DRAFT

Sherbeck Field Improvements Project Environmental Impact Report

Prepared for:

Fullerton College

321 East Chapman Avenue

Fullerton, California 92832

Contact: Oscar Saghieh, Project Manager, Campus Capital Projects

May 15, 2019

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SCH No. 2018041025

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TABLE OF CONTENTS

Section **Page No.**

APPENDICES

FIGURES

TABLES

CHAPTER 1
SUMMARY

1.1 INTRODUCTION

The North Orange County Community College District (District) has prepared this Draft Environmental Impact Report (EIR) to provide the public and responsible agencies information about the potential adverse effects on the local and regional environment associated with implementation of the proposed Sherbeck Field Improvements Project (proposed project). This EIR has been prepared pursuant to the California Environmental Quality Act (CEQA) of 1970 (as amended), codified at California Public Resources Code Section 21000 et seq., and the CEQA Guidelines in the California Code of Regulations, Title 14, Section 15000 et seq.

The Draft EIR is subject to a minimum 45-day public review period by responsible agencies and interested parties. Agency and public comments on the adequacy of the Draft EIR and the lead agency's compliance with CEQA may be submitted to the District as lead agency, in writing, prior to the end of the public review period. Publication of the Draft EIR marks the beginning of a 45-day public review period, during which written comments may be submitted to:

Mr. Richard Williams
District Director, Facilities Planning and Construction
North Orange County Community College District
1830A West Romneya Drive
Anaheim, California 92801-1819

Following the public review period, the District will prepare a Final EIR, which will include responses to all written comments received during the Draft EIR public review period. The District's Board may use this Draft EIR to consider approval of the proposed project, make Findings regarding identified impacts, and if necessary, adopt a Statement of Overriding Considerations regarding these impacts.

1.2 BACKGROUND

Sherbeck Field was originally constructed in 1956 to 1957. The field was renamed in 1992 after Coach Hal Sherbeck (Fullerton College Centennial 2017). The field house, existing turf, and rubberized track were constructed in 2010 (California Community Colleges 2016).

Funding for the proposed Sherbeck Field Improvements Project (proposed project) would come from several years of savings generated from accumulated campus fund carryover (Saghieh, pers. comm. 2017a). Funding for the proposed project would not come from Measure J funds.

1.3 PROJECT LOCATION

Sherbeck Field is located in the northeastern portion of the Fullerton College campus. Student Parking Lots 4 and 5 are located immediately north and west of the project site. Farther north are the Horticulture Building 1600 Complex and Child Development classrooms. North Berkeley Avenue borders the eastern side of the field, and farther east are single-family residences. Softball, baseball, and soccer fields are located south of Sherbeck Field.

Fullerton College is located at 321 East Chapman Avenue in the City of Fullerton (City) and occupies an approximately 70-acre site in northern Orange County. The City is surrounded by the Cities of La Habra and Brea to the north, Placentia to the east, Anaheim to the south, and Buena Park to the west. Figure 3-1, Project Location, shows the campus's regional location. Specifically, Fullerton College is bounded by residential development to the north, south, and east, and Fullerton Union High School to the west.

1.4 PROJECT OBJECTIVES

The proposed project's objectives are as follows:

- Provide a facility for the Fullerton College football program at Fullerton College that meets the college field and goalpost sizing requirements of the California Community College Athletic Association Regulations, Bylaw 4.26A.
- Provide a facility for the Fullerton College football program for full-season play so that the college does not have to request waivers from the Southern California Football Association to play at high school fields.
- Provide field lighting to allow for more evening class options for the physical education program to meet student demand and to allow for evening soccer games and occasional evening football games.
- Install permanent bleachers so that Fullerton College can host regular season and playoff football games at the college.
- Install permanent bleachers so that Fullerton College can reduce the costs associated with renting bleachers for the annual Fullerton College commencement ceremony.
- Construct a press box, which is required for football games in order to house football coaching staff, media, and statisticians.
- Construct a storage building to address the inadequacy of the current storage of football equipment and track and field equipment at the field house.

1.5 PROJECT DESCRIPTION

1.5.1 Construction and Installation

Bleachers

The proposed project would involve installation of 4,417 permanent prefabricated aluminum bleachers. On the home side of the field (south), 2,861 seats would be provided, and on the visitor side (north), 1,556 seats would be provided. The height of the bleachers would be approximately 19 feet high on the home side[1] and 14 feet high on the visitor side. Figure 3-3 shows the proposed site plan for Sherbeck Field.

Lighting

There would be a total of six field lighting stanchions. Two stanchions would be located on the visitor side of the field (north). One of these stanchions would be located on the west side of the field (F1), while the other would be located on the east side (F2). The F1 stanchion would be located north of the westernmost row of the bleachers. The F2 stanchion would be located north of the east bleacher ramp. The F1 and F2 stanchions would be approximately 100 feet tall. Football light fixtures would be located at a height of approximately 25 feet and 100 feet. Egress, or house, light fixtures would be located at a height of approximately 80 feet. F1 and F2 would each have a power load of 16.9 kilowatts (kW).

