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5.16 TRANSPORTATION AND TRAFFIC

This section of the draft environmental impact report (DEIR) evaluates the potential for implementation of the proposed Project to result in transportation and traffic impacts in the City of Long Beach and its sphere of influence (SOI). The analysis in this section is based in part on the following technical report(s):

- *Long Beach Southeast Area Specific Plan Transportation Impact Analysis*, Fehr & Peers, April 2016.
- *Technical Memorandum: Vehicle Miles Traveled (VMT) for the SEASP Project*, Fehr & Peers, March 18, 2016.
- *Long Beach Southeast Area Development and Improvement Plan (SEADIP) Multimodal Existing Conditions, Constraints, and Opportunities Assessment*, Fehr & Peers, March 2014.

Complete copies of the Transportation Impact Analysis (TIA) and VMT memo are provided in Appendix J of this DEIR.

5.16.1 Environmental Setting

5.16.1.1 REGULATORY SETTING

This section summarizes state and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed Project.

State

Caltrans, the California Department of Transportation, is charged with planning and maintaining state routes, highways, and freeways. Caltrans is the owner/operator for Pacific Coast Highway (PCH), I-405, and SR-22 in the study area. Caltrans has developed Transportation Impact Analysis Guidelines for use when assessing state facilities.

Assembly Bill 1358: The California Complete Streets Act

The California Complete Streets Act (AB 1358) of 2008 was also signed into law on September 30, 2008. Beginning January 1, 2011, AB 1358 requires circulation elements to address the transportation system from a multimodal perspective. The bill states that streets, roads, and highways must "meet the needs of all users in a manner suitable to the rural, suburban, or urban context of the general plan." Essentially, this bill requires a circulation element to plan for all modes of transportation where appropriate, including walking, biking, car travel, and transit.

The Complete Streets Act also requires circulation elements to consider the multiple users of the transportation system, including children, adults, seniors, and the disabled. AB 1358 tasks the

Governor's Office of Planning and Research (OPR) to release guidelines for compliance, which are so far undeveloped.

Sustainable Communities and Climate Protection Act

The Sustainable Communities and Climate Protection Act of 2008 or Senate Bill (SB) 375 was signed into law on September 30, 2008. The SB 375 regulation provides incentives for cities and developers to bring housing and jobs closer together and to improve public transit. The goal behind SB 375 is to reduce automobile commuting trips and length of automobile trips, thus helping to meet the statewide targets for reducing greenhouse gas emissions set by AB 32.

SB 375 requires each metropolitan planning organization to add a broader vision for growth, called a "Sustainable Communities Strategy" (SCS), to its transportation plan. The SCS must lay out a plan to meet the region's transportation, housing, economic, and environmental needs in a way that enables the area to lower greenhouse gas emissions. The SCS should integrate transportation, land-use, and housing policies to plan for achievement of the emissions target for their region. On April 7, 2016, the Southern California Association of Governments' (SCAG) Regional Council adopted the 2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy (2016 RTP/SCS).

Senate Bill 743

The legislature found that with the adoption of the SB 375, the state had signaled its commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and thereby contribute to the reduction of greenhouse gas emissions (GHG), as required by the California Global Warming Solutions Act of 2006 (Assembly Bill [AB 32]). Additionally, AB 1358, described above, requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users.

On September 27, 2013, SB 743 was signed into law. SB 743 started a process that could fundamentally change transportation impact analysis as part of CEQA compliance. These changes will include the elimination of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts in many parts of California (if not statewide). As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)). OPR is in the process of developing alternative metrics and thresholds based on VMT. OPR has published the final draft of changes to the CEQA Guidelines, which will require certification and adoption by the California Secretary for Natural Resources before they go into effect. This may take several months depending on the input received during the review process. Once the guidelines are prepared and certified, "automobile delay, as described solely by level of service of similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment"

(Public Resources Code Section 21099(b)(2)). Certification and implementation of the guidelines are expected in early 2017. Since OPR has not yet amended the CEQA Guidelines to implement this change, automobile delay is still considered a significant impact, and the City of Long Beach will continue to use the established LOS criteria.

Regional and Local

SCAG's 2016 RTP/SCS

Every four years, SCAG updates the RTP for the six-county region that includes Los Angeles, San Bernardino, Riverside, Orange, Ventura, and Imperial counties. Current and recent transportation plan goals generally focus on balanced transportation and land use planning that:

- Maximize mobility and accessibility for all people and goods in the region.
- Ensure travel safety and reliability for all people and goods in the region.
- Preserve and ensure a sustainable regional transportation system.
- Maximize the productivity of our transportation system.
- Protect the environment and health of residents by improving air quality and encouraging active transportation (e.g., bicycling and walking).
- Encourage land use and growth patterns that facilitate transit and active transportation.

Though many projects are scheduled through the RTP throughout Long Beach, none of them are in the Project area.

Los Angeles County Metropolitan Transportation Authority

Los Angeles County Metropolitan Transportation Authority (Metro) serves as transportation planner and coordinator, designer, builder, and operator for Los Angeles County. Metro funds improvements to all modes of transportation through several programs, including the Transportation Improvement Program, the Congestion Management Program, and Bicycle Transportation Strategic Plan. Metro operates rail and bus transit services throughout Los Angeles County, including the City of Long Beach.

Los Angeles County Congestion Management Program

In 2010 the County of Los Angeles updated its Congestion Management Program (CMP) to assess the overall performance of the highway system, which provides quantitative input for funding improvements and programs. This is the eighth CMP adopted for Los Angeles County since the

requirement became effective with the passage of Proposition 111 in 1990. The CMP covers approximately 500 miles of freeway facilities, which are divided into 81 key segment pairs (eastbound/westbound or northbound/southbound). The traffic operations at each segment are evaluated every two years by Caltrans and published in the CMP. The CMP arterial streets in Long Beach consist of PCH, 7th Street, Alamitos Avenue, and Lakewood Boulevard. The CMP freeway segments in Long Beach include I-710, I-605, I-405, and SR-91.

The county's traffic congestion management policy is intended to determine appropriate transportation planning actions in response to a particular level of service (LOS). However, a particular level of service at an intersection does not necessarily preclude additional development at or around that intersection. Instead, the local agency responds with a three tiered approach that emphasizes:

1. Managing speeds and motorist behavior at intersections with high LOS.
2. Reviewing traffic growth patterns when congestion begins to appear and planning for appropriate ways to address additional congestion.
3. Taking steps to manage congestion, including moving from intersection-specific metrics to LOS for an entire corridor.

City of Long Beach

The City of Long Beach Mobility Element outlines the vision, goals, policies, and implementation measures required to improve and enhance the City of Long Beach's local and regional transportation system. The vision for the future of City's transportation system includes:

- Flexible, convenient, affordable, and energy-efficient transportation options.
- Mobility practices that maintain and enhance safety while strengthening community, sense of place, urban design, and the natural environment.
- The most efficient and convenient mode of travel for any particular trip.
- Innovation and appropriate transportation technology.
- Professional standards in transportation planning and traffic engineering, with safety as the highest priority.
- Land use planning integrated with a multimodal mobility network, providing people with options to choose various forms of convenient transportation.

- Mobility systems that are planned, maintained, and operated consistent with the principles of complete streets, active living, and sustainable community design.

The mobility element proposes several "big moves" to realize the City's vision, including those detailed here:

- **Balance the needs of all mobility users.** Goals, policies, and implementation measures would be designed to create a system of complete streets that support and encourage all mobility users, regardless of age or ability, including pedestrians, bicyclists, transit riders, motorists, and truckers. Some streets would be redesigned to create corridors that prioritize walking, bicycling, and/or transit services (that is, "street character change"). On street segments where automobile travel is not emphasized or where intersection or roadway widening is not practical, the City may accept a level of service below its standard of LOS "D" in exchange for pedestrian, bicycle, and/or transit improvements.

- **Implement a context-sensitive and multimodal approach to street planning and design.** In the past, the City of Long Beach has classified streets by their function rather than their context. A context-sensitive street classification system categorizes a jurisdiction's streets by both function and community context, taking into account all road users and the character of adjacent properties and buildings. This approach will help create a more balanced mobility system; give people more transportation choices; and help integrate mobility, land use, and urban design for better "placemaking."

- **Increase the efficiency of the roadway and highway system through innovative facilities and programs.** Long Beach is a nearly built-out city with a developed mobility network. As the population grows, there will be limited opportunities to acquire additional right-of-way for vehicular traffic. Instead, future improvements will be aimed at making the mobility network more efficient by encouraging other modes of transportation and by using innovation and technology to improve the flow of traffic along corridors.

- **Provide multimodal connectivity to create a seamless mobility system.** The City's goal is a seamless link between all modes of transportation so that trips are not disrupted by system delays, burdensome ticketing procedures, unreasonable waiting times, and extended loading and unloading periods.

- **Support active transportation and active living.** Active transportation uses the energy of the human body to get from place to place—such as walking, bicycling, roller skating, and skateboarding. By making active transportation a viable option for everyday travel, the City of

Long Beach can help alleviate roadway congestion, reduce greenhouse gas emissions, improve physical health and wellness, and reduce obesity rates.

In addition, the City's municipal code includes regulations related to pedestrian, bicycle, and vehicular mobility:

- Chapter 10.08 (Traffic Control Devices)
- Chapter 10.58 (Pedestrians)
- Chapter 10.48 (Bicycles)
- Chapter 18.17 (Transportation Improvement Fee)

5.16.1.2 EXITING ROADWAY NETWORK

Regional access to Long Beach within the study area is provided by the I-405, I-710, and PCH (SR-1). Roadways in the study area are classified per the City of Long Beach Mobility Element and the Los Angeles County CMP.

- **PCH (SR-1).** PCH is classified as a State Highway (Arterial) in the Los Angeles County CMP and as a Regional Corridor in the City of Long Beach Mobility Element. The roadway extends south from State Route 101 in Leggett, California, along the Pacific Coast over 650 miles before terminating at Interstate 5 in Dana Point, California. Within the study area, PCH has an east-west orientation and is a six-lane facility divided by a two-way left-turn lane. On-street parking is generally permitted with time restraints and other restrictions. The posted speed limit in the study area is 35 miles per hour (mph).

- **San Diego Freeway (I-405).** I-405 is classified as a State Freeway in the Los Angeles CMP and as a Freeway in the City of Long Beach Mobility Element. I-405 runs from Irvine to San Fernando, cutting through the City of Long Beach. Within the study area, I-405 has ten lanes with a posted speed of 65 mph.

- **Garden Grove Freeway (SR-22).** SR-22 is classified as a State Freeway in the Los Angeles CMP and as a Freeway in the City of Long Beach Mobility Element. The roadway begins at SR-55 and ends at PCH in Long Beach. Within the study area, SR-22 has six lanes into the heart of Long Beach and a posted speed limit of 45 mph.

- **Studebaker Road.** Studebaker Road is classified as a Major Avenue in the City of Long Beach Mobility Element. The roadway runs north-south and provides direct access to I-405 and SR-22. Studebaker Road begins at 2nd Street in Long Beach and extends to Los Coyotes Diagonal south of Lakewood. Within the study area, Studebaker Road is a divided four-lane facility with a median and has a posted speed limit of 40 mph.

- **7th Street.** 7th Street is classified as a Boulevard in the City of Long Beach Mobility Element. It runs east-west and acts as major roadway throughout the Long Beach area. 7th Street begins at PCH in eastern Long Beach and extends to Downtown Long Beach. Within the study area, 7th Street is a six-lane undivided facility with a posted speed limit of 35 to 40 mph.

- **Loynes Drive.** Loynes Drive is classified as a Neighborhood Connector in the City of Long Beach Mobility Element. It runs in east-west and spans a short distance, from Studebaker Road to Bellflower Boulevard within Long Beach. Within the study area, Loynes Drive is a four-lane facility with a median and has a posted speed limit of 35 mph.

- **2nd Street.** 2nd Street is classified as a Boulevard in the City of Long Beach Mobility Element. It runs east-west and extends between Livingston Drive and Island Village Drive. At Village Island Drive, 2nd Street becomes Westminster Boulevard. Within the study area, 2nd Street is a four- to six-lane roadway divided by a median and has a posted speed limit of 40 to 50 mph.

- **Ximeno Avenue.** Ximeno Avenue is classified as a Neighborhood Connector in the City of Long Beach Mobility Element. The roadway is a north-south facility covering Long Beach from Los Coyotes Diagonal to 2nd Street. Within the study area, Ximeno Avenue is a two-lane undivided facility with a posted speed limit of 25 mph.

- **Bellflower Boulevard** Bellflower Boulevard is classified as a Boulevard in the City of Long Beach Mobility Element. The roadway spans Long Beach, Lakewood, and Downey and provides direct access to I-105, I-405, SR-1, and SR-91. The roadway is a north-south facility beginning at Loynes Drive in Long Beach and terminating at Lakewood Boulevard in Downey. Within the study area, Bellflower Boulevard is a four- to six-lane divided roadway with a raised median. Bellflower Boulevard has a posted speed limit of 35 to 40 mph.

