4.8 TRANSPORTATION

4.8.1 Introduction

This section analyzes the existing and planned transportation/traffic and circulation conditions for the planning area, and identifies circulation impacts that may result from implementation of the proposed General Plan Land Use and Urban Design Elements Project (proposed project). The analysis contained in this section is based on the *Traffic Impact Analysis*, *General Plan Land Use and Urban Design Elements, City of Long Beach, California* (TIA) prepared by LSA Associates, Inc. (LSA 2019) (Appendix G).

4.8.2 CEQA Baseline

Although the Notice of Preparation (NOP) was published in May 2015, the baseline for transportation is considered to be 2018 when the analysis for the Recirculated Draft Environmental Impact Report (EIR) was initiated. This provides an updated baseline that reflects current conditions related to transportation at the time the Recirculated Draft EIR was prepared.

4.8.3 Methodology

The TIA prepared for the proposed project is consistent with the objectives and requirements of the City of Long Beach (City), the Los Angeles County (County) Congestion Management Program (CMP) (2010), California Department of Transportation (Caltrans) methodology, and applicable provisions of the California Environmental Quality Act (CEQA).

4.8.3.1 Background Information: The Mobility Element

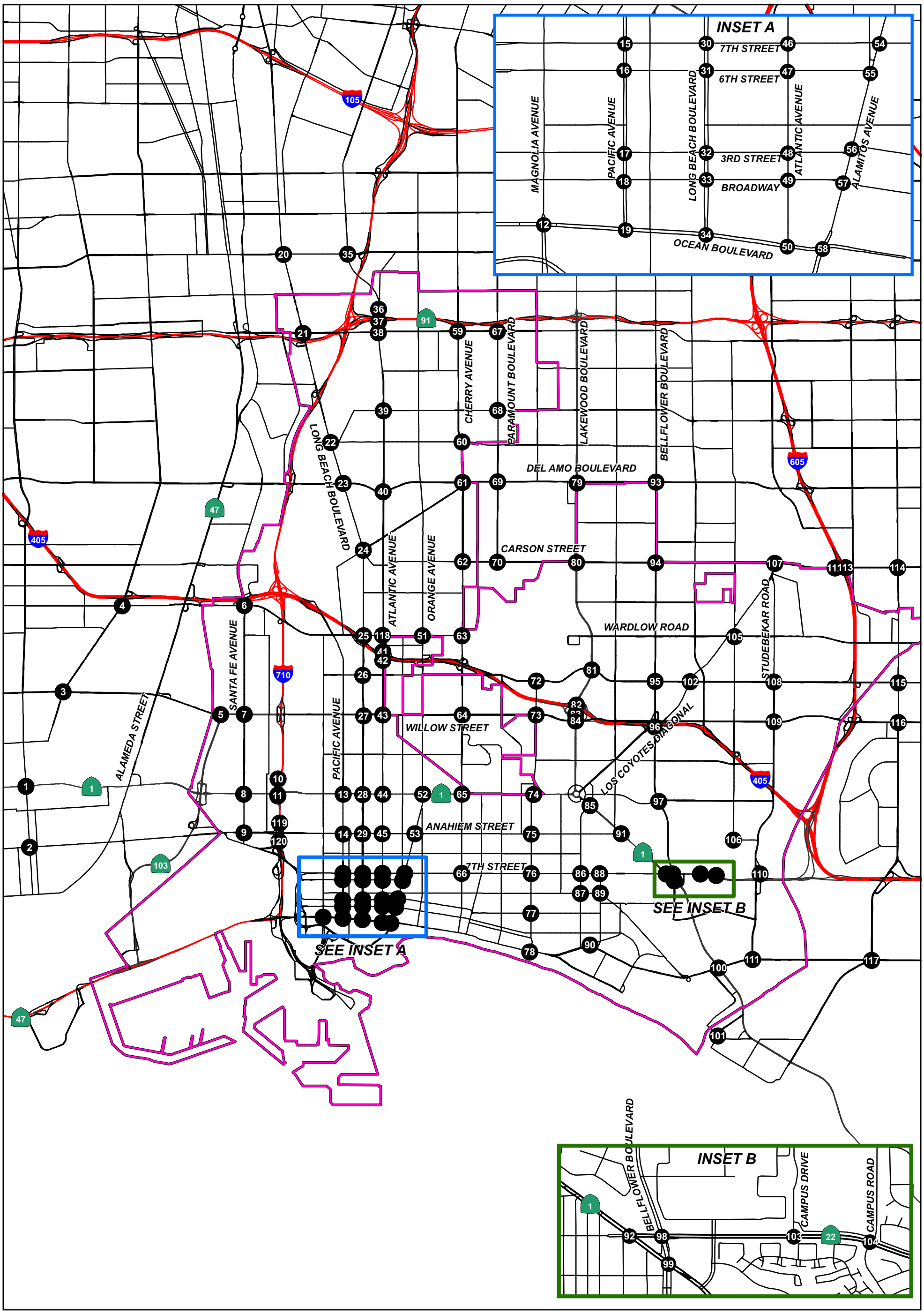
The City adopted its General Plan Mobility Element in October 2013. The Mobility Element analyzed existing and future (2035) traffic conditions. Future traffic conditions reflected growth in the City's population and employment, as well as growth in regional traffic. No changes to land use were presumed in future conditions at the time the Mobility Element was prepared.

The Mobility Element outlines goals for a balanced transportation system that is more responsive to all travel modes, with a particular emphasis on the mobility of people. Some of these goals (e.g., increased abilities to walk, bike, and use transit) would be supported by the changes in the proposed Land Use Element (LUE). These goals would also be consistent with the intent of Senate Bill (SB) 375 and the Climate Protection Act of 2008, which mandates closer linkage between land use and transportation infrastructure and SB 743, which reduces the emphasis on preserving vehicle level of service in favor of reductions in vehicle miles traveled (VMT).

Given that the Mobility Element places an emphasis on alternative modes of transportation, measuring the performance of the transportation system based solely on the convenience of travel for private automobiles will be replaced with other accessibility and mobility metrics. Consequently, the City's Mobility Element states the intent of the City to adopt a multimodal level of service (LOS) policy. Furthermore, the City is in the process of revising traffic impact guidelines consistent with recently revised CEQA guidelines mandating analysis of VMT by July 1, 2020. However, at the present time, the vehicle LOS policy is still in place.

Traffic analysis of the General Plan Mobility Element included a sample of 88 intersections throughout Long Beach. Those intersections did not include any facilities under Caltrans jurisdiction or in jurisdictions outside of Long Beach. The TIA built on the previously analyzed 88 intersections by adding a sample of intersections in each jurisdiction neighboring Long Beach as well as a sample of intersections under Caltrans jurisdiction. The initial list of sampled intersections was shared with Caltrans, and additional intersections were added at the request of Caltrans. In total, 120 intersections were included in the study area for the proposed Land Use Element (LUE)/Urban Design Element (UDE) project. Figure 4.8.1, Study Area Intersections, displays the location for the following 120 intersections:

1. Avalon Boulevard/ Pacific Coast Hwy (Caltrans)
2. Avalon Boulevard/Anaheim Street (Carson)
3. Wilmington Avenue/Sepulveda Boulevard (Carson)
4. Wilmington Avenue/223rd Street (Carson)
5. Terminal Island Freeway/Willow Street (Long Beach)
6. Santa Fe Avenue/Wardlow Road (Long Beach)
7. Santa Fe Avenue/Willow Street (Long Beach)
8. Santa Fe Ave/Pacific Coast Hwy (Caltrans, CMP)
9. Santa Fe Avenue/Anaheim Street (Long Beach)
10. I-710/Pacific Coast Hwy Cloverleaf WB (Long Beach)
11. I-710/Pacific Coast Hwy Cloverleaf EB (Long Beach)
12. Magnolia Avenue/Ocean Boulevard (Long Beach)
13. Pacific Avenue/ Pacific Coast Hwy (Caltrans)
14. Pacific Avenue/Anaheim Street (Long Beach)
15. Pacific Avenue/7th Street (Long Beach)
16. Pacific Avenue/6th Street (Long Beach)
17. Pacific Avenue/3rd Street (Long Beach)
18. Pacific Avenue/Broadway (Long Beach)
19. Pacific Avenue/Ocean Boulevard (Long Beach)
20. Long Beach Boulevard/Alondra Boulevard (Compton)
21. Long Beach Boulevard/Artesia Boulevard (Long Beach)
22. Long Beach Boulevard/Market Street (Long Beach)
23. Long Beach Boulevard/Del Amo Boulevard (Long Beach)
24. Long Beach Boulevard/San Antonio Drive (Long Beach)
25. Long Beach Boulevard/Wardlow Road (Long Beach)
26. Long Beach Boulevard/Spring Street (Long Beach)
27. Long Beach Boulevard/Willow Street (Long Beach)
28. Long Beach Boulevard/Pacific Coast Hwy (Caltrans)
29. Long Beach Boulevard/Anaheim Street (Long Beach)
30. Long Beach Boulevard/7th Street (Long Beach)
31. Long Beach Boulevard/6th Street (Long Beach)
32. Long Beach Boulevard/3rd Street (Long Beach)
33. Long Beach Boulevard/Broadway (Long Beach)
34. Long Beach Boulevard/Ocean Boulevard (Long Beach)
35. Atlantic Avenue/Alondra Boulevard (Compton)
36. Atlantic Avenue/SR-91 WB Ramps (Long Beach)
37. Atlantic Avenue/SR-91 EB Ramps (Long Beach)
38. Atlantic Avenue/Artesia Boulevard (Long Beach)
39. Atlantic Avenue/South Street (Long Beach)
40. Atlantic Avenue/Del Amo Boulevard (Long Beach)
41. Atlantic Avenue/33rd Street (Caltrans)
42. Atlantic Avenue/I-405 EB Ramps (Caltrans)
43. Atlantic Avenue/Willow Street (Long Beach)
44. Atlantic Avenue/Pacific Coast Hwy (Caltrans)
45. Atlantic Avenue/Anaheim Street (Long Beach)
46. Atlantic Avenue/7th Street (Long Beach)
47. Atlantic Avenue/6th Street (Long Beach)
48. Atlantic Avenue/3rd Street (Long Beach)
49. Atlantic Avenue/Broadway (Long Beach)
50. Atlantic Avenue/Shoreline Avenue-Ocean Boulevard (Long Beach)
51. Orange Avenue/Wardlow Road (Long Beach)
52. Orange Avenue/ Pacific Coast Hwy (Caltrans, CMP)
53. Alamitos Avenue/Anaheim Street (Long Beach)
54. Alamitos Avenue/7th Street (Long Beach, CMP)
55. Alamitos Avenue/6th Street (Long Beach)
56. Alamitos Avenue/3rd Street (Long Beach)
57. Alamitos Avenue/Broadway (Long Beach)
58. Alamitos Avenue/ Shoreline Avenue-Ocean Boulevard (Long Beach, CMP)
59. Cherry Avenue/Artesia Boulevard (Long Beach)
60. Cherry Avenue/Market Street (Long Beach)
61. Cherry Avenue/Del Amo Boulevard (Long Beach/Lakewood)
62. Cherry Avenue/Carson Street (Long Beach)
63. Cherry Avenue/Wardlow Road (Long Beach)
64. Cherry Avenue/Willow Street (Signal Hill)
65. Cherry Avenue/ Pacific Coast Hwy (Caltrans)
66. Cherry Avenue/7th Street (Long Beach)
67. Paramount Boulevard/Artesia Boulevard (Long Beach)
68. Paramount Boulevard/South Street (Long Beach)



LSA

LEGEND

Study Intersections

City of Long Beach

0 3000 6000

FEET

SOURCE: ESRI Streetmap, 2013.

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FIGURE 4.8.1

Long Beach General Plan Land Use and Urban Design Elements

Study Area Intersections

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69. Paramount Boulevard/Del Amo Boulevard (Lakewood)
70. Paramount Boulevard/Carson Street (Lakewood)
71. Downey Avenue/Alondra Boulevard (Paramount)
72. Redondo Avenue/Spring Street (Long Beach)
73. Redondo Avenue/Willow Street (Long Beach)
74. Redondo Avenue/Pacific Coast Hwy (Caltrans)
75. Redondo Avenue/Anaheim Street (Long Beach)
76. Redondo Avenue/7th Street (Long Beach)
77. Redondo Avenue/3rd Street (Long Beach)
78. Redondo Avenue/Ocean Boulevard (Long Beach)
79. Lakewood Boulevard/Del Amo Boulevard (Long Beach/Lakewood)
80. Lakewood Boulevard/Carson Street (Long Beach/ Lakewood, CMP)
81. Lakewood Boulevard/Spring Street (Long Beach)
82. Lakewood Boulevard/I-405 WB Ramps (Caltrans)
83. Lakewood Boulevard/I-405 EB Ramps (Caltrans)
84. Lakewood Boulevard/Willow Street (Long Beach, CMP)
85. Ximeno Avenue/Pacific Coast Hwy (Caltrans, CMP)
86. Ximeno Avenue/7th Street (Long Beach)
87. Ximeno Avenue/4th Street (Long Beach)
88. Park Avenue/7th Street (Long Beach)
89. Park Avenue/4th Street (Long Beach)
90. Livingston Drive/2nd Street (Long Beach)
91. Pacific Coast Hwy/Anaheim Street (Caltrans)
92. Pacific Coast Hwy/7th Street (Caltrans, CMP)
93. Bellflower Boulevard/Del Amo Boulevard (Long Beach/Lakewood)
94. Bellflower Boulevard/Carson Street (Long Beach/Lakewood)
95. Bellflower Boulevard/Atherton Street (Long Beach)
96. Bellflower Boulevard/7th Street (Long Beach)
97. Bellflower Boulevard/Pacific Coast Hwy (Caltrans)
98. Pacific Coast Hwy/2nd Street (Caltrans, CMP)
99. 1st Street/Marina Drive (Long Beach)
100. Los Coyotes Diagonal/Spring Street (Long Beach)
101. West Campus Drive/7th Street (Long Beach)
102. East Campus Road/7th Street (Long Beach)
103. Palo Verde Avenue/Wardlow Road (Long Beach)
104. Palo Verde Avenue/Anaheim Street (Long Beach)
105. Los Coyotes Diagonal/Carson Street (Long Beach/ Lakewood)
106. Studebaker Road/Spring Street (Long Beach)
107. Studebaker Road/Willow Street (Long Beach)
108. 7th Street/College Park Drive (Long Beach)
109. Studebaker Road/2nd Street (Long Beach)
110. I-605 SB Ramps/Carson Street (Caltrans)
111. I-605 NB Ramps/Carson Street (Caltrans)
112. Norwalk Boulevard/Carson Street (Hawaiian Gardens)
113. Norwalk Boulevard/Cerritos Avenue (Los Alamitos)
114. Los Alamitos Boulevard/Katella Avenue (Garden Grove)
115. Seal Beach Boulevard/Westminster Road (Seal Beach)
116. Atlantic Avenue/I-405 WB Ramps (Caltrans)
117. I-710/Anaheim St Cloverleaf WB (Caltrans)
118. I-710/Anaheim St Cloverleaf EB (Caltrans)
119. Bellflower Boulevard/Spring Street (Long Beach)
120. Bellflower Boulevard/Los Coyotes Diagonal (Long Beach)

4.8.3.2 Intersection Level of Service Methodology.

As previously stated, while the City views mobility as the movement of people and is working toward revising transportation impact guidelines, the methodology for such analysis is not currently available. Therefore, the current methodology, which focuses on the movement of automobiles, was utilized for the purposes of this TIA in addition to the VMT analysis also provided. Because the movement of automobiles through a roadway network is metered by the performance of intersections along the network, the City's methodology requires the analysis of intersection performance. Specifically, the performance of intersections was examined during the busiest morning commute hour (a.m. peak hour) and the busiest afternoon commute hour (p.m. peak hour) using intersection capacity utilization (ICU methodology).

The ICU methodology compares the volume-to-capacity (v/c) ratios of conflicting turn movements at an intersection, sums up these critical conflicting v/c ratios for each intersection approach, and determines the overall ICU. The resulting ICU is expressed in terms of LOS, where LOS A represents free-flow activity and LOS F represents overcapacity operation.

Caltrans prefers the Highway Capacity Manual (HCM) methodology for analysis of intersections. The Highway Capacity Manual, 6th Edition (HCM) (Transportation Research Board 2016) methodology calculates the delay (in seconds per vehicle) experienced by all movements through an intersection—as opposed to capacity—as the measure of effectiveness. The resulting delay is expressed in terms of LOS, much like the ICU methodology.

Typical intersection operations by LOS grade are described below in Table 4.8.A.

Table 4.8.A: LOS Descriptions

LOS	Description
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.
C	Good operation. Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.
D	Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no longstanding traffic queues.
E	Poor operation. Some longstanding vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.
F	Forced flow. Represents jammed conditions. Back-ups from locations downstream or on the cross street restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop-and-go-type traffic flow.

The relationship between ICU and LOS is shown below in Table 4.8.B:

Table 4.8.B: LOS/ICU Value Comparison

Level of Service	Intersection Capacity Utilization
A	< 0.601
B	0.601–0.700
C	0.701–0.800
D	0.801–0.900
E	0.901–1.000
F	> 1.000

The relationship between LOS and the delay (in seconds) at signalized intersections is as follows in Table 4.8.C:

Table 4.8.C: LOS/HCM Value Comparison

Level of Service	Signalized Intersection Delay (seconds)
A	≤10.0
B	>10.0 and ≤20.0
C	>20.0 and ≤35.0
D	>35.0 and ≤55.0
E	>55.0 and ≤80.0
F	>80.0

Source: *Highway Capacity Manual, 6th Edition* (Transportation Research Board 2016).

The City's *TIA Guidelines* state that "the City considers LOS D to be the upper limit of satisfactory operations." However, the Mobility Element suggests that this standard may be flexible on street segments where automobile travel is not emphasized or where widening of an intersection is not practical and pedestrian, bicycle, or transit mobility can be preserved or enhanced by accepting a vehicle LOS below LOS D.

As identified in the City's *TIA Guidelines*, an impact is considered significant where project traffic causes an intersection to deteriorate from LOS D to LOS E or F, or if the project causes an increase in the v/c ratio of 0.02 or greater when the intersection is operating at LOS E or F in the baseline condition.

4.8.3.3 Congestion Management Program Methodology

The Los Angeles County CMP requires analysis of arterial monitoring intersections where the proposed project will add 50 or more trips during either the a.m. or p.m. peak hours and CMP mainline freeway monitoring locations where the proposed project will add 150 or more trips (by direction) during either the a.m. or p.m. peak hour. Ten CMP monitored intersections are located within Long Beach. These intersections are included in the study area as noted in the list above.

The Los Angeles County CMP determines that a project would have a significant impact if project traffic increases the v/c ratio by 0.02 or more at a facility operating at LOS F. This is a similar to the City's significance threshold.