Two stanchions would be located on the home side of the field (south). One of these stanchions would be located on the west side of the field (F3), while the other would be located on the east side (F4). The F3 stanchion would be located south of the west bleacher ramp and the F4 stanchion would be located south of the east bleacher ramp. The F3 and F4 stanchions would be approximately 120 feet tall. Football light fixtures would be located at a height of approximately 30 feet and 120 feet. House light fixtures would be located at a height of approximately 80 feet. F3 and F4 would each have a power load of 19.6 kW.

One stanchion would be located on the eastern edge of the field (P1) and one on the western edge of the field (P2). The P1 stanchion would be located south of an access gate. The P2 stanchion would be located south of the scoreboard. The P1 and P2 stanchions would be approximately 60 feet tall. Track light fixtures would be located at a height of approximately 60 feet. P1 and P2 would each have a power load of 3.45 kW.

The total power load of the field lighting would be 79.9 kW. The stanchions would be made of galvanized steel and would be grey or silver.

[1] The press box would be located on the home side and would be approximately 9 feet tall. Therefore, the press box would reach approximately 28 feet tall, including the height of the bleachers.

On Monday through Thursday evenings, field lights would operate until 9:15 p.m. to accommodate classes and rentals, and house lights would operate until 9:30 p.m. to allow students to exit the field safely. On Friday evenings, field lights would operate until 8:15 p.m. at the latest, and house lights would operate until 8:30 p.m. at the latest to allow students to exit the field safely. On Saturday evenings, field lights would operate until 10:00 p.m. at the latest, and house lights would operate until 10:30 p.m. at the latest to accommodate Fullerton College football games. On Sunday evenings, field lights would operate until 6:00 p.m. at the latest to accommodate soccer rentals.

Sound System

A sound system would be installed and used for athletic competition events only. The sound system would not be used for classes or rentals, although outside organizations renting the facility could bring their own sound system, if needed. There would be 12 speaker arrays in total. Seven speaker arrays, which would be 36 feet high, would be located behind the bleachers on the east side of the field. Five speaker arrays, which would be 33 feet high, would be located behind the bleachers on the west side of the field. The speakers and speaker poles would be silver in color.

For a daytime Fullerton College football game, the sound system would be employed from 12:00 p.m. until approximately 5:00 p.m. In the event of the occasional Saturday evening football game, the sound system would operate until 10:00 p.m. If a Fullerton College soccer match were to be held in the evening, the sound system would be employed from 5:00 p.m. to approximately 8:00 p.m. For a Fullerton College track and field event, the sound system would be employed from approximately 1:00 p.m. to 5:00 p.m. Third-party rentals would have to comply with the time periods specified in Table 3-2 (see Section 3, Project Description).

Press Box

The press box would be located on the home side of the field and would be on top of the bleachers. The press box would be divided into three portions: the home press box, the coaches' box, and the visitors' press box. The press box would be 9 feet tall and would reach 28 feet tall combined with the height of the bleachers. The home and visitors' press boxes would each be approximately 15 feet long and 9 feet deep and would house the home and visitors' coaches. The 24-foot-long and 9-foot-deep box would house the Sport Information Director, statistician, announcer, scorekeeper, score clock operator, radio and television broadcasters, and local media and press. A railing would be provided on top of the press box. Windows would be located across the front of the press box, and two interior doors and two exterior doors would provide access. In total, the press box would be approximately 500 square feet in area and would not have roof access or elevator access.

Storage Building

A storage building would be installed west of the visitors' bleachers. The building would be 14 feet tall, 30 feet wide, and 20 feet deep, for a total area of 600 square feet. A roll-up door would provide easy access.

Scoreboard

No new scoreboard would be constructed as part of the proposed project. The existing scoreboard, located at the eastern side of the field, would continue to be used.

1.5.2 Proposed Programming

Sherbeck Field would be used for academic instruction, competitive athletics, and rentals. A description of these uses is provided in this section.

Academic Instruction

Fullerton College would continue to offer courses for track and field, cross country, football, and soccer, as well as various fitness courses. Courses would be offered on weekdays only in the mornings, afternoons, and early evenings before nightfall. The inclusion of field lighting as part of the field improvements project would allow Fullerton College to add more evening classes, to offer a balanced schedule, and provide more class options for students who may not be able to take physical education during the day. The earliest classes would begin at 6:20 a.m. and the latest classes would end at 9:15 p.m. Classes would run 1 hour and 25 minutes 2 nights per week. Evening classes would start at 6:15 p.m. A 9:15 ending time accounts for classes that start at 7:50 p.m. 2 nights a week (Monday and Wednesday or Tuesday and Thursday). Course sizes would range from 24 to 32 students (Saghieh, pers. comm. 2017d; Moscol, pers. comm. 2018). Fullerton College would hold a maximum of two classes at the field simultaneously (Moscol, pers. comm. 2018). The addition of lighting would allow up to 256 additional students to be enrolled in physical education classes each semester.