The study area for the Project stretches from Ximeno Avenue to Seal Beach Boulevard to the east, as far south as 1st Street, and as far north as Atherton Street. The study area consists of major intersections along PCH, Studebaker Road, 7th Street, and 2nd Street. A vicinity map displaying the study area and analyzed intersections is provided in Figure 5.16-1. In consultation with City staff, 21 study intersections were identified for analysis:

1. Studebaker Road & Interstate (I)-405 Westbound On-Ramp, Caltrans
2. Studebaker Road & I-405 Eastbound Off-Ramp, Caltrans
3. Studebaker Road & SR-22 Westbound Ramps, Caltrans
4. 7th Street & Ximeno Avenue, City of Long Beach
5. Pacific Coast Highway & 7th Street, Caltrans

6. Bellflower Boulevard & 7th Street, Caltrans
7. Channel Drive & 7th Street, Caltrans
8. Campus Drive & 7th Street, Caltrans
9. Bellflower Boulevard & Pacific Coast Highway, Caltrans
10. Channel Drive & Pacific Coast Highway, Caltrans
11. Studebaker Road & SR-22 Eastbound Ramps, Caltrans
12. Pacific Coast Highway & Loynes Drive, Caltrans
13. Studebaker Road & Loynes Drive, City of Long Beach
14. 2nd Street & Naples Plaza, City of Long Beach
15. Marina Drive & 2nd Street, City of Long Beach
16. Pacific Coast Highway & 2nd Street, Caltrans
17. Shopkeeper Road & 2nd Street, City of Long Beach
18. Studebaker Road & 2nd Street, City of Long Beach
19. 2nd Street/Westminster Boulevard & Seal Beach Boulevard, City of Seal Beach
20. Pacific Coast Highway & Studebaker Road, Caltrans
21. Pacific Coast Highway & 1st Street, Caltrans

5.16.1.3 EXISTING TRAFFIC CONDITIONS

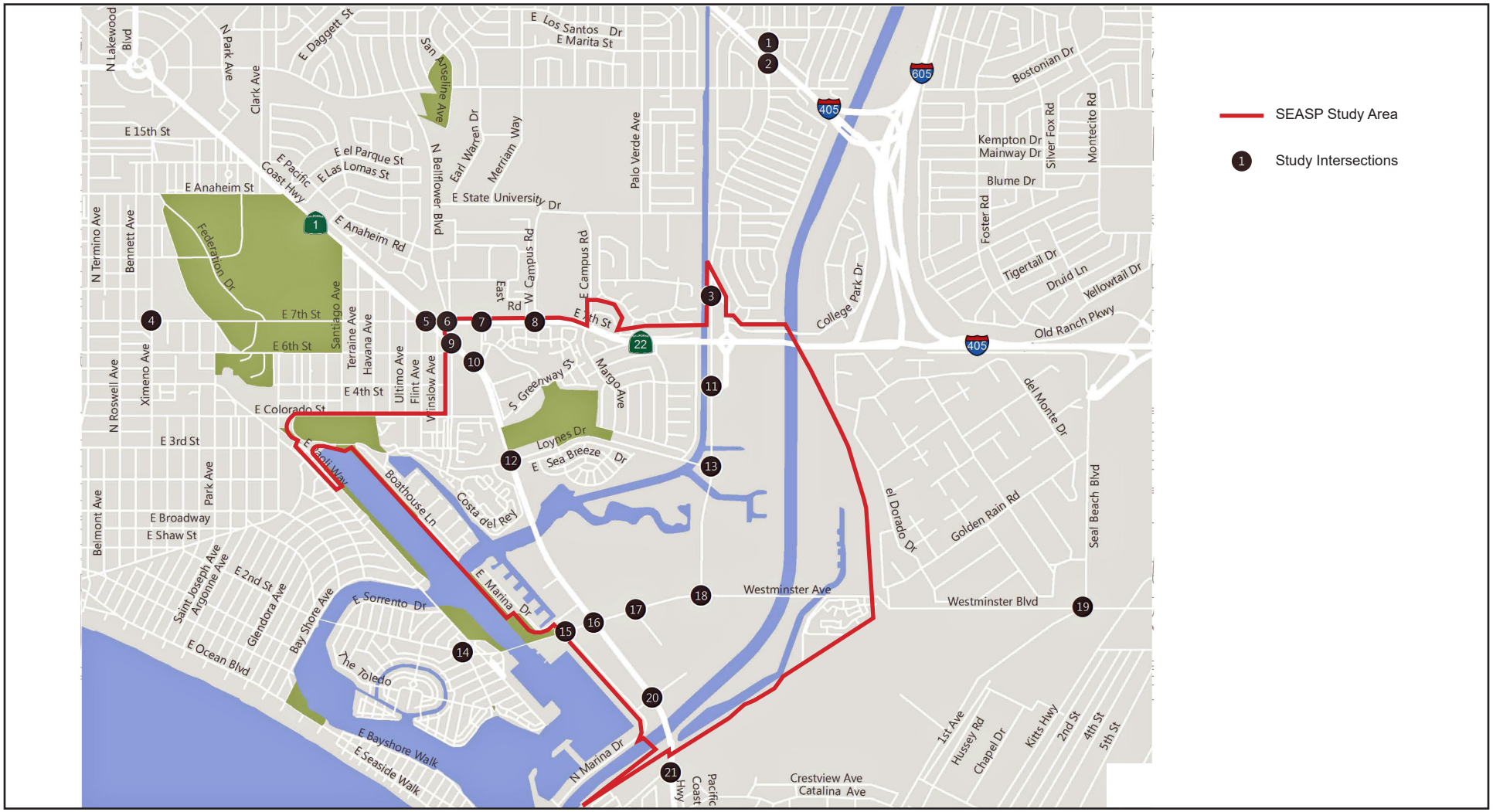
Existing morning (7:00 to 9:00 AM) and afternoon (4:00 to 6:00 PM) peak period vehicle counts at the 21 study intersections were conducted on July 14, 2015. July was chosen based on comments received that summer travel patterns in this area are higher than non-summer travel patterns which was also confirmed with City staff. Figure 3-5 of the transportation impact analysis (TIA) summarizes the existing AM and PM peak traffic volumes and lane configurations (Appendix J).

Intersection LOS Methodology

For signalized intersections, the traffic analysis was evaluated in accordance with the CMP guidelines using the Intersection Capacity Utilization (ICU) methodology. It reports the volume-to-capacity (V/C) ratio, which evaluates the critical movements for each signal and compares that to the critical movement capacity of the intersection. For unsignalized intersections and Caltrans-owned intersections, methodologies consistent with the Highway Capacity Manual 2010 (HCM 2010) were used.

Figure 5.16-1 - Study Area Intersection Analysis Locations

5. Environmental Analysis



Base Map Source: Fehr & Peers, 2016

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Based on the V/C and delay findings, the methodologies assign a qualitative letter grade that represents the operations of the intersection—from LOS A (minimal delay) to LOS F (excessive congestion). LOS E represents at-capacity operations. Descriptions of the LOS letter grades for signalized and unsignalized intersections are provided in Table 5.16-1.

Table 5.16-1 Intersection Level of Service Criteria

LOS	Interpretation	Signalized Intersections Volume-to-Capacity (V/C) Ratio	Signalized Intersection Delay (sec)	Unsignalized Intersections Delay (seconds)
A	Signalized: Operations with very low delay occurring with favorable progression and/or short cycle length. Unsignalized: Little or no delay.	0.000-0.600	0.000 – 0.600	≤ 10.0
B	Signalized: Operations with low delay occurring with good progression and/or short cycle lengths. Unsignalized: Short traffic delays.	0.601-0.700	0.601 – 0.700	> 10.0 to 15.0
C	Signalized: Operations with average delays resulting from fair progression and/or longer cycle lengths. Individual cycle failures begin to appear. Unsignalized: Average traffic delays.	0.701-0.800	0.701 – 0.800	> 15.0 to 25.0
D	Signalized: Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop and individual cycle failures are noticeable. Unsignalized: Long traffic delays.	0.801-0.900	0.801 – 0.900	> 25.0 to 35.0
E	Signalized: Operations with high delay values indicating poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences. Unsignalized: Very long traffic delays.	0.901-1.000	0.901 – 1.000	> 35.0 to 50.0

Table 5.16-1 Intersection Level of Service Criteria

LOS	Interpretation	Signalized Intersections Volume-to-Capacity (V/C) Ratio	Signalized Intersection Delay (sec)	Unsignalized Intersections Delay (seconds)
F	**Signalized:** Operation with delays unacceptable to most drivers occurring due to over saturation, poor progression, or very long cycle lengths. **Unsignalized:** Extreme traffic delays with intersection capacity exceeded	Greater than 1.000	Greater than 1.000	Greater than 50.0

Source: Fehr & Peers 2016a.
Note: V/C = Volume to Capacity

Intersection LOS

Existing-conditions traffic volumes, lane configurations, and signal timing information provided by City staff were used to analyze operations at the study intersections for AM and PM peak-hour conditions, using methodologies described above. The results of the analysis are summarized in Table 5.16-2. The cities of Long Beach and Seal Beach identify that LOS D is generally considered the lowest acceptable level for operation of intersections that fall under its jurisdiction, and for Caltrans LOS C is the worst level considered acceptable. As shown in Table 5.16-2, six intersections operate at a deficient LOS during one or more peak hours under existing conditions:

- Studebaker Road & SR-22 Westbound Ramps – PM Peak Hour (LOS F)
- 7th Street & Ximeno Avenue – PM Peak Hour (LOS E)
- Pacific Coast Highway & 7th Street – AM Peak Hour (LOS D), PM Peak Hour (LOS E)
- Channel Drive & 7th Street – PM Peak Hour (LOS E)
- Pacific Coast Highway & Loynes Drive – PM Peak Hour (LOS D)
- Pacific Coast Highway & 2nd Street – AM Peak Hour (LOS E), PM Peak Hour (LOS E)

Table 5.16-2 Intersection Level of Service for Existing (2015) Conditions

Intersection	Control	AM Peak Hour		PM Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C[1] or Delay[2]	LOS
1. Studebaker Rd & I-405 Westbound On-Ramp[3]	Signal	8.7	A	9.4	A
2. Studebaker Rd & I-405 Eastbound Off-Ramp[4]	Side-Street Stop	12.8	B	12.8	B
3. Studebaker Rd & SR-22 Westbound Ramps	Signal	30.6	C	>80.0	F
4. 7th St & Ximeno Ave	Signal	0.899	D	0.910	E
5. Pacific Coast Hwy & 7th St	Signal	**43.8**	D	**59.6**	E
6. Bellflower Blvd & 7th St	Signal	34.1	C	32.8	C
7. Channel Dr & 7th St	Signal	7.1	A	**61.0**	E
8. Campus Dr & 7th St[3]	Signal	18.9	B	19.5	B
9. Bellflower Blvd & Pacific Coast Hwy	Signal	27.2	C	27.6	C
10. Channel Dr & Pacific Coast Hwy	Signal	16.0	B	13.0	B
11. Studebaker & SR-22 Eastbound Ramps	Signal	6.2	A	5.6	A
12. Pacific Coast Hwy & Loynes Dr	Signal	30.1	C	**38.3**	D
13. Studebaker Rd & Loynes Dr	Signal	0.610	B	0.723	C
14. 2nd St & Naples Plaza	Signal	0.654	B	0.740	C
15. Marina Dr & 2nd St	Signal	0.609	B	0.772	C
16. Pacific Coast Hwy & 2nd St	Signal	**56.5**	E	**68.8**	E
17. Shopkeeper Rd & 2nd St	Signal	0.573	A	0.788	C
18. Studebaker Rd & 2nd St	Signal	0.629	B	0.807	D
19. 2nd St/Westminster Blvd & Seal Beach Blvd	Signal	0.577	A	0.857	D
20. Pacific Coast Hwy & Studebaker Rd	Signal	13.4	B	27.2	C
21. Pacific Coast Hwy & 1st St	Signal	13.9	B	13.5	B

Source: Fehr & Peers 2016a.
Notes: V/C = Volume / Capacity Ratio
Intersections operating below acceptable LOS are shown in **bold**.
[1] V/C for signalized intersections based on ICU methodology using Traffix 7.9 software.
[2] Delay for unsignalized intersections based on HCM 2010 methodology using Synchro 8 Build 806

Table 5.16-2 Intersection Level of Service for Existing (2015) Conditions

Intersection	Control	AM Peak Hour		PM Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C[1] or Delay[2]	LOS

software. Delay for side-street stop is reported as the worst-case approach delay.
[3] Analyzed using HCM 2000 because HCM 2010 does not analyze intersections with exclusive pedestrian phases.
[4] Analyzed using HCM 2000 because HCM 2010 does not analyze stop-controlled intersections with exclusive and shared turn lanes.

Freeway Level of Service Analysis Methodology

The freeway segments in the study area were analyzed for the basic, merge, and diverge components where capacity constraints typically occur on the freeway system, utilizing the HCM 2010 methodologies upon request from Caltrans. LOS for each of these segments is defined by density (passenger cars per mile per lane). Table 5.16-3 shows the LOS criteria for each freeway segment. Density and speed data were utilized from Caltrans.

Table 5.16-3 Freeway Mainline and Ramp Junction Section LOS Threshold

Level of Service	Description	Density (vplpm)[1]	
		Mainline (Basic)	Ramp / Merge / Diverge
A	Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream.	≤ 11	≤ 10
B	Free-flow speeds are maintained. The ability to maneuver with the traffic stream is only slightly restricted.	> 11 to 18	> 10 to 20
C	Flow with speeds at or near free-flow speeds. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver.	> 18 to 26	> 20 to 28
D	Speeds decline slightly with increasing flows. Freedom to maneuver with the traffic stream is more noticeably limited, and the driver experiences reduced physical and psychological comfort.	> 26 to 35	> 28 to 35

Table 5.16-3 Freeway Mainline and Ramp Junction Section LOS Threshold

Level of Service	Description	Density (vplpm)[1]	
		Mainline (Basic)	Ramp / Merge / Diverge
E	Operation at capacity. There are virtually no usable gaps within the traffic stream, leaving little room to maneuver. Any disruption can be expected to produce a breakdown with queuing.	> 35 to 45	> 35 to 45[2]
F	Represents a breakdown in flow.	> 45	> 45[2]

Source: Highway Capacity Manual (Transportation Research Board, 2010).
Notes: Density is reported in vehicles per lane per mile (vplpm).
[1] The maximum density for ramp junctions and weaving sections under LOS E is not defined in the HCM. The maximum density for basic segments of 45 vplpm was assumed to apply to ramp junctions.

Freeway LOS for Existing Conditions

Traffic count data were gathered from available sources, including the Caltrans Performance Measurement System (PeMS) and peak-hour intersection counts collected at study intersections. Ramp volumes were identified based on existing count data at intersections.

The operations at study freeway main line and ramp locations for existing conditions are summarized in Table 5.16-4. Three freeway segments, off-ramps, and on-ramps operate at a deficient LOS during the peak hours under existing conditions:

- Westbound SR-22 – AM Peak Hour (LOS D), PM Peak Hour (LOS E)
- Studebaker On-Ramp – AM Peak Hour (LOS D), PM Peak Hour (LOS D)
- Eastbound SR-22 – AM Peak Hour (LOS D), PM Peak Hour (LOS D)

Table 5.16-4 Freeway Mainline and Ramps Operations, Existing Conditions

Segment	Type	AM			PM		
		Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)
Studebaker On-Ramp	Merge	12.2	B	65.0	14.5	B	65.0
I-405 Northbound North of Studebaker	Basic	19.2	C	65.0	22.7	C	65.0
I-405 Southbound North of Studebaker	Basic	17.9	B	53.0	19.5	C	53.0
Studebaker Off-Ramp	Diverge	15.4	B	53.0	15.5	B	53.0
Westbound SR-22	Basic	29.0	D	55.0	38.9	E	55.0
Studebaker Off-Ramp	Diverge	25.0	C	55.0	27.6	C	55.0
Studebaker On-Ramp	Merge	31.8	D	55.0	29.2	D	55.0
Eastbound SR-22	Basic	31.4	D	55.0	27.9	D	55.0

Source: Fehr & Peers, 2016a.
Notes: Pc/mi/ln = passenger cars per mile per lane.
Freeway facilities operating below acceptable LOS are shown in **bold**.
Calculations were made using Highway Capacity Manual 2010 methodologies.

Bicycle Facilities

The City of Long Beach is serviced by Class I, II, and III bicycle facilities, bicycle boulevards, and separated bicycle lanes (Cycle Track or Class IV).

- Class I bike paths are separated from roadway traffic and allow bicyclist and pedestrian access.
- Class II bicycle facilities are designated lanes alongside vehicular traffic lanes.
- Class III bike routes are roadways that are signed for bicyclists, and sometimes striped with a sharrow marking, but have no designated lane.
- Bicycle boulevards are low-speed streets that have been "optimized" for bicycle traffic through traffic calming and right-of-way assignment. These are typically neighborhood streets that allow local vehicle traffic access but discourage cut-through vehicle traffic.
- Separated bicycle lanes, also known as a "cycle track" or Class IV bike facilities, are exclusive bicycle facilities with elements of a separated path and on-road bike lane. Cycle tracks are within the roadway right-of-way but are physically separated from motor traffic. In 2002, the City of Long Beach installed over two miles of cycle track in the downtown area.

