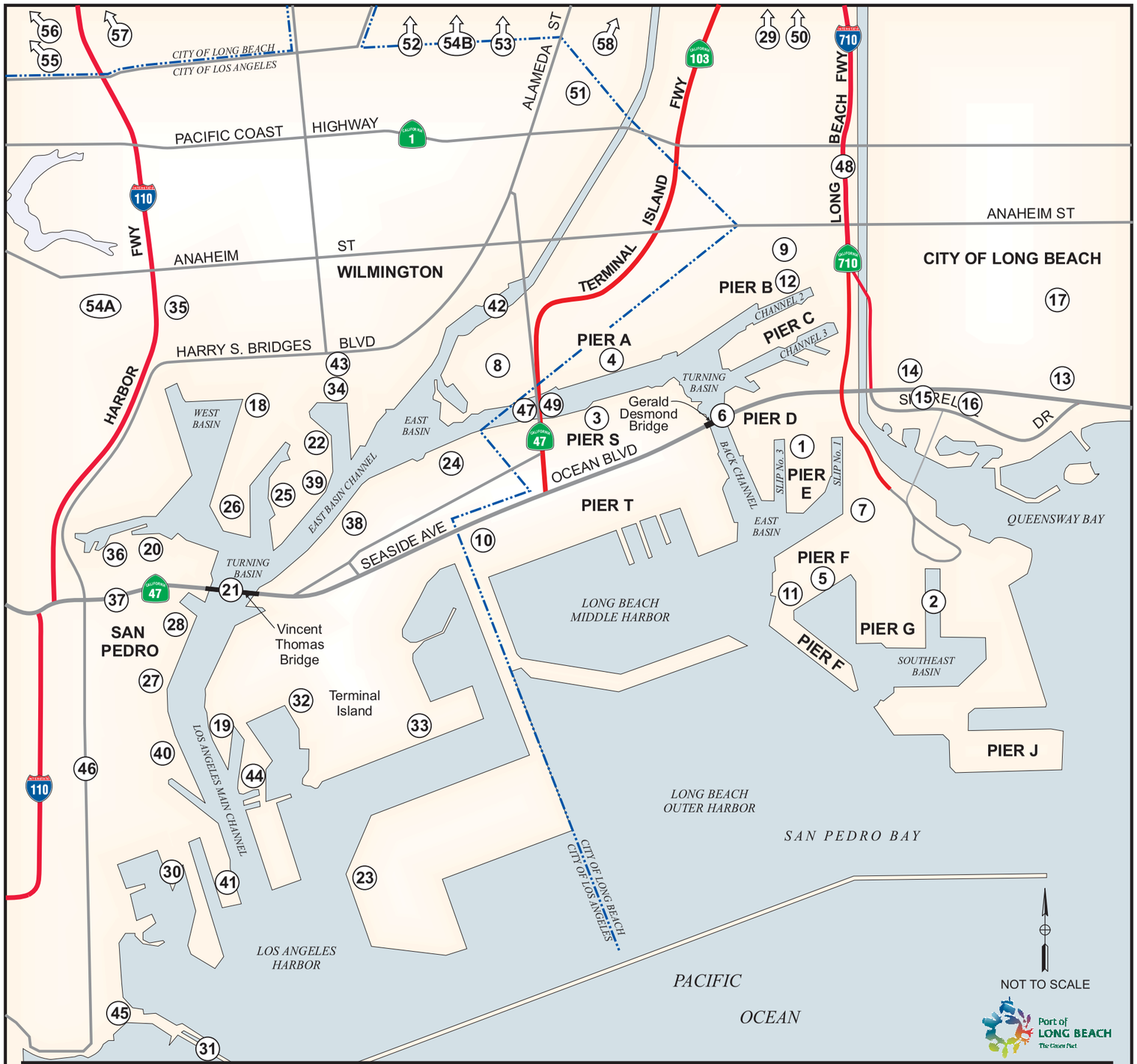
When considering the effects of past, present, and reasonably foreseeable future projects in combination with the anticipated effects associated with the Gerald Desmond Bridge Replacement Project, cumulatively considerable impacts on resource areas that are not considered adverse are discussed below.

2.4.3.1 Land Use, Recreation, Coastal Zone

Land Use

Build Alternatives

The Long Beach General Plan states that the responsibilities for planning within legal boundaries of the harbor lie with the Board of Harbor Commissioners. Uses of land and water within the Port, including cargo handling, recreation, and other coastal zone uses, have been outlined in the PMP (POLB, 1999). Land use changes within the project area will continue to be driven by global economic demand and port-related industrial needs. The Build Alternatives would not have a direct effect on land use patterns within the port outside of the areas required for construction and operation of the build alternatives but would rather respond to the travel patterns and volumes emanating from existing and forecasted travel demands within the Port. The Build Alternatives would not require or support any additional improvements that would imply the need for land use changes outside of the Port's planning area. The pattern and rate of land development within the project area are driven more directly by the modification and expansion of port facilities and are only partially affected by ancillary transportation improvements. To the extent that transportation projects, including the Build Alternatives and other transportation improvements planned for the area, facilitate some of the Port improvements, they may be regarded as contributing, in part, to overall land development trends because they would enhance overall efficiency of transportation movements within and to/from the Port area. However, the global market forces that create the underlying demand for Port facilities far outweigh the local contribution associated with any improvements in transportation facilities. Port



1. Middle Harbor Terminal Redevelopment, Port of Long Beach
2. Piers G & J Terminal Redevelopment Project, Port of Long Beach
3. Pier S Marine Terminal, Port of Long Beach
4. Pier A East, Port of Long Beach
5. Chemoil Marine Terminal, Tank Installation, Port of Long Beach
6. Gerald Desmond Bridge Replacement Project, Port of Long Beach and Caltrans/FHWA
7. Administration Building and Maintenance Facility Replacement Project, Port of Long Beach
8. Pier A West Interim/Source Removal Project, Port of Long Beach/DTSC
9. Pier B Rail Yard Expansion, Port of Long Beach
10. Terminal Island Rail Projects, Port of Long Beach
11. Mitsubishi Cement Corporation Facility Modifications, Port of Long Beach
12. Cemera Long Beach Aggregate Terminal, Port of Long Beach
13. Shoreline Gateway Project, City of Long Beach
14. West Gateway Redevelopment Project, City of Long Beach
15. Golden Shore Master Plan, City of Long Beach
16. Press-Telegram Mixed Use Development, City of Long Beach
17. Sierra Hotel Project, City of Long Beach
18. Berths 136-149 Marine Terminal, West Basin, Port of Los Angeles
19. Berths 226-236 (Evergreen) Container Terminal Improvements Project and Canners Steam Demolition, Port of Los Angeles
20. Berths 97-109 China Shipping Terminal Development Project, Port of Los Angeles
21. Channel Deepening Project/Additional Disposal Capacity, Port of Los Angeles
22. Berths 171-181, Pasha Marine Terminal, Port of Los Angeles
23. Plains All American (formerly Pacific Energy) Oil Marine Terminal, Pier 400, Port of Los Angeles
24. Berth 206-209 Interim Container Terminal Reuse Project, Port of Los Angeles
25. Ultramar Lease Renewal Project, Port of Los Angeles
26. SSA Outer Harbor Fruit Facility Relocation, Port of Los Angeles
27. Port of Los Angeles Charter School and Port Police Headquarters, San Pedro, Port of Los Angeles
28. San Pedro Waterfront Enhancements Project, Port of Los Angeles
29. Southern California International Gateway Project, Port of Los Angeles
30. Cabrillo Way Marina, Phase II, Port of Los Angeles
31. Artificial Reef, San Pedro Breakwater, Port of Los Angeles
32. Pan-Pacific Cannery Complex Demolition Project, Port of Los Angeles
33. Berth 302-305 (APL) Container Terminal Improvements Project, Port of Los Angeles
34. South Wilmington Grade Separation, Port of Los Angeles
35. "C" Street/Figueroa Street Interchange, Port of Los Angeles
36. I-110/SR 47 Connector Improvement Program, Port of Los Angeles
37. Port Transportation Master Plan, Port of Los Angeles
38. Berths 212-224 YTI Terminal Improvements, Port of Los Angeles
39. Berths 121-131 (Yang Ming) Container Terminal, Port of Los Angeles
40. San Pedro Waterfront Project, Port of Los Angeles
41. Westway Decommissioning, Port of Los Angeles
42. Consolidated Slip Restoration Project, Port of Los Angeles
43. Wilmington Waterfront Master Plan (Avalon Blvd. Corridor Project), Port of Los Angeles
44. Southwest Marine Demolition Project, Port of Los Angeles
45. Inner Cabrillo Beach Water Quality Improvement Program, Port of Los Angeles
46. Pacific Corridors Redevelopment Project, San Pedro
47. Schuyler Heim Bridge Replacement and SR 47/ Expressway, Caltrans/ACTA
48. I-710 (Long Beach Freeway) Corridor Project, Caltrans
49. Cerritos Channel Rail Bridge, ACTA
50. Intermodal Container Transfer Facility Modernization and Expansion, ICTF
51. Tesoro Reliability Improvement and Regulatory Compliance Project, Wilmington
52. BP Carson Refinery Safety, Compliance and Optimization Project, City of Carson
53. Crude Logistics Optimization Project, City of Carson
54. ConocoPhillips Los Angeles Refinery PM10 and Nox Reduction Projects, City of Carson
55. Chevron Products Company El Segundo Refinery Product Reliability and Optimization Project, City of El Segundo
56. Chevron Products Company - El Segundo Refinery Heavy Crude Project, City of El Segundo
57. ExxonMobil Rule 1105.1 Compliance Project, City of Torrance
58. Paramount Refinery Clean Fuels Project, City of Paramount