Competitive Athletics

Football

Sherbeck Field would continue to be used for Fullerton College football practice during weekdays in the afternoon and evening, for 2 hours. There would be approximately 80 practice sessions in the 16-week fall semester.

Saturday afternoon and occasional evening games[2] would be held at Sherbeck Field. Fullerton College football games would last for 3 hours. There would be approximately five regular community college games and up to two community college playoff football games per year held at Sherbeck Field. There would be five away games held at other campuses. Fullerton College football games would be scheduled from the last week of August to the last week of November. There would be a maximum of 1,600 attendees for a regular season football game and a maximum of 3,000 attendees for a playoff game (Saghieh, pers. comm. 2017d). Parking would be provided at no charge for football game attendees. Fullerton College anticipates that once games are held at the campus, the attendance may increase due to the improved convenience for students, faculty and staff. Parking on campus would be provided at no charge for football game attendees.

Soccer

Sherbeck Field would continue to be used for Fullerton College soccer practice, which would be held on weekdays in the morning for 2 hours. There are approximately 80 practice sessions in the 16-week fall semester.

Friday evening Fullerton College soccer games would be held at Sherbeck Field. Fullerton College soccer games would typically last for 2 hours. There would be approximately three soccer games per year and a maximum of 200 attendees per game. Parking would be provided at no charge for soccer game attendees.

Track and Field

Sherbeck Field would continue to be used for Fullerton College track and field practice Mondays through Fridays during the fall and spring semesters. Team practices would occur during the morning from 7:00 a.m. to 9:00 a.m. and during the afternoon from 12:00 p.m. to 2:00 p.m. There would be approximately 80 practice sessions in the 16-week fall semester and approximately 80 practice sessions in the 16-week spring semester.

Track and field events would continue to be held at Sherbeck Field. One Fullerton College track and field team event would occur per year, on a Friday during the spring semester. This event would begin at 10:00 a.m. and end at 4:00 p.m. There would be approximately 100 attendees at this event.

Orange Lutheran High School would continue to use the track in the spring and host up to four track meets per year, usually on a Tuesday, Wednesday, or Thursday. Practice and meets would be held in the afternoon from 3:00 p.m. to 6:00 p.m. and would include approximately 150 attendees.

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[2] Evening games would only be held in special circumstances during hot weather events or depending on the distance the opposing college has to travel. This is based on the Southern California Football Association bylaws. Evening games would not be regularly scheduled.

Rentals

Fullerton College would continue to rent out Sherbeck Field to private schools and organizations to host athletic courses and practice. Specifically, Hope International University, Rosary High School, CDA Slammers, Anaheim Soccer, Seahorse Soccer, CAL South, Troy High School, Prep Football America Camp, and Orange Lutheran rent Sherbeck Field for athletic practice sessions. Additionally, Sherbeck Field would be rented out by the Buena Park Police Department three times per year for training purposes. Sherbeck Field would be rented out at various times on weekdays, Saturdays, and Sundays, as shown in Table 3-2. Rentals would be limited to the following time frames: 6:00 a.m. to 9:00 a.m. Mondays through Fridays, 1:00 p.m. to 8:00 p.m. on Mondays through Fridays, and 8:00 a.m. to 8:00 p.m. on Saturdays and Sundays. Third-party rentals would have to comply with the time periods specified in Table 3-2 (see Section 3, Project Description).

Commencement Ceremony

The proposed project would not result in any change from the existing conditions as it relates to timing of and number of attendees at the annual commencement ceremony for Fullerton College. The commencement ceremony would continue to occur once per year in late May or early June at Sherbeck Field. Student check-in would occur from 8:00 a.m. to 9:30 a.m. Commencement would be held on Saturday, beginning at 10:00 a.m., and end in the afternoon. There would be a maximum of 7,500 students and guests attending the commencement ceremony.

1.6 PROJECT CONSTRUCTION

It is anticipated that the Sherbeck Field improvements would occur over 4 months, beginning in January 2020 through April 2020 (Saghieh, pers. comm. 2018). Planned construction phasing is as follows:

- Site preparation
- Grading
- Trenching
- Construction
- Paving
- Architectural coating

Site preparation would involve the removal of some existing pavement, excavation, and rough grading. Grading would consist of over-excavation within the bleacher areas, ramp areas, storage building area, and proposed paved areas to an average depth of 3 feet. During the grading phase, soils would be removed, replaced, and compacted. No export of soils is expected. The trenching phase would involve the trenching of soil for placement of utilities, such as stormwater facilities. Construction would involve the installation of the press box, storage building, bleachers, sound system, and light stanchions. The paving phase would involve the pavement of asphalt surfaces, specifically for the bleacher area, storage building area, and walkways. Architectural coating would involve the application of athletic field striping to the track and field and painting the press box.

1.7 SUMMARY OF IMPACTS

Table 1-1 presents a summary of the environmental impacts that could result from the proposed project, proposed mitigation measures, and the level of significance of the impact after the implementation of the mitigation measures.