Within the study area, there are existing Class I and II bikeways along portions of 7th Street, 2nd Street, and Loynes Drive. These bikeways are discontinuous in certain areas. Additionally, there is a Class I bikeway (San Gabriel River Trail) along the San Gabriel River. It extends from the base of the San Gabriel to the Pacific Ocean. and connects to the Rio Hondo River Trail, Bellflower Bike Trail and Coyote Creek Bikeway, forming the backbone of a large regional trail system. Existing and future bicycle facilities are shown on Figure 5.16-2.

Pedestrian Facilities

Existing pedestrian facilities in the SEASP area are limited. Most major roadways lack sidewalks on one or both sides of the street. 7th Street (between Ximeno Avenue and Studebaker Road) and 2nd Street (between Naples Plaza and Marina Drive) have well-developed sidewalks on both sides. Most intersections have crosswalks and appropriate pedestrian crossing controls, allowing for connectivity to local activity centers. Pedestrian facilities are shown on Figure 5.16-3.

Public Transit

The study area is serviced by multiple Long Beach Transit bus routes. The City of Long Beach has high bus ridership rates—1,259,928 average weekday boardings as of June 2015, according to Metro ridership statistics (Fehr & Peers 2016a). Additionally, Orange County Transportation Authority services this area, providing access between Orange County and this part of the City of Long Beach. The routes are shown on Figure 5.16-4 and listed below.

Long Beach Transit

- Route 45 (Anaheim Street to Santa Fe Avenue)
- Route 46 (Anaheim Street to Downtown)
- Route 81 (10th Street to CSULB)
- Routes 91 (7th Street/Bellflower Boulevard)
- Routes 92 (7th Street/Woodruff Avenue)
- Routes 93 (7th Street/Clark Avenue)
- Routes 94 (7th Street to Los Altos Only)
- Route 121 (Ocean/Belmont Shore/CSULB/PCH at Ximeno Avenue)
- Route 131 (Redondo Avenue to Seal Beach)

Orange County Transit Authority

- Route 1 (Long Beach to San Clemente)
- Route 42 (Seal Beach to Orange)

- Route 50 (Long Beach to Orange)
- Route 60 (Long Beach to Tustin)

California State University, Long Beach (CSULB), in partnership with Long Beach Transit, offers free use of all Long Beach Transit buses to all eligible CSULB students, faculty, and staff. Use is via transit access pass cards obtained on campus. Free use by students is available during semesters the students are enrolled (CSULB 2016). Many CSULB students and employees rely on Long Beach Transit to travel to and from the university. As development increases in Long Beach's Southeast Area, CSULB would like to see increased capacity and expanded hours for Long Beach Transit routes that stop on campus, specifically routes 91, 92, 93, 94, 96, 121, and 171.

5.16.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project could:

T-1 Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

T-2 Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

T-3 Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

T-4 Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

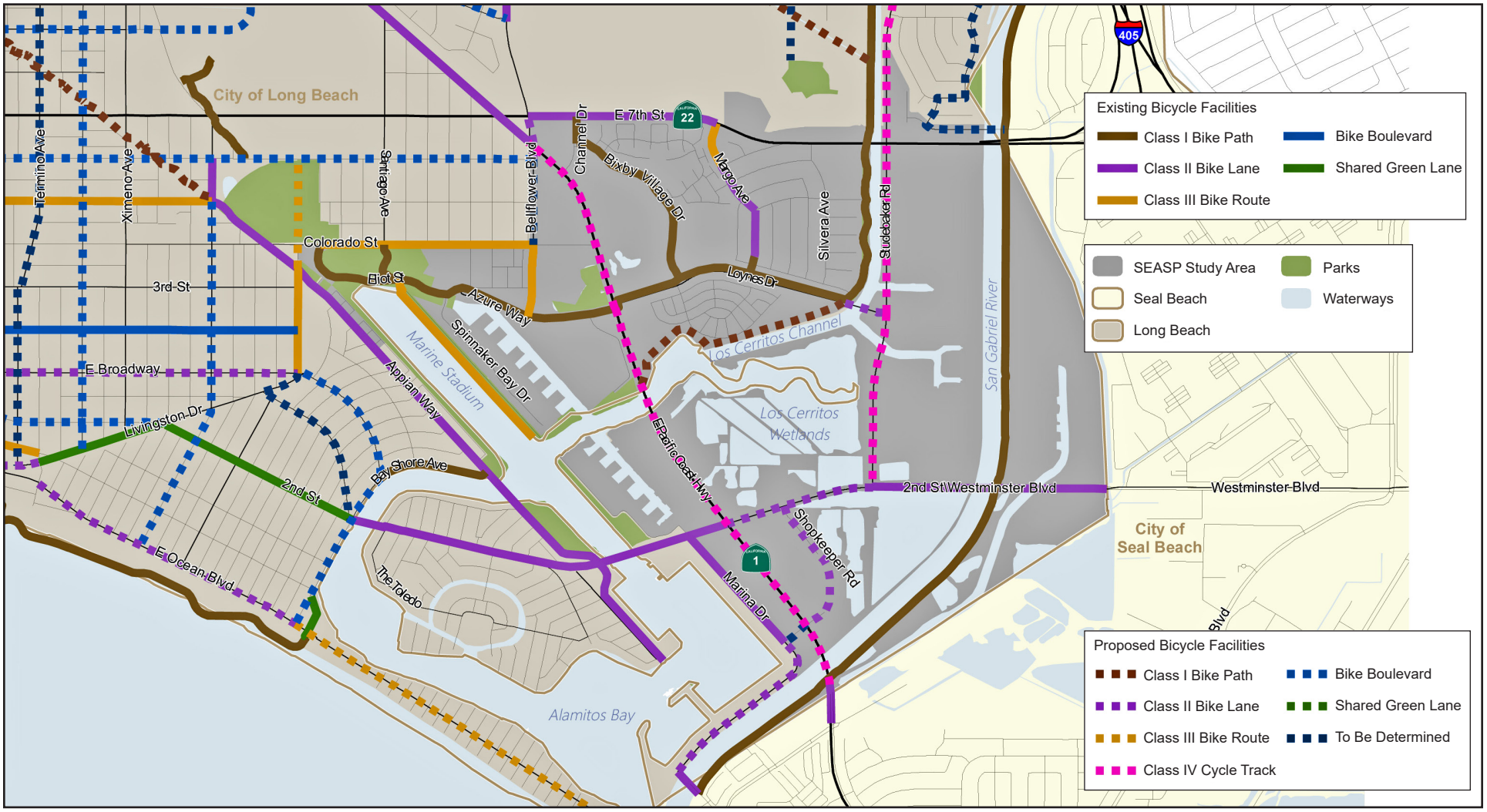
T-5 Result in inadequate emergency access.

T-6 Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

The Initial Study, included as Appendix A to this DEIR, substantiates that impacts associated with Threshold T-3 would be less than significant: However, due to input received from members of the public, this DEIR has been prepared as a "full scope" EIR, where every environmental topic listed in Appendix G of the CEQA Guidelines is evaluated. Therefore, all the above thresholds are addressed in the following analysis.

Figure 5.16-2 - Study Area Bicycle Facilities

5. Environmental Analysis



Base Map Source: Fehr & Peers, 2016

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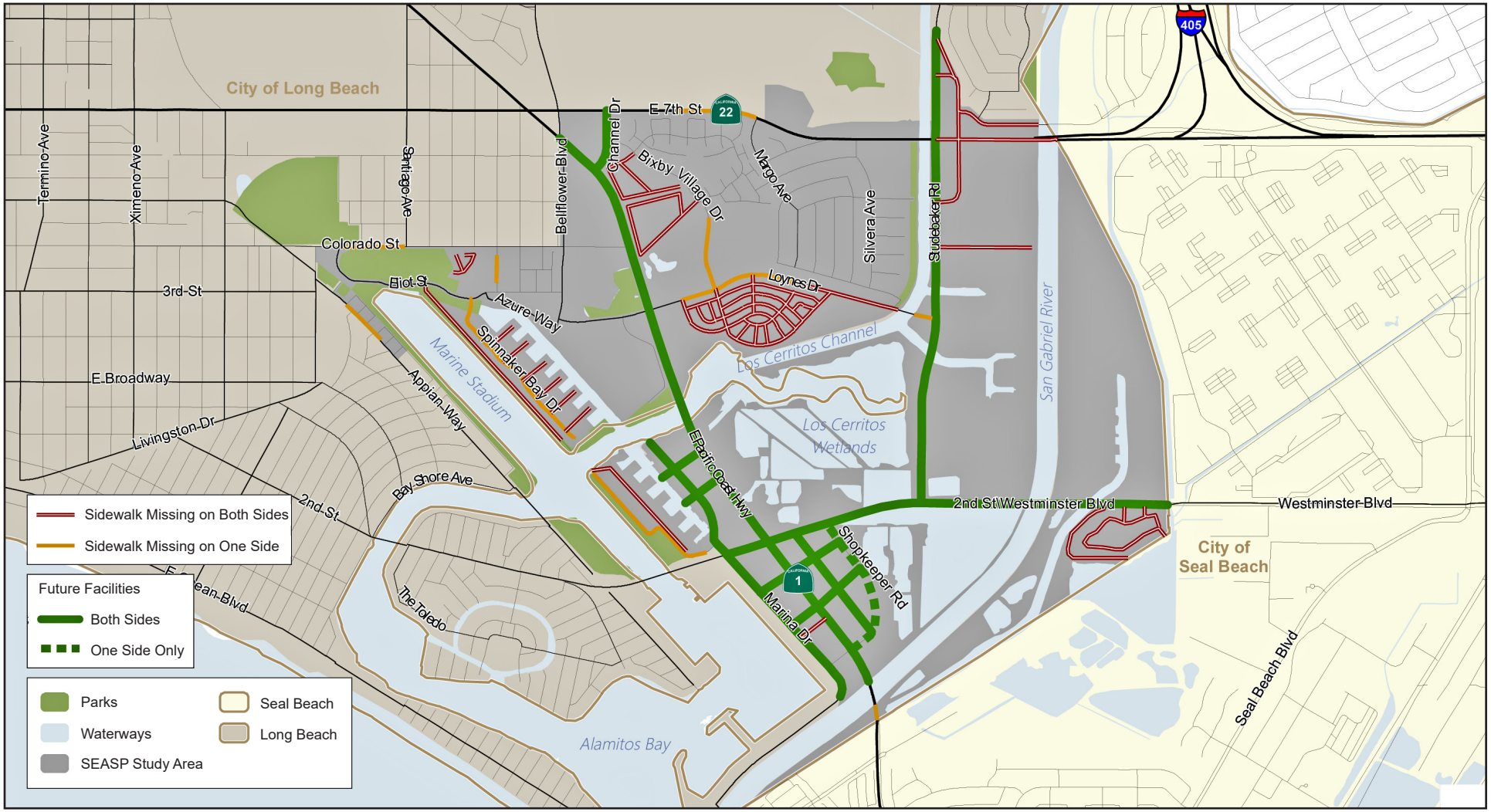
Figure 5.16-3 - Study Area Pedestrian Facilities

5. Environmental Analysis



Base Map Source: Fehr & Peers, 2016

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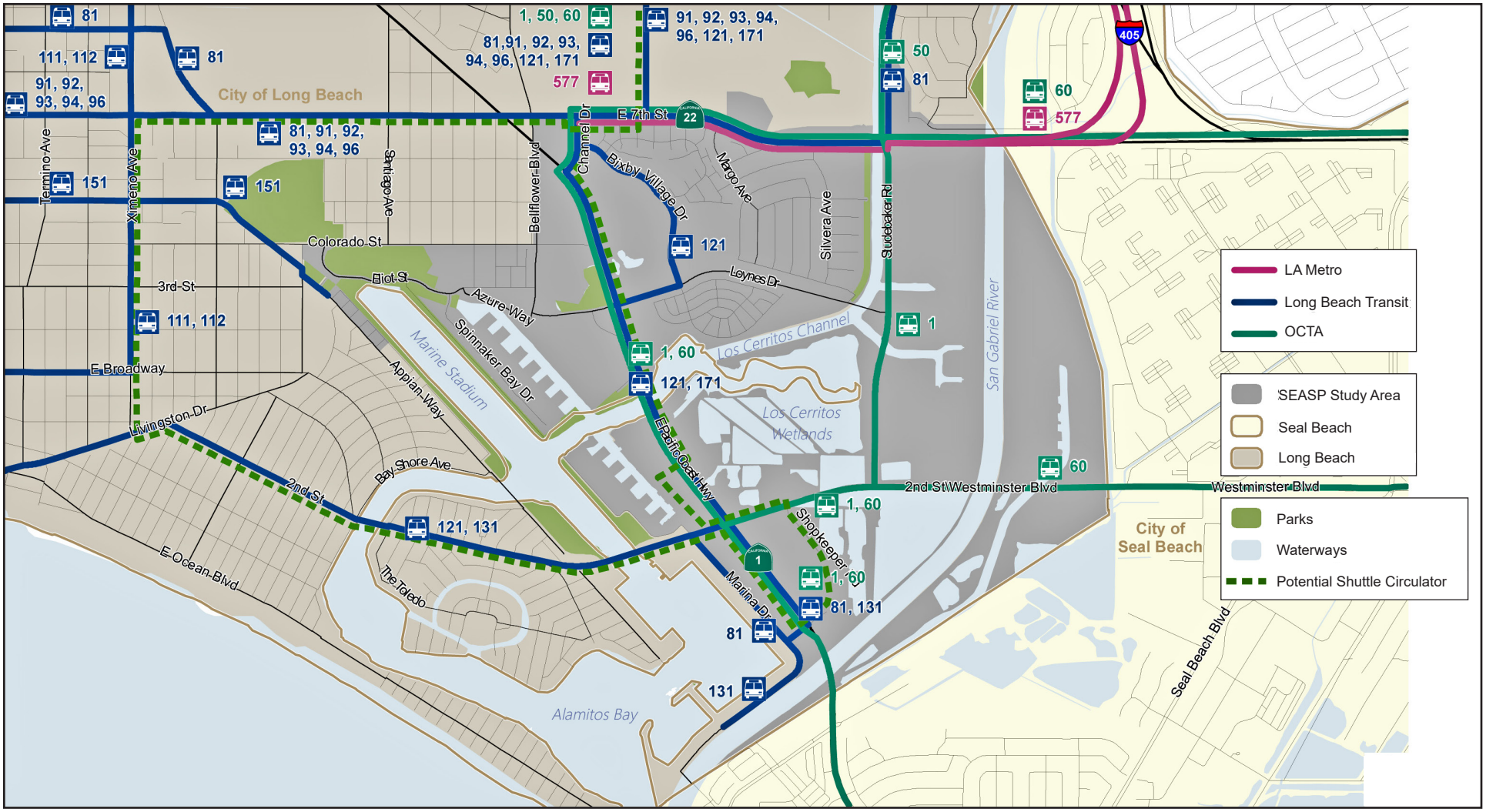
Figure 5.16-4 - Study Area Transit Service

5. Environmental Analysis



Base Map Source: Fehr & Peers, 2016

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Intersection Significance Criteria

City of Long Beach

For intersections under City of Long Beach's jurisdiction, the significance criteria are consistent with the City of Long Beach Mobility Element LOS policy and the Los Angeles County CMP Guidelines. A significant impact would occur at a signalized study intersection when the Project-related traffic causes:

- A signalized intersection to degrade from an acceptable LOS D or better to LOS E or LOS F, or
- The V/C ratio to increase by 0.02 or more at a signalized intersection that operates at LOS E or LOS F, or
- Causes an unsignalized intersection operating at LOS D or better to degrade to LOS E or LOS F and the intersection satisfies the Manual for Uniform Traffic Control Devices Peak Hour Volume Warrant for Traffic Signal Installation, or
- Adds traffic to an unsignalized intersection operating at an unacceptable LOS E or LOS F such that it satisfies the Manual for Uniform Traffic Control Devices Peak Hour Volume Warrant for traffic signal installation.