EXHIBIT 2.4-1

Related Projects in the Vicinity of the Proposed Gerald Desmond Bridge Site - Port Area

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Table 2.4.1-1
Related Projects

Number in Exhibit 2.4-1	Project Title	Project Description	Status (Project Timeframe)	Relevant Potential Cumulative Environmental Factors
		Port of Long Beach		
1	Middle Harbor Terminal Redevelopment	Expansion of an existing marine container terminal. The Piers D, E, and F development project is located in the Middle Harbor area of the POLB. The project consolidates two existing container terminals into one 345-acre (140-ha) terminal. Construction includes approximately 54.6 acres (21.6 ha) of landfill, dredging, and wharf construction; construction of an intermodal rail yard; and reconstruction of terminal operations buildings.	Draft EIS/EIR released May 2008.	Air Quality Transportation Biological Resources Water Quality & Hydrology
2	Piers G & J Terminal Redevelopment Project	Redevelopment of two existing marine container terminals into one terminal in the Southeast Harbor Planning District area. The project will develop a marine terminal of up to 315 acres (127 ha) by consolidating portions of two existing terminals on Piers G and J.	Approved project. Construction underway (2005-2015).	Geology Groundwater and Soils Air Quality Biological Resources
3	Pier S Marine Terminal	Development of a 150-acre (61-ha) container terminal on Pier S and construction of navigational safety improvements to the Back Channel.	EIS/EIR to be prepared (2007-2012).	Transportation Air Quality
4	Pier A East	Conversion of 32 acres (13 ha) of existing auto storage area into container terminal uses.	EIR to be prepared.	Transportation Air Quality
5	Chemoil Marine Terminal, Tank Installation	Construction of two petroleum storage tanks and associated relocation of utilities, and reconfiguration of adjoining marine terminal uses between Berths F210 and F211 on Pier F.	EIR to be prepared (2008-2009).	Transportation Air Quality Hazards
6	Gerald Desmond Bridge Replacement Project, POLB/ Caltrans/FHWA	Replacement or rehabilitation of the existing Gerald Desmond Bridge and adjacent roadway improvements.	Analyzed in this document.	Transportation Air Quality Biological Resources
7	Administration Building and Maintenance Facility Replacement Project	Replacement of the existing Port Administration Building and Maintenance Facility with a new facility on an adjacent site on Pier G.	Approved project (2009-2012).	Transportation Air Quality
8	Pier A West Interim/ Source Removal Project, POLB/DTSC	Remediation of approximately 90 acres (36 ha) of oil production land, including remediation of soil and groundwater contamination, relocation of oil wells, filling, and paving.	Cleanup and Abatement Order (2008-2009).	Geology Hazards

Table 2.4.1-1
Related Projects

Number in Exhibit 2.4-1	Project Title	Project Description	Status (Project Timeframe)	Relevant Potential Cumulative Environmental Factors
Port of Long Beach (continued)				
9	Pier B Rail Yard Expansion	Expansion of the existing Pier B Rail Yard in two phases, including realignment of the adjacent Pier B Street and utility relocation.	EIR being prepared (2009-2015).	Transportation Air Quality
10	Terminal Island Rail Projects	Construct rail improvements on Terminal Island, including a grade separation at Reeves Avenue and additional storage tracks.	EIR being prepared (2009-2015).	Transportation
11	Mitsubishi Cement Corporation Facility Modifications	Facility modification, including the addition of a catalytic control system, construction of four additional cement storage silos, and upgrading existing cement unloading equipment on Pier F.	EIR being prepared (2009-2013).	Air Quality
12	Cemera Long Beach Aggregate Terminal	Construction and operation of a sand, gravel, and aggregate receiving, storage, and distribution terminal, and ready-mix concrete plant on Pier B.	EIR being prepared (2009-2012).	Transportation Air Quality
City of Long Beach				
13	Shoreline Gateway Project	Mixed-use development of a 22-story residential tower with retail, commercial, and office uses located north of Ocean Boulevard, between Atlantic Avenue and Alamitos Avenue.	EIR certified in 2006.	Transportation Air Quality
14	West Gateway Redevelopment Project	Redevelop nine existing parcels, including apartments, condominiums, and retail, on Broadway between Chestnut and Maine.	Under construction.	Air Quality
15	Golden Shore Master Plan	The proposed project would provide new residential, office, retail, and potential hotel uses, along with associated parking and open space.	NOP issued November 2008.	Aesthetic/Visual Air Quality Noise Transportation Water Quality Growth Inducing Cumulative Effects

Table 2.4.1-1
Related Projects

Number in Exhibit 2.4-1	Project Title	Project Description	Status (Project Timeframe)	Relevant Potential Cumulative Environmental Factors
City of Long Beach (continued)				
16	Press-Telegram Mixed Use Development	Construction of two high-rise buildings on the 2.5-acre (1-ha) Press-Telegram site. Each building would be 22 stories and 250 ft (76 m) in height. The project would be a mixed-use development with 542 residential units, and 32,300 square feet (3,000 square meters) of office and institutional space.	Draft EIR prepared August 2006.	Air Quality Cumulative Effects Growth Inducing Minerals Noise Hazard Transportation Water Quality
17	Sierra Hotel Project	Development of a 91,304-square–foot (8,482-square-meter), 7-story hotel structure with 140 rooms. Parking will be provided in the multi-level parking structure located across the street at the southwest corner of Cedar Avenue and Seaside Way.	EIR certified December 2005.	Air Quality Hazard Transportation
Port of Los Angeles				
18	Berths 136-149 Marine Terminal, West Basin	Element of the West Basin Transportation Improvement Projects. Reconfiguration of wharves and backland. Expansion and redevelopment of the TraPac Terminal.	Project approved December 2007 (2008-2015).	Transportation Air Quality
19	Berths 226-236 (Evergreen) Container Terminal Improvements Project and Canners Steam Demolition	Proposed redevelopment of existing container terminal, including improvements to wharves, adjacent backland, crane rails, lighting, utilities, new gate complex, grade crossings, and modification of adjacent roadways and railroad tracks. Project also includes demolition of two unused buildings and other small accessory structures at the former Canners Steam Plant in the Fish Harbor area of the Port.	EIS/EIR to be prepared. NOP/NOI anticipated 2008.	Transportation
20	Berths 97-109 China Shipping Terminal Development Project	Development of the China Shipping Terminal Phase I, II, and III, including wharf construction, landfill and terminal construction, and backland development.	Project approved December 2008 (2009-2015).	Transportation Air Quality

Table 2.4.1-1
Related Projects

Number in Exhibit 2.4-1	Project Title	Project Description	Status (Project Timeframe)	Relevant Potential Cumulative Environmental Factors
Port of Los Angeles (Continued)				
21	Channel Deepening Project/Additional Disposal Capacity	Dredging and sediment disposal. This project would deepen the POLA Main Channel to a maximum depth of -53 ft (-16 m) MLLW (lesser depths are considered as project alternatives) by removing between 3.9 million and 8.5 million cu yd of sediments. The sediments would be disposed at several sites. The EIR/EIS certified for the project identified significant air and noise impacts. The Supplemental EIR/EIS is being prepared to evaluate dredging 4 million cu yd of material and creating 151 acres (61 ha) of new lands from the sediments.	SEIS/SEIR released July 2008. Construction expected 2009-2011.	Biological Resources Hydrology & Water Quality Transportation Air Quality
22	Berths 171-181, Pasha Marine Terminal	Redevelopment of existing facilities at Berths 171-181 as an Omni (multi-use) facility.	Project EIR on hold.	Transportation Air Quality
23	Plains All American (formerly Pacific Energy) Oil Marine Terminal, Pier 400	Proposal to construct a Crude Oil Receiving Facility on Pier 400 with tanks on Terminal Island and pipelines between berth, tanks, and pipeline system.	SEIS/SEIR certified November 2008. Construction expected 2009-2011.	Transportation Air Quality Biological Resources
24	Berths 206-209 Interim Container Terminal Reuse Project	Proposal to allow interim reuse of former Matson Terminal.	Final EIR certified. Construction on hold.	Hydrology & Water Quality
25	Ultramar Lease Renewal Project	Lease renewal for liquid bulk (petroleum) terminal.	Final EIR anticipated in 2009.	Air Quality Hazards
26	SSA Outer Harbor Fruit Facility Relocation	Proposal to relocate the existing fruit import facility at 22nd and Miner to Berth 153.	Project on hold (2008-2010).	Transportation Air Quality
27	POLA Charter School and Port Police Headquarters, San Pedro	Proposal to develop a POLA Charter School and Port Police Headquarters.	EIR certified August 2005. Construction anticipated 2007-2008.	Transportation Air Quality
28	San Pedro Waterfront Enhancements Project	Project includes improving existing and development of new pedestrian corridors along the waterfront (4 acres [1.62 ha]), landscaping, parking, increased waterfront access from upland areas, and creating 16 acres (6.47 ha) of public open space.	MND approved in April 2006. Construction to begin in early 2008 and will be completed in 2009.	Transportation Air Quality