1.8 ANALYSIS OF ALTERNATIVES

Four alternatives to the proposed project, including the No Project/No Development/Continued Use of Yorba Linda High School Alternative, were considered in Chapter 6, Alternatives. The No Project Alternative is a required element of an EIR pursuant to Section 15126.6(e) of the CEQA Guidelines that examines the environmental effects that would occur if the project were not to proceed. The other alternatives are discussed as part of the "range of reasonable alternatives" selected by the District. The alternatives addressed in Chapter 6 are listed below:

1. No Project/No Development/Continued Use of Yorba Linda High School Alternative
2. Reduced Project Alternative
3. Alternative Location at California State University Fullerton
4. Alternative Location at Fullerton Union High School

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
Aesthetics			
Would the project have a substantial adverse effect on a scenic vista?	N/A	N/A	N/A
Would the project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?	N/A	N/A	N/A
In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning, and other regulations governing scenic quality?	Less than significant	None	Less than significant
Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less than significant	None	Less than significant
Would the project have a cumulative effect on aesthetic resources?	Less than significant	None	Less than significant
Air Quality			
Would the project conflict with or obstruct implementation of the applicable air quality plan?	Less than significant	None	Less than significant
Would the project result in a cumulatively considerable new increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	Less than significant	None	Less than significant

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
Would the project expose sensitive receptors to substantial pollutant concentrations?	Less than significant	None	Less than significant
Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less than significant	None	Less than significant
Would the project have a cumulative effect on air quality resources?	Less than significant	None	Less than significant
Greenhouse Gas Emissions			
Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less than significant	None	Less than significant
Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less than significant	None	Less than significant
Would the project have a cumulative effect on greenhouse gas emissions resources?	Less than significant	None	Less than significant
Hazards and Hazardous Materials			
Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	N/A	N/A	N/A
Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	N/A	N/A	N/A
Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	N/A	N/A	N/A
Would the project be located on a site which is	Significant	**MM-HAZ-1**: The North Orange County Community College	Less than significant

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as result, would is create a significant hazard to the public or the environment?		District is responsible for ensuring the proposed Sherbeck Field project complies with applicable procedures set forth in the Hazardous Materials Contingency Plan for Fullerton College, 321 East Chapman Avenue, Fullerton, California 92832, and dated February 2018. The Hazardous Materials Contingency Plan, as it applies to the Sherbeck Field project, shall be followed during construction activities.	
For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	N/A	N/A	N/A
Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	N/A	N/A	N/A
Would the project expose people or structures, either directly or indirectly to a significant risk of loss, injury or death involving wildland fires?	N/A	N/A	N/A
Would the project have a cumulative effect on hazards or hazardous materials resources?	Significant	**MM-HAZ-1**	Less than significant
Noise			
Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Significant	**MM-NOI-1:** Prior to initiation of construction on the Fullerton College campus, the North Orange County Community College District shall approve a construction noise mitigation program to include the following: • Construction equipment shall be properly outfitted and maintained with feasible noise-reduction devices to minimize construction-generated noise. • Stationary noise sources such as generators shall be	**Significant and unavoidable**

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
		located away from noise-sensitive land uses if feasible. • Laydown and construction vehicle staging areas shall be located away from noise-sensitive land uses if feasible. • A temporary construction noise barrier shall be constructed at the eastern boundary of the project site. The noise barrier shall be a minimum of 8 feet in height, must have a surface density of at least 4 pounds per square foot, and be free of openings and cracks. • Whenever possible, academic, administrative, and residential areas that will be subject to construction noise shall be informed 1 week before the start of construction. • All construction pursuant to the proposed project shall be required to implement the above measures for control of construction noise. **MM-NOI-2:** The Fullerton College Athletic Department shall require the Facilities Department and any rental agreements to restrict field events at Sherbeck Field to occur only during the following times: • Spring Semester: Monday through Thursday between 6:00 a.m. to 9:15 p.m.; Friday between 6:00 a.m. to 8:00 p.m.; Saturday and Sunday between 8:00 a.m. to 8:00 p.m. • Summer Semester: Monday through Thursday between 6:00 a.m. to 9:15 p.m.; Friday between 6:00 a.m. to 8:00 p.m.; Saturday and Sunday between 8:00 a.m. to 8:00 p.m. • Fall Semester: Monday through Thursday between 6:00 a.m. to 9:15 p.m.; Friday between 6:00 a.m. to 8:15 p.m.; Saturday and Sunday between 8:00 a.m. to 8:00 p.m. (with the exception of up to two Fullerton College football games per year from 7:00 p.m. to 10:00 p.m.).	