If a City of Long Beach intersection is operating at LOS E or worse, mitigation is needed to improve the "With Project" delay to the existing "Without Project" delay. If an impact degrades an acceptable LOS to below acceptable LOS, mitigation is required to bring the LOS back to the acceptable threshold level. No mitigation is required for intersections operating at or above the acceptable threshold (LOS D).

City of Seal Beach

For intersections under the City of Seal Beach's jurisdiction, the significance criteria are consistent with the City of Seal Beach Circulation Element level of service policy and the Orange County CMP Guidelines. A significant impact would occur at a signalized study intersection when the Project-related traffic causes:

- A signalized intersection to degrade from an acceptable LOS D or better to LOS E or LOS F, or
- The V/C ratio to increase by 0.01 or more at a signalized intersection that operates at LOS E or LOS F, or
- If a City of Seal Beach intersection is operating at LOS E or worse, mitigation is needed to improve the "With Project" delay to the existing "Without Project" delay. If an impact drops an

acceptable LOS to a below than acceptable LOS, mitigation is required to bring the LOS back to the acceptable threshold level. No mitigation is required for intersections operating at or above the acceptable threshold (LOS D).

Caltrans

For intersections under Caltrans's jurisdiction, the significance criteria is consistent with the Caltrans "Guide for the Preparation of Traffic Impact Studies" (2002). A significant impact would occur at a signalized study intersection when the Project-related traffic causes:

- An intersection to degrade from an acceptable LOS C or better to LOS D, LOS E, or LOS F unless an alternative target level of service has been identified for the facility in the Caltrans Transportation Concept Report; or

- Any increase in delay for intersections already operating at LOS D, LOS E, or LOS F.

If a Caltrans intersection is operating at LOS D or worse, mitigation is needed to improve the "With Project" delay to existing "Without Project" delay. If an impact drops from an acceptable LOS to an unacceptable LOS, mitigation is required to bring the LOS back to the acceptable level. No mitigation is required for intersections operating at or above the acceptable threshold (LOS C). The target LOS for Pacific Coast Highway is D, according to the Caltrans Transportation Concept Report for Pacific Coast Highway; therefore, mitigation measures would be required to bring intersections on Pacific Coast Highway to LOS D. For other Caltrans intersections, the target LOS is C.

Freeway Significance Criteria

The Caltrans Guide provides significance criteria for freeway mainline and ramp facilities. Based on this guide, LOS C was utilized as an acceptable threshold for all Caltrans study facilities. This threshold was applied to determine when a facility degrades from acceptable to unacceptable levels. A significant impact would occur at a study freeway segment when the Project-related traffic causes:

- A freeway segment to degrade from an acceptable LOS C or better to LOS D, LOS E or LOS F unless an alternative target level of service has been identified for the facility in the Caltrans Transportation Concept Report; or

- An increase in density for freeway segments already operating at LOS D, LOS E, or LOS F.

CMP Significance Criteria

The CMP traffic impact analysis guidelines establish that a significant project impact occurs when a certain threshold is exceeded. If the proposed Project increases traffic demand on a CMP facility by

2 percent of capacity (V/C ≥ 0.02), causing LOS F (V/C > 1.00), a significant impact would occur. If the facility is already at LOS F, a significant impact occurs when the proposed Project increases traffic demand on a CMP facility by 2 percent of capacity (V/C ≥ 0.02).

5.16.3 Environmental Impacts

The following impact analysis addresses thresholds of significance related to transportation and traffic. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.16-1: Project-related trip generation would significantly impact levels of service for the existing area roadway system. [Threshold T-1]

Impact Analysis: The potential traffic impacts resulting from the proposed Project within study area are addressed below. As part of the TIA, and consistent with Los Angeles County CMP Guidelines, the following scenarios were analyzed in addition to existing conditions:

- **Existing With Project Conditions:** Existing traffic volumes plus Project traffic.
- **Cumulative Year (2035) Without Project Conditions:** Annual growth rate factor applied through Year 2035.
- **Cumulative Year (2035) With Project Conditions:** Cumulative Year traffic volumes plus Project traffic.

Project Mobility Improvements

As part of the proposed Project (see Chapter 3, *Project Description*, of this DEIR), there are improvements to the roadway, bicycle, and pedestrian network.

Roadway Connectivity

The following roadway connections and intersections will be improved:

- **Marina Drive** will have two lanes and connect Pacific Coast Highway to 2nd Street.
- **Studebaker Road/Shopkeeper Road** will have two lanes and connect Pacific Coast Highway to 2nd Street.
- **Pacific Coast Highway and Studebaker Road** westbound approach will be modified from one shared through/left/right lane to one shared through/left-turn lane and one right-turn lane. This improvement is consistent with the proposed roadway connection at Studebaker Road/Shopkeeper Road.

Bicycle Connectivity

The proposed bikeways will improve bicycle connectivity and accessibility, helping the City of Long Beach to achieve their goal of becoming the most bikeable city in the United States. The following bikeways will be improved:

- Class I bikeway adjacent to the Los Cerritos Channel from Pacific Coast Highway to Loynes Drive
- Class II bikeway along Loynes Drive from the Long Beach Bikeway Route 10 to Studebaker Road
- Class II bikeway along 2nd Street from Pacific Coast Highway and Studebaker Road
- Class II bikeway along Shopkeeper Road from Pacific Coast Highway and 2nd Street
- Class IV bikeway along Pacific Coast Highway from the San Gabriel River bridge to Bellflower Boulevard
- Class IV bikeway along Studebaker Road from 2nd Street to SR-22 Westbound Ramps

Pedestrian Connectivity

The following pedestrian facilities will be improved:

- Sidewalks on both sides of the street along Pacific Coast Highway from the San Gabriel River bridge to Bellflower Boulevard
- Sidewalks on both sides of the street along 2nd Street from Marina Drive to the Long Beach City limits
- Sidewalks on both sides of the street along Marina Drive from the Los Cerritos Channel to the San Gabriel River
- Sidewalks on both sides of the street along Studebaker Road from 2nd Street to SR-22 Westbound Ramps
- Sidewalks on one side of the street along Shopkeeper Road from Pacific Coast Highway to 2nd Street
- Sidewalks on both sides of the street along Channel Drive from Pacific Coast Highway to 7th Street

- Sidewalks on both sides of the street within the Project site adjacent to Pacific Coast Highway, Marina Drive, and 2nd Street

- Shorter block lengths in the Project area to create new internal streets improving pedestrian and bicycle circulation

Project Trip Generation

The proposed Project would generate additional vehicular travel in the study area. Given the mixed-use nature of the site, it would not generate traffic in a similar manner as traditional development sites. Therefore, the trip generation analysis considers the combined effects of the Project's mix of land uses, regional location, demographics, and development scale. The analysis utilized the MXD methodology (or mixed-use development trip generation) to calculate Project-related trips. This methodology is described in detail on pages 26 to 31 of the TIA (see Appendix J). Table 5.16-5 summarizes the existing and proposed trip generation.

Table 5.16-5 Project Trip Generation Estimates

Trips	Daily	AM Peak	PM Peak
Proposed Project	101,170	5,021	8,569
Existing Land Uses	65,731	3,047	5,299
Net Trips	35,439	1,974	3,270

Source: Fehr & Peers 2016a.

The net change would result in an increase of 35,439 daily trip ends, of which 1,974 would occur in the AM peak hour and 3,270 in the PM peak hour. Project trips were assigned to the study area roadway network based on the trip generation and distribution estimates developed for the Project. The distribution was based on the likely approach and departure routes to and from the study area using multiple sources—the location of complementary land uses, existing traffic volumes on study roadways, and the 2010 Longitudinal Employer-Household Dynamics Origin Destination Employment Statistics to provide insight into local travel patterns. The Project trip distribution is shown in Figure 4-1 of the TIA, and the assignment of "Project only" trips is shown in Figure 4-2 of the TIA (see Appendix J).

Existing with Project Conditions

Intersection LOS results for Existing (2015) with Project conditions are summarized in Table 5.16-6. As shown in the table, nine of the study intersections would operate at unacceptable levels of service. Table 5.16-7 shows the increase in V/C due to the Project, which determines if a significant impact would occur according to the applicable agency thresholds for significance. As shown in

Table 5.16-7, all nine study intersections are forecast to result in a significant impact for Existing With Project Conditions.

- Westbound Ramps: SR-22 & Studebaker Road: AM Peak Hour (LOS D), PM Peak Hour (LOS F)
- Ximeno Avenue & 7th Street: AM Peak Hour (LOS E), PM Peak Hour (LOS E)
- Pacific Coast Highway & 7th Street: AM Peak Hour (LOS D), PM Peak Hour (LOS E)
- Bellflower Boulevard & 7th Street: AM Peak Hour (LOS D), PM Peak Hour (LOS D)
- Channel Drive & 7th Street: PM Peak Hour (LOS E)
- Pacific Coast Highway & Loynes Drive: PM Peak Hour (LOS E)
- Pacific Coast Highway & 2nd Street : AM Peak Hour (LOS E), PM Peak Hour (LOS F)
- Shopkeeper Road & 2nd Street: PM Peak Hour (LOS F)
- 2nd Street/Westminster and Seal Beach Boulevard: PM Peak Hour (LOS E)

Table 5.16-6 Intersection Level of Service for Existing With Project Conditions

Intersection	Control	AM Peak Hour		PM Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C[1] or Delay[2]	LOS
1. Studebaker Rd & I-405 Westbound On-Ramp3	Signal	15.1	B	13.4	B
2. Studebaker Rd & I-405 Eastbound Off-Ramp4	Side-Street Stop	13.2	B	13.4	B
3. Studebaker Rd & SR-22 Westbound Ramps	Signal	40.2	D	>80.0	F
4. 7th St & Ximeno Ave	Signal	0.905	E	0.957	E
5. Pacific Coast Hwy & 7th St	Signal	52.5	D	78.2	E
6. Bellflower Blvd & 7th St	Signal	39.5	D	40.6	D
7. Channel Dr & 7th St	Signal	7.3	A	77.1	E
8. Campus Dr & 7th St3	Signal	22.9	C	21.1	C
9. Bellflower Blvd & Pacific Coast Hwy	Signal	27.2	C	31.0	C
10. Channel Dr & Pacific Coast Hwy	Signal	15.6	B	11.6	B

Table 5.16-6 Intersection Level of Service for Existing With Project Conditions

Intersection	Control	AM Peak Hour		PM Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C[1] or Delay[2]	LOS
11. Studebaker & SR-22 Eastbound Ramps	Signal	5.9	A	6.1	A
12. Pacific Coast Hwy & Loynes Dr	Signal	29.0	C	>80.0	F
13. Studebaker Rd & Loynes Dr	Signal	0.691	B	0.817	D
14. 2nd St & Naples Plaza	Signal	0.662	B	0.787	C
15. Marina Dr & 2nd St	Signal	0.655	B	0.852	D
16. Pacific Coast Hwy & 2nd St	Signal	75.6	E	>80.0	F
17. Shopkeeper Rd & 2nd St	Signal	0.738	C	1.002	F
18. Studebaker Rd & 2nd St	Signal	0.738	C	0.883	D
19. 2nd St/Westminster Blvd & Seal Beach Blvd	Signal	0.585	A	0.901	E
20. Pacific Coast Hwy & Studebaker Rd	Signal	20.7	C	39.9	D
21. Pacific Coast Hwy & 1st St	Signal	14.9	B	17.0	B

Source: Fehr & Peers 2016a.
Notes: V/C = Volume / Capacity Ratio
Intersections operating below acceptable LOS are shown in **bold**.
[1] V/C for signalized intersections based on ICU methodology using Traffix 7.9 software.
[2] Delay for unsignalized intersections based on HCM 2010 methodology using Synchro 8 Build 806 software. Delay for side-street stop is reported as the worst-case approach delay.
[3] Analyzed using HCM 2000 because HCM 2010 does not analyze intersections with exclusive pedestrian phases.
[4] Analyzed using HCM 2000 because HCM 2010 does not analyze stop-controlled intersections with exclusive and shared turn lanes.

Table 5.16-7 Existing With Project Intersection Impact Summary

Intersection	Control	Peak Hour	No Project		With Project			Significant Impact?
			V/C[1] or Delay[2]	LOS	V/C[1] or Delay[2]	LOS	Project Change	
3. Studebaker Rd & SR-22 Westbound Ramps	Signal	AM	30.6	C	40.2	D	9.6	Yes
		PM	>80.0	F	>80.0	F	N/A	Yes
4. Ximeno Ave & 7th St	Signal	AM	0.899	D	0.905	E	0.006	Yes
		PM	0.91	E	0.957	E	0.047	Yes
5. Pacific Coast Hwy & 7th St	Signal	PM	59.6	E	78.2	E	18.6	Yes
6. Bellflower Blvd & 7th St	Signal	AM	34.1	C	39.5	D	8.8	Yes
		PM	32.8	C	40.6	D	10.4	Yes
7. Channel Dr & 7th St	Signal	PM	61.0	E	77.1	E	16.1	Yes
12. Pacific Coast Hwy & Loynes Dr	Signal	PM	38.3	D	>80.0	F	-	Yes
16. Pacific Coast Hwy & 2nd St	Signal	AM	56.5	E	75.6	E	19.1	Yes
		PM	68.8	E	>80.0	F	-	Yes
17. Shopkeeper Rd & 2nd St	Signal	PM	0.788	C	1.002	F	0.214	Yes
19. Seal Beach Blvd & 2nd St/Westminster Blvd	Signal	PM	0.857	D	0.901	E	0.044	Yes

Source: Fehr & Peers 2016a.
[1] V/C for signalized intersections based on ICU methodology using Traffix 7.9 software.
[2] Delay for unsignalized intersections based on HCM 2010 methodology using Synchro 8 Build 806 software.