Additionally, Appendix D.8.4 of the CMP provides a methodology for estimating transit ridership generated by a project to determine whether or not the project is anticipated to result in a significant impact to transit service.

4.8.3.4 Caltrans Methodology

Within the study area, Caltrans has jurisdiction over two types of facilities: State highway segments (freeway mainline facilities and State highways that function as arterials) and intersections between arterial streets and State highways (on/off-ramps and arterial intersections). The methodology for analyzing potential impacts to Caltrans facilities, including the facilities selected for analysis in the TIA, was reviewed and approved by Caltrans prior to conducting the analysis.

State Highway Segments. Traffic volume in the a.m. and p.m. peak hours is compared to capacity to calculate v/c ratios. Freeway mainline segments are estimated to have a capacity for 2,350 vehicles per hour per lane (vphpl). Arterial segments are estimated to have a capacity for 1,800 vphpl.

In order to determine the peak-hour operations at the ramp merge/diverge junctions with their respective freeway mainlines, freeway on- and off-ramp merge/diverge junctions are analyzed consistent with the methodology described in Chapter 14, Freeway Merge and Diverge Segments in the HCM 6th Edition and calculated utilizing the HCS7 (Version 7.5) software package. The freeway on- and off-ramp merge/diverge junction peak-hour operation performance measures are based on density, in terms of passenger cars per mile per lane. Freeway on- and off-ramp merge/diverge junctions are considered to operate at LOS F if demand on an on- or off-ramp exceeds the ramp capacity, regardless of the calculated density at the merge/diverge junction.

State Highway/Arterial Intersections. Intersections between State highways and arterial roadways are analyzed applying HCM methodology using Synchro 10 software. Where these intersections are part of a closely spaced system of intersections, the delay caused by interaction between the intersections is included in the calculation of average delay. Some of the study intersections form a cloverleaf interchange without typical stop-control. However, these areas still experience delay and congestion. Analysis of the density within the weaving segment was used to calculate the performance of these intersections. Other intersections formed by freeway off-ramps to arterials lacked stop-control and did not form a weaving segment. Some of these intersections were closely spaced with a stop-controlled intersection. At these locations, the queue of the downstream intersection was examined to determine if the queue was likely to reach and block the off-ramp.

Performance Standard and Impact Thresholds. For State highway segments, the performance standards adopted for facilities of regional significance in the Los Angeles County CMP was applied. Namely, a standard of LOS E is considered satisfactory except where the base year LOS is worse than LOS E, in which case the base year LOS would be the standard. The General Plan is determined to have a cumulative impact on the facility if the LOS is degraded from an acceptable LOS to LOS F or if additional traffic volume is contributed to a facility operating in excess of its operational standard.

On-Ramps and Off-Ramps. Design guidelines contained in Chapter 504.3 of the Caltrans *Highway Design Manual* (HDM) were utilized for additional on- and off-ramp capacity analysis. In the case of on-ramps, the HDM provides the following hourly capacity recommendations:

- **Metered Single-Lane On-Ramps:** Recommended for up to 900 vehicles per hour (vph), or
- **Metered Multilane On-Ramps:** When ramp volumes exceed 900 vph

When ramp volumes exceed 1,500 vph, a 1,000-foot (ft) minimum length auxiliary lane should be provided beyond the ramp convergence point.

For off-ramps, the HDM provides the following hourly capacity recommendations:

- When design year estimated volumes exceed 1,500 equivalent passenger cars per hour, a two-lane ramp should be provided.
- Provisions should be made for possible widening to three or more lanes at the crossroads intersection. An auxiliary lane approximately 1,400 ft long should be provided in advance of a two-lane exit. For volumes less than 1,500 equivalent passenger cars per hour but more than 900 vph, a one-lane wide exit ramp should be provided with provision for adding an auxiliary lane and an additional lane on the ramp.

For freeway ramps, the General Plan is determined to have a cumulative impact on the facility if the facility is projected to operate in excess of its operational standard.

4.8.3.5 Future Traffic Projection

The California State Department of Finance and California Employment Development Department prepare projections of population and employment growth for the State and its regions. For the Southern California region, the Metropolitan Planning Organization (MPO) is the Southern California

Association of Governments (SCAG). SCAG uses the data provided by the State and projects population and employment growth for subregions and jurisdictions as part of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) process. For the 2016 RTP/SCS, SCAG forecasts a population growth of 18,230 new residents and employment growth of 28,511 new jobs in Long Beach by 2040.

Projecting housing needs follows a similar process, whereby the State (i.e., the Department of Housing and Community Development) provides regional housing projections to the region (i.e., SCAG), which in turn projects housing growth for local jurisdictions. Unlike other data projections, rather than being simply informative, the housing allocation provided to jurisdictions through the Regional Housing Needs Assessment (RHNA) process is enforceable through the Housing Accountability Act. As an outcome of the most recent RHNA process, the City is required to plan for 7,048 new dwelling units to accommodate future population growth. However, due to insufficient construction of new housing units in the past (within Long Beach and the region), Long Beach has many residential areas where housing units are overcrowded, as documented in the City-prepared Assessment of Fair Housing (AFH, 2016) required by the United States Department of Housing and Urban Development.

As an outcome of this AFH assessment, it was determined that the City has anticipated housing needs for 21,476 housing units to address existing housing needs to alleviate overcrowding. In total, Long Beach requires 28,524 housing units to accommodate the needs of projected population (7,048 housing units needed) and existing (21,476 housing units needed to address overcrowding) housing needs. It is this number of units, which complies with both the State and federal assessments that must be accommodated in City planning documents such as the LUE/UDE.

As a result of the processes described above, the following quantities of demographic data growth are anticipated in the anticipated General Plan build out scenario (2040):

- **Population:** 18,230 new residents, for a total of 484,485 by 2040
- **Housing:** 28,524 new dwelling units, for a total of 192,318 by 2040
- **Employment:** 28,511 new jobs anticipated, for a total of 181,665 by 2040

In a departure from the existing LUE, which segregates property with traditional single-use land use designations, the proposed LUE establishes 14 PlaceTypes that would divide Long Beach into distinct neighborhoods, each with their own sense of character and place. PlaceTypes would allow for a combination of land uses at varying densities and intensities to allow for greater flexibility and a mix of compatible land uses within these areas. Figure 3.4 (refer to Chapter 3.0, Project Description, of this Recirculated Draft EIR) displays the proposed locations of PlaceTypes, and Figure 3.5 (Chapter 3.0) displays the height limits throughout Long Beach.

Under the proposed LUE, approximately 13 percent of Long Beach is proposed to result in concentrated land use changes as compared to existing conditions to focus anticipated growth. These areas are referred to as “Major Areas of Change” throughout the proposed LUE. The Major Areas of Change signify areas where demographic growth is anticipated to be most concentrated; however, areas that are not designated as “Major Areas of Change” and/or are not anticipated to result in considerable changes in existing land use patterns may also experience development and change. Figure 3.6 (Chapter 3.0) displays the Major Areas of Change.

The SCAG RTP Travel Demand Model was modified to reflect the changes included in the proposed project. The projections of population and employment growth are not affected by the proposed project, rather, the proposed project strategically accommodates the growth projected by SCAG. However, the number of housing units is anticipated to increase to address overcrowding. The proposed LUE will also affect the location of future land uses.

A detailed description of the methodology of calculating changes to socioeconomic data for each Long Beach Traffic Analysis Zones (TAZ) in the RTP Travel Demand Model is provided in the *Methodology for Calculating Growth in Socioeconomic Data Associated with the Long Beach General Plan Land Use Element* memorandum (Appendix E). In summary, previously calculated changes in demographic data disclosed in previous Specific Plan documents (e.g., the Downtown Plan, the Midtown Specific Plan, the Douglas Park Rezone Project, and the Southeast Area Specific Plan) were accounted for, the remaining new employment outside of these areas was allocated according to existing employment density, the remaining new housing outside of these areas was allocated according to planned density levels, and population was allocated proportionate to the new housing. The RTP Travel Demand Model was re-run with these changes to housing, population, and employment projections in each of the City's TAZs. LSA then determined how future traffic volumes would be altered by changes to the location of demographic data.

4.8.4 Existing Environmental Setting

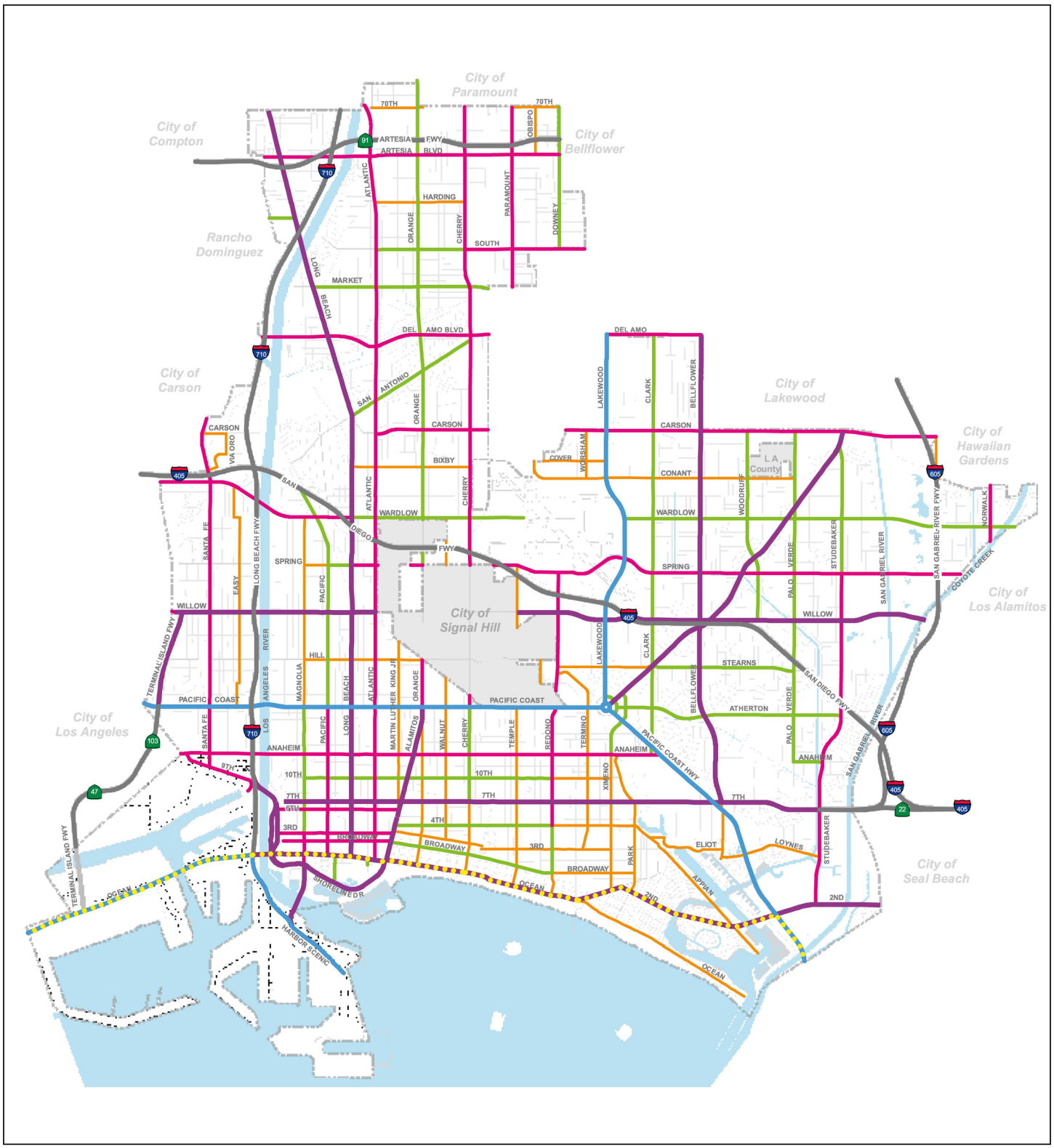
4.8.4.1 Existing Circulation System

The City has adopted a context-sensitive street classification plan emphasizing mobility for different roadway users. These classifications run from regional corridors designed for intraregional travel to local streets discouraging high volumes of through traffic to enhance the ability to serve bicycles and pedestrians. The circulation system forms a grid network that is denser in the downtown area where a greater density of land uses require support from a greater density of roadways. Figure 4.8.2, Context Sensitive Street Classification System, illustrates the existing roadway network by street classification.

4.8.4.2 Existing Transit Service

Long Beach is served by a robust network of transit options from multiple operators, including rail, fixed-route bus service, shuttles, and boats. Long Beach has a municipal transit agency, Long Beach Transit (LBT) (which provides 34 fixed-route bus routes), the free Downtown Passport circulator, demand-response transit, the AquaLink water bus between Alamitos Bay Landing and downtown Long Beach, and the AquaBus water taxi between marinas and docks along the downtown waterfront.

Other transit operators in Long Beach include the Orange County Transportation Authority (OCTA), Torrance Transit, the Los Angeles Department of Transportation (LADOT), and the Los Angeles County Metropolitan Transportation Authority (Metro). Metro operates fixed-route local and express bus service on a limited number of routes within Long Beach. Metro also operates the Blue



LSA

Legend

Classifications

- Freeway
- Regional Corridor
- Boulevard
- Major Avenue
- Minor Avenue
- Neighborhood Connector
- Scenic Route
- Local Street
- Port-Related Street

N

FIGURE 4.8.2

Long Beach General Plan Land Use and Urban Design Elements

Context-Sensitive Street Classification System

SOURCE: City of Long Beach, Mobility Element

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Line passenger rail service between downtown Long Beach and downtown Los Angeles. The Blue Line connects to the larger and expanding Metro Rail system, providing a convenient transit link between Long Beach and the larger metropolitan region. Figure 4.8.3, Transit-Priority Streets, illustrates the existing transit network within Long Beach.

4.8.4.3 Existing Bicycle Network

As previously explained, it is the stated priority of the City to provide alternative modes of transportation in place of private automobiles. As part of this effort, the City has established a bicycle transportation network and has adopted a Bicycle Master Plan (2001), which was updated in 2017 at which time it became an appendix to the Mobility Element (2013) of the General Plan. The vision for bicycle infrastructure buildout is illustrated on Figure 4.8.4, Bicycle Master Plan.

The City has 127.1 miles of different types of bike paths, including 34.7 miles of Class 1 bikeways, 59.9 miles of Class II bikeways, 28.1 miles of Class III bike routes, and 4.4 miles of Class IV separated bikeways,[1] as described further below.

- **Class I:** Variously called a bike path or multi-use trail. Provides for bicycle travel on a paved right of way completely separated from any street or highway.
- **Class II:** Referred to as a bike lane. Provides a striped lane for one-way travel on a street or highway.
- **Class III:** Referred to as a bike route or sharrow. Provides for shared use with pedestrian or motor vehicle traffic.
- **Class IV:** These protected bike lanes provide a physical buffer between vehicle travel lanes and on-street bike lanes.

To provide connections to other transportation modes, bicycle racks are included at several of the transit stops within the City. In addition, the Long Beach Bikestation is located in downtown Long Beach, near the Metro Blue Line. The Bikestation provides valet bicycle parking, bicycle rentals, and other amenities.

4.8.4.4 Existing Pedestrian Network

The existing conditions within the City include an elaborate network of pedestrian facilities, such as sidewalk coverage, curb cuts, crosswalks, street lighting, landscaping, shared-use paths, promenades, recreational pathways, and signalized intersections that serve the needs of pedestrians.

[1] Bicycle Master Plan Table 3-4. 2017. Website: http://longbeach.gov/globalassets/pw/media-library/documents/resources/general/bicycle-master-plan/bicycle_master_plan (accessed May 7, 2019).

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LSA

Legend

Transit Route Classification

- Secondary
- Primary
- Multimodal Hub
- Metro Rail Stations
- Metro Rail
- Bus Routes (includes LB Transit, Metro, and OCTA)

FIGURE 4.8.3

Long Beach General Plan Land Use and Urban Design Elements

Transit-Priority Streets

SOURCE: City of Long Beach, Mobility Element

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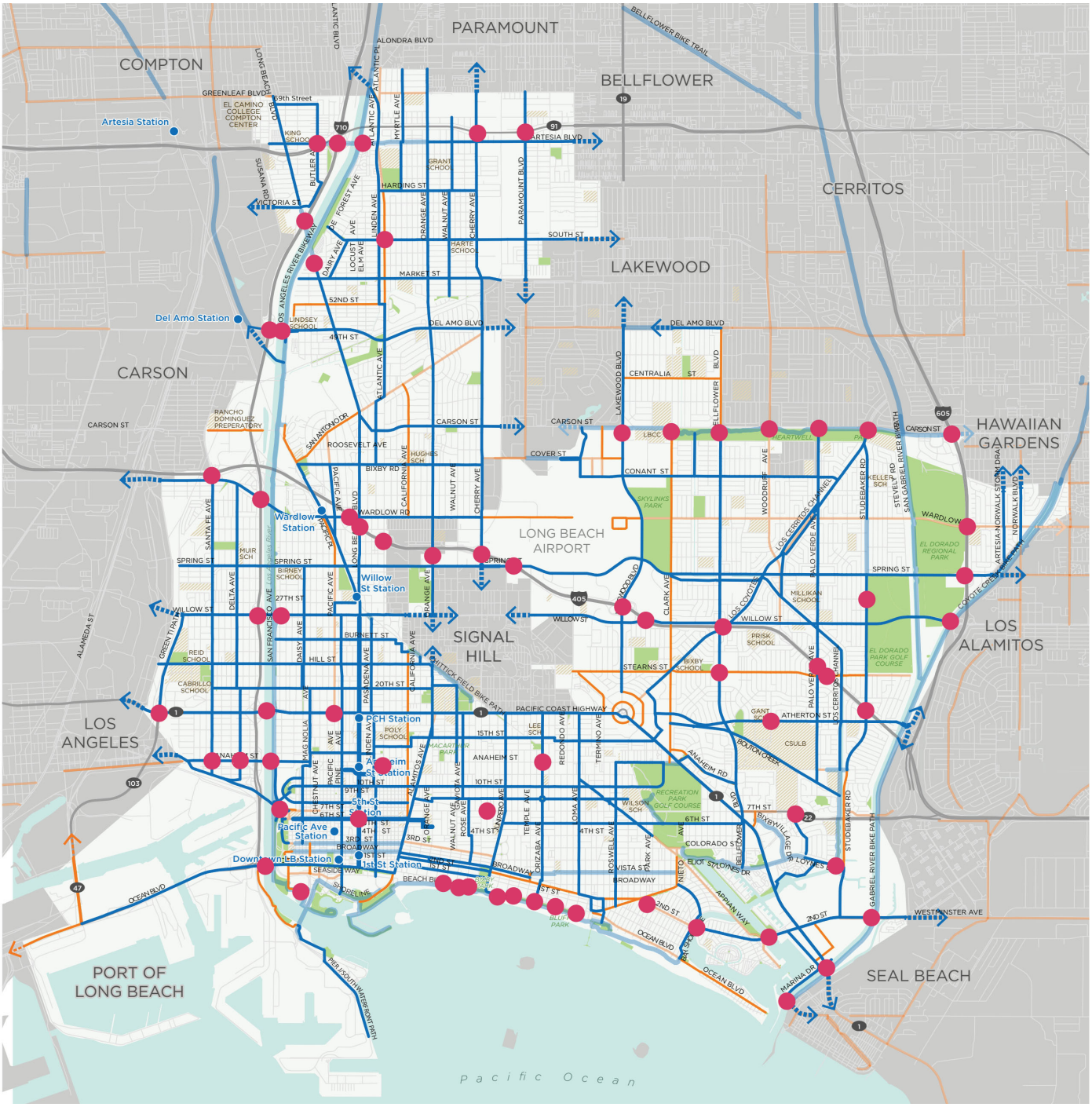

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LEGEND

- Spot Improvement
- Recommended 8-to-80 Bikeway
- Recommended Bike Lane
- Existing 8-to-80 Bikeway
- Existing Bike Lane

N

NO SCALE

FIGURE 4.8.4

Long Beach General Plan Land Use and Urban Design Elements
Bicycle Master Plan

SOURCE: City of Long Beach, Bicycle Master Plan (2017)

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In recent years, the City has made a concerted effort to improve the walkability citywide with a particular focus on its Downtown and transit-rich communities. After adoption of the Mobility Element in 2013, two pedestrian plans were developed as technical appendices to the new element. Adopted in 2016, the Downtown and TOD Pedestrian Master Plan[2] focuses on the transit rich Downtown and around Metro Blue Line transit stops to provide policies, guidelines, and standards that ensure best practices for pedestrian design and identify catalytic infrastructure projects. Adopted in 2017, the Communities of Excellence in Nutrition, Physical Activity and Obesity Prevention (CX3) Pedestrian Plan[3] was developed in collaboration with the Health Department to guide the improvement of the walking environment in low-income neighborhoods within Central and West Long Beach by connecting adopted City policies and plans, best practices, and the community's voce for a safe, healthy, and beautiful City.