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
		• Third-party rentals will also be required to use the College's PA system during the rental period.	
Would the project result in generation of excessive groundborne vibration or groundborne noise levels?	Less than significant	None	Less than significant
For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	N/A	N/A	N/A
Would the project have a cumulative effect on noise resources?	Significant	**MM-NOI-1** **MM-NOI-2**	**Significant and unavoidable**
Public Services			
Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:			
i. Fire protection?	Less than significant	None	Less than significant
ii. Police protection?	Less than significant	None	Less than significant
iii. Schools?	N/A	N/A	N/A
iv. Parks?	N/A	N/A	N/A
v. Other public facilities?	N/A	N/A	N/A
Would the project have a cumulative effect on public services resources?	Less than significant	None	Less than significant

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
Recreation			
Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	N/A	N/A	N/A
Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	Significant	**MM-NOI-1** (see Noise section of this table) **MM-NOI-2** (see Noise section of this table) **MM-HAZ-1** (see Hazards and Hazardous Materials section of this table) **MM-TRA-1** Construction Management Plan Criteria: To ensure impacts to the surrounding street system are less than significant, the North Orange County Community College District, in coordination with the City of Fullerton, shall, prior to the commencement of construction activities, develop a Construction Management Plan to be implemented during project construction. The Construction Management Plan shall include the following components: • Implement traffic control for any street closure, detour, or other disruption to traffic circulation. • Identify the routes that construction vehicles will utilize to access the site for the delivery of construction materials to minimize to the extent feasible traffic-related impacts, traffic controls and detours, and proposed construction phasing plan for the project. • Specify the hours during which transport activities can occur and methods to minimize construction-related impacts to adjacent streets. • Require that the hauling or transport of oversize loads be limited to the non-peak hours of 9:00 a.m. to 4:00 p.m. only, Monday through Friday, unless approved otherwise	**Significant and unavoidable**

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
		by the City Engineer. • Use of local collector street (as defined by Exhibit 6 of The Fullerton Built Environment) by construction vehicles shall be prohibited. • Haul trucks entering or exiting public streets shall at all times yield to public traffic. • All construction-related parking and staging of vehicles shall be kept out of the adjacent public roadways and will occur on site. • The Construction Management Plan shall meet standards established in the current *California Manual on Uniform Traffic Control Devices* as well as City of Fullerton requirements. **MM-TRA-2:** The North Orange County Community College District shall implement a Traffic Management Plan (TMP) during the Friday and Saturday field event arrival and departure periods, as applicable, at the intersections of Lemon Street/Berkeley Avenue, Lemon Street/Fullerton College Drive, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2. The TMP shall be implemented in coordination with the City of Fullerton and shall include, as necessary: the placement of police department staff at the affected intersections to manage traffic flow; intersection signal timing adjustments to further improve traffic flow; routing of traffic via traffic cones/delineators; and/or the implementation of programmable changeable message signs. **MM-TRA-3:** Prior to 2030, the North Orange County Community College District shall pay its proportional "fair share" (24.9%) of the costs to implement the following	

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
		improvements at the intersection of State College Boulevard/Chapman Avenue: Widen and/or restripe the westbound approach of Chapman Avenue to provide a second westbound left-turn lane and modify the existing traffic signal as necessary. **MM-TRA-4:** Prior to 2030, the North Orange County Community College District shall pay its proportional "fair share" (0.6%) of the costs to implement the following improvements at the intersection of the State Route (SR) 57 Northbound (NB) Ramps and Chapman Avenue: widen and/or restripe the westbound approach of Chapman Avenue to provide a third westbound through lane and modify the existing traffic signal as necessary.. **MM-TRC-1:** In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether additional study is warranted. Depending on the significance of the find under the California Environmental Quality Act (CEQA), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted. **MM-UTL-1:** Based on the Orange County Technical Guidance Document and site characteristics, the proposed project would ensure that the site runoff surface is captured and directed into bioswales on the northern and southern sides of the site. Each swale shall be designed as a trapezoid	

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
		with side slopes of no more than 2:1, with a 3-foot base width, as shown in the preliminary drainage analysis prepared for the proposed project. All overflow drainage in excess of the water quality treatment flow requirements will be directed into the existing curb and gutter system around the site.	
Would the project have a cumulative effect on recreation resources?	Significant	**MM-NOI-1** **MM-NOI-2** **MM-HAZ-1** **MM-TRA-1** **MM-TRA-2** **MM-TRA-3** **MM-TRA-4** **MM-TRC-1** **MM-UTL-1**	**Significant and unavoidable**
		Transportation	
Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Significant	**MM-TRA-1** (see Recreation section of this table) **MM-TRA-2** (see Recreation section of this table) **MM-TRA-3** (see Recreation section of this table) **MM-TRA-4** (see Recreation section of this table)	**Significant and unavoidable**
Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	Significant	**MM-TRA-1** **MM-TRA-2** **MM-TRA-3** **MM-TRA-4**	**Significant and unavoidable**
Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves, or dangerous intersections) or incompatible uses (e.g., farm equipment)?	N/A	N/A	N/A
Would the project result in inadequate emergency	Less than significant	None	Less than significant

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
access?			
Would the project have a cumulative effect on traffic and/or circulation resources?	Significant	**MM-TRA-2** **MM-TRA-3** **MM-TRA-4**	**Significant and unavoidable**
Tribal Cultural Resources			
Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:			
Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	Less than significant	None	Less than significant
A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Significant	**MM-TRC-1** (see Recreation section of this table)	Less than significant
Would the project have a cumulative effect on cultural resources?	Less than significant	None	Less than significant
Utilities and Service Systems			
Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Potentially significant	**MM-UTL-1** (see Recreation section of this table)	Less than significant
Would the project have sufficient water supplies	Less than significant	None	Less than significant