Cumulative Year (2035) Without Project Conditions

Assumptions

Future volumes for Cumulative Year (2035) Without and With Project conditions were developed using a 0.505 percent per year growth rate, consistent with the Los Angeles County CMP Guidelines. The growth rate accounts for pending and approved projects in the City of Long Beach as well as regional growth anticipated by Year 2035. Cumulative Year (2035) Without Project AM

and PM peak hour traffic volumes for study intersections are shown on Figure 5-1 of the TIA (see Appendix J).

The City of Long Beach has the following approved and pending development projects:

- Consolidated Coastal Development will remove and consolidate existing industrial operations at the Synergy Oil Field.
- AES Battery grid energy storage facility will be constructed along Studebaker Road north of the existing AES facility.
- Light Industrial Development on Studebaker Road will zone for commercial/industrial uses, but the project has been stalled since September 2014.
- The existing Seaport Marina Hotel will be demolished, and a commercial center with retail and restaurant space will be constructed at the corner of 2nd St & Pacific Coast Highway.
- The Belmont Pool Revitalization Project will involve construction and operation of a replacement pool complex at Olympic Plaza that will provide permanent indoor seating for approximately 1,250 spectators and temporary outdoor seating for up to 3,000 spectators.

Although these are pending or approved projects, the City of Long Beach directed the traffic consultant (Fehr & Peers) to consider only the Seaport Marina Hotel demolition and commercial center construction as a pending and approved project. All other project traffic is considered in buildout growth.

The City of Seal Beach also directed Fehr & Peers to add another approved and pending development project:

- 28-home residential subdivision southwest of 1st St & Pacific Coast Highway.

Intersection LOS

Intersection LOS results for Cumulative Year (2035) Without Project conditions are summarized in Table 5.16-8.

Table 5.16-8 Intersection Level of Service for Cumulative Year (2036) Without Project Conditions

Intersection	Control	AM Peak Hour		PM Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C[1] or Delay[2]	LOS
1. Studebaker Rd & I-405 Westbound On-Ramp3	Signal	9.2	A	11.8	B
2. Studebaker Rd & I-405 Eastbound Off-Ramp4	Side-Street Stop	13.2	B	14.3	B
3. Studebaker Rd & SR-22 Westbound Ramps	Signal	36.9	D	>80.0	F
4. 7th St & Ximeno Ave	Signal	0.995	E	1.017	F
5. Pacific Coast Hwy & 7th St	Signal	>80.0	F	>80.0	F
6. Bellflower Blvd & 7th St	Signal	48.4	D	51.0	D
7. Channel Dr & 7th St	Signal	10.4	B	>80.0	F
8. Campus Dr & 7th St3	Signal	40.8	D	32.6	C
9. Bellflower Blvd & Pacific Coast Hwy	Signal	28.8	C	31.6	C
10. Channel Dr & Pacific Coast Hwy	Signal	15.1	B	11.6	B
11. Studebaker & SR-22 Eastbound Ramps	Signal	6.8	A	7.4	A
12. Pacific Coast Hwy & Loynes Dr	Signal	30.3	C	57.7	E
13. Studebaker Rd & Loynes Dr	Signal	0.672	B	0.809	D
14. 2nd St & Naples Plaza	Signal	0.724	C	0.833	D
15. Marina Dr & 2nd St	Signal	0.672	B	0.844	D
16. Pacific Coast Hwy & 2nd St	Signal	69.8	E	>80.0	F
17. Shopkeeper Rd & 2nd St	Signal	0.655	B	0.900	D
18. Studebaker Rd & 2nd St	Signal	0.686	B	0.896	D
19. 2nd St/Westminster Blvd & Seal Beach Blvd	Signal	0.634	B	0.948	E
20. Pacific Coast Hwy & Studebaker Rd	Signal	17.3	B	56.9	E
21. Pacific Coast Hwy & 1st St	Signal	19.5	B	19.3	B

Table 5.16-8 Intersection Level of Service for Cumulative Year (2036) Without Project Conditions

Intersection	Control	AM Peak Hour		PM Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C[1] or Delay[2]	LOS

Source: Fehr & Peers 2016a.
Notes: V/C = Volume / Capacity Ratio
Intersections operating below acceptable LOS are shown in **bold**.
[1] V/C for signalized intersections based on ICU methodology using Traffix 7.9 software.
[2] Delay for unsignalized intersections based on HCM 2010 methodology using Synchro 8 Build 806 software. Delay for side-street stop is reported as the worst-case approach delay.
[3] Analyzed using HCM 2000 because HCM 2010 does not analyze intersections with exclusive pedestrian phases.
[4] Analyzed using HCM 2000 because HCM 2010 does not analyze stop-controlled intersections with exclusive and shared turn lanes.

Ten intersections are expected to operate at a deficient LOS during one or more peak hours for Cumulative Year (2035) Without Project Conditions:

- Studebaker Road & SR-22 Westbound Ramps: AM Peak Hour (LOS D), PM Peak Hour (LOS F)
- Ximeno Avenue & 7th Street: AM Peak Hour (LOS E), PM Peak Hour (LOS F)
- Pacific Coast Highway & 7th Street: AM Peak Hour (LOS F), PM Peak Hour (LOS F)
- Bellflower Boulevard & 7th Street: AM Peak Hour (LOS D), PM Peak Hour (LOS D)
- Channel Drive & 7th Street: PM Peak Hour (LOS F)
- Campus Drive & 7th Street: AM Peak Hour (LOS D)
- Pacific Coast Highway & Loynes Drive: PM Peak Hour (LOS E)
- Pacific Coast Highway & 2nd Street: AM Peak Hour (LOS E), PM Peak Hour (LOS F)
- Seal Beach Boulevard & 2nd Street/Westminster Boulevard: PM Peak Hour (LOS E)
- Pacific Coast Highway & Studebaker Road: PM Peak Hour (LOS E)

Cumulative Year (2035) With Project Conditions

To estimate Cumulative Year With Project traffic volumes, the Project-only volumes were added to Cumulative Year Without Project traffic volumes based on the trip generation and trip distribution assumptions discussed previously, shown in Figure 4-2 of the TIA (see Appendix J). Intersection LOS results for Cumulative Year With Project Conditions are summarized in Table 5.16-9. Fifteen intersections are forecast to operate at a deficient LOS during one or more peak hours for Cumulative Year (2035) With Project Conditions.

Table 5.16-9 Intersection Level of Service for Cumulative Year (2035) With Project Conditions

Intersection	Control	AM Peak Hour		PM Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C[1] or Delay[2]	LOS
1. Studebaker Rd & I-405 Westbound On-Ramp3	Signal	15.7	B	14.3	B
2. Studebaker Rd & I-405 Eastbound Off-Ramp4	Side-Street Stop	13.7	B	15.5	C
3. Studebaker Rd & SR-22 Westbound Ramps	Signal	47.1	D	>80.0	F
4. 7th St & Ximeno Ave	Signal	0.999	E	1.068	F
5. Pacific Coast Hwy & 7th St	Signal	>80.0	F	>80.0	F
6. Bellflower Blvd & 7th St	Signal	55.6	E	63.6	E
7. Channel Dr & 7th St	Signal	11.2	B	>80.0	F
8. Campus Dr & 7th St3	Signal	50.6	D	35.3	C
9. Bellflower Blvd & Pacific Coast Hwy	Signal	29.3	C	38.8	D
10. Channel Dr & Pacific Coast Hwy	Signal	14.5	B	10.0	A
11. Studebaker & SR-22 Eastbound Ramps	Signal	6.5	A	39.9	D
12. Pacific Coast Hwy & Loynes Dr	Signal	30.4	C	>80.0	F
13. Studebaker Rd & Loynes Dr	Signal	0.741	C	0.922	E
14. 2nd St & Naples Plaza	Signal	0.728	C	0.872	D
15. Marina Dr & 2nd St	Signal	0.716	C	0.979	E
16. Pacific Coast Hwy & 2nd St	Signal	>80.0	F	>80.0	F
17. Shopkeeper Rd & 2nd St	Signal	0.812	D	1.130	F
18. Studebaker Rd & 2nd St	Signal	0.798	C	0.996	E
19. 2nd St/Westminster Blvd & Seal Beach Blvd	Signal	0.643	B	1.005	F

Table 5.16-9 Intersection Level of Service for Cumulative Year (2035) With Project Conditions

Intersection	Control	AM Peak Hour		PM Peak Hour	
		V/C[1] or Delay[2]	LOS	V/C[1] or Delay[2]	LOS
20. Pacific Coast Hwy & Studebaker Rd	Signal	25.2	C	74.9	E
21. Pacific Coast Hwy & 1st St	Signal	19.2	B	47.7	D

Source: Fehr & Peers 2016a.
Notes: V/C = Volume / Capacity Ratio
Intersections operating below acceptable LOS are shown in **bold**.
[1] V/C for signalized intersections based on ICU methodology using Traffix 7.9 software.
[2] Delay for unsignalized intersections based on HCM 2010 methodology using Synchro 8 Build 806 software. Delay for side-street stop is reported as the worst-case approach delay.
[3] Analyzed using HCM 2000 because HCM 2010 does not analyze intersections with exclusive pedestrian phases.
[4] Analyzed using HCM 2000 because HCM 2010 does not analyze stop-controlled intersections with exclusive and shared turn lanes.

Table 5.16-10 shows the increase in V/C due to the Project, which determines if a significant impact would occur according to the applicable agency thresholds for significance. As shown in Table 5.16-10, all 15 study intersections are forecast to result in a significant impact for 2035 With Project Conditions:

- Studebaker Road & SR-22 Westbound Ramps (Caltrans): AM Peak Hour (LOS D), PM Peak Hour (LOS F)
- Ximeno Avenue & 7th Street: AM Peak Hour (LOS E), PM Peak Hour (LOS F)
- Pacific Coast Highway & 7th Street (Caltrans): AM Peak Hour (LOS F), PM Peak Hour (LOS F)
- Bellflower Boulevard & 7th Street (Caltrans): AM Peak Hour (LOS E), PM Peak Hour (LOS E)
- Channel Drive & 7th Street (Caltrans): PM Peak Hour (LOS F)
- Campus Drive & 7th Street (Caltrans): AM Peak Hour (LOS D)
- Studebaker Rd & SR-22 Eastbound Ramps (Caltrans): PM Peak Hour (LOS D)
- Pacific Coast Highway & Loynes Drive (Caltrans): PM Peak Hour (LOS F)

- Studebaker Road & Loynes Drive: PM Peak Hour (LOS E)
- Marina Drive & 2nd Street: PM Peak Hour (LOS E)
- Pacific Coast Highway & 2nd Street (Caltrans): AM Peak Hour (LOS F), PM Peak Hour (LOS F)
- Shopkeeper Road & 2nd Street: PM Peak Hour (LOS F)
- Studebaker Road & 2nd Street: PM Peak Hour (LOS E)
- Seal Beach Boulevard & 2nd St/Westminster Boulevard (City of Seal Beach): PM Peak Hour (LOS F)
- Pacific Coast Highway & Studebaker Road (Caltrans): PM Peak Hour (LOS E)

Table 5.16-10 Cumulative 2035 With Project Intersection Impact Summary

Intersection	Control	Peak Hour	No Project		With Project			Significant Impact?
			V/C[1]	LOS	V/C[1]	LOS	Project Change	
3. Studebaker Rd & SR-22 Westbound Ramps	Signal	AM	36.9	D	47.1	D	10.2	Yes
		PM	>80.0	F	>80.0	F	N/A	Yes
4. Ximeno Ave & 7th St	Signal	AM	1.017	F	1.068	F	0.051	Yes
		PM	>80.0	F	>80.0	F	N/A	Yes
5. Pacific Coast Hwy & 7th St	Signal	AM	>80.0	F	>80.0	F	N/A	Yes
		PM	48.4	D	55.6	E	7.2	Yes
6. Bellflower Blvd & 7th St	Signal	AM	51.0	D	63.6	E	12.6	Yes
		PM	>80.0	F	>80.0	F	N/A	Yes
7. Channel Dr & 7th St	Signal	PM	40.8	D	50.0	D	9.2	Yes
8. Campus Dr & 7th St	Signal	AM	32.6	C	35.3	D	2.7	Yes
11. Studebaker Rd & Eastbound Ramps	Signal	PM	11.6	B	39.9	D	28.3	Yes
12. Pacific Coast Hwy & Loynes Dr	Signal	PM	57.7	E	>80.0	F	N/A	Yes
13. Studebaker Rd & Loynes Dr	Signal	PM	0.809	D	0.914	E	0.105	Yes
15. Marina Dr & 2nd St	Signal	PM	0.844	D	0.980	E	0.136	Yes
16. Pacific Coast Hwy & 2nd St	Signal	AM	69.8	E	>80.0	F	N/A	Yes
		PM	>80.0	F	>80.0	F	N/A	Yes
17. Shopkeeper Rd & 2nd St	Signal	PM	0.900	E	1.140	F	0.240	Yes
18. Studebaker Rd & 2nd St	Signal	PM	0.896	D	0.992	F	0.085	Yes
19. Seal Beach Blvd & 2nd St/Westminster Blvd	Signal	PM	0.948	E	1.005	F	0.057	Yes
20. Pacific Coast Hwy & Studebaker Rd	Signal	PM	56.9	E	75.1	E	18.2	Yes

Source: Fehr & Peers 2016a.
Notes: V/C = Volume / Capacity Ratio
[1] V/C for signalized intersections based on ICU methodology using Traffix 7.9 software.

Impact 5.16-2: Project-related trip generation would impact levels of service for the freeway system. [Threshold T-1]

Impact Analysis: Traffic impacts to the freeway system were evaluated using the criteria in the Caltrans Guide for the Preparation of Traffic Impact Studies (2002) for freeway mainline and ramp facilities.

Existing With Project Conditions

As shown in Table 5.16-11, four freeway segments, off-ramps, and on-ramps would operate at a deficient LOS during the peak hours for Existing (2015) With Project Conditions:

- Westbound SR-22: AM Peak Hour (LOS F), PM Peak Hour (LOS E)
- Studebaker Off-Ramp: PM Peak Hour (LOS D)
- Studebaker On-Ramp: AM Peak Hour (LOS D), PM Peak Hour (LOS D)
- Eastbound SR-22: AM Peak Hour (LOS E), PM Peak Hour (LOS D)

Table 5.16-11 Freeway Mainline and Ramps Operations, Existing With Project

Segment	Type	AM			PM		
		Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)
Studebaker On-Ramp	Merge	13.3	B	65.0	15.2	B	65.0
I-405 Northbound North of Studebaker	Basic	19.6	C	65.0	23.0	C	65.0
I-405 Southbound North of Studebaker	Basic	18.0	B	53.0	20.0	C	53.0
Studebaker Off-Ramp	Diverge	15.5	B	53.0	16.3	B	53.0
Westbound SR-22	Basic	45.0	F	55.0	39.7	E	55.0
Studebaker Off-Ramp	Diverge	30.5	D	55.0	27.6	C	55.0
Studebaker On-Ramp	Merge	34.2	D	55.0	30.9	D	55.0
Eastbound SR-22	Basic	41.1	E	55.0	34.3	D	55.0

Source: Fehr & Peers 2016a.
Notes: pc/mi/ln = passenger cars per mile per lane.
Freeway facilities operating below acceptable LOS are shown in **bold**.
Calculations were made using Highway Capacity Manual 2010 methodologies.