Buildings, sidewalk lighting, sidewalks, landscaping, and street furniture have been implemented to encourage walking between the transit stations, housing, shopping, employment centers, and nearby recreation uses.

4.8.4.5 Existing Intersection LOS Analysis

For a few of the study intersections, traffic volume data had been collected since 2016 and could be used for this traffic analysis. Depending on the age of the traffic data, an ambient traffic growth rate of 1 percent per year was added to estimate 2018 traffic volume. For most of the study intersections, vehicle turning volumes were collected during the peak morning (7:00 a.m.–9:00 a.m.) and evening (4:00 p.m.–6:00 p.m.) commute periods. Peak-hour intersection turn volumes were surveyed on a typical. These volumes were taken in 15-minute increments and then totaled as hourly volumes, which is the standard procedure for volume data collection.

Table 4.8.D summarizes the results of the existing a.m. and p.m. peak-hour LOS analysis. As Table 4.8.D indicates, while most intersections operate at a satisfactory LOS (i.e., LOS D or better) in the a.m. and p.m. peak hours, 20 of the sampled intersections (approximately 17 percent) operate at unsatisfactory LOS E or F during one or both peak hours.

[2] Long Beach Development Services. 2016. Website: http://www.lbds.info/tod_pedestrian_master_plan/ (accessed May 6, 2019).

[3] Long Beach Development Services. 2017. Website: http://www.lbds.info/cx3pedplan/ (accessed May 6, 2019).

Table 4.8.D: Existing Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
1	Avalon Boulevard/Pacific Coast Hwy	Caltrans	0.75	C	0.72	C
2	Avalon Boulevard/Anaheim Street	Carson	0.56	A	0.62	B
3	Wilmington Avenue/Sepulveda Boulevard	Carson	0.70	B	0.67	B
4	Wilmington Avenue/223rd Street	Carson	>1.00	F	1.00	E
5	Terminal Island Freeway/Willow Street	Long Beach	0.40	A	0.56	A
6	Santa Fe Avenue/Wardlow Road	Long Beach	0.57	A	0.72	C
7	Santa Fe Avenue/Willow Street	Long Beach	0.80	C	0.89	D
8	Santa Fe Avenue/Pacific Coast Hwy	Caltrans	0.76	C	0.77	C
9	Santa Fe Avenue/Anaheim Street	Long Beach	0.48	A	0.55	A
10	I-710/SR-1 Cloverleaf WB	Long Beach	N/A[1]		N/A[1]	
11	I-710/SR-1 Cloverleaf EB	Long Beach	N/A[1]		N/A[1]	
12	Magnolia Avenue/Ocean Boulevard	Long Beach	0.65	B	0.60	A
13	Pacific Avenue/Pacific Coast Hwy	Caltrans	0.64	B	0.75	C
14	Pacific Avenue/Anaheim Street	Long Beach	0.65	B	0.74	C
15	Pacific Avenue/7th Street	Long Beach	0.50	A	0.38	A
16	Pacific Avenue/6th Street	Long Beach	0.35	A	0.65	B
17	Pacific Avenue/3rd Street	Long Beach	0.52	A	0.38	A
18	Pacific Avenue/Broadway	Long Beach	0.37	A	0.55	A
19	Pacific Avenue/Ocean Boulevard	Long Beach	>1.00	F	0.87	D
20	Long Beach Boulevard/Alondra Boulevard	Compton	0.69	B	0.87	D
21	Long Beach Boulevard/Artesia Boulevard	Long Beach	0.74	C	0.81	D
22	Long Beach Boulevard/Market Street	Long Beach	0.64	B	0.79	C
23	Long Beach Boulevard/Del Amo Boulevard	Long Beach	0.82	D	0.70	B
24	Long Beach Boulevard/San Antonio Drive	Long Beach	0.60	A	0.79	C
25	Long Beach Boulevard/Wardlow Road	Long Beach	0.89	D	0.91	E
26	Long Beach Boulevard/Spring Street	Long Beach	>1.00	F	>1.00	F
27	Long Beach Boulevard/Willow Street	Long Beach	0.75	C	0.78	C
28	Long Beach Boulevard/Pacific Coast Hwy	Caltrans	0.68	B	0.75	C
29	Long Beach Boulevard/Anaheim Street	Long Beach	0.56	A	0.68	B
30	Long Beach Boulevard/7th Street	Long Beach	>1.00	F	0.79	C
31	Long Beach Boulevard/6th Street	Long Beach	0.39	A	0.64	B
32	Long Beach Boulevard/3rd Street	Long Beach	0.52	A	0.40	A
33	Long Beach Boulevard/Broadway	Long Beach	0.41	A	0.61	B
34	Long Beach Boulevard/Ocean Boulevard	Long Beach	0.60	A	0.51	A
35	Atlantic Avenue/Alondra Boulevard	Compton	0.80	C	0.76	C
36	Atlantic Avenue/SR-91 WB Ramps	Long Beach	0.60	A	0.53	A
37	Atlantic Avenue/SR-91 EB Ramps	Long Beach	0.48	A	0.58	A
38	Atlantic Avenue/Artesia Boulevard	Long Beach	0.79	C	0.86	D
39	Atlantic Avenue/South Street	Long Beach	0.52	A	0.72	C
40	Atlantic Avenue/Del Amo Boulevard	Long Beach	0.77	C	0.79	C
41	Atlantic Avenue/33rd Street	Caltrans	0.48	A	0.72	C
42	Atlantic Avenue/I-405 EB Ramps	Caltrans	0.49	A	0.55	A
43	Atlantic Avenue/Willow Street	Long Beach	0.68	B	0.79	C
44	Atlantic Avenue/Pacific Coast Hwy	Caltrans	0.68	B	0.73	C
45	Atlantic Avenue/Anaheim Street	Long Beach	0.76	C	0.81	D
46	Atlantic Avenue/7th Street	Long Beach	0.70	B	0.55	A
47	Atlantic Avenue/6th Street	Long Beach	0.40	A	0.61	B
48	Atlantic Avenue/3rd Street	Long Beach	0.56	A	0.35	A

Table 4.8.D: Existing Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
49	Atlantic Avenue/Broadway	Long Beach	0.28	A	0.62	B
50	Atlantic Avenue/Shoreline Avenue-Ocean Boulevard	Long Beach	0.57	A	0.52	A
51	Orange Avenue/Wardlow Road	Long Beach	0.75	C	0.81	D
52	Orange Avenue/Pacific Coast Hwy	Caltrans	0.65	B	0.73	C
53	Alamitos Avenue/Anaheim Street	Long Beach	0.84	D	0.88	D
54	Alamitos Avenue/7th Street	Long Beach	0.80	C	0.73	C
55	Alamitos Avenue/6th Street	Long Beach	0.78	C	>1.00	F
56	Alamitos Avenue/3rd Street	Long Beach	0.86	D	0.59	A
57	Alamitos Avenue/Broadway	Long Beach	0.68	B	0.82	D
58	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	Long Beach	0.79	C	0.73	C
59	Cherry Avenue/Artesia Boulevard	Long Beach	0.82	D	0.87	D
60	Cherry Avenue/Market Street	Long Beach	0.75	C	0.90	D
61	Cherry Avenue/Del Amo Boulevard	Long Beach/Lakewood	0.77	C	0.85	D
62	Cherry Avenue/Carson Street	Long Beach	0.65	B	0.81	D
63	Cherry Avenue/Wardlow Road	Long Beach	0.78	C	0.89	D
64	Cherry Avenue/Willow Street	Signal Hill	0.71	C	0.81	D
65	Cherry Avenue/Pacific Coast Hwy	Caltrans	0.77	C	0.74	C
66	Cherry Avenue/7th Street	Long Beach	0.80	C	0.80	C
67	Paramount Boulevard/Artesia Boulevard	Long Beach	0.67	B	0.67	B
68	Paramount Boulevard/South Street	Long Beach	0.66	B	0.84	D
69	Paramount Boulevard/Del Amo Boulevard	Lakewood	0.84	D	0.92	E
70	Paramount Boulevard/Carson Street	Lakewood	0.64	B	0.86	D
71	Downey Avenue/Alondra Boulevard	Paramount	0.77	C	0.82	D
72	Redondo Avenue/Spring Street	Long Beach	0.63	B	0.69	B
73	Redondo Avenue/Willow Street	Long Beach	0.70	B	0.74	C
74	Redondo Avenue/Pacific Coast Hwy	Caltrans	0.97	E	0.98	E
75	Redondo Avenue/Anaheim Street	Long Beach	0.87	D	0.94	E
76	Redondo Avenue/7th Street	Long Beach	0.97	E	0.91	E
77	Redondo Avenue/3rd Street	Long Beach	0.48	A	0.52	A
78	Redondo Avenue/Ocean Boulevard	Long Beach	0.58	A	0.68	B
79	Lakewood Boulevard/Del Amo Boulevard	Long Beach/Lakewood	0.89	D	0.97	E
80	Lakewood Boulevard/Carson Street	Long Beach/Lakewood	0.63	B	0.77	C
81	Lakewood Boulevard/Spring Street	Long Beach	0.82	D	0.81	D
82	Lakewood Boulevard/I-405 WB Ramps	Caltrans	0.41	A	0.46	A
83	Lakewood Boulevard/I-405 EB Ramps with Lakewood Boulevard/Willow Street	Caltrans	0.45	A	0.43	A
84	Lakewood Boulevard/Willow Street	Long Beach	0.93	E	0.95	E
85	Ximeno Avenue/Pacific Coast Hwy	Caltrans	0.71	C	0.80	C
86	Ximeno Avenue/7th Street	Long Beach	0.92	E	0.85	D
87	Ximeno Avenue/4th Street	Long Beach	0.64	B	0.74	C
88	Park Avenue/7th Street	Long Beach	0.93	E	0.90	D
89	Park Avenue/4th Street	Long Beach	0.74	C	0.76	C
90	Livingston Drive/2nd Street	Long Beach	0.70	B	0.62	B
91	Pacific Coast Hwy/Anaheim Street	Caltrans	0.70	B	0.80	C
92	Pacific Coast Hwy/7th Street	Caltrans	0.95	E	0.96	E
93	Bellflower Boulevard/Del Amo Boulevard	Long Beach/Lakewood	0.82	D	>1.00	F

Table 4.8.D: Existing Intersection Level of Service Summary

Study Area No.	Intersection	Jurisdiction	AM Peak Hour		PM Peak Hour	
			V/C Ratio	LOS	V/C Ratio	LOS
94	Bellflower Boulevard/Carson Street	Long Beach/Lakewood	0.79	C	0.93	E
95	Bellflower Boulevard/Spring Street	Long Beach	0.76	C	0.79	C
96	Bellflower Boulevard/Los Coyotes Diagonal	Long Beach	0.65	B	0.82	D
97	Bellflower Boulevard/Atherton Street	Long Beach	0.79	C	0.80	C
98	Bellflower Boulevard/7th Street	Long Beach	0.85	D	0.80	C
99	Bellflower Boulevard/Pacific Coast Hwy	Caltrans	0.71	C	0.79	C
100	Pacific Coast Hwy/2nd Street	Caltrans	0.93	E	0.87	D
101	1st Street/Marina Drive	Long Beach	0.22	A	0.27	A
102	Los Coyotes Diagonal/Spring Street	Long Beach	0.70	B	0.74	C
103	West Campus Drive/7th Street	Long Beach	0.72	C	0.72	C
104	East Campus Road/7th Street	Long Beach	0.77	C	0.80	C
105	Palo Verde Avenue/Wardlow Road	Long Beach	0.50	A	0.65	B
106	Palo Verde Avenue/Anaheim Street	Long Beach	0.51	A	0.75	C
107	Los Coyotes Diagonal/Carson Street	Long Beach/Lakewood	0.71	C	0.78	C
108	Studebaker Road/Spring Street	Long Beach	0.47	A	0.79	C
109	Studebaker Road/Willow Street	Long Beach	0.77	C	0.87	D
110	7th Street/College Park Drive	Long Beach	0.77	C	>1.00	F
111	Studebaker Road/2nd Street	Long Beach	0.82	D	0.88	D
112	I-605 SB Ramps/Carson Street	Caltrans	0.56	A	0.68	B
113	I-605 NB Ramps/Carson Street	Caltrans	0.56	A	0.60	A
114	Norwalk Boulevard/Carson Street	Hawaiian Gardens	0.77	C	0.83	D
115	Norwalk Boulevard/Cerritos Avenue	Los Alamitos	0.78	C	0.90	D
116	Los Alamitos Boulevard/Katella Avenue	Garden Grove	0.88	D	0.88	D
117	Seal Beach Boulevard/Westminster Road	Seal Beach	0.80	C	0.93	E
118	Atlantic Avenue/I-405 WB Ramps	Caltrans	0.37	A	0.48	A
119	I-710/Anaheim Street Cloverleaf WB	Caltrans	N/A[1]		N/A[1]	
120	I-710/Anaheim Street Cloverleaf EB	Caltrans	N/A[1]		N/A[1]	

Source: Compiled by LSA (2019).
Note: Shaded cells indicate unsatisfactory LOS.
[1] Intersection is not stop controlled

Caltrans = California Department of Transportation
EB = eastbound
Hwy = Highway
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
LOS = level of service
N/A = Not Applicable
NB = northbound
SB = southbound
SR-1 = State Route 1
SR-91 = State Route 91
V/C = volume-to-capacity
WB = westbound

4.8.5 Regulatory Setting

4.8.5.1 Federal Regulations

There are no relevant federal traffic and circulation regulations applicable to the proposed project.

4.8.5.2 State Regulations

Congestion Management Program. In Los Angeles County, the CMP is the program by which County agencies have agreed to monitor and report on the status of regional roadways. In June 1990, the passage of the Proposition 111 gas tax increase required urbanized areas in the State with a

population of 50,000 or more to adopt a CMP. The CMP is intended to link transportation, land use, and air quality decisions, as well as address the impact of local growth on the regional transportation system. State legislation requires that the CMP contain a process to analyze the impacts of land use decisions by local governments on the regional transportation system. For CMP purposes, the regional transportation system is defined by the legislation as all State highways and principal arterials. The identification and analysis of impacts along with estimated mitigation costs are determined with respect to this CMP Highway System.

As the Congestion Management Agency for Los Angeles County, Metro is responsible for the preparation of the CMP. The latest CMP (Metro 2010) states that a significant impact would occur if intersection LOS with the project is LOS F and the proposed project causes a 0.02 or greater increase in volume-to-capacity ratio. The CMP includes 10 monitored intersections within the City of Long Beach. These intersections are as follows, and are also included in the project study area:

- (8) Santa Fe Avenue/Pacific Coast Highway
- (52) Orange Avenue/Pacific Coast Highway
- (54) Alamitos Avenue/7th Street
- (58) Alamitos Avenue/Shoreline Avenue-Ocean Boulevard
- (76) Redondo Avenue/7th Street
- (80) Lakewood Boulevard/Carson Street
- (84) Lakewood Boulevard/Willow Street
- (85) Pacific Coast Highway/Ximeno Avenue
- (92) Pacific Coast Highway/7th Street
- (100) Pacific Coast Highway/2nd Street

SB 743. On December 28, 2018, the California Office of Administrative Law cleared the revised *State CEQA Guidelines* for use. Among the changes to the *State CEQA Guidelines* was removal of vehicle delay and LOS from consideration under CEQA. With the adopted guidelines, transportation impacts are to be evaluated based on a project's effect on VMT. Lead agencies are allowed to opt in to the revised transportation guidelines, but the new guidelines must be used starting July 1, 2020.

As discussed above, the City of Long Beach Mobility Element began a departure from considering vehicle LOS as the only measure of a transportation system's effectiveness, but the City has not yet established thresholds related to VMT. However, the State law provides sufficient guidance to evaluate the proposed project's impacts related to VMT.

California Public Resources Code (PRC) Section 15064.3(b)(4) states (in part) that:

> A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household, or in any other measure.

To provide an abundance of information on the effects of the proposed project, this analysis includes VMT in absolute terms, per capita, and per household. For context, Long Beach VMT is compared to the larger Los Angeles County and Southern California regions.

4.8.5.3 Local and Regional Policies and Regulations

City of Long Beach General Plan Mobility Element. In October 2013, the City approved the Mobility Element of the City's General Plan. The Mobility Element seeks to guide development and improvements to the existing circulation system. As previously stated, the Mobility Element establishes several goals aimed at improving the existing transportation system so that it is responsive to all travel modes. Some of these goals (e.g., increased ability to walk, bike, and use transit) would be supported by the changes in the proposed LUE. The following transportation/traffic goals and policies in the City's Mobility Element are applicable to the proposed project.