Table 2.4.1-1
Related Projects

Number in Exhibit 2.4-1	Project Title	Project Description	Status (Project Timeframe)	Relevant Potential Cumulative Environmental Factors
Port of Los Angeles (Continued)				
29	Southern California International Gateway Project	Construction and operation of an intermodal container transfer facility and various associated components, including relocation of an existing rail operation.	DEIR expected in 2009.	Transportation Air Quality
30	Cabrillo Way Marina, Phase II	Redevelopment of the old marinas in the Watchorn Basin and development of the backland areas for a variety of commercial and recreational uses.	Construction anticipated (2008-2009).	Transportation Air Quality
31	Artificial Reef, San Pedro Breakwater	Development of an artificial reef site south of the San Pedro Breakwater. Provides opportunity for suitable reuse of clean construction materials and to create bottom topography to promote local sportfishing.	Negative Declaration issued and certified. Project proceeding (2006-2010).	Biological Resources Hydrology & Water Quality
32	Pan-Pacific Cannery Complex Demolition Project	Demolition of two unused buildings and other small accessory structures at the former Pan-Pacific Cannery in the Fish Harbor area of the POLA.	FEIR being prepared.	Transportation Air Quality
33	Berth 302-305 (APL) Container Terminal Improvements Project	Construction and operation of a new container terminal expansion area on the east side of Pier 300. 40 acres (16 ha) of fill have been added to Pier 300. An additional 40 acres (16 ha) of fill will be evaluated in the Channel Deepening Supplemental EIS/EIR.	EIR/EIS to be prepared	Transportation Air Quality Biological Resources
34	South Wilmington Grade Separation	An elevated grade separation would be constructed along a portion of Fries Avenue over the existing rail line tracks to eliminate vehicular traffic delays that would otherwise be caused by trains using the existing rail line and the new ICTF rail yard. The elevated grade would include a connection onto Water Street. There would be a minimum 24.5-ft (7.5-m) clearance for rail cars traveling under the grade separation.	Conceptual planning stage.	Transportation Air Quality

Table 2.4.1-1
Related Projects

Number in Exhibit 2.4-1	Project Title	Project Description	Status (Project Timeframe)	Relevant Potential Cumulative Environmental Factors
Port of Los Angeles (Continued)				
35	"C" Street/ Figueroa Street Interchange	The "C" Street/Figueroa Street interchange would be redesigned to include an elevated ramp from Harry Bridges Boulevard to I-110, over John S. Gibson Boulevard. There would be a minimum 15-ft (4.5-m) clearance for vehicles traveling on John S. Gibson Boulevard. An additional extension would connect from Figueroa Street to the new elevated ramp over Harry Bridges Boulevard.	Conceptual planning stage.	Transportation Air Quality
36	I-110/SR 47 Connector Improvement Program	Program may include "C" Street/ I-110 access ramp intersection improvements, I-110 NB Ramp/John S. Gibson Boulevard intersection improvements, and SR 47 on- and off-ramp at Front Street.	IS/EA	Air Quality Noise Visual Recreation
37	Port Transportation Master Plan	Port-wide transportation master plan for roadways in and around POLA facilities. Present and future traffic improvement needs are being determined based on existing and projected traffic volumes. Some improvements under consideration include I-110/SR 47/Harbor Boulevard interchange; south Wilmington grade separations; and additional traffic capacity analysis for the Vincent Thomas Bridge.	Conceptual planning stage.	Transportation Air Quality
38	Berths 212-224 YTI Terminal Improvements	Wharf modifications at the YTI Marine Terminal Project involve wharf upgrades and backland reconfiguration, including new buildings.	NOP/NOI anticipated in 2008.	Transportation Air Quality
39	Berths 121-131 (Yang Ming) Container Terminal	Reconfiguration of wharves and backlands. Expansion and redevelopment of the APL Terminal.	NOP/NOI anticipated in 2008.	Transportation Air Quality

Table 2.4.1-1
Related Projects

Number in Exhibit 2.4-1	Project Title	Project Description	Status (Project Timeframe)	Relevant Potential Cumulative Environmental Factors
Port of Los Angeles (Continued)				
40	San Pedro Waterfront Project	Project includes construction of North Harbor and Downtown Harbor promenades, and Downtown Water Feature; enhancements to the existing John S. Gibson Park; construction of a Town Square at the foot of 6th Street, a 7th Street Pier, and a Ports O' Call Promenade; development of California Coastal Trail along the waterfront; construction of additional cruise terminal facilities; a Ralph J. Scott Historic Fireboat display; relocation of the Catalina Cruises Terminal and the SS Lane Victory; extension of the Red Car Line; and related parking improvements.	Draft EIR/EIS being prepared. Construction expected 2010-2015.	Transportation Air Quality
41	Westway Decommissioning	Decommissioning of the Westway Terminal along the Main Channel (Berths 70-71). Work includes decommissioning and removing 136 storage tanks with total capacity of 593,000 barrels.	Remedial planning underway. Decommissioning anticipated in 2009.	Air Quality Hazardous Materials
42	Consolidated Slip Restoration Project	Remediation of contaminated sediment at Consolidated Slip, including capping sediments or removal/disposal to an appropriate facility. Work includes capping and/or treatment of approximately 30,000 cubic yards of contaminated sediments.	Remedial actions being evaluated.	Air Quality Hazardous Materials
43	Wilmington Waterfront Master Plan (Avalon Blvd. Corridor Project)	Planned development intended to provide waterfront access and promote development along Avalon Boulevard.	EIR being prepared.	Transportation Air Quality
44	Southwest Marine Demolition Project	Demolition of buildings and other small accessory structures.	EIR being prepared.	Air Quality
45	Inner Cabrillo Beach Water Quality Improvement Program	Phased improvements, including sewer and storm drain work, sand replacement, bird excluders, and circulation improvements.	Construction underway.	Water Quality

Table 2.4.1-1
Related Projects

Number in Exhibit 2.4-1	Project Title	Project Description	Status (Project Timeframe)	Relevant Potential Cumulative Environmental Factors
Community of San Pedro				
46	Pacific Corridors Redevelopment Project, San Pedro	Development of commercial/retail, manufacturing, and residential components.	Construction underway. Expected completion in 2032 according to Community Redevelopment Agency of Los Angeles.	Transportation Air Quality
California Department of Transportation (Caltrans)				
47	Schuyler Heim Bridge Replacement and SR 47 Expressway, Caltrans/ACTA	Replace the Schuyler Heim Bridge with a fixed structure and improve the SR 47/ Henry Ford Avenue/Alameda Street transportation corridor by constructing an elevated expressway from the Schuyler Heim Bridge to SR 1 (PCH).	FEIR/EIS anticipated 2009	Transportation Air Quality
48	I-710 (Long Beach Freeway) Corridor Project	The study proposes to develop transportation solutions to traffic congestion and other mobility problems along approximately 18 mi (29 km) of SR 710 between the San Pedro Bay ports and SR 60.	NOP/NOI released August 2008.	Transportation Air Quality
Alameda Corridor Transportation Authority (ACTA)				
49	Cerritos Channel Rail Bridge	Construct a new rail lift-bridge with two tracks, adjacent to the existing Badge Avenue Bridge.	Conceptual project.	Air Quality Noise
ICTF Joint Powers Authority				
50	Intermodal Container Transfer Facility (ICTF) Modernization and Expansion	Modernize and expand the existing ICTF to increase capacity, and modernize existing equipment, rail yard operation methods.	NOP/IS released January 2009 (2010-2014).	Transportation Air Quality Noise
Community of Wilmington				
51	Tesoro Reliability Improvement and Regulatory Compliance Project	Tesoro projects at its Los Angeles Refinery and at its Sulfur Recovery Plant to improve the reliability of refinery operations and to comply with regulatory requirements.	FEIR certified April 2009.	Air Quality Hazards Transportation
City of Carson				
52	BP Carson Refinery Safety, Compliance and Optimization Project	Physical changes and additions to multiple process units and operations, as well as operational and functional improvements within the confines of the existing refinery.	Addendum to FEIR January 2008. FEIR certified September 2006.	Air Quality Cumulative Effects Hazards Transportation

Table 2.4.1-1
Related Projects

Number in Exhibit 2.4-1	Project Title	Project Description	Status (Project Timeframe)	Relevant Potential Cumulative Environmental Factors
		City of Carson (continued)		
53	Crude Logistics Optimization Project	Construction and operation of two 260-ft-diameter (79-m) covered external floating roof tanks to store crude oil at the BP Carson Crude Terminal (CCT).	EIR certified March 2008.	Cumulative Effects Noise Hazards Transportation
54	ConocoPhillips Los Angeles Refinery PM_{10} and NO_X Reduction Projects	Proposed project will reduce PM_{10} and NO_X emissions at its existing Wilmington (55A) and Carson plants (55B) through modifications to refinery units at both plants.	FEIR certified June 2007.	Aesthetics Air Quality Hydrology & Water Quality Transportation
		City of El Segundo		
55	Chevron Products Company El Segundo Refinery Product Reliability and Optimization Project	Modifications and additions at the existing El Segundo Refinery to increase the reliability, energy efficiency, and capacity of specific existing refinery processing equipment; allow the processing of a wider range of crude oils; and voluntarily reduce potential atmospheric emissions from existing pressure relief devices.	FEIR certified May 2009.	Air Quality Energy Hazards Hydrology & Water Quality Noise Solid/Hazardous Waste Transportation
56	Chevron Products Company – El Segundo Refinery Heavy Crude Project	Modifications to the Chevron Products Company (Chevron) El Segundo Refinery to enable the refinery to maintain or slightly increase its current production levels of saleable products and processing more heavy crude oil.	FEIR certified August 2006. Addendum certified May 2007.	Air Quality
		City of Torrance		
57	ExxonMobil Rule 1105.1 Compliance Project	Proposes modifications to the fluidized catalytic cracking unit at its Torrance Refinery to comply with new PM_{10} and ammonia emission limits set by SCAQMD Rule 1105.1.	FEIR certified March 2007.	Air Quality
		City of Paramount		
58	Paramount Refinery Clean Fuels Project	Project proposes improvements to produce reformulated gasoline and ultra low sulfur diesel for California markets.	Addendum to FEIR September 2007. FEIR certified April 2004.	Air Quality Hazards Transportation

development is expected to continue with or without the Build Alternatives; therefore, when considered with other related projects, the proposed project would not result in significant or adverse cumulative land use effects.