Cumulative (2035) Freeway Operations

As shown in Table 5.16-12, four freeway segments, off-ramps, and on-ramps would operate at a deficient LOS during the peak hours for Cumulative (2035) Without Project Conditions:

- Westbound SR-22: AM Peak Hour (LOS D), PM Peak Hour (LOS F)
- Studebaker Off-Ramp: PM Peak Hour (LOS D)
- Studebaker On-Ramp: AM Peak Hour (LOS D), PM Peak Hour (LOS D)
- Eastbound SR-22: AM Peak Hour (LOS E), PM Peak Hour (LOS D)

Table 5.16-12 Freeway Mainline and Ramps Operations, Cumulative (2035) Without Project

Segment	Type	AM			PM		
		Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)
Studebaker On-Ramp	Merge	13.4	B	65.0	16.4	B	65.0
I-405 Northbound North of Studebaker	Basic	21.3	C	65.0	25.4	C	65.0
I-405 Southbound North of Studebaker	Basic	19.8	C	53.0	21.6	C	53.0
Studebaker Off-Ramp	Diverge	16.4	B	53.0	18.1	B	53.0
Westbound SR-22	Basic	33.7	D	55.0	-	F	55.0
Studebaker Off-Ramp	Diverge	27.2	C	55.0	29.4	D	55.0
Studebaker On-Ramp	Merge	34.3	D	55.0	32.0	D	55.0
Eastbound SR-22	Basic	37.0	E	55.0	32.0	D	55.0

Source: Fehr & Peers 2016a.
Notes: Pc/mi/ln = passenger cars per mile per lane.
Freeway facilities operating below acceptable LOS are shown in bold.
Calculations were made using Highway Capacity Manual 2010 methodologies.

As shown in Table 5.16-13, four freeway segments, off-ramps, and on-ramps would operate at a deficient LOS during the peak hours for Cumulative (2035) With Project Conditions:

- Westbound SR-22: AM Peak Hour (LOS D), PM Peak Hour (LOS F)
- Studebaker Off-Ramp: PM Peak Hour (LOS F)
- Studebaker On-Ramp: AM Peak Hour (LOS D), PM Peak Hour (LOS D)
- Eastbound SR-22: AM Peak Hour (LOS E), PM Peak Hour (LOS D)

Table 5.16-13 Freeway Main Line and Ramps Operations, Cumulative (2035) With Project

Segment	Type	AM			PM		
		Density (pc/mi/ln)	LOS	Speed (mph)	Density (pc/mi/ln)	LOS	Speed (mph)
Studebaker On-Ramp	Merge	14.7	B	65.0	16.8	B	65.0
I-405 Northbound North of Studebaker	Basic	21.3	C	65.0	25.4	C	65.0
I-405 Southbound North of Studebaker	Basic	19.8	C	53.0	21.6	C	53.0
Studebaker Off-Ramp	Diverge	16.5	B	53.0	18.4	B	53.0
Westbound SR-22	Basic	33.7	D	55.0	-	F	55.0
Studebaker Off-Ramp	Diverge	26.6	C	55.0	-	F	55.0
Studebaker On-Ramp	Merge	34.8	D	55.0	31.9	D	55.0
Eastbound SR-22	Basic	37.0	E	55.0	32.0	D	55.0

Source: Fehr & Peers 2016a.
Notes: pc/mi/ln = passenger cars per mile per lane.
Freeway facilities operating below acceptable LOS are shown in **bold**.
Calculations were made using Highway Capacity Manual 2010 methodologies.

Impact 5.16-3: Project-related trip generation in combination with existing and proposed cumulative development would result in designated road and/or highways exceeding county congestion management agency service standards. [Threshold T-2]

Impact Analysis: The CMP was created statewide as a result of Proposition 111 and has been implemented locally by Metro. The CMP in effect in Los Angeles County was issued by Metro in 2010 and requires that the traffic impact of individual development projects of potential regional significance be analyzed. The CMP system comprises a specific system of arterial roadways plus all freeways, and 164 intersections are identified for monitoring on the system in Los Angeles County. The CMP locations in the study area are the intersections of:

- Pacific Coast Highway & 7th Street
- Pacific Coast Highway & 2nd Street

According to the CMP Traffic Impact Analysis Guidelines developed by Metro, a traffic impact analysis is required if a proposed project would add 50 or more trips during either the AM or PM weekday peak hours to a CMP intersection, including freeway on- or off-ramps. For CMP-designated intersections, the acceptable LOS is E.

Since the Los Angeles CMP guidelines use the ICU methodology for assessing CMP locations, the volume-to-capacity (V/C) ratio was used for this analysis. If the proposed Project increases traffic demand on a CMP facility by 2 percent of capacity (V/C ≥ 0.02), causing LOS F (V/C > 1.00), a significant impact would occur. If the facility is already at LOS F, a significant impact occurs if the proposed Project increases traffic demand on a CMP facility by 2 percent of capacity (V/C ≥ 0.02).

Table 5.16-14 shows the LOS results for the CMP intersections. The CMP study area intersections of Pacific Coast Highway at 7th Street and Pacific Coast Highway at 2nd Street operate at an acceptable LOS during the Existing (2015) scenario, but operate deficiently in the Existing With Project, Cumulative (2035) Without Project, and Cumulative (2035) With Project scenarios. Without mitigation this would be a significant impact.

Table 5.16-14 Intersection CMP Analysis

Intersection	Traffic Scenario	AM Peak Hour		PM Peak Hour	
		V/C	LOS	V/C	LOS
Pacific Coast Highway at 7th Street	Existing	0.886	D	0.972	E
	Existing With Project	0.913	E	1.050	F
	Cumulative Year (2035) Without Project	0.968	E	1.068	F
	Cumulative Year (2035) With Project	1.006	F	1.174	F
Pacific Coast Highway at 2nd Street	Existing	0.807	D	0.899	D
	Existing With Project	0.928	E	1.064	F
	Cumulative Year (2035) Without Project	0.879	D	0.978	E
	Cumulative Year (2035) With Project	1.009	F	1.231	F

Source: Fehr & Peers 2016a.
Notes: VC = volume-to-capacity; LOS = level of service

Impact 5.16-4: The proposed Project would not increase hazards due to a design feature. [Threshold T-4]

Impact Analysis: At Project completion, improvements to the circulation network within the SEASP area would improve vehicular, pedestrian, and bicycle mobility. As discussed previously, improvements would consist of roadway connections, additional lanes at intersections, and new bicycle lanes and sidewalks (also see PDF-4 and PDF-5, below). The City of Long Beach and Long Beach Fire Department (LBFD) have adopted roadway design standards that preclude the construction of any unsafe design features. Standards for provision of safe road and circulation

improvements are also outlined in the Specific Plan. The proposed Project roadway and circulation improvements would be required to adhere to the City's Standard Engineering Plans and LBFD's design standards, as well as those outlined in the Specific Plan, which would be imposed on Project developments by the City and LACFD during the building plan check and development review process. Compliance with these established and proposed design standards would ensure that hazards due to design features would not occur. No mitigation measures are necessary.

Impact 5.16-5: The proposed Project would not result in inadequate emergency access. [Threshold T-5]

Impact Analysis: To address fire and emergency access needs, the traffic and circulation components of the proposed Project would be designed and constructed in accordance with all applicable LBFD design standards for emergency access (e.g., minimum lane width and turning radius). For example, new site access driveways and drives aisles would be designed to meet the minimum width requirements of LBFD to allow the passing of emergency vehicles. Future development projects under the proposed Project would also be required to incorporate all applicable design and safety requirements in the most current adopted fire codes, building codes, and nationally recognized fire and life safety standards of the City and LBFD, such as those outlined in Chapter 18.48 (Fire Code) of the City's municipal code, which incorporates by reference the 2013 California Fire Code. Compliance with these codes and standards is ensured through the City's and LBFD's development review and building permit process.

Additionally, during the building plan check and development review process, the City would coordinate with LBFD and LBPD to ensure that the necessary fire prevention and emergency response features are incorporated into the proposed Project and that adequate circulation and access (e.g., adequate turning radii for fire trucks) is provided within the traffic and circulation components of the proposed Project. All site and building improvements proposed under the Project would be subject to review and approval by the City, LBFD, and LBPD prior to building permit and certificate of occupancy issuance. Therefore, impacts on emergency access would be less than significant.

Impact 5.16-6: The proposed Project complies with adopted policies, plans, and programs for alternative transportation. [Threshold T-6]

Impact Analysis: The mobility and streetscape plan for the proposed Specific Plan is guided by the City's mobility element and incorporates several complete street concepts to promote bicycle and pedestrian travel. The Specific Plan would provide an equitable method of vehicular, public transit, pedestrian, and bicycle access for development of the area. Section 3.5.1, *Description of the Project*, of Chapter 3, *Project Description*, discusses the improvements to the Specific Plan area to accommodate

transit, pedestrians, bicycles, and autos, which would create an efficient, balanced, multimodal mobility network by integrating autos, transit, bicycles, and pedestrians into a complete street.

Pedestrian

The Project would enhance pedestrian facilities throughout the Specific Plan area by providing new sidewalks, enhanced lighting and landscaping, and implementation of bicycle lanes, which would also enhance pedestrian safety. New pedestrian connections are proposed in the Specific Plan area and offsite. Major roadways throughout the Specific Plan area will provide sidewalks on both sides of the road, increasing the performance of the pedestrian facilities. Additionally, certain locations will have a buffered sidewalk, providing enhanced pedestrian comfort and safety. Therefore, the Project would have a beneficial impact to pedestrian facilities.

Bicycle

The existing bicycle facilities in the study area are discontinuous. The Project proposes new bicycle facilities throughout the SEASP. A Class IV cycle track along Pacific Coast Highway and Studebaker Road will provide local access to Long Beach, while Class II bicycle facilities along 2nd Street, Shopkeeper Road, and Marina Drive will provide access throughout the Project area. The proposed bicycle facilities will improve overall access throughout the Specific Plan area and eliminate several existing discontinuous facilities.

Because the Project area proposes improvements to the existing bicycle network, there is no conflict with the adopted City of Long Beach Bicycle Master Plan or City of Long Beach Mobility Element. The proposed Class IV bikeways provide a buffered bikeway, which increases the performance and safety of the bicycle facilities. The proposed Class II bikeways provide continuity between the existing bikeways, also increasing the performance of the bicycle facilities. Therefore, the Project would have a beneficial impact to bicycle facilities.

Transit

The proposed Specific Plan is currently served by the Orange County Transportation Authority and Long Beach Transit bus services (see Figure 5.16-2, *Transit Routes and Facilities*). The number of transit trips generated by the Project was estimated by multiplying the peak hour trip generation (2,555 PM peak hour trips) by 1.4 to convert auto trips to person trips (3,577 person trips), and assuming that up to 3.5 percent of those trips could be transit trips. This results in the potential of 125 PM peak hour transit trips generated by the Project. With 13 transit routes serving the study area, this would equate to about 10 riders per route. Also, multiple buses operate on most of the routes during the peak hours, and this would result in an estimated 4 riders per transit vehicle. At an estimated increase of 4 riders per transit vehicle, the performance or safety of transit will not decrease. Impacts to transit are less than significant.

Conclusion

In summary, the proposed Specific Plan would improve bicycle and pedestrian facilities and infrastructure throughout the Project area to promote active and alternative modes of transportation. Additionally, it would not create a substantial increase in transit ridership that could decrease the performance or safety of the system.

Consistency with the Mobility Element

The SEASP is guided by the City's mobility element and is consistent with several policies to promote complete streets and alternative transportation modes:

- **MOP Policy 1-1:** To improve the performance and visual appearance of Long Beach's streets, design streets holistically using "complete streets approach" which considers walking, those with mobility constraints, bicyclists, public transit users, and various modes of mobility in parallel.
- **MOP Policy 1-4:** Allow for flexible use of public right-of-way to accommodate all users of the street system, while maintaining safety standards.
- **MOP Policy 1-9:** Increase mode shift of transit, pedestrians, and bicycles.
- **MOP Policy 2-2:** Design the character and scale of the street to support its street type and place-type designation and overlay networks.
- **MOP Policy 2-6:** Ensure high-quality, on-street access to transit stops and stations.
- **MOP Policy 2-11:** Consider every street in Long Beach as a street that bicyclists and pedestrians will use.
- **MOP Policy 2-18:** Provide adequate sidewalk widths and clear path of travel as determined by street type classification, adjoining land uses, and expected pedestrian usage.
- **MOP Policy 5-2:** Reduce Vehicle Miles Traveled (VMT) and vehicle trips through the use of alternative modes of transportation and TDM [transportation demand management].

Furthermore, the SEASP would help the City implement AB 1358, the California Complete Streets Act. AB 1358, described in Section 5.16.1.1, *Regulatory Setting*, requires local governments to plan for a balanced, multimodal transportation network that meets the needs of all users. By incorporating Complete Streets elements/components into the SEASP, the City would increase the number of trips made by alternative modes of travel, reducing the number of vehicle trips. An increase in transit trips, bicycling, and walking would thus help the City meet the transportation needs of all

residents, workers, and visitors while reducing traffic congestion. Therefore, no impacts to adopted policies, plans, and programs for alternative transportation are anticipated to occur.

Consistency with SB 743

As stated in Section 5.16.1.1, *Regulatory Setting*, SB 743 started a process that could fundamentally change transportation impact analysis as part of CEQA compliance. These changes in many parts of California (if not statewide) will include the elimination of auto delay, LOS, and similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts. As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)). Certification of the new guidelines are expected in early 2017. However, since OPR has not yet amended the CEQA Guidelines to implement this change, automobile delay is still considered a significant impact, and the City of Long Beach will continue to use the established LOS criteria.

For informational purposes, Fehr & Peers prepared a technical memorandum (see Appendix J) to quantify the VMT for the Project under existing and proposed conditions. VMT calculations and reductions were quantified using the SCAG forecasting model and the U.S. Environmental Protection Agency mixed-use development (MXD) trip generation methodology to accurately estimate Project trip internalization based on land use mix and accessibility, assist in identifying appropriate transportation demand management (TDM) approaches for the Project, and quantify VMT reductions associated with those TDM strategies. Detailed methodology used to calculate VMT and VMT reductions are provided in Appendix J of this DEIR.

Table 5.16-15 shows the VMT and VMT per service population. As shown, the overall VMT would increase by approximately 305,044 compared to existing conditions, and the VMT per service population would decrease by approximately 5.84 or 13 percent.