Goal 1: Create a safe, efficient, balanced, and multimodal mobility network.

Mobility of People (MOP) Policies:

MOP Policy 1-1 To improve the performance and visual appearance of Long Beach's streets, design streets holistically using the "complete streets approach" which considers walking, those with mobility constraints, bicyclists, public transit users, and various other modes of mobility in parallel.

MOP Policy 1-12 Continue to assist Long Beach Transit in implementing a comprehensive Citywide transit service that meets future needs.

MOP Policy 1-13 Increase multimodal access to major employers and educational institutions, including Long Beach City College.

MOP Policy 1-14 Use universal design techniques to accommodate pedestrians of all ages and abilities and ensure compliance with the Americans with Disabilities Act.

MOP Policy 1-17 Develop land use policies that focus development potential in locations best served by transit.

MOP Policy 1-18 Focus development densities for residential and nonresidential land uses around the eight Metro Blue Line stations within City boundaries.

MOP Policy 2-2 Design the character and scale of the street to support its street type and place-type designation and overlay networks (for example, create a bike boulevard or bicycle-friendly retail district, transit street, or green street).

MOP Policy 2-15 Ensure that all new development is consistent with the applicable provisions of the Bicycle Master Plan.

MOP Policy 5-2 Reduce vehicle miles traveled (VMT) and vehicle trips through the use of alternative modes of transportation and Transportation Demand Management (TDM).

MOP Policy 6-12 Promote transit-oriented development with reduced parking requirements around appropriate transit hubs and stations to facilitate the use of available transit systems.

4.8.6 Thresholds of Significance

The following thresholds of significance are based on Appendix G of the *State CEQA Guidelines*. Based on these thresholds, implementation of the proposed project would have a significant adverse impact with respect to transportation if it would:

Threshold 4.8.1: Conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities;

Threshold 4.8.2: Conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b);

Threshold 4.8.3: Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or

Threshold 4.8.4: Result in inadequate emergency access.

The Initial Study/Notice of Preparation (IS/NOP) (Appendix A) determined that the proposed project would result in less than significant impacts related to four of the six transportation thresholds that were included in Transportation/Traffic section of Appendix G of the *State CEQA Guidelines*. However, the CEQA thresholds related to transportation were modified in December 2018 as part of the State's comprehensive update to the *State CEQA Guidelines*. Two of the thresholds identified in the IS/NOP were retained after adoption of the revised guidelines (Thresholds 4.8.3 and 4.8.4). As described further in the IS/NOP, the proposed project is a planning/policy action and as such, the design details of future projects are unknown at this time. Future projects facilitated by approval of the proposed project would be subject to the City's Site Plan Review process, and may also be subject to a separate environmental review process. Therefore, the IS/NOP determined that implementation of the proposed project would result in less than significant impacts related to changes in the exposure to hazards due to a design feature (Threshold 4.8.3) and inadequate emergency access (Threshold 4.8.4).

For the reasons stated above, these thresholds are not analyzed further in this Recirculated Draft EIR.

4.8.7 Compliance Measures and Project Design Features

The proposed project would not be required to adhere to any compliance measures and would not include any project design features related to transportation and traffic. Although there are no compliance measures and project design features related to transportation and traffic, the LUE and UDE Goals, Strategies, and Policies are intended t to direct growth to areas served by transit and encourage compact pedestrian and bicycle friendly development patterns and urban design. The LUE and UDE Goals, Strategies, and Policies will be reinforced by the zoning code update that will implement the proposed project.

4.8.7.1 Proposed Land Use Element and Urban Design Element Goals, Strategies, and Policies

The following proposed LUE and UDE Goals, Strategies, and Policies are applicable to the analysis of Transportation and Traffic:

Land Use Element.

STRATEGY No. 1: Support sustainable urban development patterns.

LU Policy 1-1: Promote sustainable development patterns and development intensities that use land efficiently and accommodate and encourage walking.

STRATEGY No. 7: Implement the major areas of change identified in this Land Use Plan (Map LU-20).

LU Policy 7-6: Promote transit-oriented development around passenger rail stations and along major transit corridors.

LU Policy 7-7: Continue to develop the downtown into a city center that provides compact development, accommodates new growth, creates a walkable urban environment, allows for diversified businesses and is easily accessible to surrounding neighborhoods and regional facilities.

LU Policy 7-9: Focus infill development in the downtown, Multi-Family residential neighborhoods and transit-oriented development areas, and along specific corridors.

LU Policy 7-11: Support infill and transit-oriented development projects by utilizing available tools, such as public-private partnerships and assistance with land assembly and consolidation.

Urban Design Element.

STRATEGY No. 1: Improve function and connectivity within neighborhoods and districts.

Policy UD 1-5: Prioritize and revitalize streetscapes in existing neighborhoods and targeted areas of change to provide well-lit streets, continuous sidewalks, consistent paving treatment and improved crosswalks at intersections.

Policy UD 1-6: Identify streets that can be reconfigured to accommodate a variety of improvements, such as wider sidewalks with trees, bike paths, dedicated transit lanes, and landscape medians or curb extensions that make the streets more attractive and usable, consistent with Complete Streets principles.

STRATEGY No. 2: Beautify and improve efficiency of corridors, gateways, and private and public spaces.

Policy UD 4-4: Identify opportunities for "walking loops" through neighborhoods that provide easy-to-follow routes (with average walking time and distances noted) for exercise and pleasure.

Policy UD 8-3: Enhance walkable streets and neighborhoods to create pedestrian-friendly environments that support business vitality.

Policy UD 16-2: Continue to develop the Downtown into a city center that provides compact development, accommodates new growth, creates a walkable environment, allows for diversified businesses, and is easily accessible to surrounding neighborhoods and regional facilities.

Policy UD 16-3: Focus new development with the greatest intensity and broadest mix of uses, along transit-supportive corridors, downtown, and near transit stations.

Policy UD 19-8: Provide better connections to these neighborhoods by improving bikeways and pedestrian paths, especially along the arterial streets. Capture opportunity for pedestrian paths to improve walkability (e.g., utility easement, vacant parcels).

Policy UD 19-9: Encourage streets to be repurposed to accommodate slower speeds and better serve pedestrians, cyclists, and local transit where the City Transportation Engineer determines that streets are overdesigned for estimated traffic loads.

Policy UD 20-6: Provide traffic calming measures such as roundabouts or narrowed intersections, where appropriate, to slow automobile speeds and allow pedestrians and cyclists to safely share the street.

Policy UD 21-3: Promote pedestrian activity by establishing well-designed streetscapes, active ground floor uses, and tree-canopied sidewalks that are unique to the individual neighborhood and transit stations.

Policy UD 21-8: Provide access to parking/loading from alleys or side streets to minimize curb cuts along the main boulevard where pedestrian activity will be the heaviest. Require a well-designed interface between pedestrians, bicyclists, and transit users. Bicycle facilities and pedestrian amenities should be integrated throughout the PlaceType.

Policy UD 23-8: Provide access to auto-oriented uses with the minimum required curb cut to make the sidewalk more navigable for pedestrians. Consider sidewalk extensions wherever possible to slow automobile traffic into the residential areas and to improve pedestrian crossings at side streets. Provide bicycle parking within commercial developments.

Policy UD 28-6: Encourage pedestrian activity through the controlling of vehicles, the use of tree-canopied, landscaped pathways and sidewalks, pedestrian-scaled lighting, and active and inviting ground floor uses.

Policy UD 28-7: Provide transit stops that are conveniently located.

Policy UD 38-8: Provide a clear zone for through-pedestrian traffic along the sidewalk. See the Mobility Element for specific sidewalk widths for each Street Type.

Policy UD 40-2: Provide well-marked and convenient pedestrian access through parking areas to separate pedestrian and vehicular traffic.

Policy UD 41-1: Encourage new developments to incorporate pedestrian amenities and pathways that provide direct, convenient, and safe access to public sidewalks and streets.

Policy UD 41-2: Explore opportunities to improve connections among the downtown, corridors, campuses, and neighborhoods to create interconnected walking environments.

Policy UD 41-3: Maintain and enhance the street grid network and short blocks that support all modes of transportation in Long Beach.

Policy UD 41-4: Provide street furnishings in the pedestrian zone to encourage walking and areas to stop and rest.

Policy UD 41-5: Promote enhancement, repair, and maintenance of alleys, paseos, paths, and trails.

Policy UD 41-6: Encourage the use of specialty paving or artistic ground treatment, such as painted concrete, where alleys intersect to enhance pedestrian activity.

Policy UD 41-7: Provide wayfinding signs, pedestrian lighting for safety and security, benches, and public art along alleys, paseos, paths, and trails to enhance neighborhood character and walkability.

Policy UD 41-8: Provide mid-block pedestrian connections between the street and alley on commercial blocks to encourage pedestrian discovery and safe passages.

STRATEGY No. 42: Continue promoting the City's vision to become the most bicycle-friendly city in the United States. Refer to additional policies provided in the Mobility Element.

Policy UD 42-1: Support and enhance bicycle streets by strategically locating bicycle facilities (like bicycle boulevards, bike racks and corrals, bike stations, and bike rental/share facilities), and reducing conflicts between pedestrians, bicyclists, and vehicles.

Policy UD 42-2: Encourage the integration of bike corrals and other transit amenities into projects located at heavily used transit stops, retail areas, and activity centers.

Policy UD 42-3: Support Long Beach's bike share program.

Policy UD 42-4: Provide bicycle facilities that connect activity centers.

STRATEGY No. 43: Establish comfortable and safe transit infrastructure. Refer to additional policies provided in the Mobility Element.

Policy UD 43-1: Promote the integration of transit stop amenities into the site or landscape design of a project, such as rain or sun protection, seating, and trash receptacle, where appropriate and feasible.

Policy UD 43-2: Create and encourage the use of a route/bus information theme to transit centers (or elements), so that they are visually similar, recognizable, and have an identity that is specific to Long Beach.

Policy UD 43-3: Provide transit infrastructure within 1/4 mile of all bus and transit stops.

4.8.8 Project Impacts

Threshold 4.8.1: Would the project conflict with program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Significant and Unavoidable.

4.8.8.1 Arterial Intersections

Significant and Unavoidable Impact. State agencies forecast regional demographic growth and the MPO (i.e., SCAG) uses the data provided by the State for the RTP/SCS process. As part of the RTP/SCS, SCAG updates and validates the RTP Travel Demand Model. For the 2016 RTP, demographic data in Long Beach was allocated to the Traffic Analysis Zones (TAZs) within the City according to the currently adopted LUE. LSA compared the RTP 2040 traffic projections to the RTP Existing Base Year traffic projections and calculated an annual growth rate. In some instances, the annual growth rate for Long Beach provided in the Los Angeles County CMP was higher. LSA applied the higher annual growth rate to the Existing (2018) traffic volumes at each study area intersection to calculate General Plan Horizon Year (2040) No Project traffic volumes. The RTP Travel Demand Model was modified to reflect the changes included in the proposed project. Although the projections of population and employment growth are not affected by the proposed project, the number of housing units is anticipated to increase. The proposed LUE will also affect the location of future land uses. LSA then determined how future traffic volumes would be altered by changes to the location of demographic data and generated General Plan Anticipated Buildout (2040) With Proposed Project traffic volumes.

Demographic trends such as population and employment growth are forecast to occur whether or not the proposed LUE/UDE elements are adopted. This has been shown to be true in Long Beach, where overcrowding resulted from population increase occurring even without a sufficient housing increase to support it. As is required by CEQA, however, the traffic conditions in the future with the proposed project are compared to existing conditions. Table 4.8.E provides that comparison.

As Table 4.8.E shows, the traffic volume increase between Existing (2018) and the anticipated General Plan Anticipated Buildout (2040) With the Proposed Project scenario is considered significant at 48 of the 120 intersections included in the study area (40 percent). The intersections significantly impacted by the proposed project are:

4. Wilmington Avenue/223rd Street
7. Santa Fe Avenue/Willow Street
19. Pacific Avenue/Ocean Boulevard
20. Long Beach Boulevard/Alondra Boulevard
21. Long Beach Boulevard/Artesia Boulevard
25. Long Beach Boulevard/Wardlow Road
26. Long Beach Boulevard/Spring Street
30. Long Beach Boulevard/7th Street
38. Atlantic Avenue/Artesia Boulevard
43. Atlantic Avenue/Willow Street
51. Orange Avenue/Wardlow Road
53. Alamitos Avenue/Anaheim Street
54. Alamitos Avenue/7th Street
55. Alamitos Avenue/6th Street
56. Alamitos Avenue/3rd Street
57. Alamitos Avenue/Broadway
59. Cherry Avenue/Artesia Boulevard
60. Cherry Avenue/Market Street
61. Cherry Avenue/Del Amo Boulevard
62. Cherry Avenue/Carson Street
66. Cherry Avenue/7th Street
68. Paramount Boulevard/South Street
69. Paramount Boulevard/Del Amo Boulevard
70. Paramount Boulevard/Carson Street
71. Downey Avenue/Alondra Boulevard
72. Redondo Avenue/Spring Street
74. Redondo Avenue/Pacific Coast Highway
75. Redondo Avenue/Anaheim Street
76. Redondo Avenue/7th Street
79. Lakewood Boulevard/Del Amo Boulevard
81. Lakewood Boulevard/Spring Street
84. Lakewood Boulevard/Willow Street
86. Ximeno Avenue/7th Street
88. Park Avenue/7th Street
91. Pacific Coast Hwy/Anaheim Street
92. Pacific Coast Highway/7th Street
93. Bellflower Boulevard/Del Amo Boulevard
94. Bellflower Boulevard/Carson Street
98. Bellflower Boulevard/7th Street
100. Pacific Coast Highway/2nd Street
104. East Campus Road/7th Street
109. Studebaker Road/Willow Street
110. 7th Street/College Park Drive
111. Studebaker Road/2nd Street
114. Norwalk Boulevard/Carson Street
115. Norwalk Boulevard/Cerritos Avenue
116. Los Alamitos Boulevard/Katella Avenue
117. Seal Beach Boulevard/Westminster Road

Table 4.8.E presented the CEQA-required analysis of proposed project impacts as compared to the existing conditions and indicates that impacts are potentially significant. As further discussed in Section 4.8.8.6, all of the physical improvements necessary for impacted intersections to function at an acceptable level are subject to constraints that render the addition of vehicle capacity infeasible. Therefore, impacts at these 48 intersections remain significant and unavoidable.

In order to provide an expanded comparison of the effects of the increased housing and locational change of land use concentration in the proposed project, Table 4.8.F compares the results of the General Plan Horizon Year (2040) No Project and the General Plan Anticipated Buildout (2040) With the Proposed Project scenarios. As Table 4.8.F shows, when compared to the previous plan, the proposed project results in some intersections operating better and some intersections operating poorer due to the redistribution of land uses.

Table 4.8.E: Intersection Level of Service Comparison – Proposed Project versus Existing Conditions

Intersection		Existing (2018)				General Plan Anticipated Buildout (2040) With Proposed Project				Future Change With Proposed Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
1	Avalon Boulevard/Pacific Coast Hwy	0.75	C	0.72	C	0.85	D	0.81	D	0.10	0.09
2	Avalon Boulevard/Anaheim Street	0.56	A	0.62	B	0.59	A	0.67	B	0.03	0.05
3	Wilmington Avenue/Sepulveda Boulevard	0.70	B	0.67	B	0.79	C	0.78	C	0.09	0.11
4	Wilmington Avenue/223rd Street	>1.00	F	1.00	E	**>1.00**	**F**	**>1.00**	**F**	0.14	0.12
5	Terminal Island Freeway/Willow Street	0.40	A	0.56	A	0.49	A	0.67	B	0.09	0.11
6	Santa Fe Avenue/Wardlow Road	0.57	A	0.72	C	0.63	B	0.78	C	0.06	0.06
7	Santa Fe Avenue/Willow Street	0.80	C	0.89	D	**0.91**	**E**	**0.98**	**E**	0.11	0.09
8	Santa Fe Avenue/Pacific Coast Hwy	0.76	C	0.77	C	0.86	D	0.87	D	0.10	0.10
9	Santa Fe Avenue/Anaheim Street	0.48	A	0.55	A	0.56	A	0.63	B	0.08	0.08
10	I-710/SR-1 Cloverleaf WB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
11	I-710/SR-1 Cloverleaf EB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
12	Magnolia Avenue/Ocean Boulevard	0.65	B	0.60	A	0.74	C	0.68	B	0.09	0.08
13	Pacific Avenue/Pacific Coast Hwy	0.64	B	0.75	C	0.74	C	0.81	D	0.10	0.06
14	Pacific Avenue/Anaheim Street	0.65	B	0.74	C	0.73	C	0.84	D	0.08	0.10
15	Pacific Avenue/7th Street	0.50	A	0.38	A	0.55	A	0.41	A	0.05	0.03
16	Pacific Avenue/6th Street	0.35	A	0.65	B	0.37	A	0.73	C	0.02	0.08
17	Pacific Avenue/3rd Street	0.52	A	0.38	A	0.57	A	0.42	A	0.05	0.04
18	Pacific Avenue/Broadway	0.37	A	0.55	A	0.41	A	0.62	B	0.04	0.07
19	Pacific Avenue/Ocean Boulevard	>1.00	F	0.87	D	**>1.00**	**F**	**0.95**	**E**	0.03	0.08
20	Long Beach Boulevard/Alondra Boulevard	0.69	B	0.87	D	0.77	C	**0.97**	**E**	0.08	0.10
21	Long Beach Boulevard/Artesia Boulevard	0.74	C	0.81	D	0.80	C	**0.93**	**E**	0.06	0.12
22	Long Beach Boulevard/Market Street	0.64	B	0.79	C	0.68	B	0.88	D	0.04	0.09
23	Long Beach Boulevard/Del Amo Boulevard	0.82	D	0.70	B	0.90	D	0.76	C	0.08	0.06
24	Long Beach Boulevard/San Antonio Drive	0.60	A	0.79	C	0.68	B	0.89	D	0.08	0.10
25	Long Beach Boulevard/Wardlow Road	0.89	D	0.91	E	**0.98**	**E**	**>1.00**	**F**	0.09	0.10
26	Long Beach Boulevard/Spring Street	>1.00	F	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	0.15	0.23
27	Long Beach Boulevard/Willow Street	0.75	C	0.78	C	0.85	D	0.89	D	0.10	0.11
28	Long Beach Boulevard/Pacific Coast Hwy	0.68	B	0.75	C	0.76	C	0.85	D	0.08	0.10
29	Long Beach Boulevard/Anaheim Street	0.56	A	0.68	B	0.63	B	0.77	C	0.07	0.09
30	Long Beach Boulevard/7th Street	>1.00	F	0.79	C	**>1.00**	**F**	0.81	D	0.16	0.02
31	Long Beach Boulevard/6th Street	0.39	A	0.64	B	0.44	A	0.76	C	0.05	0.12
32	Long Beach Boulevard/3rd Street	0.52	A	0.40	A	0.57	A	0.45	A	0.05	0.05
33	Long Beach Boulevard/Broadway	0.41	A	0.61	B	0.48	A	0.69	B	0.07	0.08
34	Long Beach Boulevard/Ocean Boulevard	0.60	A	0.51	A	0.63	B	0.55	A	0.03	0.04
35	Atlantic Avenue/Alondra Boulevard	0.80	C	0.76	C	0.87	D	0.87	D	0.07	0.11
36	Atlantic Avenue/SR-91 WB Ramps	0.60	A	0.53	A	0.64	B	0.59	A	0.04	0.06
37	Atlantic Avenue/SR-91 EB Ramps	0.48	A	0.58	A	0.54	A	0.65	B	0.06	0.07
38	Atlantic Avenue/Artesia Boulevard	0.79	C	0.86	D	0.88	D	**0.98**	**E**	0.09	0.12