Recreation and Coastal Zone

Build Alternatives

The Build Alternatives would have no effect on recreational land use. The Build Alternatives would not result in cumulatively considerable significant or adverse recreation impacts.

All of the proposed Build Alternatives would be consistent with the California Coastal Act and PMP, which states that all port-related developments shall be located, designed, and constructed so as to minimize substantial adverse environmental impacts; minimize potential traffic conflicts between vessels; give highest priority to the use of existing land space within harbors for port purposes, and provide for other beneficial uses consistent with the public trust.

All of the Build Alternatives and other related projects within the coastal zone would require coastal permits or CCC review. All projects would be conditioned, as appropriate, by the CCC, Ports, and Cities; therefore, they would not result in cumulatively considerable significant or adverse effects on coastal zone resources.

2.4.3.2 Growth Inducement

Bridge Replacement Alternatives

Direct Growth-Inducement Potential: Areas within the vicinity of the Port are largely built-out and consist of dense development typical of established urban areas. The Bridge Replacement Alternatives would not result in changes to zoning or land use designations that would have the potential to directly influence growth. None of the related projects are contingent upon the completion of the proposed project. Future development within the abandoned bridge footprint or within the surrounding areas would consist largely of redevelopment and would be approved in accordance with the applicable state and local planning processes. The Bridge Replacement Alternatives would not result in a greater amount of land available for redevelopment within or outside of the POLB than exists today; therefore, the Bridge Replacement Alternatives would not result in cumulatively considerable significant or adverse effects related to direct growth or development within the related projects area.

Indirect Growth-Inducement Potential: When considered in the context of future development that is likely to occur within the POLB/POLA and surrounding communities, the traffic congestion relief benefits associated with the Bridge Replacement Alternatives would have the potential to indirectly influence growth as a result of more efficient or improved access to and from areas within the POLB and surrounding communities. In other words, the proposed bridge replacement project would not cause indirect growth in and of itself; however, additional growth associated with future land development in the project area could be influenced by the traffic congestion-relief benefits provided by the new bridge. The Bridge Replacement Alternatives would not result in new accessibility to and from areas that are currently inaccessible and would not cause associated indirect growth via creation of new access. In other words, the proposed bridge replacement project would not cause indirect growth in and of itself; however, additional cumulative growth associated with future land development in the project area, which would be influenced by the traffic congestion-relief benefits provided by the new bridge, may occur as approved in the PMP and local and regional planning documents. Therefore, the Bridge Replacement Alternatives would not result in cumulatively considerable significant or adverse impacts related to indirect growth of development in the Port area.

Container Terminal Throughput Capacity: The POLB/POLA container storage throughput capacity must also be considered in cumulative growth of the Port area. The throughput capacity of the POLB/POLA container terminals is a function of several variables, as discussed in Section 2.1.2.

While the new bridge would provide more efficient access for trucks to and from the Port terminals, the throughput capacity constraints dictate the overall capacity of the terminals. Improved truck access to the Ports is not the driving influence on terminal throughput. The reduction of traffic congestion resulting from the Bridge Replacement Alternatives and the relatively small savings in overall cargo transit time attributable to the new bridge would not be an incentive for shippers to divert their cargo from other ports to the POLB/POLA. Additionally, increasing the bridge elevation would provide safe passage of larger vessels, but it would not increase potential throughput of the Ports because the project would not increase terminal capacity; therefore, the

Bridge Replacement Alternatives would not result in cumulatively considerable significant or adverse effects related to indirect growth of terminal capacity associated with the improved access to the Port.

Rehabilitation Alternative

Under the Rehabilitation Alternative, the Gerald Desmond Bridge would continue to operate in its existing configuration. There would be no changes in land use or zoning, and there would be no changes to the existing surface transportation system or access within the vicinity of the existing bridge. As such, there would be no potential for the Rehabilitation Alternative to result either directly or indirectly in cumulatively considerable significant or adverse growth effects.

2.4.3.3 Community Impacts

Community Character and Cohesion

Build Alternatives

The project area is zoned for Port-related industrial activities and consists mainly of heavy industrial uses associated with the Port's various terminals. No residential areas are within the Port planning areas, and the proposed project would not affect population or housing or result in any land use changes that either directly or indirectly affects local or regional population growth projections.

The project is confined to the immediate vicinity of the port and consists of the replacement or rehabilitation of an existing transportation facility; therefore, it would not contribute to the creation of a barrier between communities, nor would it encroach into adjacent communities, either of itself, or in the context of other related projects.

The Build Alternatives would not permanently affect any community facilities or services or access to any community facilities or services; therefore, the Build Alternatives would not result in any cumulatively considerable significant or adverse impacts, when considered in relation to other related projects on community character or cohesion.

Relocations

Bridge Replacement Alternatives

No residential areas would be affected by the Build Alternatives. Some property acquisition and/or employee displacement is expected under these alternatives. When considered along with the effects of other related projects taking place in the port area, the proposed project would contribute to a general trend of land conversion from smaller, less intense, land uses, to larger and more consolidated port-related land uses. In that sense, a cumulative contribution to relocations (primarily affecting commercial properties) can be attributed to the bridge improvement project; however, it is reasonable to believe that the proposed project and related projects would result in an overall increase in business opportunities, including commercial space and jobs, to meet the relocation needs of any displaced business or employee within the vicinity of the Ports. It is expected that all projects would comply with relocation and acquisition guidelines of the regulating agency; therefore, the relocation effects of the Build Alternatives, when considered with other related projects, would not result in any cumulatively considerable significant or adverse relocation impacts as a result of property acquisition and/or employee displacement.

Rehabilitation Alternative

No permanent acquisition or employee displacement is anticipated under this alternative. The Rehabilitation Alternative would not contribute to cumulatively considerable relocation impacts.

Environmental Justice

Build Alternatives

Because the proposed Build Alternatives would not affect residences, nor would it have permanent adjacency effects on residences, the proposed project would not result in disproportionately high and adverse effects on minority and/or low-income population groups; therefore, when considered with other related projects, the proposed project would not result in cumulatively considerable significant or adverse impacts on minority and/or low-income population groups.

2.4.3.4 Public Services

Build Alternatives

The need for public services (e.g., schools, health care facilities, parks, libraries) is governed by growth in population and, to a certain extent, by growth in permanent employment, which can also translate into additional population. Population growth itself is largely a regional phenomenon that is measured by the imbalance of immigration versus emigration plus net births. The former factor is influenced by the strength of the regional economy, which has exhibited (and continues to do so) sound strength over the long term. The latter factor is independent of public policy. The San Pedro Bay Ports constitute a substantial

component of the region's economy The San Pedro Bay Ports handle more than 40 percent of the nation's total containerized cargo import traffic and 24 percent of the nation's total exports. This trade volume equates to $256 billion in total national trade in 2005, with $62.5 billion of that trade in California. In addition, the study conservatively estimates that more than 886,000 jobs in California are directly and indirectly related to international trade activities conducted through the San Pedro Bay Ports (ACTA, 2008). To the extent that the Ports continue to grow in response to global market forces, they will continue to be a substantial component of the regional economy; therefore, they would also contribute to growth in the employment-driven component of population growth over time.

Expected increases in regional population and employment are accounted for in the regional projections provided by SCAG. In an indirect sense, the contribution of the Ports to population and employment growth has already been taken into account. As the POLB adds and improves the productivity of its terminal facilities, the employment growth projections attributable to the Port, which are included in the SCAG projections, come "on line." So long as the additions of terminal capacity are in line with adopted regional employment growth forecasts, the potential cumulative effects on the need for public services of various kinds are being planned for at the regional and local level through the general plans and capital improvement programs of the many local jurisdictions in the region. In this scenario, when considered with other related projects, significant and adverse cumulative impacts associated with Port growth would not occur.

The Bridge Replacement Alternatives respond to the traffic demand generated by local and regional population and employment growth, and they accommodate vehicular movements related to cargo handling in the Port. These vehicular movements are the outcome of population and employment activity, not the cause; therefore, the Build Alternatives do not contribute to adverse or significant cumulative impacts on public services.

The Build Alternatives would also generate large volumes of construction and the Bridge Replacement Alternatives would generate demolition debris. This would result in disposal requirements and a reduction in municipal solid waste landfill capacity; however, 50 percent of the debris would be diverted in accordance with AB 75, and recyclable materials would be hauled to local recycling facilities or inert landfills. This would reduce use of Los Angeles County landfills and minimize project-related cumulative impacts on landfill capacity. It is assumed that all other related projects would also dispose of construction and demolition debris in accordance with state and local requirements. Landfill capacity would not be adversely impacted by disposal needs of these alternatives when considered in conjunction with the disposal needs of related projects. No cumulatively considerable significant or adverse impacts on landfill capacity are anticipated.

2.4.3.5 Maritime Navigation

Build Alternatives

Some construction activities over the Back Channel could potentially result in occasional shipping delays. These delays would be minimized through close coordination between the terminal operators, the Port, and the contractor. The Build Alternatives would not substantially interfere with the accessibility of the Port's berths to calling vessels; therefore, no cumulatively considerable significant or adverse impacts on maritime navigation are anticipated

2.4.3.6 Visual/Aesthetics

Bridge Replacement Alternatives

The Bridge Replacement Alternatives and all related projects planned within the Port would comply with PMP requirements for maintenance of visual quality and enhancement of visual quality of Harbor land at or along major vehicular approaches (POLB, 1999). These projects, in conjunction with the Bridge Replacement Alternatives, would not contribute to cumulatively considerable significant or adverse impacts on visual quality. Additionally, the new landmark bridge design proposed for the Bridge Replacement Alternatives would enhance the visual landscape and visual quality within and outside of the Port.