Table 5.16-15 VMT and VMT per Service Population

	Existing	Proposed	Net Change
VMT	455,236	760,280	+305,044
VMT per Service Population	45.34	39.50	-5.84

Source: Fehr & Peers 2016b.
Notes: VMT=Vehicle Miles Traveled, Service population represents residential population plus employment in the study area

The proposed Specific Plan includes TDM measures that will reduce VMT (see PDF-1 through PDF-3, below), including pedestrian and bicycle improvements. Table 5.16-16 shows that these measures would result in a VMT reduction of approximately 56,261, or 7.4 percent. In total, with TDM measures, VMT per service population is expected to decrease by approximately 19 percent compared to existing conditions.

Table 5.16-16 VMT and VMT per Service Population

	Proposed	Proposed with TDM measures	VMT Reduction
VMT	760,280	704,019	-56,261
VMT per Service Population	39.50	36.57	-2.93

Source: Fehr & Peers 2016b.
Notes: VMT=Vehicle Miles Traveled
Service population represents residential population plus employment in the study area.

Impact 5.16-7: The proposed Project would not result in a change in air traffic patterns [Threshold T-3]

Impact Analysis: The Long Beach Municipal Airport is approximately 2.5 miles northwest of the Project area. The Project area is not within the airport's land use plan and would not cause a change in the directional patterns of aircrafts flying to and from Long Beach Municipal Airport. Portions of the Project area are within the airport planning area of the Los Alamitos Joint Forces Training Base (JFTB). However, as determined in Sections 5.8, *Hazards and Hazardous Materials,* and 5.12, *Noise*, of this DEIR, the Project area is not within safety hazard zones or noise contours of JFTB. In addition, according to Section 5.10, *Land Use and Planning*, future development would not conflict with building height restrictions identified in the airport environs land use plan. Project implementation would not result in a change in air traffic patterns. No impacts are anticipated.

5.16.4 Cumulative Impacts

Cumulative traffic impacts are created when the proposed Project—combined with other future development projects accommodated by the City's General Plan—contributes to the overall traffic impacts, requiring additional improvements to maintain acceptable level of service operations with or without the proposed Project. A significant cumulative impact is identified when a facility is projected to operate below the level of service standards due to cumulative future traffic in combination with Project-related traffic increases. Cumulative traffic impacts were addressed in Impacts 5.16-1, 5.16-2, and 5.16-3. Impacts and mitigation measures are discussed in Sections 5.16.6 and 5.16.7, below. As discussed in these sections, the proposed Project's incremental effect on congested intersections would be significant at 14 study area intersections. The City of Long Beach requires payment of transportation improvement fees in accordance with Chapter 18.17 (Transportation Improvement Fee) of the City's municipal code to mitigate local traffic impacts. As detailed in this section, the Project's contribution to cumulative traffic impacts at intersections in the cities of Long Beach and Seal Beach and impacts at CMP intersections and freeway facilities would be cumulatively considerable and therefore significant.

5.16.5 Existing Regulations

State and Regional

- The California Complete Streets Act (Assembly Bill 1358)
- SCAG 2013 Regional Transportation Plan/Sustainable Communities Strategy
- Los Angeles County Congestion Management Program

Local

- City of Long Beach Municipal Code, Chapters 10.08 (Traffic Control Devices), 10.58 (Pedestrians), 10.48 (Bicycles), 18.17 (Transportation Improvement Fee)

5.16.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impacts would be less than significant: 5.16-4, 5.16-5, 5.16-6, and 5.16-7.

Without mitigation, the following impacts would be **potentially significant**:

- **Impact 5.16-1** Project-related traffic would result in a substantial impact at 15 intersections during the traffic peak hours. The intersections affected are under the jurisdictions of the cities of Long Beach and Seal Beach and Caltrans.

- **Impact 5.16-2** Project-related traffic would result in a substantial impact at a freeway main-line segment of State Route 22 and at the Studebaker ramps at State Route 22.

- **Impact 5.16-3** Project-related traffic would result in a substantial impact at two CMP intersections.

5.16.7 Mitigation Measures

Project Design Features

The following Project Design Features (PDF) would reduce impacts associated with the proposed Project:

Transportation and Motor Vehicles

PDF-1 **Reduction of Peak Hour Trips, Transportation Management Association (TMA):** The City shall establish a TMA with authority to implement strategies pertaining to trip reduction through transportation demand management (TDM). Responsibilities of the TMA shall include, but are not limited to:

- Operation of all shared parking subject to the TMA program.
- Real-time information and other wayfinding mechanisms.
- Coordinating and offering programs to provide biking, walking, and other trip reduction strategies.
- Data collection.

The TMA shall actively engage existing and future parking lot and garage owners to lease, sell, or make spaces publically accessible in order to be added to the district's pool of shared parking.

PDF-2 **Reduction of Peak Hour Trips, Transportation Demand Management (TDM) Plan:** Projects within SEASP that generate 50 or more peak hour trips are required to:

- Join the TMA and ensure that tenants are TMA members for the first 25 years from the date of final inspection or certificate of occupancy.
- Submit a Transportation Demand Management (TDM) plan to the City Traffic Engineer and Director of Development Services, or his/her designee.

PDF-3 **Reduced Parking Requirements:** Projects in SEASP are eligible for a parking reduction by incorporating Transportation Demand Management (TDM) strategies, pending Site Plan Review approval. TDM strategies applicable to reduced parking requirements, subject to the discretion of the City's Site Plan Review Committee, include but are not limited to:

- Car sharing
- Carpool/vanpool
- Unbundled parking (parking spaces are rented or sold separately, rather than automatically included with the rent or purchase price of a residential or commercial unit)
- Joint use (shared parking)
- Transit, bicycle, and pedestrian system improvements
- Trip reduction incentives to employees, such as free transit passes

A "park once" policy shall be promoted for SEASP. Rather than driving from one use to another, visitors are highly encouraged to park once and walk to one or more destinations within the Project area. Similarly, residents and employees are encouraged to walk from residences or workplaces to SEASP destinations.

All parking reduction requirements shall be approved at the discretion of the Site Plan Review Committee, which will determine the appropriate level of parking demand reduction generated by these strategies on a project-specific basis.

PDF-4 **Internal Circulation:** In order to create a more walkable community and add vehicular connections throughout the Project area, the SEASP creates a block or grid patterns. Conceptual internal street sections are shown on Figure 6-16 of the Specific Plan.

PDF-5 **Pedestrian Network:** Many streets in the SEASP area currently do not have sidewalks or only have sidewalks on one side of the street. Figure 6-1 in the Specific Plan shows the network of proposed sidewalk connections. Pedestrian connections shall be developed in coordination and pursuant to the standard of Chapter 7, Design Standards and Guidelines, of the Specific Plan. The addition of sidewalks and/or boardwalk are proposed along Pacific Coast Highway, Channel Drive, Studebaker Road, 2nd Street, Marina Drive, and streets internal to development that will occur in the Specific Plan area. In addition to providing more sidewalks, the Specific Plan recommends "breaking-up" the long block lengths in the SEASP area

into shorter blocks to provide more connectivity and make it easier for pedestrians to comfortably navigate an area. Midblock crossings are proposed across Pacific Coast Highway adjacent to areas designated as Community Core. Lastly, to limit exposure and increase safety for pedestrians crossing the street, curb extensions are also envisioned at crossings, possibly along Marina Drive or Studebaker Road as a transition into the mixed-use areas.

PDF-6 **Bicycle Network:** Figure 6-2 in the Specific Plan identifies proposed bicycle connections. Bicycle circulation is provided on streets with designated bike lanes, separated bikeways (cycle tracks), and off-street pathways. These facilities are classified in four bicycle facility classifications:

- *Class I Bikeway (Multiuse Path).* Provides a separated corridor that is not served by streets and highways and is away from the influence of parallel streets. Class I bikeways are for nonvehicle use only with opportunities for direct access and recreational benefits, right-of-way for the exclusive use of bicycles and pedestrians, and minimized cross-flow conflicts. SEASP includes a new Class I facility on the north side of the Los Cerritos Channel that would connect Pacific Coast Highway to Loynes Drive if it does not impact sensitive wetlands in the area. A connection is also proposed that would link this route to the existing San Gabriel Bike Trail.
- *Class II Bikeway (Bike Lanes).* Provides a delineated right-of-way assigned to bicyclists to enable more predictable movements, accommodating bicyclists through on-street corridors. New Class II bikeways are proposed along the Shopkeeper Road extension to Pacific Coast Highway, Studebaker Road, and Marina Drive.
- *Class III Bikeway (Bike Route).* A shared facility (by bikes and vehicles) that provides either continuity with other bicycle facilities or designates preferred routes through high-demand on-street corridors. The existing Class III facility along 2nd Street between Pacific Coast Highway and Studebaker Road is envisioned to be improved as a Class II facility through implementation of this Specific Plan.
- *Class IV Separated Bikeways (Cycle Track).* Provides delineated right-of-way assigned to bicyclists with physical separation from vehicles. This separation can include parked vehicles, bollards, curbs, or any other physical device that provides separation. The most significant change to the bike and roadway network

proposed for the SEASP area is the inclusion of two cycle tracks—one along Pacific Coast Highway and the other along Studebaker Road.

PDF-7 **Traffic Light Synchronization:** Traffic signal timing at intersections along the Pacific Coast Highway are controlled by Caltrans and the City of Long Beach. To better coordinate progression of traffic signals in the area, the SEASP identifies the following options:

- Enter into a cooperative agreement with Caltrans to maintain the signals.
- Have Caltrans relinquish sections of their facility to the City, so that the City can update the equipment and maintain the signals.
- Work with Caltrans on a comprehensive signal timing program that is implemented to coordinate and maintain the timings, including hardware to ensure that the signal clocks do not drift from one another.

Mitigation Measures

Impact 5.16-1

TRAF-1 As part of the subsequent environmental review for development projects that would be accommodated by the SEASP, a site-specific traffic study shall be prepared by the project applicant/developer to evaluate the project's potential traffic and transportation impacts and to identify specific improvements, as deemed necessary, to provide safe and efficient onsite circulation and access. The traffic study for the first development project to be considered under the SEASP shall include an analysis of signal timing of 2nd Street through Naples to identify timing adjustments needed to improve signal synchronization. The traffic study shall be approved by the Public Works Department, and improvements and signal timing shall be implemented prior to certificate of occupancy.

TRAF-2 Prior to issuance of occupancy permits for development projects that would be accommodated by the SEASP, project applicants/developers shall make fair-share payments to the City of Long Beach toward construction of the traffic improvements listed below. The following traffic improvements and facilities are necessary to mitigate impacts of the SEASP and shall be included in the City's fee mechanism(s):

Existing With Project Improvements

- **Studebaker Road & SR-22 Westbound Ramps:** Construct a spiral striped roundabout with two circulating lanes, with a southbound slip (bypass) lane. The

southbound approach would be striped with two through lanes and one shared through-left turn lane; the westbound approach would have two left turn lanes and one right turn slip lane; and the northbound approach would have two through lanes and one right turn slip lane. This measure would be funded through the City of Long Beach Capital Improvement Plan (CIP) and fair-share contributions from area developments.

Alternatively, the intersection could remain signalized with the following improvements:

- Modify the westbound approach from two left turn lanes and one right turn lane, to three left turn lanes and one right turn lane.
- Modify the southbound approach from one left turn lane and one through lane, to one left turn lane and three through lanes.
- Optimize the AM and PM signal cycle lengths and splits.

- **Shopkeeper Road & 2nd Street:** This intersection would require the following improvements:
  - Modify the northbound approach from one shared through-left turn lane and one right turn lane, to one shared through-left turn lane and two right turn lanes.
  - Modify the westbound approach from one left turn lane, two through lanes, and one shared through-right turn lane, to two left turn lanes, two through lanes, and one shared through-right turn lane.

Cumulative Year (2035) With Project Improvements

- **Studebaker Road & SR-22 West- and Eastbound Ramps:** Construct a spiral striped roundabout with two circulating lanes, with a southbound slip (bypass) lane. The southbound approach would be striped with two through lanes and one shared through-left turn lane; the westbound approach would have two left turn lanes and one right turn slip lane; and the northbound approach would have two through lanes and one right turn slip lane. This measure would be funded through the City of Long Beach Capital Improvement Plan (CIP).

  Alternatively, the intersection could remain signalized and with the following improvements:

  - Modify the westbound approach from two left turn lanes and one right turn lane, to three left turn lanes and one right turn lane.

- Modify the northbound approach from one through lane and one shared through-right turn lane, to two through lanes and one shared through-right turn lane.
- Modify the southbound approach from one left turn lane and one through lane, to one left turn lane and three through lanes.
- Optimize the AM and PM signal cycle lengths and splits.

- **Marina Drive & 2nd Street:** This intersection would require the following improvements:
  - Modify the northbound approach from one left turn lane, one shared through-left turn lane, one through lane, and one right turn lane, to two left turn lanes, one through lane, and one right turn lane.
  - Modify the southbound approach from one left turn lane, one shared through-left turn lane, and one right turn lane, to two left turn lanes, one through lane, and one right turn lane.
  - Modify the westbound approach from one left turn lane, two through lanes, and one shared through-right turn lane, to two left turn lanes, two through lanes, and one shared through-right turn lane.
- **Shopkeeper Road & 2nd Street:** This intersection would require the following improvements:
  - Modify the westbound approach from one left turn lane, two through lanes, and one shared through-right turn lane, to two left turn lanes, two through lanes, and one shared through-right turn lane.
  - Modify the eastbound approach from one left turn lane, two through lanes, and one shared through-right turn lane, to one left turn lane, three through lanes, and one right turn lane.
- **PCH & Studebaker Road:** This intersection would require the following improvements:
  - Modify the southbound approach from one left turn lane, two through lanes, one right turn lane, and one right turn lane, to one left turn lane, three through lanes, one right turn lane.
  - Optimization of the PM signal cycle lengths and splits.

TRAF-3 Prior to issuance of occupancy permits for development projects that would be accommodated by the SEASP, project applicants/developers shall make fair-share payments to the City of Seal Beach toward construction of the traffic improvement listed below.

- **Seal Beach Boulevard & 2nd Street/Westminster Boulevard:** Modify the northbound approach from having one left turn lane, two through lanes, and one shared through-right turn lane, to having one left turn lane, three through lanes, and one right turn lane.

Mitigation Measures Considered and Rejected

Mitigation measures were evaluated for every impacted intersection in detail (see Section 12 of the TIA in Appendix J of this DEIR). However, some mitigation measures were determined to be infeasible for the reasons in Section 5.16-8, *Level of Significance After Mitigation*, below. The traditional method of mitigating significant traffic-related impacts—when defined as delays to autos due to overcapacity or increases in auto trips on street segments—is to increase auto capacity by providing additional lanes or facilities. Widening roads is challenging because space in the Project area is already constrained and utilized by other land uses, wetlands, or transportation facilities. Due to the limited right-of-way in the Project area and surrounding areas of Long Beach, capacity improvements for autos may require the loss or constriction of bicycle lanes, sidewalks, parking lots, etc. The traffic analysis for this project could not identify any additional capacity improvements for autos that would not impact existing buildings or have negative secondary impacts—such as eliminating wetland areas or parking or degrading the pedestrian environment. However, implementation of the proposed Specific Plan would improve mobility in the area through pedestrian and bicycle improvements and other TDM measures.