Table 4.8.E: Intersection Level of Service Comparison – Proposed Project versus Existing Conditions

Intersection		Existing (2018)				General Plan Anticipated Buildout (2040) With Proposed Project				Future Change With Proposed Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
39	Atlantic Avenue/South Street	0.52	A	0.72	C	0.59	A	0.80	C	0.07	0.08
40	Atlantic Avenue/Del Amo Boulevard	0.77	C	0.79	C	0.88	D	0.90	D	0.11	0.11
41	Atlantic Avenue/33rd Street	0.48	A	0.72	C	0.55	A	0.78	C	0.07	0.06
42	Atlantic Avenue/I-405 EB Ramps	0.49	A	0.55	A	0.55	A	0.61	B	0.06	0.06
43	Atlantic Avenue/Willow Street	0.68	B	0.79	C	0.75	C	**0.91**	**E**	0.07	0.12
44	Atlantic Avenue/Pacific Coast Hwy	0.68	B	0.73	C	0.78	C	0.87	D	0.10	0.14
45	Atlantic Avenue/Anaheim Street	0.76	C	0.81	D	0.84	D	0.89	D	0.08	0.08
46	Atlantic Avenue/7th Street	0.70	B	0.55	A	0.78	C	0.62	B	0.08	0.07
47	Atlantic Avenue/6th Street	0.40	A	0.61	B	0.49	A	0.66	B	0.09	0.05
48	Atlantic Avenue/3rd Street	0.56	A	0.35	A	0.62	B	0.42	A	0.06	0.07
49	Atlantic Avenue/Broadway	0.28	A	0.62	B	0.30	A	0.67	B	0.02	0.05
50	Atlantic Avenue/Shoreline Avenue-Ocean Boulevard	0.57	A	0.52	A	0.63	B	0.55	A	0.06	0.03
51	Orange Avenue/Wardlow Road	0.75	C	0.81	D	0.85	D	**0.91**	**E**	0.10	0.10
52	Orange Avenue/Pacific Coast Hwy	0.65	B	0.73	C	0.72	C	0.83	D	0.07	0.10
53	Alamitos Avenue/Anaheim Street	0.84	D	0.88	D	**0.94**	**E**	**1.00**	**E**	0.10	0.12
54	Alamitos Avenue/7th Street	0.80	C	0.73	C	**0.92**	**E**	0.84	D	0.12	0.11
55	Alamitos Avenue/6th Street	0.78	C	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	1.19	1.56
56	Alamitos Avenue/3rd Street	0.86	D	0.59	A	**0.95**	**E**	**0.91**	**E**	0.09	0.32
57	Alamitos Avenue/Broadway	0.68	B	0.82	D	0.87	D	**>1.00**	**F**	0.19	0.32
58	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	0.79	C	0.73	C	0.88	D	0.79	C	0.09	0.06
59	Cherry Avenue/Artesia Boulevard	0.82	D	0.87	D	0.90	D	**>1.00**	**F**	0.08	0.15
60	Cherry Avenue/Market Street	0.75	C	0.90	D	0.82	D	**>1.00**	**F**	0.07	0.15
61	Cherry Avenue/Del Amo Boulevard	0.77	C	0.85	D	0.87	D	**0.98**	**E**	0.10	0.13
62	Cherry Avenue/Carson Street	0.65	B	0.81	D	0.69	B	**0.92**	**E**	0.04	0.11
63	Cherry Avenue/Wardlow Road	0.78	C	0.89	D	0.83	D	0.89	D	0.05	0.00
64	Cherry Avenue/Willow Street	0.71	C	0.81	D	0.78	C	0.90	D	0.07	0.09
65	Cherry Avenue/Pacific Coast Hwy	0.77	C	0.74	C	0.88	D	0.83	D	0.11	0.09
66	Cherry Avenue/7th Street	0.80	C	0.80	C	0.85	D	**0.91**	**E**	0.05	0.11
67	Paramount Boulevard/Artesia Boulevard	0.67	B	0.67	B	0.75	C	0.76	C	0.08	0.09
68	Paramount Boulevard/South Street	0.66	B	0.84	D	0.74	C	**0.96**	**E**	0.08	0.12
69	Paramount Boulevard/Del Amo Boulevard	0.84	D	0.92	E	**0.94**	**E**	**>1.00**	**F**	0.10	0.12
70	Paramount Boulevard/Carson Street	0.64	B	0.86	D	0.71	C	**0.95**	**E**	0.07	0.09
71	Downey Avenue/Alondra Boulevard	0.77	C	0.82	D	0.88	D	**0.93**	**E**	0.11	0.11
72	Redondo Avenue/Spring Street	0.63	B	0.69	B	**0.98**	**E**	**>1.00**	**F**	0.35	0.38
73	Redondo Avenue/Willow Street	0.70	B	0.74	C	0.77	C	0.83	D	0.07	0.09
74	Redondo Avenue/Pacific Coast Hwy	0.97	E	0.98	E	**>1.00**	**F**	**>1.00**	**F**	0.09	0.08
75	Redondo Avenue/Anaheim Street	0.87	D	0.94	E	**0.99**	**E**	**>1.00**	**F**	0.12	0.13
76	Redondo Avenue/7th Street	0.97	E	0.91	E	**>1.00**	**F**	**>1.00**	**F**	0.04	0.13
77	Redondo Avenue/3rd Street	0.48	A	0.52	A	0.54	A	0.55	A	0.06	0.03

Table 4.8.E: Intersection Level of Service Comparison – Proposed Project versus Existing Conditions

Intersection		Existing (2018)				General Plan Anticipated Buildout (2040) With Proposed Project				Future Change With Proposed Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
78	Redondo Avenue/Ocean Boulevard	0.58	A	0.68	B	0.61	B	0.68	B	0.03	0.00
79	Lakewood Boulevard/Del Amo Boulevard	0.89	D	0.97	E	**0.99**	**E**	**>1.00**	**F**	0.10	0.12
80	Lakewood Boulevard/Carson Street	0.63	B	0.77	C	0.70	B	0.84	D	0.07	0.07
81	Lakewood Boulevard/Spring Street	0.82	D	0.81	D	**0.94**	**E**	**0.97**	**E**	0.12	0.16
82	Lakewood Boulevard/I-405 WB Ramps	0.41	A	0.46	A	0.46	A	0.50	A	0.05	0.04
83	Lakewood Boulevard/I-405 EB Ramps with Lakewood Boulevard/Willow Street	0.45	A	0.43	A	0.50	A	0.43	A	0.05	0.00
84	Lakewood Boulevard/Willow Street	0.93	E	0.95	E	**>1.00**	**F**	**>1.00**	**F**	0.09	0.07
85	Ximeno Avenue/Pacific Coast Hwy	0.71	C	0.80	C	0.78	C	0.87	D	0.07	0.07
86	Ximeno Avenue/7th Street	0.92	E	0.85	D	**>1.00**	**F**	**0.96**	**E**	0.12	0.11
87	Ximeno Avenue/4th Street	0.64	B	0.74	C	0.70	B	0.81	D	0.06	0.07
88	Park Avenue/7th Street	0.93	E	0.90	D	**>1.00**	**F**	**>1.00**	**F**	0.16	0.12
89	Park Avenue/4th Street	0.74	C	0.76	C	0.80	C	0.85	D	0.06	0.09
90	Livingston Drive/2nd Street	0.70	B	0.62	B	0.80	C	0.69	B	0.10	0.07
91	Pacific Coast Hwy/Anaheim Street	0.70	B	0.80	C	**>1.00**	**F**	**0.91**	**E**	0.33	0.11
92	Pacific Coast Hwy/7th Street	0.95	E	0.96	E	**>1.00**	**F**	**>1.00**	**F**	0.11	0.11
93	Bellflower Boulevard/Del Amo Boulevard	0.82	D	>1.00	F	**0.93**	**E**	**>1.00**	**F**	0.11	0.14
94	Bellflower Boulevard/Carson Street	0.79	C	0.93	E	0.85	D	**>1.00**	**F**	0.06	0.12
95	Bellflower Boulevard/Spring Street	0.76	C	0.79	C	0.87	D	0.87	D	0.11	0.08
96	Bellflower Boulevard/Los Coyotes Diagonal	0.65	B	0.82	D	0.71	C	0.85	D	0.06	0.03
97	Bellflower Boulevard/Atherton Street	0.79	C	0.80	C	0.90	D	0.90	D	0.11	0.10
98	Bellflower Boulevard/7th Street	0.85	D	0.80	C	**0.93**	**E**	0.89	D	0.08	0.09
99	Bellflower Boulevard/Pacific Coast Hwy	0.71	C	0.79	C	0.80	C	0.90	D	0.09	0.11
100	Pacific Coast Hwy/2nd Street	0.93	E	0.87	D	**>1.00**	**F**	**>1.00**	**F**	0.13	0.14
101	1st Street/Marina Drive	0.22	A	0.27	A	0.24	A	0.29	A	0.02	0.02
102	Los Coyotes Diagonal/Spring Street	0.70	B	0.74	C	0.76	C	0.82	D	0.06	0.08
103	West Campus Drive/7th Street	0.72	C	0.72	C	0.81	D	0.82	D	0.09	0.10
104	East Campus Road/7th Street	0.77	C	0.80	C	0.89	D	**0.93**	**E**	0.12	0.13
105	Palo Verde Avenue/Wardlow Road	0.50	A	0.65	B	0.54	A	0.73	C	0.04	0.08
106	Palo Verde Avenue/Anaheim Street	0.51	A	0.75	C	0.56	A	0.84	D	0.05	0.09
107	Los Coyotes Diagonal/Carson Street	0.71	C	0.78	C	0.79	C	0.88	D	0.08	0.10
108	Studebaker Road/Spring Street	0.47	A	0.79	C	0.52	A	0.89	D	0.05	0.10
109	Studebaker Road/Willow Street	0.77	C	0.87	D	0.87	D	**0.98**	**E**	0.10	0.11
110	7th Street/College Park Drive	0.77	C	>1.00	F	0.78	C	**>1.00**	**F**	0.01	0.27
111	Studebaker Road/2nd Street	0.82	D	0.88	D	**0.95**	**E**	**1.00**	**E**	0.13	0.12
112	I-605 SB Ramps/Carson Street	0.56	A	0.68	B	0.64	B	0.78	C	0.08	0.10
113	I-605 NB Ramps/Carson Street	0.56	A	0.60	A	0.69	B	0.74	C	0.13	0.14
114	Norwalk Boulevard/Carson Street	0.77	C	0.83	D	0.87	D	**0.94**	**E**	0.10	0.11
115	Norwalk Boulevard/Cerritos Avenue	0.78	C	0.90	D	0.85	D	**>1.00**	**F**	0.07	0.12

Table 4.8.E: Intersection Level of Service Comparison – Proposed Project versus Existing Conditions

Intersection		Existing (2018)				General Plan Anticipated Buildout (2040) With Proposed Project				Future Change With Proposed Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
116	Los Alamitos Boulevard/Katella Avenue	0.88	D	0.88	D	**>1.00**	**F**	**1.00**	**E**	0.15	0.12
117	Seal Beach Boulevard/Westminster Road	0.80	C	0.93	E	**0.97**	**E**	**>1.00**	**F**	0.17	0.13
118	Atlantic Avenue/I-405 WB Ramps	0.37	A	0.48	A	0.39	A	0.51	A	0.02	0.03
119	I-710/Anaheim Street Cloverleaf WB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
120	I-710/Anaheim Street Cloverleaf EB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]

Source: Compiled by LSA (2019).
Note: Shaded cells indicate unsatisfactory LOS per the City's TIA guidelines. Cells shaded with black indicate significant impact.
[1] Intersection is not stop controlled

EB = eastbound
Hwy = Highway
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
LOS = level of service
N/A = Not Applicable
NB = northbound
SB = southbound
SR-1 = State Route 1
WB = westbound
SR-91 = State Route 91
V/C = volume-to-capacity

A comparison of the effects of the proposed project and the existing LUE is included for informational purposes to help illustrate how the proposed project affects conditions in the horizon year. For the purposes of CEQA, however, impacts are determined when the proposed project is compared to existing conditions. As shown in Table 4.8.F, the following four intersections had been forecast to operate at unsatisfactory LOS under General Plan Horizon Year (2040) No Project conditions and are forecast to operate at satisfactory LOS under the General Plan Anticipated Buildout (2040) With Proposed Project conditions:

23. Long Beach Boulevard/Del Amo Boulevard
45. Atlantic Avenue/Anaheim Street
85. Ximeno Avenue/Pacific Coast Hwy
97. Bellflower Boulevard/Atherton Street

As shown in Table 4.8.F, the following nine intersections would be adversely impacted in the proposed project to existing LUE comparison:

7. Santa Fe Avenue/Willow Street
26. Long Beach Boulevard/Spring Street
43. Atlantic Avenue/Willow Street
55. Alamitos Avenue/6th Street
59. Cherry Avenue/Artesia Boulevard
72. Redondo Avenue/Spring Street
81. Lakewood Boulevard/Spring Street
92. Pacific Coast Hwy/7th Street
110. 7th Street/College Park Drive

Table 4.8.F: Intersection Level of Service Comparison – 2040 Horizon Year: No Project versus Proposed Project

	Intersection	General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project				Change With Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
1	Avalon Boulevard/Pacific Coast Hwy	0.85	D	0.81	D	0.85	D	0.81	D	0.00	0.00
2	Avalon Boulevard/Anaheim Street	0.59	A	0.68	B	0.59	A	0.67	B	0.00	(0.01)
3	Wilmington Avenue/Sepulveda Boulevard	0.79	C	0.78	C	0.79	C	0.78	C	0.00	0.00
4	Wilmington Avenue/223rd Street	>1.00	F	>1.00	F	>1.00	F	>1.00	F	0.00	(0.02)
5	Terminal Island Freeway/Willow Street	0.48	A	0.68	B	0.49	A	0.67	B	0.01	(0.01)
6	Santa Fe Avenue/Wardlow Road	0.62	B	0.79	C	0.63	B	0.78	C	0.01	(0.01)
7	Santa Fe Avenue/Willow Street	0.85	D	1.00	E	**0.91**	**E**	0.98	E	0.06	(0.02)
8	Santa Fe Avenue/Pacific Coast Hwy	0.86	D	0.87	D	0.86	D	0.87	D	0.00	0.00
9	Santa Fe Avenue/Anaheim Street	0.54	A	0.61	B	0.56	A	0.63	B	0.02	0.02
10	I-710/SR-1 Cloverleaf WB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
11	I-710/SR-1 Cloverleaf EB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
12	Magnolia Avenue/Ocean Boulevard	0.75	C	0.68	B	0.74	C	0.68	B	(0.01)	0.00
13	Pacific Avenue/Pacific Coast Hwy	0.71	C	0.84	D	0.74	C	0.81	D	0.03	(0.03)
14	Pacific Avenue/Anaheim Street	0.73	C	0.84	D	0.73	C	0.84	D	0.00	0.00
15	Pacific Avenue/7th Street	0.55	A	0.41	A	0.55	A	0.41	A	0.00	0.00
16	Pacific Avenue/6th Street	0.37	A	0.73	C	0.37	A	0.73	C	0.00	0.00
17	Pacific Avenue/3rd Street	0.57	A	0.42	A	0.57	A	0.42	A	0.00	0.00
18	Pacific Avenue/Broadway	0.41	A	0.62	B	0.41	A	0.62	B	0.00	0.00
19	Pacific Avenue/Ocean Boulevard	>1.00	F	0.94	E	>1.00	F	0.95	E	0.00	0.01
20	Long Beach Boulevard/Alondra Boulevard	0.77	C	0.97	E	0.77	C	0.97	E	0.00	0.00
21	Long Beach Boulevard/Artesia Boulevard	0.83	D	0.93	E	0.80	C	0.93	E	(0.03)	0.00
22	Long Beach Boulevard/Market Street	0.69	B	0.87	D	0.68	B	0.88	D	(0.01)	0.01
23	Long Beach Boulevard/Del Amo Boulevard	0.93	E	0.79	C	0.90	D	0.76	C	(0.03)	(0.03)
24	Long Beach Boulevard/San Antonio Drive	0.68	B	0.89	D	0.68	B	0.89	D	0.00	0.00
25	Long Beach Boulevard/Wardlow Road	0.98	E	>1.00	F	0.98	E	>1.00	F	0.00	(0.03)
26	Long Beach Boulevard/Spring Street	>1.00	F	>1.00	F	**>1.00**	**F**	>1.00	F	0.04	0.00
27	Long Beach Boulevard/Willow Street	0.85	D	0.88	D	0.85	D	0.89	D	0.00	0.01
28	Long Beach Boulevard/Pacific Coast Hwy	0.78	C	0.84	D	0.76	C	0.85	D	(0.02)	0.01
29	Long Beach Boulevard/Anaheim Street	0.63	B	0.77	C	0.63	B	0.77	C	0.00	0.00
30	Long Beach Boulevard/7th Street	>1.00	F	0.81	D	>1.00	F	0.81	D	0.00	0.00
31	Long Beach Boulevard/6th Street	0.42	A	0.76	C	0.44	A	0.76	C	0.02	0.00
32	Long Beach Boulevard/3rd Street	0.57	A	0.44	A	0.57	A	0.45	A	0.00	0.01
33	Long Beach Boulevard/Broadway	0.49	A	0.69	B	0.48	A	0.69	B	(0.01)	0.00
34	Long Beach Boulevard/Ocean Boulevard	0.63	B	0.56	A	0.63	B	0.55	A	0.00	(0.01)
35	Atlantic Avenue/Alondra Boulevard	0.90	D	0.87	D	0.87	D	0.87	D	(0.03)	0.00
36	Atlantic Avenue/SR-91 WB Ramps	0.66	B	0.59	A	0.64	B	0.59	A	(0.02)	0.00
37	Atlantic Avenue/SR-91 EB Ramps	0.54	A	0.65	B	0.54	A	0.65	B	0.00	0.00
38	Atlantic Avenue/Artesia Boulevard	0.87	D	0.98	E	0.88	D	0.98	E	0.01	0.00