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?			
Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	Less than significant	None	Less than significant
Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	N/A	N/A	N/A
Would the project comply with federal, state, and local statutes and regulations related to solid waste?	N/A	N/A	N/A
Would the project have a cumulative effect on utilities and/or service systems resources?	Potentially significant	**MM-UTL-1**	Less than significant
Energy			
Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy?	Less than significant	None	Less than significant
Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	Less than significant	None	Less than significant
Would the project have a cumulative effect on energy?	Less than significant	None	Less than significant
Wildfire			
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones:			
Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?	Less than significant	None	Less than significant
Would the project due to slope, prevailing winds, and	Less than significant	None	Less than significant

Table 1-3
Summary of Project Impacts

Environmental Topic	Impact?	Mitigation Measure(s)	Level of Significance After Mitigation
other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?			
Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	Less than significant	None	Less than significant
Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	Less than significant	None	Less than significant
Would the project have a cumulative effect on wildfire?	Less than significant	None	Less than significant

1.9 AREAS OF CONTROVERSY

Section 15123(b)(2) of the CEQA Guidelines requires the executive summary of an EIR to disclose areas of controversy known to the lead agency that have been raised by the agencies and the public. The District circulated a notice of [reparation (NOP) to solicit agency and public comments on the scope and environmental analysis to be included in the EIR. A total of 62 comment letters and 24 scoping comment cards were received during the NOP public review period. Copies of the NOP and the NOP comment letters received by the District are included in Appendices A and B, respectively, to this EIR. The following issues were raised in the written responses to the NOP:

- Several commenters were concerned with impacts related to light pollution, increased glare from the lights, noise pollution, traffic, and parking issues.
- Commenters suggested use of the Fullerton Union High School Stadium, California State University, Fullerton Titan Stadium, or other venues as alternatives.
- Other issues raised were related to safety, which would increase the need for police patrolling during events.
- The City asked that the EIR include effective and enforceable mitigation measures that will protect the surrounding residential areas from light, noise, and traffic intrusion. Other comments include recommendations for the aesthetics, noises, traffic, and alternatives analyses. In addition, the City requested that the EIR evaluate impacts to public infrastructure, using anticipated quantities of discharge into storm drains, sewers, and anticipated water usage.

Based on the City's comments, the EIR carried forward analysis of Section 4.10, Utilities and Service Systems, as it relates to water, wastewater, and stormwater. Other comments are addressed in Section 4.1, Aesthetics; Section 4.5, Noise; Section 4.8, Transportation; and Chapter 6, Alternatives.

1.10 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain a discussion of issues to be resolved. With respect to the proposed project, the key issues to be resolved include decisions by the District, as lead agency, as to the following:

- Whether this environmental document adequately describes the environmental impacts of the proposed project.
- Whether the recommended mitigation measures should be modified and/or adopted.

- Whether there are other mitigation measures or alternatives that should be considered for the proposed project besides those identified in the Draft EIR.

1.11 REFERENCES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

Moscol, M. 2018. "Confirmation of Sherbeck Field Class Information for EIR." Email from M. Moscol (Assistant Project Manager/Campus Capital Projects, Fullerton College) to R. Struglia (Dudek). May 4, 2018.

Saghieh, O. 2017d. "Sherbeck Field Event Attendance." Email from O. Saghieh (Project Manager/Campus Capital Projects, Fullerton College) to C. Munson (Dudek). September 25, 2017.

Saghieh, O. 2018. "Data Needs for AQ and GHG Analyses." Email from O. Saghieh (Project Manager/Campus Capital Projects, Fullerton College) to R. Struglia (Dudek).

CHAPTER 2
INTRODUCTION

2.1 PROJECT BACKGROUND

Sherbeck Field was originally constructed from 1956 to 1957. The field was renamed in 1992 after Coach Hal Sherbeck, who coached 31 seasons at Fullerton College from 1961 to 1991. According to the Fullerton College 1999 Master Plan, a new College-Community All-Purpose stadium with seating for 10,000 to 12,000 spectators was one of the top priorities. Another option was a football-only stadium. Those plans eventually faded, since they were dependent on occupying the high school farm. In 2010, the field house, synthetic field, and rubberized track were constructed as part of Bond Measure X. When the project was publicly bid, lights and bleachers were part of the project. Community feedback led to the removal of the lights and bleachers as part of the project. With increased needs for additional programs creating more demands for field use and a championship football team, the North Orange County Community College District (District) has decided to move forward with the proposed Sherbeck Field Improvements Project (proposed project). A detailed description of the proposed project is provided in Chapter 3, Project Description, of this environmental impact report (EIR).