Impacts for which mitigation measures were evaluated but improvements were deemed infeasible or are under the jurisdiction of another agency are as follows:

Existing With Project Impacts

- Ximeno Avenue & 7th Street
- Pacific Coast Highway & 7th Street
- Bellflower Boulevard & 7th Street
- Channel Drive & 7th Street
- Pacific Coast Highway & Loynes Drive
- Pacific Coast Highway & 2nd Street
- Shopkeeper Road & 2nd Street

Cumulative Year With Project Impacts

- Ximeno Avenue & 7th Street
- Pacific Coast Highway & 7th Street (Caltrans)
- Bellflower Boulevard & 7th Street (Caltrans)
- Channel Drive & 7th Street (Caltrans)
- Campus Drive & 7th Street (Caltrans)
- Studebaker Road & SR-22 Eastbound and Westbound Ramps (Caltrans)
- Pacific Coast Highway & Loynes Drive (Caltrans)
- Studebaker Road & Loynes Drive
- Pacific Coast Highway & 2nd Street (Caltrans)
- Shopkeeper Road & 2nd Street
- Studebaker Road & 2nd Street
- Pacific Coast Highway & Studebaker Road (Caltrans)

Impact 5.16-2

The proposed Project would result in project level and cumulative impacts to four freeway facilities: the westbound and eastbound SR-22 and the SR-22 Studebaker off-ramp and on-ramp (merge and diverge analysis).

Impacts to SR-22 would require addition of a main-line travel lane on the freeway. There is insufficient space to implement this mitigation within the existing right-of-way. Furthermore, there is no funding mechanism in place to contribute fees to this improvement. Therefore, impacts to freeway facilities are ***significant and unavoidable***.

Impact 5.16-3

Mitigation measures were considered and rejected to improve the CMP intersections of PCH at 7th Street and at 2nd Street to an acceptable LOS (see Section 8 of the TIA in Appendix J of this DEIR). Although these improvements would mitigate the impact to an acceptable LOS E during the AM and PM peak hours, development exists on all four quadrants of the intersections, and sufficient right-of-way does not exist. Since these intersections exceed the minimum standard of LOS E and no feasible mitigation is available, the Los Angeles CMP requires a deficiency plan. This plan includes improvement measures to implement at the intersection or TDM techniques that would decrease reliance on single-occupant vehicles. TDM measures are required, as detailed in PDF-1 through 3, above.

5.16.8 Level of Significance After Mitigation

Impact 5.16.1

Existing (2014) With Project Conditions

- **Studebaker Road & SR-22 Westbound Ramps (Caltrans):** With Mitigation Measure TRAF-2, operations are improved to an acceptable LOS C during the AM and PM peak hours. However, both improvements are within the responsibility and jurisdiction of another public agency (Caltrans) and not the lead agency (City of Long Beach). The improvements require Caltrans approval, and therefore the impact is considered ***significant and unavoidable***.

- **Ximeno Avenue & 7th Street:** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS D during the AM and PM peak hours. The improvements would require right-of-way dedication along 7th Street to accommodate the additional lanes. However, there is insufficient right-of-way due to current development and sidewalks. Since there is insufficient right-of-way to implement these improvements, the impact is considered ***significant and unavoidable***.

- **Pacific Coast Highway & 7th Street (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to LOS D during the AM and PM peak hours. These improvements would require right-of-way dedication along 7th Street and Pacific Coast Highway to accommodate the additional lanes. However, there is insufficient right-of-way due to current development, and the intersection is within the responsibility and jurisdiction of another public agency (Caltrans) and not the lead agency (City of Long Beach). The improvements require Caltrans approval, and therefore the impact is considered ***significant and unavoidable***.[1]

- **Bellflower Boulevard & 7th Street (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS C during the AM and PM peak hour. These improvements are not feasible because it would require right-of-way dedication that would encroach onto existing buildings and eliminate sidewalks and parking to accommodate the additional lanes. Additionally, the improvements cannot be guaranteed by the project or the City of Long Beach as the improvement would

[1] It should also be noted that the City of Long Beach Mobility Element identifies a grade separation at the "Iron Triangle," which is the triangle configuration of the Pacific Coast Highway/7th Street/Bellflower Boulevard intersections. This would include the closure of Bellflower Boulevard Southbound to simplify movements. This project grade separation would reduce congestion at the "Iron Triangle" but is still in the conceptual phase.

require the approval from Caltrans, who is the owner/operator of this intersection. As such, the impact is considered ***significant and unavoidable***

- **Channel Drive & 7th Street (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS C during the PM peak hour. These improvements would require right-of-way dedication that would eliminate sidewalks, parking, and bus stops along 7th Street to accommodate the additional lanes. Additionally, the improvements fall under the jurisdiction of another public agency (Caltrans) and not the lead agency (City of Long Beach). The improvements require Caltrans approval, and therefore the impact is considered ***significant and unavoidable***.

- **Pacific Coast Highway & Loynes Drive (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS D during the PM peak hour. There is sufficient right-of-way, since the existing right-of-way contains sidewalks and grass buffers. However, the roadway improvements would encroach upon the adjacent wetlands in the coastal zone, which would require California Coastal Commission approval. Additionally, the improvements fall under the jurisdiction of another public agency (Caltrans) and not the lead agency (City of Long Beach) and would require Caltrans approval. Given these constraints (limited right-of-way, potential wetland constraints, and the inability to guarantee implementation of the improvements), the impact is considered ***significant and unavoidable***.

- **Pacific Coast Highway & 2nd Street (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to pre-Project conditions during the AM and PM peak hours. These mitigations would require right-of-way dedication along Pacific Coast Highway and 2nd Street to accommodate the additional lanes. However, widening 2nd Street and Pacific Coast Highway is not consistent with the goals of the Specific Plan, as outlined in Chapter 3 of the SEASP. Finally, the improvements fall under the jurisdiction of another public agency (Caltrans) and not the lead agency (City of Long Beach). The improvements require Caltrans approval, and therefore the impact is considered ***significant and unavoidable***.

- **Shopkeeper Road & 2nd Street (Caltrans):** With Mitigation Measure TRAF-2, operations are improved to an acceptable level of service during the PM peak hour. However, the improvements may impact adjacent wetlands in the coastal zone, which may require Coastal Commission approval. Therefore, the impact is considered ***significant and unavoidable***.

- **Seal Beach Boulevard and 2nd Street/Westminster:** With Mitigation Measure TRAF-3, operations are improved to an acceptable LOS D during the PM peak hour. These

improvements would require right-of-way dedication along Seal Beach Boulevard and 2nd Street/Westminster Boulevard to accommodate the additional lanes. Sufficient right-of-way does exist along Seal Beach Boulevard and 2nd Street/Westminster Boulevard. However, these improvements may encroach upon the adjacent wetlands within the coastal zone, require median modification, or require removal of the bicycle lane. Impacts to the wetlands would require approval of the Coastal Commission. Impacts to the median and/or removal of the bicycle lane are not consistent with the goals of the Specific Plan, as outlined in Chapter 3 of the SEASP. Additionally, the improvements fall under the jurisdiction of another public agency (City of Seal Beach) and not the lead agency (City of Long Beach). The improvements require City of Seal Beach approval, since it is the owner/operator of this intersection. Therefore, the impact is considered ***significant and unavoidable***.

Cumulative Year (2035) With Project Conditions

- **Studebaker Road & SR-22 Westbound Ramps:** With Mitigation Measure TRAF-2, operations are improved to an acceptable LOS C during the AM and PM peak hours. Mitigation for the signal improvements is also feasible, since sufficient right-of-way exists. However, both improvements are within the responsibility and jurisdiction of another public agency (Caltrans) and not the lead agency (City of Long Beach). The improvements require Caltrans approval, and therefore the impact is considered ***significant and unavoidable***.

- **Ximeno Avenue & 7th Street:** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS D during the AM and PM peak hours. The improvements would require right-of-way dedication along 7th Street to accommodate the additional lanes due to existing development. Since there is insufficient right-of-way to implement these improvements, the impact is considered ***significant and unavoidable***.

- **Pacific Coast Highway & 7th Street (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS D during the AM and PM peak hours. These improvements would require right-of-way dedication along 7th Street and Pacific Coast Highway to accommodate the additional lanes. However, there is insufficient right-of-way due to current development, and the intersection is within the responsibility and jurisdiction of another public agency (Caltrans) and not the lead agency (City of Long Beach). The improvements require Caltrans approval, and therefore the impact is considered ***significant and unavoidable***.

- **Bellflower Boulevard & 7th Street (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS C during the PM peak hour. These improvements are not feasible because it would require right-

of-way dedication that would encroach onto existing buildings and eliminate sidewalks and parking to accommodate the additional lanes. Additionally, the improvements cannot be guaranteed by the project or the City of Long Beach since the improvements would require the approval from Caltrans, who is the owner/operator of this intersection. Therefore, the impact is considered ***significant and unavoidable***.

- **Channel Drive & 7th Street (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS D during the PM peak hour. These improvements would require right-of-way dedication that would eliminate sidewalks, parking, and bus stops along 7th Street to accommodate the additional lanes. Additionally, the improvements cannot be guaranteed by the project or the City of Long Beach because the improvements would require approval from Caltrans, who is the owner/operator of this intersection. Therefore, the impact is considered ***significant and unavoidable***.

- **Campus Drive & 7th Street (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS C during the AM peak hours. This would require right-of-way dedication along 7th Street to accommodate the additional lanes. However, there is not sufficient right-of-way to implement these improvements. Additionally, the improvements cannot be guaranteed by the City of Long Beach, because these improvements would require the approval from Caltrans, who is the owner/operator of this intersection. Therefore, the impact is considered ***significant and unavoidable***.

- **Studebaker Rd & SR-22 Eastbound Ramps (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS C during the AM and PM peak hours. Mitigation for the signal timing optimization improvements is feasible, since signal timing updates are part of Caltrans standard maintenance activity. However, both improvement options are within the responsibility and jurisdiction of another public agency (Caltrans) and not the lead agency (City of Long Beach). The improvements require Caltrans approval, and therefore the impact is considered ***significant and unavoidable***.

- **Pacific Coast Highway & Loynes Drive (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS D during the PM peak hour. These mitigations would require right-of-way dedication along Pacific Coast Highway and Loynes Drive to accommodate the additional lanes. Additionally, the roadway improvements may encroach upon the adjacent wetlands. Finally, the improvements fall under the jurisdiction of another public agency (Caltrans), not the lead agency (City of Long Beach), and would require Caltrans approval. Given these constraints (limited right-of-way,

potential wetland constraints, and the inability to guarantee implementation of the improvements), the impact is considered ***significant and unavoidable***.

- **Studebaker Road & Loynes Drive:** With Mitigation Measure TRAF-2, operations are improved to an acceptable LOS D during the PM peak hour. However, these improvements may encroach upon the adjacent wetlands within the coastal zone which may require Coastal Commission approval. Therefore, the impact is considered ***significant and unavoidable***.

- **Marina Drive & 2nd Street:** With Mitigation Measure TRAF-2, operations are improved to an acceptable LOS D during the PM peak hour. These mitigations would require right-of-way dedication along 2nd Street to accommodate the additional lane and restriping of Marina Drive. Since the proposed redevelopment of SEASP is along 2nd Street, there is sufficient right-of-way. Therefore, the impact is considered less than significant.

- **Pacific Coast Highway & 2nd Street (Caltrans):** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to pre-project conditions during the AM and PM peak hours. These mitigations would require right-of-way dedication along Pacific Coast Highway and 2nd Street to accommodate the additional lanes. However, widening 2nd Street and Pacific Coast Highway is not consistent with the goals of the Specific Plan, as outlined in Chapter 3 of the SEASP. Additionally, the improvements fall under the jurisdiction of another public agency (Caltrans), not the lead agency (City of Long Beach). The improvements require Caltrans approval, and therefore the impact is considered ***significant and unavoidable***.

- **Shopkeeper Road & 2nd Street:** With Mitigation Measure TRAF-2, operations are improved to an acceptable LOS D during the PM peak hour. These improvements require additional right-of-way along 2nd Street and Shopkeeper Road to accommodate the additional lanes. However, the improvements may encroach upon the adjacent wetlands. Therefore, the impact is considered ***significant and unavoidable***.

- **Studebaker Road & 2nd Street:** With mitigation measures detailed in Section 12 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS D during the PM peak hour. These mitigations would require right-of-way dedication along Studebaker Road and 2nd Street/Westminster Boulevard to accommodate the additional lanes. These improvements would encroach upon the adjacent wetlands in the coastal zone, which may require Coastal Commission approval. Therefore, the impact is considered ***significant and unavoidable***.

- **Seal Beach Boulevard & 2nd St/Westminster Boulevard (City of Seal Beach):** With Mitigation Measure TRAF-3, operations are improved to an acceptable LOS D during the PM peak hour. These mitigations would require right-of-way, median modification, or bike lane

removal along Seal Beach Boulevard and 2nd Street/Westminster Boulevard to accommodate the additional lanes. Additionally, these improvements encroach upon the adjacent wetlands. Finally, the improvements fall under the jurisdiction of another public agency (City of Seal Beach), not the lead agency (City of Long Beach), and would require City of Seal Beach approval. Therefore, the impact is considered ***significant and unavoidable***.

- **Pacific Coast Highway & Studebaker Road (Caltrans):** With Mitigation Measure TRAF-2, operations are improved to an acceptable LOS C during the PM peak hours. However, the improvements fall under the jurisdiction of another public agency (Caltrans), not the lead agency (City of Long Beach), and would require Caltrans approval. Therefore, the impact is considered ***significant and unavoidable***.

Impact 5.16.-2

Many of the freeway segments will operate at an unacceptable level, and the project adds traffic to these facilities. Therefore, there are project-level impacts and cumulative impacts to the freeway system near the project site. To mitigate the impacts at the identified locations, freeway main-line widening or freeway ramp widening would be required.

However, this type of infrastructure is extremely costly and is typically infeasible for one development project to undertake. Additionally, the facility is not controlled by the City, which could not guarantee implementation of the mitigation measures. Therefore, the identified impacts to the freeway system are considered ***significant and unavoidable***.

Impact 5.16-3

With mitigation measures detailed in Section 8 of the TIA (Appendix J of this DEIR), operations are improved to an acceptable LOS E at CMP intersections—PCH at 7th Street and at 2nd Street. However, there is insufficient right-of-way along 2nd Street and Pacific Coast Highway due to existing development. Additionally, this intersections falls under the jurisdiction of another public agency (Caltrans), not the lead agency (City of Long Beach). The improvements require Caltrans approval, and therefore the impact is considered ***significant and unavoidable***.

Since both intersections exceed the minimum standard of LOS E and no feasible mitigation is available, the CMP requires a deficiency plan. As discussed above, this plan includes improvement measures to implement at the intersection or TDM techniques that would decrease the reliance on a single-occupant vehicle. These techniques are outlined in the TDM strategies in Chapter 6 of the Specific Plan.

5.16.9 References

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