Table 4.8.F: Intersection Level of Service Comparison – 2040 Horizon Year: No Project versus Proposed Project

	Intersection	General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project				Change With Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
39	Atlantic Avenue/South Street	0.59	A	0.80	C	0.59	A	0.80	C	0.00	0.00
40	Atlantic Avenue/Del Amo Boulevard	0.88	D	0.90	D	0.88	D	0.90	D	0.00	0.00
41	Atlantic Avenue/33rd Street	0.50	A	0.84	D	0.55	A	0.78	C	0.05	(0.06)
42	Atlantic Avenue/I-405 EB Ramps	0.53	A	0.61	B	0.55	A	0.61	B	0.02	0.00
43	Atlantic Avenue/Willow Street	0.79	C	0.87	D	0.75	C	**0.91**	**E**	(0.04)	0.04
44	Atlantic Avenue/Pacific Coast Hwy	0.77	C	0.85	D	0.78	C	0.87	D	0.01	0.02
45	Atlantic Avenue/Anaheim Street	0.88	D	0.94	E	0.84	D	0.89	D	(0.04)	(0.05)
46	Atlantic Avenue/7th Street	0.78	C	0.59	A	0.78	C	0.62	B	0.00	0.03
47	Atlantic Avenue/6th Street	0.49	A	0.66	B	0.49	A	0.66	B	0.00	0.00
48	Atlantic Avenue/3rd Street	0.63	B	0.41	A	0.62	B	0.42	A	(0.01)	0.01
49	Atlantic Avenue/Broadway	0.30	A	0.66	B	0.30	A	0.67	B	0.00	0.01
50	Atlantic Avenue/Shoreline Avenue-Ocean Boulevard	0.62	B	0.54	A	0.63	B	0.55	A	0.01	0.01
51	Orange Avenue/Wardlow Road	0.82	D	0.91	E	0.85	D	0.91	E	0.03	0.00
52	Orange Avenue/Pacific Coast Hwy	0.71	C	0.83	D	0.72	C	0.83	D	0.01	0.00
53	Alamitos Avenue/Anaheim Street	0.94	E	1.00	E	0.94	E	1.00	E	0.00	0.00
54	Alamitos Avenue/7th Street	0.92	E	0.83	D	0.92	E	0.84	D	0.00	0.01
55	Alamitos Avenue/6th Street	>1.00	F	>1.00	F	>1.00	F	**>1.00**	**F**	(0.01)	0.03
56	Alamitos Avenue/3rd Street	0.96	E	0.92	E	0.95	E	0.91	E	(0.01)	(0.01)
57	Alamitos Avenue/Broadway	0.84	D	>1.00	F	0.87	D	>1.00	E	0.03	0.00
58	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	0.85	D	0.79	C	0.88	D	0.79	C	0.03	0.00
59	Cherry Avenue/Artesia Boulevard	0.92	E	0.99	E	0.90	D	**>1.00**	**F**	(0.02)	0.03
60	Cherry Avenue/Market Street	0.88	D	>1.00	F	0.82	D	>1.00	F	(0.06)	0.00
61	Cherry Avenue/Del Amo Boulevard	0.87	D	0.97	E	0.87	D	0.98	E	0.00	0.01
62	Cherry Avenue/Carson Street	0.73	C	0.92	E	0.69	B	0.92	E	(0.04)	0.00
63	Cherry Avenue/Wardlow Road	0.86	D	0.97	E	0.83	D	0.89	D	(0.03)	(0.08)
64	Cherry Avenue/Willow Street	0.81	D	0.92	E	0.78	C	0.90	D	(0.03)	(0.02)
65	Cherry Avenue/Pacific Coast Hwy	0.88	D	0.83	D	0.88	D	0.83	D	0.00	0.00
66	Cherry Avenue/7th Street	0.92	E	0.90	D	0.85	D	0.91	E	(0.07)	0.01
67	Paramount Boulevard/Artesia Boulevard	0.76	C	0.75	C	0.75	C	0.76	C	(0.01)	0.01
68	Paramount Boulevard/South Street	0.76	C	0.96	E	0.74	C	0.96	E	(0.02)	0.00
69	Paramount Boulevard/Del Amo Boulevard	0.96	E	>1.00	F	0.94	E	>1.00	F	(0.02)	0.00
70	Paramount Boulevard/Carson Street	0.71	C	0.95	E	0.71	C	0.95	E	0.00	0.00
71	Downey Avenue/Alondra Boulevard	0.88	D	0.92	E	0.88	D	0.93	E	0.00	0.01
72	Redondo Avenue/Spring Street	0.70	B	0.79	C	**0.98**	**E**	**>1.00**	**F**	0.28	0.28
73	Redondo Avenue/Willow Street	0.78	C	0.84	D	0.77	C	0.83	D	(0.01)	(0.01)
74	Redondo Avenue/Pacific Coast Hwy	>1.00	F	>1.00	F	>1.00	F	>1.00	F	(0.03)	(0.03)
75	Redondo Avenue/Anaheim Street	0.99	E	>1.00	F	0.99	E	>1.00	F	0.00	(0.01
76	Redondo Avenue/7th Street	>1.00	F	>1.00	F	>1.00	F	>1.00	F	(0.09)	0.00
77	Redondo Avenue/3rd Street	0.54	A	0.58	A	0.54	A	0.55	A	0.00	(0.03)

Table 4.8.F: Intersection Level of Service Comparison – 2040 Horizon Year: No Project versus Proposed Project

Intersection		General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project				Change With Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
78	Redondo Avenue/Ocean Boulevard	0.60	A	0.77	C	0.61	B	0.68	B	0.01	(0.09)
79	Lakewood Boulevard/Del Amo Boulevard	>1.00	F	>1.00	F	0.99	E	>1.00	F	(0.04)	0.00
80	Lakewood Boulevard/Carson Street	0.72	C	0.88	D	0.70	B	0.84	D	(0.02)	(0.04)
81	Lakewood Boulevard/Spring Street	0.93	E	0.91	E	0.94	E	**0.97**	**E**	0.01	0.06
82	Lakewood Boulevard/I-405 WB Ramps	0.46	A	0.51	A	0.46	A	0.50	A	0.00	(0.01)
83	Lakewood Boulevard/I-405 EB Ramps with Lakewood Boulevard/Willow Street	0.50	A	0.48	A	0.50	A	0.43	A	0.00	(0.05)
84	Lakewood Boulevard/Willow Street	>1.00	F	>1.00	F	>1.00	F	>1.00	F	(0.02)	(0.04)
85	Ximeno Avenue/Pacific Coast Hwy	0.80	C	0.92	E	0.78	C	0.87	D	(0.02)	(0.05)
86	Ximeno Avenue/7th Street	>1.00	F	0.96	E	>1.00	F	0.96	E	0.00	0.00
87	Ximeno Avenue/4th Street	0.72	C	0.81	D	0.70	B	0.81	D	(0.02)	0.00
88	Park Avenue/7th Street	>1.00	F	>1.00	F	>1.00	F	>1.00	F	0.00	0.00
89	Park Avenue/4th Street	0.79	C	0.85	D	0.80	C	0.85	D	0.01	0.00
90	Livingston Drive/2nd Street	0.80	C	0.65	B	0.80	C	0.69	B	0.00	0.04
91	Pacific Coast Hwy/Anaheim Street	0.99	E	0.91	E	>1.00	F	0.91	E	0.04	0.00
92	Pacific Coast Hwy/7th Street	>1.00	F	>1.00	F	>1.00	F	**>1.00**	**F**	0.00	0.03
93	Bellflower Boulevard/Del Amo Boulevard	0.93	E	>1.00	F	0.93	E	>1.00	F	0.00	0.00
94	Bellflower Boulevard/Carson Street	0.88	D	>1.00	F	0.85	D	>1.00	F	(0.03)	(0.03)
95	Bellflower Boulevard/Spring Street	0.90	D	0.90	D	0.87	D	0.87	D	(0.03)	(0.03)
96	Bellflower Boulevard/Los Coyotes Diagonal	0.70	B	0.88	D	0.71	C	0.85	D	0.01	(0.03)
97	Bellflower Boulevard/Atherton Street	0.91	E	0.91	E	0.90	D	0.90	D	(0.01)	(0.01)
98	Bellflower Boulevard/7th Street	0.93	E	0.88	D	0.93	E	0.89	D	0.00	0.01
99	Bellflower Boulevard/Pacific Coast Hwy	0.80	C	0.90	D	0.80	C	0.90	D	0.00	0.00
100	Pacific Coast Hwy/2nd Street	>1.00	F	>1.00	F	>1.00	F	>1.00	F	0.00	0.00
101	1st Street/Marina Drive	0.24	A	0.29	A	0.24	A	0.29	A	0.00	0.00
102	Los Coyotes Diagonal/Spring Street	0.75	C	0.82	D	0.76	C	0.82	D	0.01	0.00
103	West Campus Drive/7th Street	0.80	C	0.82	D	0.81	D	0.82	D	0.01	0.00
104	East Campus Road/7th Street	0.89	D	0.93	E	0.89	D	0.93	E	0.00	0.00
105	Palo Verde Avenue/Wardlow Road	0.54	A	0.73	C	0.54	A	0.73	C	0.00	0.00
106	Palo Verde Avenue/Anaheim Street	0.56	A	0.85	D	0.56	A	0.84	D	0.00	(0.01)
107	Los Coyotes Diagonal/Carson Street	0.78	C	0.88	D	0.79	C	0.88	D	0.01	0.00
108	Studebaker Road/Spring Street	0.54	A	0.89	D	0.52	A	0.89	D	(0.02)	0.00
109	Studebaker Road/Willow Street	0.87	D	1.00	E	0.87	D	0.98	E	0.00	(0.02)
110	7th Street/College Park Drive	0.86	D	>1.00	F	0.78	C	**>1.00**	**F**	(0.08)	0.14
111	Studebaker Road/2nd Street	0.95	E	>1.00	F	0.95	E	1.00	E	0.00	(0.12)
112	I-605 SB Ramps/Carson Street	0.64	B	0.89	D	0.64	B	0.78	C	0.00	(0.11)
113	I-605 NB Ramps/Carson Street	0.68	B	0.74	C	0.69	B	0.74	C	0.01	0.00
114	Norwalk Boulevard/Carson Street	0.87	D	0.94	E	0.87	D	0.94	E	0.00	0.00
115	Norwalk Boulevard/Cerritos Avenue	0.88	D	>1.00	F	0.85	D	>1.00	F	(0.03)	0.00

Table 4.8.F: Intersection Level of Service Comparison – 2040 Horizon Year: No Project versus Proposed Project

Intersection		General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project				Change With Project	
		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
116	Los Alamitos Boulevard/Katella Avenue	>1.00	F	1.00	E	>1.00	F	1.00	E	0.01	0.00
117	Seal Beach Boulevard/Westminster Road	0.95	E	>1.00	F	0.97	E	>1.00	F	0.02	0.00
118	Atlantic Avenue/I-405 WB Ramps	0.38	A	0.50	A	0.39	A	0.51	A	0.01	0.01
119	I-710/Anaheim Street Cloverleaf WB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]
120	I-710/Anaheim Street Cloverleaf EB	N/A[1]		N/A[1]		N/A[1]		N/A[1]		N/A[1]	N/A[1]

Source: Compiled by LSA (2019).
Note: Shaded cells indicate unsatisfactory LOS per the City's TIA guidelines. Cells shaded with black indicate significant impact.
[1] Intersection is not stop controlled

EB = eastbound
Hwy = Highway
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
LOS = level of service
N/A = Not Applicable
NB = northbound
SB = southbound
SR-1 = State Route 1
SR-91 = State Route 91
V/C = volume-to-capacity
WB = westbound

4.8.8.2 Congestion Management Program Intersections

Significant and Unavoidable Impact. The Los Angeles County CMP monitors 10 intersections within Long Beach. Table 4.8.G summarizes the performance of these CMP intersections under Existing (2018), General Plan Horizon Year (2040) No Project, and the General Plan Anticipated Buildout (2040) With Proposed Project conditions. As Table 4.8.G shows, future traffic growth that will occur without or with the project and the traffic redistribution resulting from the project are anticipated to result in LOS F conditions (with a 0.02 or greater increase in v/c) at 4 of the 10 CMP intersections in Long Beach and would, therefore, have a significant impact. As further discussed in Section 4.8.8.6, all of the physical improvements necessary for impacted intersections to function at an acceptable level are subject to constraints that render the addition of vehicle capacity infeasible. Therefore, impacts at these 4 CMP intersections are considered significant and unavoidable. The 4 impacted intersections are:

76. Redondo Avenue/7th Street
84. Lakewood Boulevard/Willow Street
92. Pacific Coast Hwy/7th Street
100. Pacific Coast Hwy/2nd Street

Table 4.8.G: CMP Intersection Summary

Intersection		Existing (2018)				General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project				Change (Existing to Proposed Project)	
		AM		PM		AM		PM		AM		PM		AM	PM
		V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS	V/C	LOS		
8	Santa Fe Avenue/Pacific Coast Hwy	0.76	C	0.77	C	0.86	D	0.87	D	0.86	D	0.87	D	0.10	0.10
52	Orange Avenue/Pacific Coast Hwy	0.65	B	0.73	C	0.71	C	0.83	D	0.72	C	0.83	D	0.07	0.10
54	Alamitos Avenue/7th Street	0.80	C	0.73	C	0.92	E	0.83	D	0.92	E	0.84	D	0.12	0.11
58	Alamitos Avenue/Shoreline Avenue-Ocean Boulevard	0.79	C	0.73	C	0.85	D	0.79	C	0.88	D	0.79	C	0.09	0.06
76	Redondo Avenue/7th Street	0.97	E	0.91	E	>1.00	F	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	0.04	0.13
80	Lakewood Boulevard/Carson Street	0.63	B	0.77	C	0.72	C	0.88	D	0.70	B	0.84	D	0.07	0.07
84	Lakewood Boulevard/Willow Street	0.93	E	0.95	E	>1.00	F	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	0.09	0.07
85	Ximeno Avenue/Pacific Coast Hwy	0.71	C	0.80	C	0.80	C	0.92	E	0.78	C	0.87	D	0.07	0.07
92	Pacific Coast Hwy/7th Street	0.95	E	0.96	E	>1.00	F	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	0.11	0.11
100	Pacific Coast Hwy/2nd Street	0.93	E	0.87	D	>1.00	F	>1.00	F	**>1.00**	**F**	**>1.00**	**F**	0.13	0.14

Source: Compiled by LSA (2019).
Note: Shaded cells indicate unsatisfactory LOS per CMP guidelines. Cells shaded with black indicate significant impact.
Hwy = Highway
LOS = level of service
V/C = volume-to-capacity

4.8.8.3 Congestion Management Program Transit

Less than Significant Impact. Los Angeles County CMP Appendix D.8.4 provides guidelines on estimating transit ridership generated by a project. As shown on Figure 4.8.3, Long Beach is served by a robust transit network. The proposed project increases density of land uses adjacent to transit corridors to leverage the existing transit infrastructure and potentially reduce VMT and greenhouse gas emissions.

Based on the guidance provided in the Los Angeles County CMP, it is estimated that 7 percent of residential person-trips and 9 percent of commercial person-trips in the Downtown PlaceType (within 0.25 mile of the Transit Gallery multi-modal transportation corridor), 5 percent of residential person-trips and 7 percent of commercial person-trips in the Transit-Oriented Development PlaceType (within 0.25 mile of the Blue Line, a CMP transit corridor), and 3.5 percent of all other person-trips would be transit trips.

For residential and commercial person-trip data, this analysis uses population and employment data respectively. The data developed for the General Plan Anticipated Buildout (2040) With Proposed Project scenario estimated that the population in the Downtown PlaceType would increase by 3,190 while employment would increase by 5,200. Transit-Oriented Development PlaceTypes will have a population increase of 7,448 and an employment increase of 268. The population increase for all other areas of Long Beach is 7,592, and the employment increase of all other areas is 23,043. To avoid

double counting, 22 percent of the total 18,230 population change was estimated to both live and work in Long Beach, which is the existing percentage and therefore would be conservative since the project is anticipated to increase the number of jobs and address housing demand providing opportunity for more residents to both work and live in Long Beach.

The estimated percentage of transit trips and estimated person-trips described above result in an estimated new transit ridership of 2,014 during the single busiest morning peak hour and 2,014 during the single busiest evening peak hour by 2040. Morning and evening commute periods last for multiple hours, but the transit ridership during the remainder of the peak commute periods (as well as midday and late evening) would be lower than this single hour transit demand. The busiest hour transit demand would be spread across the Blue Line, 34 fixed routes operated by LBT, and other transit operators in Long Beach. On average, each route would experience an increase of approximately 50 riders during the peak hours. With between 4 and 12 buses/trains per hour, new riders would occupy approximately 5 to 15 percent of a vehicle's capacity (approximately 80 people per vehicle), which is unlikely to create an impact to the existing and future transit service.

Both LBT and Metro have recently (or are currently) engaged in studies seeking to better align services to meet community needs and increase ridership. The LBT Systemwide Transit Analysis and Reassessment Initiative (STAR) surveyed residents regarding improvements to existing service or amenities that further the goal of LBT being the first choice for mobility. Metro's Vision 2028 Strategic Plan seeks to reduce the amount of time residents spend traveling in all travel modes. Metro is extending the light rail lines in its network and closing gaps in the system. Metro is in the second step of the NextGen Bus Study that is looking at the bus system systematically for the first time in 25 years. The Vision 2028 Strategic Plan also considers the role of first and last mile connections to transit.

With improved service levels, new light rail lines, additional connections between travel modes, and new first and last mile options, the rate of new trips taking transit may increase from the rates identified in the 2010 CMP. However, simultaneous with enticing additional ridership, these improved services would include increases in capacity, reducing the probability that additional ridership would create an impact to transit service.

4.8.8.4 Caltrans Ramp Intersections

Significant and Unavoidable Impact. Some of the study intersections are freeway ramp intersections or are otherwise under the jurisdiction of Caltrans. These intersections were analyzed using ICU methodology in the previous sections of this report. For disclosure purposes, these intersections were also analyzed using Caltrans-preferred HCM methodology.

Some of the intersections included in the sample of Caltrans intersections do not have stop control. For the I-710/SR-1 cloverleaf and the I-710/Anaheim Street cloverleaf, the weaving sections created by the on- and off-ramps are evaluated according to the density of vehicles in the lane-change area. The intersections of Lakewood Boulevard/I-405 eastbound ramps and Atlantic Avenue/I-405 westbound ramps are not stop controlled but are located near an adjacent signalized intersection. For these locations, the analysis examined the queues forming at the adjacent intersection to determine whether vehicles exiting the freeway ramp would be blocked by the queue at the adjacent traffic signal. The intersection of Lakewood Boulevard/I-405 westbound ramps is not stop controlled and is

not located near another stop-controlled intersection. At this location, traffic from the freeway off-ramp is free flowing.