Rehabilitation Alternative

The visual quality and character of the project area would be the same under the Rehabilitation Alternative as the No Action Alternative. This alternative would not affect the visual/aesthetic environment, and it would not contribute to cumulatively considerable significant or adverse visual quality effects.

2.4.3.7 Cultural Resources

Build Alternatives

The former Edison Power Plant No. 3 and SCE transmission towers were determined eligible for

listing on the NRHP. The Build Alternatives would not require demolition or alteration of the facilities or towers. New towers would be constructed adjacent to the existing towers. No known archaeological or paleontological resources were identified within the APE. The formation of Terminal Island and the surrounding areas make it unlikely that any archaeological or paleontological resources are present within the project area. The Build Alternatives would not adversely affect historic resources and, when considered with other related projects, would not result in cumulatively considerable significant or adverse impacts on cultural resources.

2.4.3.8 Water Resources

Water Quality

Build Alternatives

The Port's commitment to greening operations and increasing population density, along with increasingly stringent regulatory requirements and community involvement, have made the protection of water resources a priority in the Port. Soil disturbance associated with Build Alternative construction activities could result in temporary sedimentation and siltation effects on surface waters and could be cumulatively considerable when considered in relation to sedimentation and siltation effects of other related projects that could be under construction at the same time. However, potential cumulative effects on surface water due to the Build Alternatives are not anticipated because a site-specific SWPPP would be implemented, and the selection of appropriate construction site BMPs would ensure that no water quality standards or WDRs would be violated. It is reasonable to assume that all other related projects would also implement similar water quality protection measures. With implementation of these measures, the Build Alternatives would not contribute significantly or adversely to cumulative surface water quality impacts. Additionally, excavation activities are anticipated to encounter groundwater, and dewatering would be necessary. Dewatering groundwater in the project area is a concern because this can cause the contaminated groundwater plume to migrate to uncontaminated areas. All dewatering activities would be in compliance with Los Angeles RWQCB regulatory requirements, including an individual dewatering permit or waste discharge permit, if applicable. Prior to commencement of dewatering activities, RWQCB would be contacted immediately to provide a recommendation on how to handle the disposal of dewatering flows. Any dewatering activities, including those that may contact contaminated groundwater, shall be treated to remove pollutants to meet Los Angeles RWQCB discharge requirements, or hauled offsite and properly disposed of. No dewatering would be required during operation of the project. Additionally, the project would incorporate treatment BMPs into all of the alternatives that would capture and treat storm water runoff. Once operational, the completed project would result in beneficial effects on surface water and would have no effect on groundwater. The beneficial effects to surface water would be attained through the implementation of proposed treatment BMPs, where there currently is no treatment. Due to beneficial effects of the Build Alternatives, there is no potential to contribute to cumulatively considerable significant or adverse impacts on surface or groundwater.

Storm Water Runoff

Bridge Replacement Alternatives

The Bridge Replacement Alternatives would result in an increase in impervious surfaces and associated storm water runoff; however, all runoff would be captured and treated in eight treatment BMPs (i.e., six media filters and two biofiltration swales) prior to discharge to the existing storm drain. Storm water discharge would not exceed existing velocities and would not require construction of additional storm water drainage capacity. Implementation of the Bridge Replacement Alternatives would result in a beneficial effect on surface water quality due to treatment of storm water runoff prior to discharge into the harbor. No cumulatively considerable significant or adverse impacts related to storm water runoff are anticipated

Rehabilitation Alternative

The Rehabilitation Alternative would result in seismic improvements to the Gerald Desmond Bridge and would not result in new impervious surfaces or increased storm water runoff; however, treatment BMPs have been incorporated into this alternative, and all runoff would be captured and treated in five treatment BMPs (i.e., three media filters and two biofiltration swales). Implementation of the Rehabilitation Alternative would result in a beneficial effect on surface water quality due to treatment of storm water runoff prior to discharge into the harbor. No cumulatively considerable significant or adverse impacts related to storm water runoff are anticipated.

Hydrology and Floodplains

Build Alternatives

Although the North-side Alignment Alternative would place structures within the 100-year flood hazard area, it would not be considered a "significant encroachment." The Build Alternatives would not impede or redirect flows. When considered with other related projects, and due to the location of the Build Alternatives adjacent to the harbor and ocean, no cumulatively considerable significant or adverse impacts related to hydrology and floodplains are anticipated.

2.4.3.9 Geologic Resources

Bridge Replacement Alternatives

The Bridge Replacement Alternatives would be designed to meet all federal and state seismic design criteria, with return to service within days of a major seismic event. Soil loss associated with grading and other construction activities is expected to be minimal. It is anticipated that other related projects would be implemented in a similar manner; therefore, collectively, no conditions would be created that would result in a cumulative adverse impact either from or on geologic conditions when considered with other related projects. Additionally, implementation of the Build Alternatives would decrease the current risk of loss, injury, or death as a result of ground shaking or other seismically induced effects. The proposed project would also reduce the current risk associated with exposing people or structures to adverse effects because of seismic activities and seismic-related ground failure. No cumulatively considerable significant or adverse impacts related to geologic resources are anticipated.

Rehabilitation Alternative

Under this alternative, cumulative impacts to geologic resources would be comparable to those described under the Bridge Replacement Alternatives; however, it is likely that after a major seismic event, the Gerald Desmond Bridge would likely require demolition and reconstruction. No cumulatively considerable significant or adverse impacts related to geologic resources are anticipated.

2.4.3.10 Hazardous Wastes/Materials

Build Alternatives

Construction activities associated with the Build Alternatives and other related projects, either severally or collectively, could result in hazardous materials being used or encountered in the field. Hazardous waste/materials are potentially located in areas adjacent to the proposed alignments. This project (as would the related projects) would be required to employ BMPs in the transportation, storage, and handling of any hazardous materials encountered or used in their respective construction processes. The project would also be required to follow appropriate procedures for handling and disposal of such materials if they are encountered in the field in accordance with the project's hazardous waste management plan. Primarily, hazardous material-related impacts attributable to the Build Alternatives, in conjunction with construction of related projects, could potentially occur from the handling of contaminated soil and groundwater and potential presences of asbestos and LBP. All related projects in the area would be evaluated on a project-by-project basis and would incorporate measures into the hazardous waste management plan to reduce potential impacts. These measures would be expected to be consistent with applicable standards, regulations, and requirements to reduce potential impacts from hazardous materials/wastes. It is anticipated that other related projects would be implemented in a similar manner; therefore, with implementation of the protection measures, no cumulatively considerable significant or adverse impacts related to hazardous waters and materials are anticipated.

2.4.3.11 Noise

Build Alternatives

Construction noise effects are anticipated; however, noise generated during construction would be intermittent with varying levels of intensity. There are several other projects within a 0.5-mi (0.8-km) radius of this proposed project that may be under construction concurrently. Depending on phasing of the various projects and distance from other concurrent related projects, temporary, cumulative noise effects may occur. Potential cumulative noise effects related to construction activities would cease at the end of the construction period. Although not considered sensitive receptors (see Section 2.2.6 [Noise]) Port/harbor workers are located within 1,000 ft (305 m) of the construction site. Pile driving and bridge demolition activities could temporarily affect outdoor work areas for Port/harbor workers adjacent to the construction site (within 450 ft [137 m] of pile driving activities and within 500 ft [152 m] of bridge demolition activities). Port/harbor workers may be intermittently exposed to noise levels exceeding the City of Long Beach construction noise threshold. Due to the temporary and intermittent nature of construction noise, OSHA occupational noise protection

measures, natural attenuation and distance to other related projects, construction-related noise would not be considered an adverse cumulative noise effect. As applicable, construction noise reduction practices would be incorporated into the project. As previously stated, intermittent and temporary increases in noise levels associated with construction and demolition would be temporary, and no cumulatively considerable significant or adverse impacts related to construction noise are anticipated.

Additionally, most of the ambient noise within the project area is already attributable to surface traffic and adjacent industrial operations. Operational noise effects of the Build Alternatives would not substantially contribute to permanent cumulative increases in ambient noise levels at sensitive receptors or in the project vicinity. The expected project-related maximum increase in ambient noise levels at the nearest sensitive receptor associated with the Build Alternatives, compared to the overall future ambient noise levels without the project, would be no more than 1 dBA. A change in ambient noise level of 3 dBA or less is generally considered imperceptible to human hearing. When combined with the industrial nature of the land uses within the project area, forecasted Port-related operational growth, the distance to the nearest sensitive receptors (1,300 ft [396 m]) and other related projects, the Build Alternatives would not contribute to cumulatively considerable significant or adverse increases in ambient noise.

2.4.3.12 Energy

Bridge Replacement Alternatives

Upon completion, the proposed project would conserve energy by relieving congestion and contributing towards other transportation efficiencies. Increases in energy use would be limited to those during construction of the project, and they would then return to normal levels subsequent to completion of the project. There is a potential for other related projects to be under construction concurrently with the proposed project; however, this project would not have substantial energy impacts contributing towards cumulative energy consumption. Overall energy saved by relieving congestion, reducing VMT, and other transportation efficiencies from the project over its design life would be greater than the energy consumed to construct the project. No cumulatively considerable significant or adverse impacts related to energy are anticipated.

Rehabilitation Alternative

The Rehabilitation Alternative would not result in cumulative energy impacts. With the exception of energy consumed during construction of the seismic retrofit improvements, energy impacts would be the same as the No Action Alternative. No cumulatively considerable significant or adverse impacts related to energy are anticipated.

2.4.3.13 Biological Environment

Natural Communities

Build Alternatives

No natural communities occur within the project area; therefore, when considered with other related projects, there is no potential for cumulatively considerable impacts on natural communities.

Wetlands and Other Waters

Build Alternatives

No wetlands are within the project footprint, and all construction activates would occur outside of the Back Channel. The Build Alternatives do not affect wetlands or other waters; therefore, when considered with other related projects, there is no potential for cumulatively considerable impacts on wetlands or other waters.