2.2 ENVIRONMENTAL PROCEDURES

2.2.1 CEQA Compliance

As set forth in the California Environmental Quality Act (CEQA),[1] the purpose of an EIR is to identify a project's significant effects on the environment, identify alternatives to a project, and indicate the manner in which significant impacts can be mitigated or avoided (Public Resources Code Section 21002.1).

In order to be approved and implemented, the proposed project requires that discretionary action be taken by the District's Board of Trustees. Therefore, in accordance with Public Resources Code Section 21080, the proposed project is subject to environmental review requirements under CEQA. For purposes of complying with CEQA, the District's Board of Trustees is the lead agency for the proposed project (CEQA Guidelines Sections 15050–15053).[2]

In accordance with Section 15121(a) of the CEQA Guidelines, this EIR is an informational document that will inform the District's Board of Trustees and the public of: (1) the significant environmental effects of the proposed project, (2) possible ways to minimize any significant effects, and (3) reasonable alternatives to the project. Thus, the EIR is an important document that

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1 CEQA is located at Section 21000 et seq. of the Public Resources Code.

2 The CEQA Guidelines are located at Section 15000 et seq. of Title 14 of the California Code of Regulations.

is ultimately used by the District's Board of Trustees when considering whether to approve, deny, or modify the proposed project.

This EIR has been prepared in conformance with CEQA and the CEQA Guidelines. CEQA Guidelines Section 15151 defines the standards for EIR adequacy as follows:

> An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

2.2.2 Notice of Preparation and Scoping

CEQA establishes mechanisms whereby the public and decision makers can be informed about the nature of the project being proposed and the extent and types of impacts that the project and its alternatives would have on the environment should the project or alternatives be implemented. In accordance with CEQA Guidelines Section 15063, the District prepared an Initial Study (dated April 2018) for the proposed project that identified the topics to be analyzed in this EIR. Pursuant to Section 15082 of the CEQA Guidelines, a notice of preparation (NOP) dated April 9, 2018, was circulated to interested agencies, organizations, and individuals. The NOP was sent to 23 local agency departments and organizations, including the local library where a hard copy of the NOP and Initial Study were available for review (see Appendix A to this Draft EIR). The NOP was posted at the County Clerk's office on April 9, 2018, for a period of 30 days. The NOP was also sent to the State Clearinghouse at the California Governor's Office of Planning and Research. The State Clearinghouse assigned a state identification number (SCH No. 2018041025) to the Draft EIR. Fullerton College also mailed a notice of the EIR scoping meeting to approximately 4,000 property owners, residents, and organizations located within a 1-mile radius of the campus.

The NOP is intended to encourage interagency communication regarding the proposed project so that agencies, organizations, and individuals are afforded an opportunity to respond with specific comments and/or questions regarding the scope and content of the EIR. Pursuant to Section 15082 of the CEQA Guidelines, recipients of the NOP were requested to provide responses within 30 days after their receipt of the NOP. A public scoping meeting was held on the Fullerton College campus on May 1, 2018, to gather additional public input on the scope of the environmental document. Approximately 30 staff members and 200 community members attended the scoping meeting. The 30-day public scoping period ended on May 8, 2018. All comments received during the NOP public notice period were considered during the preparation of this Draft EIR. A table with the commenting agency or property owner, date of the comment made, summary of the comment, and chapter/section where the comment is addressed is provided in Appendix B. Following this table are the copies of the comment letters received.

A total of 62 comment letters and 24 scoping comment cards were received during the NOP public review period. The following issues were raised in the written responses to the NOP:

- Several commenters were concerned with impacts related to light pollution, increased glare from the lights, noise pollution, traffic, and parking issues.
- Commenters suggested use of the Fullerton Union High School Stadium, California State University, Fullerton Titan Stadium, or other venues as alternatives.
- Other issues raised were related to safety, which would increase the need for police patrolling during events.
- The City asked that the EIR include effective and enforceable mitigation measures that will protect the surrounding residential areas from light, noise, and traffic intrusion. Other comments include recommendations for the aesthetics, noise, traffic, and alternatives analyses. In addition, the City requested that the EIR evaluate impacts to public infrastructure, using anticipated quantities of discharge into storm drains and sewers, and anticipated water usage.

The Initial Study found the proposed project would not result in significant impacts to agriculture and forestry resources, biological resources, cultural resources, geology and soils, hydrology and water quality, land use and planning, mineral resources, population and housing, and utilities and service systems. Based on the City's comments, the EIR carried forward analysis of Section 4.10, Utilities and Service Systems, as it relates to water, wastewater, and stormwater. Other comments are addressed in Section 4.1, Aesthetics; Section 4.5, Noise; Section 4.8, Transportation; and Chapter 6, Alternatives.