Table 4.8.H presents the analysis of these intersections in the Existing (2018), General Plan Horizon Year (2040) No Project, and General Plan Anticipated Buildout (2040) with Proposed Project conditions. As Table 4.8.H shows, 6 of the 30 sampled Caltrans intersections operate at unsatisfactory LOS (i.e., beyond LOS E) in the existing condition and would continue to operate at unsatisfactory LOS in the future regardless of the proposed project. Two additional intersections function at LOS E or better in existing conditions but would function at LOS F in the future regardless of the proposed project.

However, according to the performance criteria established for this TIA (i.e., contribution of traffic to a facility operating in excess of its operational standard), the project is found to have potentially significant impacts on the following Caltrans intersections according to Caltrans impact criteria.

Because this analysis sampled Caltrans intersections, potentially significant traffic impacts may occur at additional intersections not included in the list below.

- Redondo Avenue/Pacific Coast Highway
- Lakewood Boulevard/Del Amo Boulevard
- Lakewood Boulevard/Spring Street
- Lakewood Boulevard/I-405 Eastbound Ramps
- Pacific Coast Highway/Anaheim Street
- I-605 Southbound Ramps/Carson Street

Because these Caltrans facilities are not within the City's jurisdiction and the City cannot compel Caltrans to implement mitigation, impacts at these six intersections are considered significant and unavoidable.

4.8.8.5 Caltrans Arterial and Freeway Facilities

Significant and Unavoidable Impact. The TIA analyzed freeway facilities including mainline segments, merging segments, and diverge segments. Many of these facilities were found to function beyond their designed LOS in existing conditions. On- and off-ramps in the study area were found to meet the design guidelines. The proposed project would contribute additional traffic volume, which would constitute a significant impact according to the established criteria. Because these Caltrans facilities are not within the City's jurisdiction and the City cannot compel Caltrans to implement improvements, impacts at these facilities are considered significant and unavoidable.

The TIA analyzed arterials that are on the State Highway System. The performance of these roadways was found to meet LOS standards meaning that vehicle delay on these facilities is a result of intersection performance.

Table 4.8.H: Freeway Ramp and State Highway Intersection Level of Service Summary

Intersection	Existing (2018)				General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS
1. Avalon Boulevard/Pacific Coast Hwy	37.6	D	35.3	D	50.4	D	47.1	D	50.4	D	46.9	D
5. Terminal Island Freeway (SR-103)/Willow Street	23.0	C	32.6	C	26.5	C	42.5	D	27.2	C	47.3	D
8. Santa Fe Avenue/Pacific Coast Hwy	41.3	D	35.4	D	49.7	D	44.6	D	51.5	D	46.7	D
10. I-710/SR-1 Cloverleaf WB[1]	17.8 pc/mi/ln	B	30.3 pc/mi/ln	D	19.9 pc/mi/ln	B	38.1 pc/mi/ln	E	20.5 pc/mi/ln	C	38.0 pc/mi/ln	E
11. I-710/SR-1 Cloverleaf EB[1]	18.7 pc/mi/ln	B	23.5 pc/mi/ln	C	23.9 pc/mi/ln	C	32.2 pc/mi/ln	C	24.1 pc/mi/ln	C	27.4 pc/mi/ln	C
13. Pacific Avenue/Pacific Coast Hwy	18.9	B	23.5	C	23.9	C	32.2	C	24.1	C	27.4	C
28. Long Beach Boulevard/Pacific Coast Hwy	33.3	C	34.7	C	39.8	D	44.9	D	38.1	D	46.0	D
36. Atlantic Avenue/SR-91 WB Ramps	19.0	B	23.7	C	24.4	C	33.3	C	24.2	C	33.3	C
37. Atlantic Avenue/SR-91 EB Ramps	11.2	B	18.5	B	12.9	B	25.1	C	12.9	B	25.3	C
41. Atlantic Avenue/33rd Street	5.8	A	10.5	B	6.5	A	15.0	B	6.7	A	13.9	B
42. Atlantic Avenue/I-405 EB Ramps	10.7	B	9.6	A	13.4	B	10.8	B	15.2	B	11.4	B
44. Atlantic Avenue/Pacific Coast Hwy	21.7	C	23.9	C	25.9	C	33.0	C	25.8	C	36.7	D
52. Orange Avenue/Pacific Coast Hwy	20.7	C	25.4	C	26.7	C	29.5	C	26.4	C	29.3	C
65. Cherry Avenue/Pacific Coast Hwy	33.5	C	32.7	C	40.6	D	41.6	D	40.7	D	40.4	D
74. Redondo Avenue/Pacific Coast Hwy	66.7	E	67.0	F	97.7	F	99.0	F	**88.0**	**F**	**95.0**	**F**
79. Lakewood Boulevard/Del Amo Boulevard	49.5	D	75.1	E	72.1	E	110.5	F	62.1	E	**110.4**	**F**
80. Lakewood Boulevard/Carson Street	26.8	C	33.8	C	32.4	C	45.6	D	31.8	C	42.2	D
81. Lakewood Boulevard/Spring Street	78.3	E	125.2	F	121.6	F	181.9	F	**134.8**	**F**	**197.5**	**F**
82. Lakewood Boulevard/I-405 WB Ramps[2]	N/A[3]		N/A[3]		N/A[3]		N/A[3]		N/A[3]		N/A[3]	
83. Lakewood Boulevard/I-405 EB Ramps[2,4]	Not Blocked		Blocked		Blocked		Blocked		**Blocked**		**Blocked**	
85. Ximeno Avenue/Pacific Coast Hwy	54.0	D	56.5	E	56.5	E	72.9	E	55.5	E	66.8	E
91.Pacific Coast Hwy/Anaheim Street	71.3	E	80.1	F	188.4	F	100.2	F	**194.5**	**F**	**100.5**	**F**
92. Pacific Coast Hwy/7th Street	46.7	D	41.5	D	70.1	E	57.0	E	69.6	E	62.4	E
99. Bellflower Boulevard/Pacific Coast Hwy	19.5	B	23.3	C	25.1	C	26.4	C	25.1	C	26.5	C
100. Pacific Coast Hwy/2nd Street	47.4	D	48.7	D	69.8	E	70.0	E	69.6	E	69.9	E
112. I-605 SB Ramps/Carson Street	13.5	B	44.9	D	22.0	C	141.0	F	22.0	C	**87.2**	**F**
113. I-605 NB Ramps/Carson Street	11.2	B	12.5	B	12.1	B	15.9	B	12.2	B	15.6	B
118. Atlantic Avenue/I-405 WB Ramps[2,4]	Not Blocked		Blocked		Not Blocked		Blocked		Not Blocked		Blocked	

Table 4.8.H: Freeway Ramp and State Highway Intersection Level of Service Summary

Intersection	Existing (2018)				General Plan Horizon Year (2040) No Project				General Plan Anticipated Buildout (2040) With Proposed Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS	Delay/ Density	LOS
119. I-710/Anaheim Street Cloverleaf WB[1]	12.7 pc/mi/ln	B	11.4 pc/mi/ln	B	16.2 pc/mi/ln	B	14.5 pc/mi/ln	B	17.0 pc/mi/ln	B	14.7 pc/mi/ln	B
120. I-710/Anaheim Street Cloverleaf EB[1]	22.6 pc/mi/ln	C	29.8 pc/mi/ln	D	31.3 pc/mi/ln	D	38.4 pc/mi/ln	E	31.8 pc/mi/ln	D	38.7 pc/mi/ln	E

Source: Compiled by LSA (2019).
Notes: Shaded cells indicate unsatisfactory LOS per CMP guidelines. Cells shaded with black indicate significant impact.
Delay is reported in seconds.
[1] Analyzed as a weaving segment. Value is density in passenger cars/mile/lane.
[2] No stop control is present at this interchange.
[3] This intersection is not subject to LOS analysis.
[4] 95th percentile queue at the adjacent intersection could impede off-ramp traffic and was examined as part of the operational analysis.
EB = eastbound
Hwy = Highway
I-405 = Interstate 405
I-605 = Interstate 605
I-710 = Interstate 710
ICU = Intersection Capacity Utilization
LOS = level of service\NB = northbound
pc/mi/ln = passenger cars per mile per lane
SB = southbound
SR-1 = State Route 1
WB = westbound

4.8.8.6 Potential Physical Improvements

The analysis above identified potentially significant traffic impacts to vehicle LOS at intersections in Long Beach, intersections in neighboring cities, Caltrans intersections, and freeway facilities. Of the 120 intersections included in the study area, 48 of them (40 percent) would be significantly impacted by traffic volume increases between existing and future conditions. The TIA considered the physical improvements necessary for impacted intersections to function at LOS D with projected future traffic volumes. These improvements are listed in Table 4.8.I.

The TIA also considered the constraints to constructing the physical improvements. Constraints could include the intersection being located outside of the City's jurisdiction, which eliminates the City's authority to compel physical improvements. Physical improvements located outside of the existing rights-of-way could be infeasible or result in increased environmental impacts.

Physical improvements outside of existing rights-of-way would be further challenged if impacting existing structures or open space. Constraints could also exist if improvements could be completed within the existing rights-of-way but would conflict with other travel modes. The Mobility Element states that, "the City may accept levels of service below the City standard of D in exchange for pedestrian, bicycle, and/or transit improvements. This balanced approach will help the City create a more balanced multimodal transportation system that supports appropriate infill projects and transit-oriented development strategies." Table 4.8.I identifies whether these constraints are present at each of the impacted intersections.

As Table 4.8.I shows, all of the physical improvements necessary for impacted intersections to function at LOS D are subject to constraints that render the addition of vehicle capacity infeasible. Capacity enhancement of freeway facilities is also infeasible because the City cannot compel Caltrans to make improvements. In addition, analysis of freeway mainline segments show that up to 6 additional travel lanes might be necessary on freeways that are currently from 6–10 lanes. Additionally, capacity enhancements to freeway facilities to accommodate peak-hour traffic volume may not be effective as additional traffic could be attracted from the shoulder periods (i.e., time periods just before or after peak periods).

Table 4.8.I: Potential Mitigation for Impacts to Intersections

Intersection	Jurisdiction	Capacity Addition from Existing	Feasible	Reason Infeasible
4. Wilmington Avenue/223rd Street	Carson	SBR, EBL	No	Outside jurisdiction
7. Santa Fe Avenue/Willow Street	Long Beach	3rd EBT, 3rd WBT	No	Outside right-of-way, removal of structures
19. Pacific Avenue/Ocean Boulevard	Long Beach	4th and 5th WBT	No	Outside right-of-way, removal of parking
20. Long Beach Boulevard/Alondra Boulevard	Compton	NBR, 3rd EBT	No	Outside jurisdiction, outside right-of-way, removal of structures
21. Long Beach Boulevard/Artesia Boulevard	Long Beach	3rd EBT	No	Conflicts with other travel modes (bicycle)
25. Long Beach Boulevard/Wardlow Road	Long Beach	2nd NBL, 2nd EBL	No	Outside right-of-way, removal of structures

Table 4.8.I: Potential Mitigation for Impacts to Intersections

Intersection	Jurisdiction	Capacity Addition from Existing	Feasible	Reason Infeasible
26. Long Beach Boulevard/Spring Street	Long Beach	3rd/4th NBT, NBR, 2nd SBL, 3rd/4th SBT, SBR, 2nd EBL, 3rd/4th EBT, 2nd WBL, 3rd WBT	No	Outside right-of-way, removal of structures, removal of parking
30. Long Beach Boulevard/7th Street	Long Beach	2nd NBL, 3rd NBT, 3rd SBT, 4th/5th WBT	No	Outside right-of-way, removal of structures, conflicts with other travel modes
38. Atlantic Avenue/Artesia Boulevard	Long Beach	3rd EBT	No	Outside right-of-way
43. Atlantic Avenue/Willow Street	Long Beach	EBR	No	Outside right-of-way, removal of structures
51. Orange Avenue/Wardlow Road	Long Beach	EBR	No	Outside right-of-way, removal of structures
53. Alamitos Avenue/Anaheim Street	Long Beach	2nd NBT, 2nd SBT	No	Conflicts with other travel modes (bicycle)
54. Alamitos Avenue/7th Street	Long Beach	WBR	No	Conflicts with other travel modes (bicycle), outside right-of-way, removal of parking
55. Alamitos Avenue/6th Street	Long Beach	3rd SBT, 2nd/3rd WB	No	Conflicts with other travel modes (bicycle), outside right-of-way, removal of parking
56. Alamitos Avenue/3rd Street	Long Beach	2nd SBT	No	Conflicts with other travel modes (bicycle)
57. Alamitos Avenue/Broadway	Long Beach	NBR	No	Conflicts with other travel modes (bicycle), outside right-of-way, removal of structure
59. Cherry Avenue/Artesia Boulevard	Long Beach	3rd EBT	No	Conflicts with other travel modes (bus), removal of parking
60. Cherry Avenue/Market Street	Long Beach	NBR, 3rd EBT	No	Outside right-of-way, removal of parking
61. Cherry Avenue/Del Amo Boulevard	Long Beach/ Lakewood	2nd SBL	No	Outside jurisdiction
62. Cherry Avenue/Carson Street	Long Beach	4th NBT	No	Outside right-of-way, removal of structures
66. Cherry Avenue/7th Street	Long Beach	EBR	No	Outside right-of-way, removal of parking
68. Paramount Boulevard/South Street	Long Beach	EBR	No	Conflicts with other travel modes (trucks)
69. Paramount Boulevard/Del Amo Boulevard	Lakewood	NBR, 3rd EBT, 3rd WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
70. Paramount Boulevard/Carson Street	Lakewood	WBR	No	Outside jurisdiction, outside right-of-way
71. Downey Avenue/Alondra Boulevard	Lakewood	EBR	No	Outside jurisdiction, removal of parking
72. Redondo Avenue/Spring Street	Long Beach	4th EBT, EBR	No	Outside right-of-way, removal of structures
74. Redondo Avenue/Pacific Coast Hwy	Caltrans	NBR, 3rd SBT, 4th EBT, 4th WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
75. Redondo Avenue/Anaheim Street	Long Beach	3rd NBT, 3rd SBT, SBR, EBR	No	Outside right-of-way, removal of structures
76. Redondo Avenue/7th Street	Long Beach	3rd EBT, EBR, 3rd WBT, WBR	No	Outside right-of-way, removal of structures, removal of parking
79. Lakewood Boulevard/Del Amo Boulevard	Long Beach	2nd NBL, NBR, 2nd SBL, 4th EBT, 3rd WBT	No	Outside right-of-way, conflicts with flood control
81. Lakewood Boulevard/Spring Street	Long Beach	3rd SBL, 4th SBT	No	Outside right-of-way, conflicts with flood control

Table 4.8.I: Potential Mitigation for Impacts to Intersections

Intersection	Jurisdiction	Capacity Addition from Existing	Feasible	Reason Infeasible
84. Lakewood Boulevard/Willow Street	Long Beach	SBR, 4th EBT	No	Outside right-of-way, removal of structures
86. Ximeno Avenue/7th Street	Long Beach	3rd EBT, 3rd WBT	No	Outside right-of-way, removal of structures
88. Park Avenue/7th Street	Long Beach	3rd EBT, 3rd WBT	No	Outside right-of-way, removal of structures
91. Pacific Coast Hwy/Anaheim Street	Caltrans	2nd NBL	No	Outside jurisdiction, conflicts with other travel modes (bicycle), removal of open space
92. Pacific Coast Hwy/7th Street	Caltrans	3rd SBL, 4th EBT, 3rd WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
93. Bellflower Boulevard/ Del Amo Boulevard	Long Beach/ Lakewood	3rd NBT, 3rd EBT, 3rd WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
94. Bellflower Boulevard/Carson Street	Long Beach/ Lakewood	3rd NBT, EBR	No	Outside jurisdiction, outside right-of-way, removal of open space
98. Bellflower Boulevard/7th Street	Long Beach	WBR	No	Outside right-of-way, removal of structures
100. Pacific Coast Hwy/2nd Street	Caltrans	NBR, 4th EBT, 4th WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
104. East Campus Road/7th Street	Long Beach	4th EBT	No	Outside right-of-way, removal of structures
109. Studebaker Road/Willow Street	Long Beach	NBR, WBR	No	Outside right-of-way, removal of open space
110. 7th Street/College Park Drive	Long Beach	2nd NBT	No	Outside right-of-way
111. Studebaker Road/2nd Street	Long Beach	3rd EBL	No	Outside right-of-way
114. Norwalk Boulevard/Carson Street	Hawaiian Gardens	3rd EBT	No	Outside jurisdiction, conflicts with other travel modes (bus)
115. Norwalk Boulevard/Cerritos Avenue	Los Alamitos	NBR, 3rd SBT, 3rd EBT	No	Outside jurisdiction, outside right-of-way
116. Los Alamitos Boulevard/Katella Avenue	Garden Grove	4th NBT, 4th SBT, 4th EBT, 4th WBT	No	Outside jurisdiction, outside right-of-way, removal of structures
117. Seal Beach Boulevard/ Westminster Road	Seal Beach	4th NBT, 3rd WBT	No	Outside jurisdiction, outside right-of-way, removal of structures

Source: Compiled by LSA 2019).
Caltrans = California Department of Transportation
EBL = eastbound left-turn lane
EBR = eastbound right-turn land
ELT = eastbound through lane
Hwy = Highway
NBL = northbound left-turn lane
NBR = northbound right-turn lane
NBT = northbound through lane
SBL = southbound left-turn lane
SBR = southbound right-turn lane
SBT = southbound through lane
WBL = westbound left-turn lane
WBR = westbound right-turn lane
WBT = westbound through lane

If the addition of capacity is infeasible to mitigate the impacts to the volume-to-capacity ratio at an intersection or freeway facility, a reduction in traffic volume may mitigate the impact. The Mobility Element presents a number of Implementation Measures designed to promote mobility by supporting all travel modes, including walking, bicycling, and use of transit, thereby reducing the number of automobile trips on the roadway network. Executing Mobility of People (MOP) Implementation Measures (IM) 1 through MOP IM-60 would have an effect on managing travel demand, reducing the volume of vehicle traffic, decreasing the volume-to-capacity ratio at City intersections, and improving vehicle LOS. The implementation measures are:

- **MOP IM-1:** Develop a street design standards manual to reflect the new street typologies that incorporate the concept of complete streets.
- **MOP IM-2:** Routinely incorporate complete streets features into all street redesign and repaving projects.
- **MOP IM-3:** Provide neighborhood and business groups the opportunity to review preliminary plans for major street improvements included in this plan before final design and implementation.
- **MOP IM-4:** Develop a Citywide Pedestrian Master Plan that establishes a basic inventory of pedestrian infrastructure, comprehensively prioritizes pedestrian improvements, furthers the intent of the place-type designations, makes connections to other modes of travel, promotes public health, and connects with open space features.
- **MOP IM-5:** Create walking loops with stepping-stone mile markers and other supportive features to support active living.
- **MOP IM-6:** Continue to implement programs to promote pedestrian safety through outreach to both pedestrians and motorists.
- **MOP IM-7:** Create separated lanes for pedestrians and cyclists for the entire length of the beach path.
- **MOP IM-8:** Use Neighborhood Traffic Control techniques when excessive vehicle speed, excessive volume, or pedestrian/vehicle safety concerns warrant them.
- **MOP IM-9:** Implement midblock crossings and traffic calming as needed in the more suburban locations of the City where larger blocks and wider streets inhibit pedestrians.
- **MOP IM-10:** Design safer streets by using traffic calming techniques (such as roundabouts and sidewalk extensions) and by providing more frequent and innovative crosswalks, pedestrian signals, and clearly marked bicycle lanes.
- **MOP IM-11:** Continuously implement new technology to improve the pedestrian environment.
- **MOP IM-12:** Actively seek funding to implement the Pedestrian and Bicycle Master Plans.
- **MOP IM-13:** Implement a Citywide bikeshare program.
- **MOP IM-14:** Develop an on-street bike parking (i.e., bike corrals) program, including standards and procedures.
- **MOP IM-15:** Strengthen existing development standards for bike parking at new commercial and multifamily developments.
- **MOP IM-16:** Implement the City's Metro Blue Line Bicycle and Pedestrian Access Plan.