Plant Species

Build Alternatives

Construction and operation of the Build Alternatives would not result in any effects on any marine or terrestrial plant communities. All construction activities would occur entirely within developed areas that are devoid of natural plant communities and outside of the Back Channel. No loss of sensitive terrestrial or marine plant species would occur during the construction and operation of the Build Alternatives, and when considered with other related projects, no cumulatively considerable impacts on plant species are anticipated.

Animal Species

Build Alternatives

The project footprint associated with the Build Alternatives would occur entirely within developed areas and outside of the Back Channel. Potentially affected species are generally well adapted to construction and other human activities, and they would likely avoid the project area during construction; however, some mortality of common terrestrial wildlife species may result due to project construction activities. These

common wildlife species are generally abundant in the project vicinity. No construction in the marine environment would be required, and no direct effects on marine species or habitat are anticipated. When considered with other related projects, the Build Alternatives would not have cumulatively considerable significant or adverse impacts related on marine or common terrestrial species.

Threatened and Endangered Species

Bridge Replacement Alternatives

The peregrine falcon and several species of bats frequently nest/roost on or around the Gerald Desmond Bridge. During construction of either bridge alignment, existing nesting ledges and roost areas on the Gerald Desmond Bridge would be available for continued use. As discussed in Section 2.3 (Biological Resources), if adjacent construction disturbance results in nest/roost abandonment by falcons and/or bats during construction of the new bridge, there are other suitable areas for these species to reside until construction is complete. New nesting ledges and bat boxes would be available for occupancy prior to exclusion activities associated with demolition of the existing bridge. Additionally, if feasible, falcon and bat exclusion for demolition of the Schuyler Heim Bridge and Gerald Desmond Bridge Replacement would be timed to avoid exclusion during the same breeding season. This would ensure that at least one familiar nesting/roost area within the project vicinity is available throughout construction. These impacts were considered at the project level, resulting in measures to avoid and minimize the potential effects on falcons and bats. Also, as discussed in Section 2.3 (Biological Resources), artificial nesting and roosting sites for peregrine falcons and bat species would be incorporated into the Gerald Desmond Bridge Replacement Alternatives. When considered with other related projects and with implementation of the protection measures discussed in Section 2.3, no cumulatively considerable significant or adverse impacts on peregrine falcons or bat species are anticipated.

Lighting of the project during construction and operation may affect special-status species and resident/migratory birds. Artificial lighting could potentially disrupt behavior, resulting in disorientation and collisions with the bridge structures (International Dark-Sky Association, 2002; Longcore and Rich, 2004). Although the potential for collisions would not represent a substantial effect on special-status species or bird migration or use at the project level, it may result in cumulative impacts to birds when considered with construction and operational lighting required for other related projects. The Bridge Replacement Alternatives would incorporate permanent bridge lighting types known to minimize potential effects (i.e., low-pressure sodium lights, high-pressure sodium lights, or LED lights) and avoid lighting types known to be disruptive to migrating wildlife (mercury vapor lamps [Jones, 2000]). Additionally, lighting would be shielded to ensure that light is focused inward, and the amount of lighting would be reduced where possible during both construction and operation. With implementation of the protection measures discussed in Section 2.3, and considering the extent and brilliance of ambient nighttime lighting of the harbor areas adjacent to the bridge, lighting on the existing bridge, and the industrialized nature of the BSA, no cumulatively considerable significant or adverse impacts associated with artificial lighting on special-status species or resident/migratory birds are anticipated.

Rehabilitation Alternative

This alternative would require temporary relocation of nesting ledges and staged construction that would modify nest/roost access during construction. If the Rehabilitation Alternative and the Schuyler Heim project are under construction at the same time, there is potential for temporary cumulative impacts on the falcon because all familiar perches could be unavailable for use; however, as discussed in Section 2.3 (Biological Resources), temporary nest sites would be created and available on the Gerald Desmond Bridge during construction. If nest/roost abandonment does occur, there are other suitable areas for these species to reside until construction is completed. Subsequent to construction of this alternative, existing nesting and roost areas would again be available for reoccupation. When considered with other related projects and with implementation of the protection measures discussed in Section 2.3, no cumulatively considerable significant or adverse impacts on peregrine falcons or bat species are anticipated.

Upon completion of the retrofit activities, bridge lighting would be the same as the existing bridge lighting. Construction night lighting would be focused and directed on the work area. Given the extent and brilliance of ambient nighttime lighting of the harbor areas adjacent to the bridge, lighting on the existing bridge, and the industrialized

nature of the BSA, no cumulatively considerable significant or adverse impacts associated with artificial lighting on special-status species or resident/migratory birds are anticipated

Invasive Species

Build Alternatives

Construction vehicles can easily transport seeds of invasive species from other construction sites into the project area; however, because of the industrial and highly developed nature of the project area, invasive species establishment is unlikely. Standard measures to prevent the spread of invasive species would be implemented. Project landscaping would be limited to slopes near the bridge ramps and would follow the provisions set forth in EO 13112, which mandates preventing the introduction of and controlling the spread of invasive plant species on highway ROWs. No invasive species listed in the National Invasive Species Management Plan or the State of California Noxious Weed List would be used in the landscaping for the proposed project. It is anticipated that similar measures would be incorporated at other related project sites. With incorporation of these measures, no cumulatively considerable significant or adverse impacts related to the spread or establishment of invasive species are anticipated.

2.4.4 Environmental Resources for which Potentially Adverse Cumulative Impacts would Result

When considering the effects of past, present, and reasonably foreseeable future projects in combination with the anticipated effects associated with the Gerald Desmond Bridge Replacement Project, cumulatively considerable impacts on resource areas that are considered potentially adverse are discussed below.

2.4.4.1 Utilities/Emergency Service

Utilities

Bridge Replacement Alternatives

These alternatives and, more than likely, most related projects would require relocation of various utilities during construction (i.e., electric, telephone lines, natural gas, water and sewer pipelines, storm drains, and oil lines and wells). The relocation process could temporarily interrupt utilities while a changeover from the existing to relocated facilities occurs. It is also possible that construction activities associated with other related projects could interrupt utilities serving the immediate vicinity. Utility relocation for the proposed project would be conducted in a manner designed to minimize any potential for interruption. It is reasonable to believe that other related projects would also minimize the potential for service interruption. Interruption of associated utility service in the project area is unlikely to occur. If a service interruption associated with a utility relocation of a related project were to occur simultaneously with an interruption related to the Bridge Replacement Alternatives, this may result in a potentially adverse cumulative impact. The likelihood of such a simultaneous occurrence would be minimal and temporary in duration, perhaps extending for a period of hours. Because utility relocation is common within the Port and related projects area, service disruptions and associated potential cumulatively considerable impacts would be temporary, and minimal, cumulatively considerable adverse or significant impacts are not anticipated. Once operational, the proposed project would not have an effect on utility use or operation, either of itself or in the context of other related projects. .

Rehabilitation Alternative

Potential cumulative impacts associated with utility relocations for the Rehabilitation Alternative would be similar to those described for the Bridge Replacement Alternatives; however, the Rehabilitation Alternative would require much less utility relocation and would not involve the relocation of the SCE lines. Once operational, the proposed project would not have an effect on utility use or operation, either of itself or in the context of other related projects. Because utility relocation is common within the Port and related projects area, service disruptions and associated potential cumulatively considerable impacts would be temporary, and minimal, cumulatively considerable adverse or significant impacts are not anticipated..

Emergency Services

Bridge Replacement Alternatives

Some traffic delays can be expected during construction. Delays may potentially result in increased response times for emergency service providers. The Bridge Replacement Alternatives would utilize a staged construction method, and vehicle travel across the existing bridge would be maintained throughout the construction phases. Only minor effects on emergency services are anticipated during the construction phase and would mainly consist of reduced travel speeds through the project area. A TMP would be designed to identify ways to reduce emergency

service impacts during the construction phase. Cumulative impacts to emergency services could potentially occur if construction of related projects is concurrent with the proposed project. Careful coordination between the proposed and related projects and emergency service providers should minimize these consequences. The TMP for this project would address issues of emergency circulation in conjunction with TMPs for other related projects, and cumulatively considerable adverse or significant impacts are not anticipated.

Rehabilitation Alternative

Potential cumulative impacts associated with emergency services for the Rehabilitation Alternative would be similar to those described for the Bridge Replacement Alternatives; however, most of the construction activities with potential to impact emergency response times would occur during off peak hours, from 7:00 p.m. to 7:00 a.m. A TMP designed to reduce emergency service impacts during the construction phase would be completed. Cumulative impacts to emergency services could potentially occur if construction of related projects is concurrent with the proposed project. Careful coordination between the proposed project and related projects and emergency service providers should minimize these consequences. The TMP for this project would also address emergency circulation in conjunction with TMPs for other related projects. Potential and cumulatively considerable adverse or significant impacts are not anticipated.