- **MOP IM-17:** Address bicycle safety and access in the design and maintenance of all street projects.
- **MOP IM-18:** Whenever capital improvement projects are constructed at intersections, vehicle actuation should detect bicycles.
- **MOP IM-19:** Identify and analyze locations with a high number of bicycle crashes and implement appropriate engineering, education, enforcement, and countermeasures.
- **MOP IM-20:** Use "sharrow" marking on all existing and proposed Class III facilities, as feasible.
- **MOP IM-21:** Institutionalize the Bicycle-Friendly Business Districts and Bike Saturday campaign in Long Beach.
- **MOP IM-22:** Continue to conduct annual bike counts, walk audits, and other data collection and analysis related to bicycle facilities for program evaluation and to support grant-making efforts.
- **MOP IM-23:** Develop a policy for retrofitting existing automobile parking spaces for bike parking at existing commercial and multifamily developments.
- **MOP IM-24:** Coordinate and collaborate with local school districts to provide enhanced, safer bicycle and pedestrian connections to school facilities throughout Long Beach.
- **MOP IM-25:** Continue to upgrade the City's designation as a bike-friendly city to Platinum status.
- **MOP IM-26:** Participate in and support Citywide events to promote bicycling, such as National Car-Free Day, Bike to- Work Day, Bike Saturday, and Park[ing] Day, women on bikes, and bike buddy.
- **MOP IM-27:** Pilot an "individualized marketing campaign" to help residents to choose safe, convenient routes to replace automobile trips with bicycling and transit trips.
- **MOP IM-28:** Actively support ciclovias (i.e., bike festivals) and other "open street" activities in Long Beach.
- **MOP IM-29:** Continue to support the Bikestation and encourage the development of small-scale bike-transit hubs throughout the City of Long Beach.
- **MOP IM-30:** Ensure that all planning processes, such as neighborhood and specific plans, identify areas where pedestrian, bike, and transit improvements can be made, such as new connections, increased sidewalk width, improved crosswalks, improved lighting, and new street furniture.
- **MOP IM-31:** Continue to strengthen the marketing and promotion of nonautomobile transportation to residents, employees, and visitors.

- **MOP IM-32:** Routinely integrate the financing, design, and construction of pedestrian facilities with street projects. Build pedestrian improvements at the same time as improvements for vehicular circulation.

- **MOP IM-33:** Continue to implement pedestrian streetscape designs, especially on streets with projected excess vehicle capacity, to reduce either the number of travel lanes or the roadway width, and use the available public rights-of-way to provide wider sidewalks, bicycle lanes, transit amenities, or landscaping.

- **MOP IM-34:** Convert electricity transmission corridors to parks, as resources and leases become available.

- **MOP IM-35:** Establish Rails to Trails Program to repurpose, share, or reconfigure surplus rights-of-way to greenbelts with bicycles and pedestrian facilities.

- **MOP IM-36:** Establish a Pavement to Plazas Program to realign irregular intersections and repurpose surplus public rights-of-way for public space.

- **MOP IM-37:** Actively support and assist Long Beach Transit in the implementation of design guidelines for bus shelters and other bus stop amenities.

- **MOP IM-38:** Include Long Beach Transit early in the City's Site Plan Review process to ensure transit facilities are well integrated into the development project.

- **MOP IM-39:** Actively support and assist Long Beach Transit's development of a strategic action plan for future transit service.

- **MOP IM-40:** Actively support and assist Long Beach Transit's expansion of real-time transit information at bus shelters and expand smart phone applications and other new technology.

- **MOP IM-41:** Actively support and assist Long Beach Transit's establishment of mini-transit hubs throughout the City that provide multimodal connectivity.

- **MOP IM-42:** Establish interagency transit hubs and Park and Rides in northern half of the City.

- **MOP IM-43:** Actively support and assist Metro to expand the existing Park and Ride facilities at Metro Blue Line stations.

- **MOP IM-44:** Actively support Long Beach Transit's efforts to expand the Universal Access Pass Program to major employers and business districts.

- **MOP IM-45:** Continue to explore the feasibility of bus rapid transit and a streetcar system in Long Beach.

- **MOP IM-46:** Continue to implement transit-priority traffic signals.

- **MOP IM-47:** Investigate the feasibility of establishing a street car or other type of personal rapid transit system in Long Beach. This system is proposed as a long-term community asset that will enhance nonautomobile connectivity between neighborhoods; bus, rail, and water transit hubs; and the Downtown core.

- **MOP IM-48:** As a pilot program, apply interim Multimodal Level of Service (MMLOS) standards for development proposals Downtown.

- **MOP IM-49:** Actively promote and develop plans for the extension of the Metro Green Line Station to the Blue Line Willow Station to increase regional connectivity.

- **MOP IM-50:** Review all capital improvement projects to ensure improvements located on existing and planned bus routes include modification of street, curb, and sidewalk configurations to allow for easier and more efficient bus operation and improved passenger access and safety while maintaining overall pedestrian and bicycle safety and convenience.

- **MOP IM-51:** Ensure that the City's Transportation Impact Fee Program provides adequate funding for necessary transportation improvements that will benefit all travel modes, while also incentivizing development that is less dependent on expensive, new transportation infrastructure.

- **MOP IM-52:** Review and, if necessary, update the City's Transportation Impact Fee Program to ensure that funding is provided for necessary transportation improvements that will benefit all travel modes.

- **MOP IM-53:** Integrate financing and implementation of pedestrian, bicycle, and transit improvement projects with other related street modifications projects.

- **MOP IM-54:** Participate with local, regional, State and federal agencies, and other organizations.

- **MOP IM-55:** Support the casual carpool system by enhancing existing facilities and amenities. If necessary, the carpool facilities should be reconfigured or relocated to equally convenient locations.

- **MOP IM-56:** When industry best practice has been established, adopt a MMLOS standard.

- **MOP IM-57:** Develop a program to regularly evaluate traffic collision data. Identify top collision locations for automobiles, bicycles, and pedestrians, and develop appropriate countermeasures.

- **MOP IM-58:** Develop street and alley vacation guidelines.

- **MOP IM-59:** Create a mechanism to adjust the pricing and hours of availability and turnover of on-street parking consistent with the cost of parking garages and demand.

- **MOP IM-60:** Revise current parking space requirements to reflect shared parking and park-once policies.

Consistent with MOP IM-51 and MOP IM-52, the City is currently engaged in updating the Transportation Impact Fee Program to provide for improved mobility (including pedestrian and bicycle infrastructure) and otherwise manage travel demand. However, the timing and effectiveness of improvements funded through the Transportation Impact Fee Program are not known at this time. The effect of all of the measures identified in the Mobility Element on individual intersection LOS cannot be guaranteed because they rely on the changing attitudes and actions of many commuters. In addition, when some automobile trips are converted into alternative modes, some automobile trips that would otherwise have been discouraged by congestion may occur. Therefore, although these measures would contribute to an improved vehicle LOS, their effects cannot be quantified and they cannot be considered mitigation for the impacted freeway facilities and 48 impacted intersections for the purposes of CEQA. Therefore, Mitigation Measure MM T-1 is recommended to reduce the level of traffic impacts.

Mitigation Measure MM T-1 would require consideration of feasible traffic improvements at the time individual projects are proposed. If individual projects contribute to transportation impacts for which physical improvement is feasible, then physical improvements would be implemented and transportation impacts would be reduced. However, if potential physical improvements are not feasible, then transportation impacts would remain significant. Therefore, implementation of the proposed project would result in a significant and unavoidable impact related to a program, plan, ordinance, or policy addressing the circulation system.

Threshold 4.8.2: Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?

Less than Significant.

State CEQA Guidelines Section 15064.3 subdivision (b) provides revised criteria for analyzing transportation impacts consistent with SB 743, which has been interpreted as removing vehicle LOS from consideration under CEQA. In lieu of vehicle LOS, VMT must be adopted as the measure of transportation impact by July 1, 2020. As discussed above, Section 15064.3 subdivision (b) allows a lead agency to choose how to the evaluate a project's VMT in absolute terms, per capita, per household, or in any other measure. The TIA included VMT in absolute terms, per capita, and per household. For context, Long Beach VMT is compared to the larger Los Angeles County and Southern California regions.

The 2016 SCAG RTP/SCS provided calculations of VMT derived from the Regional Travel Demand Model. The data were presented in terms of daily VMT per capita for the entire region and by county in the model base year, future (2040 Baseline) without the RTP, and future (2040 with RTP/SCS) with the RTP. Table N summarizes this SCAG VMT data.

Table 4.8.J also displays per-capita VMT data for Long Beach. These data were not included in the 2016 RTP/SCS but were developed using the Regional Travel Demand Model and present an equivalent comparison. It should be noted that the 2040 Baseline model was not available for calculating the City's VMT in that scenario. As the data shows, VMT per capita is anticipated to decline regionally in the future as a result of previous planning efforts and is anticipated to decline further due to the elements of the 2016 SCAG RTP/SCS, which the proposed project would help to implement at the local level. VMT per capita in Long Beach is lower in the existing condition than in Los Angeles County as a whole and lower than the entire SCAG region. With implementation of the 2016 RTP/SCS, VMT per capita in Long Beach is anticipated to decline even further and will continue to be lower than the region as a whole or in Los Angeles County.

Table 4.8.J: Regional Per-Capita VMT Comparison

	Existing Base Year	2040 Baseline[1]	2040 with RTP/SCS
SCAG Region	22.8	22.1	20.5
Los Angeles County	21.5	20.2	18.4
Long Beach	19.9	–	18.0

Source: SCAG Regional Travel Demand Model
[1] 2040 regional planning horizon year baseline analysis prepared by SCAG for Comparison with 2016 SCAG RTP/SCS to project VMT without the RTP/SCS
RTP/SCS = Regional Transportation Plan/Sustainable Communities Strategy
SCAG = Southern California Association of Governments
VMT =vehicle miles traveled

Similar to the trend shown in the 2016 RTP/SCS, VMT in Long Beach is projected to decline as a result of planning efforts. In absolute terms, VMT in Long Beach will be reduced from 9,482,252 per day in the existing condition to 9,028,327 with the Proposed Project (a 5 percent decrease). The population will increase as VMT declines, resulting in VMT per capita declining from 19.9 per day to 18.2 per day (a 9 percent decrease). It should be noted that the traffic model data predict slightly higher VMT per capita with the proposed project than with the current distribution of land uses, as explained further below.

Table 4.8.K shows that the land use changes proposed in the LUE/UDE result in more efficient travel during the morning and evening peak commute hours (i.e., lower VMT during the peak periods). However, VMT during off-peak times increases slightly with the proposed project as compared to the existing LUE. These off-peak VMT are generated by discretionary trips, which the traffic model calculates based on the number of households. In other words, the model assumes that people living in overcrowded housing conditions generate fewer trips (e.g. to the grocery store) than the same number of people living in less-crowded, separate housing. Because the proposed project reduces overcrowding compared to the previous land use distribution, the number of discretionary trips increases as does the off-peak VMT and, subsequently, the total VMT. The existing VMT per household is 56.9 per day, which is anticipated to decline in the future to 49.9 per day without the proposed project. The efficiency of the distribution of land uses in the LUE/UDE would reduce this further to 46.1 VMT per day per household (a 19 percent decrease from existing conditions and an 8 percent decrease from the existing LUE).

Table 4.8.K: Long Beach VMT

	Existing Base Year	2040 No Project with Existing LUE	2040 with Proposed Project	Percentage Change	
				From Existing LUE[1]	From Existing Base Year
Citywide Peak Period VMT[2]	4,635,625	4,306,500	4,276,489	(1%)	(8%)
Citywide Off-Peak VMT[2]	4,846,627	4,600,132	4,751,838	3%	(2%)
Citywide Daily VMT[2]	9,482,252	8,906,632	9,028,327	1%	(5%)
VMT per Capita[3]	19.9	18.0	18.2	1%	(9%)
VMT per Household[4]	56.9	49.9	46.1	(8%)	(19%)

Source: Southern California Association of Governments Regional Travel Demand Model

1 Provided for information and disclosure purposes only.

2 Regional Travel Demand Model traffic analysis zones do not terminate at city limits. Citywide data reflects the total in all traffic analysis zones for which any portion is within Long Beach city limits.

3 Regional Travel Demand Model traffic analysis zones do not terminate at city limits. Per capita ratio is the total VMT in all traffic analysis zones for which any portion is within Long Beach divided by the total population in those traffic analysis zones, which is greater than the Long Beach population.

4 Regional Travel Demand Model traffic analysis zones do not terminate at city limits. Per household ratio is the total VMT in all traffic analysis zones for which any portion is within Long Beach divided by the total households in those traffic analysis zones, which is greater than the Long Beach household.

VMT = vehicle miles traveled

The State of California has concurrent goals of reducing VMT and increasing housing supply to improve affordability and accommodate the workforce. The proposed project increases the number of housing units to reduce overcrowding in Long Beach. The efficiency of the location of land uses in the LUE/UDE (i.e., infill development policies and sites) results in a 19 percent decrease in VMT per household compared to existing conditions. Other measures of VMT, including per capita and absolute terms, decline as well compared to existing conditions. With the proposed project, VMT per capita in Long Beach remains lower than the region as a whole and lower than Los Angeles County. Because the measures of VMT in absolute terms and per capita decrease from existing conditions with the proposed project and the measure of VMT per household decreases from existing conditions and from the current LUE, it is determined that the proposed project would have a less than significant impact related to *State CEQA Guidelines* Section 15064.3 subdivision (b), analyzing transportation impacts consistent with SB 743.

4.8.9 Mitigation Measures

MM T-1 Prior to approval of any discretionary project that is forecast to generate 100 or more peak-hour trips, as determined by the City of Long Beach (City) Traffic Engineer, the property owners/developers shall prepare a traffic improvement analysis of any facilities under the jurisdiction of Caltrans at which the project is anticipated to contribute 50 or more peak-hour trips, analyzing the impact on such state transportation facilities where Caltrans has previously prepared a valid traffic study, as identified below, and identified feasible operational and physical improvements and has determined the associated fees necessary to mitigate project-related impacts. The fair share cost of such improvements shall be assessed if transportation analysis demonstrates such improvements can achieve vehicle level of service (LOS) D (as measured by Intersection Capacity Utilization or Highway Capacity Manual

methodology) or an improved vehicle level of service, if LOS D cannot be feasibly achieved. The Conditions of Approval for the project shall require the property owner/developer to construct, bond for, or pay reasonable fair share fees to the City who will work jointly with Caltrans to implement such improvements, unless alternative funding sources have been identified.

In the event that Caltrans prepares a valid study, as defined below, that identifies fair share contribution funding sources attributable to and paid from private development to supplement other regional and State funding sources necessary to undertake improvements of impacted state transportation facilities, then the project applicant shall use reasonable efforts to pay the applicable fair share amount to Caltrans. The study shall be reviewed and approved by the California Transportation Commission. It shall include fair share contributions related to private development based on nexus requirements contained in the Mitigation Fee Act (Govt. Code § 66000 et seq.) and 14 Cal. Code of Regs. § 15126.4(a)(4) and, to this end, the study shall recognize that impacts to Caltrans facilities that are not attributable to development located within the City of Long Beach are not required to pay in excess of such developments' fair share obligations. The fee study shall also be compliant with Government Code § 66001(g) and any other applicable provisions of law. If Caltrans chooses to accept the project Applicant's fair share payment, Caltrans shall apply the payment to the fee program adopted by Caltrans or agreed upon by the City and Caltrans as a result of the fair share fee study.

4.8.10 Cumulative Impacts

As defined in Section 15130 of the *State CEQA Guidelines*, cumulative impacts are the incremental effects of an individual project when viewed in connection with the effects of past, current, and probably future projects within the cumulative impact area for traffic and circulation. The project proposes an update to the City's General Plan that would affect development patterns throughout the City through the horizon year of 2040. As such, because the proposed project is a City-wide policy action that would facilitate future development throughout the entire City, the proposed project itself is cumulative in nature.

Under the anticipated General Plan (2040) plus Proposed Project build-out conditions, the analysis above identified potentially significant traffic impacts to vehicle LOS at intersections in Long Beach, intersections in neighboring cities, Caltrans intersections, and freeway facilities. Of the 120 intersections included in the study area, 48 of them (40 percent) would be significantly impacted by traffic volume increases between existing and future conditions. Potential physical improvements at each impacted location was considered against potential constraints such as the intersection being located outside of the City's jurisdiction, which eliminates the City's authority to compel physical improvements or physical improvements being located outside of the existing rights-of-way, which could be infeasible or result in increased environmental impacts. Furthermore, the effect of the Implementation Measures in the Mobility Element in reducing traffic volume cannot be guaranteed to reduce impacts. Because measures to increase vehicle capacity or reduce vehicle volume cannot be guaranteed and may not be feasible, the impacts identified above are considered cumulatively significant and unavoidable for the horizon year of 2040.

4.8.11 Level of Significance after Mitigation

As identified in Table 4.8.I, mitigations in the form of physical improvements are not feasible for the identified intersections to function at LOS D or better. Therefore, Mitigation Measure MM T-1 is the only feasible mitigation. After implementing Mitigation Measure MM T-1, some of the potentially significant traffic impacts to intersections in Long Beach, intersections in neighboring cities, Caltrans intersections, and freeway facilities may be reduced while others are likely to remain significant and unavoidable.

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