2.4.4.2 Air Quality

Construction Impacts

Bridge Replacement Alternatives

The Bridge Replacement Alternatives would result in construction-related cumulative impacts within the SCAB. The SCAB experiences chronic exceedance of state and federal ambient air quality standards; therefore, exceedances of established thresholds must be considered an adverse consequence. As discussed in Section 2.1.5, the Replacement Alternatives would exceed the SCAQMD construction threshold for NO_X during the 9th month of construction years 1 and 2, and the 3rd month of construction Year 3. Although the impact would be temporary, NO_X is a precursor for O_3 and, when considered with other related projects, could contribute cumulatively to the SCAB's O_3 nonattainment status. This exceedance would be considered a cumulative temporary adverse impact. All feasible mitigation measures would be implemented, as discussed in Section 2.1.5. Most of the air quality impacts from related projects would result from mobile sources, such as motor vehicles, construction equipment, and terminal operating vehicles. Ongoing EPA, CARB, SCAQMD, and Port programs are aimed at reducing overall emissions by encouraging or mandating measures to implement the use of alternative fuels, introduction of cleaner running engines, and increased use of ride sharing. In November 2006, the Ports approved the San Pedro Bay Ports CAAP. This plan links the emission reduction efforts and visions of the Ports with the similar efforts and goals of the regulatory agencies (e.g., SCAQMD and CARB) in charge of ensuring compliance with air quality standards. This 5-year CAAP highlights goals, emissions reduction, and budgetary needs for FY 2006/2007 through 2010/2011. The Ports will regularly evaluate the progress towards meeting the CAAP's goals, review the status of existing control measures, evaluate new measures, and develop a revised Action Plan each year (POLB, 2006b); however, construction emissions represent additions to the mobile source emissions burden of the SCAB; therefore, they are unavoidable during the most intense construction activities.

Additionally, construction activities could result in offsite ambient NO_X concentrations that would exceed SCAQMD thresholds of significance during construction year 2 and 3 at a distance of up to 1,640 ft (500 m) from the construction area. Exceedance of the threshold, when considered with the potential for exceedance of offsite ambient construction emission thresholds for other related projects, construction NO_X emissions could contribute to cumulatively adverse temporary air quality effects on sensitive receptors within 1,640 ft (500 m) of the construction area. Sensitive receptors potentially affected within 1,640 ft (500 m) include primarily Cesar Chavez Park and Elementary School, the Golden Shore Marine Reserve, and a few residences. Temporary adverse ambient offsite exceedances would be intermittent over the 12-month period, occur only during the most intense construction activities, and be highly dependent upon construction vehicle mix, proximity of construction activities to the sensitive receptors, and prevailing climactic conditions. .

To the extent feasible, the construction schedule of this project would be coordinated so that concurrent major construction activities are avoided or minimized to reduce adverse air quality impacts. Coordination of the SR 47/Schuyler Heim Bridge replacement project and Gerald Desmond

Bridge replacement project by their respective development teams, as well as PDTs of other related projects in the vicinity, is ongoing. Construction of the proposed project would result in temporary adverse effects to air quality, even after impacts have been minimized to the maximum extent practicable; therefore, impacts of the proposed project, when considered in conjunction with other related concurrent projects under construction, would be expected to be adverse. During construction of either Bridge Replacement Alternative, construction emissions would temporarily contribute to cumulative adverse effects to air quality.

Rehabilitation Alternative

The Rehabilitation Alternative would not exceed SCAQMD local or regional construction emission thresholds and would not contribute to cumulative adverse air quality effects during construction.

Operational Impacts

Bridge Replacement Alternatives

Under the Bridge Replacement Alternatives, regional daily operational emissions for all criteria pollutants would be substantially less than the operational emissions associated with the 2005 base year in both the opening (2015) and horizon years (2030); however, the SCAQMD operational thresholds for NO_X would be exceeded during the opening year. Although the impact would be temporary, NO_X is a precursor for O_3 and, when considered with other related projects, could temporarily contribute cumulatively to the SCAB's O_3 nonattainment status. The overall emissions reduction is due to compliance with adopted regulations for mobile source control measures and include the use of alternative or reformulated fuels, retrofit control on engines, and installing or encouraging the use of new engines and cleaner heavy-duty vehicles. However, when considered with other related projects, exceedance of SCAQMD daily operational threshold criteria would contribute to cumulative considerable temporary adverse effects to air quality during operations. By the horizon year (2030), daily operational Bridge Replacement Alternative emissions would be in compliance with all SCAQMD operational thresholds.

Additionally, localized CO effects associated with operation were assessed by estimating the maximum ambient CO concentrations near the intersections with the greatest potential for hot-spot generation. The Build Alternatives did not result in any exceedance of NAAQS or CAAQS and would not contribute to cumulatively adverse localized CO effects during operations.

2.4.4.3 Traffic and Circulation

Traffic Effects Associated with Three Other Related Projects

This subsection focuses on three roadway improvements from the listing of cumulative projects:

- Improvements to SR 47, excluding the direct "flyover" connector ramp serving traffic from EB Ocean Boulevard to NB SR 47;
- Widening of SR 710 north of the Ports; and
- The direct "flyover" connector ramp serving traffic from EB Ocean Boulevard to NB SR 47 (SR 47 Flyover).

All other cumulative transportation projects and the analysis of their potential traffic effects under both the Rehabilitation and Bridge Replacement Alternatives are included in the analysis of traffic effects presented in Section 2.1.5. Thus, the Rehabilitation Alternative would not result in any adverse cumulative effects on traffic and circulation.

The remainder of this section addresses cumulative effects of the Bridge Replacement Alternatives. The traffic forecasts used in the analysis presented in Section 2.1.5 include traffic from cumulative development projects and circulation on cumulative transportation projects, except for the three transportation projects listed above. These three transportation projects were added to the list of cumulative projects after the traffic forecasting was complete. The potential effects of the three projects listed below were examined using additional runs of the traffic forecasting model testing the sensitivity of the traffic network to these three projects. The flyover was analyzed separately because it was added to the SR 47 project late in the development of that project.

SR 47 and SR 710 Improvements

Improvements to the SR 47 Expressway and SR 710 freeway north of the Ports were not included in the roadway network used to forecast traffic for the future years because those improvements were not planned or programmed at the time that the travel demand forecasting model network was developed; however, a sensitivity analysis was conducted that included these two projects as additional improvements to the year 2030 Bridge Replacement Alternatives condition.

The traffic assignment model for the 2030 Bridge Replacement Alternatives condition was run with improvements to SR 710 and SR 47 (excluding the SR 47 Flyover) added to the network. Because of the additional capacity on SR 710 and SR 47, there are some changes in forecast traffic volumes.

Table 2.4.4-1 shows the changes in traffic with the proposed Bridge Replacement Alternatives, including and excluding the additional improvements to SR 710 and SR 47. The results show that the addition of those two projects could increase PCE traffic on the bridge between 2 and 8 percent during a given peak hour. Because the bridge is expected to operate at LOS C or better in the year 2030 with the Bridge Replacement Alternatives, the additional traffic can be easily accommodated in the proposed designs of the Bridge Replacement Alternatives.

SR 47 Flyover at Terminal Island Freeway Interchange

The proposed SR 47 Flyover would provide a direct connection for traffic from EB Ocean Boulevard to NB SR 47. The SR 47 Flyover is included in the preferred alternative in the May 2009 *Schuyler Heim Bridge Replacement and SR-47 Expressway Project Final Environmental Impact Statement/ Environmental Impact Report* (Caltrans, 2007a). The SR 47 Flyover could also influence some of the same roadway segments that would be affected by the proposed Bridge Replacement Alternatives for the Gerald Desmond Bridge. The SR 47 Flyover is expected to be operational sometime between 2015 and 2030.

Operational analysis of the influence of the SR 47 Flyover on the roadway study segments was conducted using CORSIM software and HCM methods. The peak-hour traffic volumes used in the analysis are the same as those used for analysis of the Bridge Replacement Alternatives. The SR 47 Flyover was evaluated with and without the proposed Bridge Replacement Alternatives in years 2015 and 2030.

Table 2.4.4-2 summarizes the results of the analysis of the influence of the SR 47 Flyover on

Table 2.4.4-1
Year 2030 Traffic Volumes for the Bridge Replacement Alternatives with SR 710 and SR 47 Improvements Except SR 47 Flyover

	AM Peak		MD Peak		PM Peak	
	EB	WB	EB	WB	EB	WB
Year 2030 with Bridge Replacement Plus SR 710 and SR 47 Improvements						
Autos	1,636	1,312	1,117	1,065	1,756	2,189
Trucks (Non-PCE)	1,059	1,164	1,249	1,192	1,148	866
Total Vehicles (Non-PCE)	2,695	2,476	2,366	2,257	2,904	3,055
Total Vehicles (PCE)	3,754	3,640	3,615	3,449	4,052	3,921
Year 2030 with Bridge Replacement						
Autos	1,445	1,311	1,131	1,010	1,900	2,066
Trucks (Non-PCE)	1,022	1,118	1,176	1,182	1,028	803
Total Vehicles (Non-PCE)	2,467	2,429	2,307	2,192	2,928	2,869
Total Vehicles (PCE)	3,489	3,547	3,483	3,374	3,956	3,672
Difference						
Autos	191	1	-14	55	-144	123
Trucks (Non-PCE)	37	46	73	10	120	63
Total Vehicles (Non-PCE)	228	47	59	65	-24	186
Total Vehicles (PCE)	265	93	132	75	96	249
Total Vehicles (PCE) – Percent Increase	8%	3%	4%	2%	2%	7%

Note: PCE – passenger car equivalents
Source: Iteris, 2009.

Table 2.4.4-2 Comparison of Study Segment LOS for the No Action/Rehabilitation Alternatives and Bridge Replacement Alternatives with and without the Ocean Boulevard to SR 47 Flyover

	Segment	From	To	Year 2005	Without EB Ocean Boulevard to NB SR 47 Flyover				With EB Ocean Boulevard to NB SR 47 Flyover			
					Year 2015		Year 2030		Year 2015		Year 2030	
				Existing/ Baseline	No Action/ Rehab Alt	Bridge Replace Alts	No Action/ Rehab Alt	Bridge Replace Alts	No Action/ Rehab Alt	Bridge Replace Alts	No Action/ Rehab Alt	Bridge Replace Alts
AM Peak Hour												
1	EB Ocean Blvd	Navy Way	Pier S Avenue	*	C	C	F	C	B	B	B	B
	WB Ocean Blvd	Pier S Avenue	Navy Way	*	C	C	C	C	C	C	C	C
2	EB Ocean Blvd	Pier S Avenue	Terminal Island Freeway	*	B	C	C	C	B	C	C	C
	WB Ocean Blvd	Terminal Island Freeway	Pier S Avenue	*	B	C	C	C	B	B	C	C
3	EB Ocean Blvd	Terminal Island Freeway	Horseshoe Ramps	*	B	C	C	C	C	C	C	C
	WB Ocean Blvd	Horseshoe Ramps	Terminal Island Freeway	*	B	E	B	D	B	B	B	B
4	EB Gerald Desmond Bridge	Upgrade	Crest	B	C	C	C	D	C	C	D	D
	EB Gerald Desmond Bridge	Crest	Downgrade	C	D	C	D	C	D	C	D	C
5	WB Gerald Desmond Bridge	Upgrade	Crest	C	F	C	F	C	F	C	F	C
	WB Gerald Desmond Bridge	Crest	Downgrade	C	D	C	D	C	D	C	D	C
6	NB Connector	EB Ocean Blvd	NB I-710	B	B	A	B	A	B	A	B	B
	SB Connector	SB I-710	WB Ocean Blvd	B	C	B	D	C	D	B	D	C
7	I-710 NB	NB Connector	NB I-710 Mainline	B	B	A	B	A	B	A	B	B
	I-710 SB	SB I-710 Mainline	SB Connector	A	B	B	B	C	B	B	B	C
8	EB Ocean Blvd	NB Connector	Downtown	A	A	B	A	B	A	B	A	B
	WB Ocean Blvd	Downtown	SB Connector	A	A	B	A	B	A	B	A	B
MD Peak Hour												
1	EB Ocean Blvd	Navy Way	Pier S Avenue	*	C	C	F	F	B	B	F	B
	WB Ocean Blvd	Pier S Avenue	Navy Way	*	C	C	C	C	B	C	B	C
2	EB Ocean Blvd	Pier S Avenue	Terminal Island Freeway	*	B	C	B	C	B	C	C	C
	WB Ocean Blvd	Terminal Island Freeway	Pier S Avenue	*	B	B	B	C	B	B	C	C
3	EB Ocean Blvd	Terminal Island Freeway	Horseshoe Ramps	*	B	C	B	B	B	C	B	C
	WB Ocean Blvd	Horseshoe Ramps	Terminal Island Freeway	*	B	F	F	F	B	B	F	B
4	EB Gerald Desmond Bridge	Upgrade	Crest	C	D	D	C	C	D	D	D	D
	EB Gerald Desmond Bridge	Crest	Downgrade	C	D	C	C	B	D	C	D	C
5	WB Gerald Desmond Bridge	Upgrade	Crest	C	F	C	F	C	F	C	F	C
	WB Gerald Desmond Bridge	Crest	Downgrade	C	C	C	D	C	C	C	F	C
6	NB Connector	EB Ocean Blvd	NB I-710	B	B	B	B	A	B	B	B	B
	SB Connector	SB I-710	WB Ocean Blvd	A	D	B	D	C	C	B	F	C
7	I-710 NB	NB Connector	NB I-710 Mainline	B	C	B	B	A	C	B	B	B
	I-710 SB	SB I-710 Mainline	SB Connector	A	B	B	B	C	B	B	C	C
8	EB Ocean Blvd	NB Connector	Downtown	A	A	A	A	A	A	A	A	A
	WB Ocean Blvd	Downtown	SB Connector	A	A	B	A	B	A	B	A	B
PM Peak Hour												
1	EB Ocean Blvd	Navy Way	Pier S Avenue	*	C	C	F	F	B	B	C	C
	WB Ocean Blvd	Pier S Avenue	Navy Way	*	C	C	D	D	C	C	D	D
2	EB Ocean Blvd	Pier S Avenue	Terminal Island Freeway	*	C	C	C	D	C	C	D	D
	WB Ocean Blvd	Terminal Island Freeway	Pier S Avenue	*	C	C	C	D	C	C	C	D
3	EB Ocean Blvd	Terminal Island Freeway	Horseshoe Ramps	*	C	C	B	C	C	C	C	D
	WB Ocean Blvd	Horseshoe Ramps	Terminal Island Freeway	*	C	B	C	C	C	B	C	C
4	EB Gerald Desmond Bridge	Upgrade	Crest	C	D	D	C	D	C	D	E	D
	EB Gerald Desmond Bridge	Crest	Downgrade	C	D	C	D	C	D	C	E	D
5	WB Gerald Desmond Bridge	Upgrade	Crest	C	F	C	F	C	E	C	F	D
	WB Gerald Desmond Bridge	Crest	Downgrade	C	D	C	D	C	D	C	D	C
6	NB Connector	EB Ocean Blvd	NB I-710	B	B	B	A	A	B	B	B	B
	SB Connector	SB I-710	WB Ocean Blvd	B	C	B	C	B	C	B	C	B
7	I-710 NB	NB Connector	NB I-710 Mainline	B	B	B	A	A	B	B	B	B
	I-710 SB	SB I-710 Mainline	SB Connector	A	A	B	B	B	A	B	B	B
8	EB Ocean Blvd	NB Connector	Downtown	A	A	B	A	B	A	B	B	B
	WB Ocean Blvd	Downtown	SB Connector	A	A	C	A	C	A	C	A	C

Notes:
* - Analysis is for multi-lane highway sections. Sections that were not or will not be grade-separated highway sections are not presented in this analysis comparison.
a - Sections where the existing 2005 condition was not a multi-lane highway, but the future condition will be. Therefore, no direct comparison is appropriate.
LOS - Level of Service ; NB - Northbound; SB - Southbound; EB - Eastbound; WB - Westbound; Alt - Alternative, Rehab - Rehabilitation

Source: Iteris, 2009.

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the Bridge Replacement Alternatives. Assuming that the SR 47 Flyover is in place and a bridge replacement is not, the analysis reveals that in the year 2030, LOS F occurs on the bridge in the WB direction (Segment 5) in all three peak hours. In the EB direction (Segment 4), LOS E occurs on the bridge in the PM peak hour. With both a bridge replacement and the SR 47 Flyover in place, the above conditions improve to LOS D or better in all three peak periods.

For the roadway segments not on the bridge (Segments 1 through 3 and 6 through 8), Table 2.4.4-2 reveals that in the year 2030, assuming the SR 47 Flyover is in place and a bridge replacement is not, LOS F occurs on EB Ocean Boulevard from Navy Way to Pier S Avenue during the MD peak hour. Under the same conditions, LOS F occurs on the connector from SR 710 to Ocean Boulevard during the MD peak hour. If both a Bridge Replacement Alternative and the SR 47 Flyover are implemented, the LOS on those two segments (EB Ocean Boulevard from Navy Way to Pier S Avenue and the connector from SR 710 to Ocean Boulevard) improves to LOS C or better.

With both a proposed Bridge Replacement Alternative and the SR 47 Flyover, no LOS F operations are forecast on the study segments in either year 2015 or 2030. These results indicate that neither a proposed Bridge Replacement Alternative nor the SR 47 Flyover is individually capable of resolving LOS F operations on all roadway segments, but that a proposed Bridge Replacement Alternative and the SR 47 Flyover acting together can.

The SR 47 Flyover, in conjunction with either proposed Bridge Replacement Alternative, would result in cumulative combined LOS benefits exceeding what either improvement could individually provide. Based on the analysis presented above, the SR 710 widening and SR 47 Expressway projects would provide an additional increment of traffic to the Bridge Replacement Alternatives. There is sufficient capacity on those alternatives to accommodate the additional traffic. The LOS E condition on the EB bridge segment during the PM peak hour with both the SR 47 Flyover and a Bridge Replacement Alternative implemented would remain LOS E, with an additional 2 to 8 percent increment of traffic associated with the SR 710 and SR 47 improvements. The density on that segment is 36.0 vehicles per lane per mile with the SR 47 Flyover and a Bridge Replacement Alternative implemented. An increase of 8 percent would result in a density of 38.9, which is still within the LOS E range.

In summary, it is concluded that all adverse cumulative traffic effects resulting from reasonably foreseeable roadway improvements in conjunction with the proposed Bridge Replacement Alternatives are identified in Section 2.1.5. There are traffic benefits to the proposed Gerald Desmond Bridge Replacement Alternatives from one of the three cumulative projects presented in this section. The flyover connector ramp from EB Ocean Boulevard to NB SR 47 would provide a benefit to the proposed Bridge Replacement Alternatives. The SR 47 Flyover, in conjunction with a proposed Bridge Replacement Alternative, is expected to address the adverse effect of the Bridge Replacement Alternatives on WB Ocean Boulevard from the Horseshoe Ramps to the Terminal Island Freeway interchange by improving operations to LOS C or better. Additional traffic from widening SR 710 north of the Ports could be accommodated by the proposed Bridge Replacement Alternatives.

Pedestrian and Bicycle Facilities

Terminal Island is an industrial area within the Harbor District where there is currently no residential, retail, or public recreational facilities and future nonmotorized demand (e.g., pedestrians or bicycles) on Ocean Boulevard over the Gerald Desmond Bridge is anticipated to be low, In addition, Terminal Island does not include any designated bicycle route. The Los Angeles County MTA has not included bikeways or walkways on the Gerald Desmond Bridge (or its replacement) or Terminal Island in its regional bikeway master plan.

The current Gerald Desmond Bridge has a pedestrian walkway, but it is not considered a “major nonmotorized route” and discussions with the MTA bikeway program staff concluded that a designated bike route or pedestrian walkway is not required for this project; therefore, no cumulative adverse effects would result from the Rehabilitation or Bridge Replacement Alternatives during construction or operation.

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