2.2.3 Overview of Environmental Impact Report Process

This EIR has been made available to members of the public, agencies, and interested parties for a 45-day public review period in accordance with CEQA Guidelines Section 15105. Public review of the Draft EIR is intended to focus "on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated" (14 CCR 15204). The Notice of Completion of the Draft EIR has been filed with the State Clearinghouse as required by CEQA Guidelines Section 15085. In addition, the Notice of Availability of the Draft EIR has been distributed pursuant to CEQA

Guidelines Section 15087. This EIR is available for review during the 45-day public review period at the following locations:

- North Orange County Community College District Headquarters, 1830A W. Romneya Drive, Anaheim, California 92801
- Fullerton Public Library, 353 W Commonwealth Avenue, Fullerton, California 92832

In addition, this EIR is available online through the North Orange County Community College District website (http://www.nocccd.edu/) and the Fullerton College website (http://www.fullcoll.edu/campusprojects/).

Upon conclusion of the public review and comment period, written responses to all written comments pertaining to environmental issues will be prepared as part of the Final EIR. If appropriate, edits to this EIR also will be made. As required by CEQA, responses to comments submitted by responsible public agencies will be distributed to those agencies for review prior to consideration of the Final EIR by the District's Board of Trustees.

As required by CEQA Guidelines Section 15097, a Mitigation Monitoring and Reporting Program also will be prepared. The Mitigation Monitoring and Reporting Program will include all mitigation measures identified in the EIR, the entity responsible for implementing each measure, the timing associated with each measure, and any follow-up reporting requirements. Upon completion of the Final EIR and other required documentation, the District's Board of Trustees will consider whether to certify the EIR and approve the proposed project. At that time, environmental considerations and economic, social, and other factors will be weighed by the District's Board of Trustees when determining the selected course of action.

2.2.4 Reference Notes

As a state agency, the District is not subject to local government planning regulations such as policies and guidelines outlined in the City of Fullerton General Plan. Notwithstanding, the District considers local agencies and related planning documents where feasible. Accordingly, any reference to local planning documents generally is provided for informational purposes only unless otherwise noted. For this reason, the EIR references the certain City of Fullerton planning documents, including the City's General Plan and associated documents.

2.3 CONTENTS OF THE EIR

To describe the direct, indirect, and cumulative impacts, as well as mitigation measures and alternatives for the proposed project, this EIR is organized as follows:

- **Chapter 1, Summary**, outlines the conclusions of the environmental analysis and provides a summary of the project as compared to the alternatives analyzed in the EIR. This section also includes a table summarizing all environmental impacts identified in this EIR along with the associated mitigation measures proposed to reduce or avoid each impact.
- **Chapter 2, Introduction**, serves as a foreword to the EIR, introducing the project background and the applicable environmental review procedures, presenting a summary of the comments received during the scoping process, and explaining the format of the EIR.
- **Chapter 3, Project Description**, provides a thorough description of the proposed project components, including existing and proposed programming at Sherbeck Field, and required discretionary approvals.
- **Chapter 4, Environmental Analysis**
  - The introduction includes a discussion of the approach to the analysis of potentially significant impact areas and an overview of the organization of each of these categories.
  - Sections 4.1 through 4.12, which constitute the project's environmental analysis, provide an analysis of the potentially significant environmental impacts identified for the proposed project, including cumulative impacts, as well as proposed mitigation measures to reduce or avoid any potentially significant impacts. The following impact areas are discussed:

    4.1 Aesthetics

    4.2 Air Quality

    4.3 Greenhouse Gas Emissions

    4.4 Hazards and Hazardous Materials

    4.5 Noise

    4.6 Public Services

    4.7 Recreation

    4.8 Transportation

    4.9 Tribal Cultural Resources

    4.10 Utilities and Service Systems

    4.11 Energy

    4.12 Wildfire

- **Chapter 5, Other CEQA Considerations**, includes a summary of impacts found not to be significant, which is a discussion of potential environmental topics that have been found, through the Initial Study process, to have a less than significant impact or no impact on the environment. This chapter addresses significant and unavoidable impacts associated with the proposed project and why the project is being proposed notwithstanding significant unavoidable impacts. This chapter also includes a summary of significant irreversible environmental changes, which addresses environmental areas where significant environmental effects cannot be avoided and any significant irreversible environmental changes that would result from implementation of the proposed project. The growth-inducing impacts associated with the proposed project are also discussed.
- **Chapter 6, Alternatives**, discusses four alternatives to the proposed project, including the No Project/No Development/Continued Use of Yorba Linda High School Alternative; a Reduced Project Alternative; an Alternative Site Location at California State University, Fullerton; and an Alternative Site Location at Fullerton Union High School.
- **Chapter 7, List of Preparers**.
- **Appendices** include various technical studies prepared for the proposed project:
  - Appendix A – Initial Study/NOP
  - Appendix B – NOP Comments Summary Table and NOP Comment Letters
  - Appendix C – Illumination Study
  - Appendix D – Air Quality and Greenhouse Gas Emissions Modeling Runs
  - Appendix E – Noise Calculations
  - Appendix F – Traffic Impact Analysis
  - Appendix G – Cultural Resources Report
  - Appendix H - Preliminary Drainage Analysis

2.4 REFERENCES

California Public Resources Code, Sections 21000–21177. California Environmental Quality Act (CEQA), as amended.

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

CHAPTER 3
PROJECT DESCRIPTION

3.1 INTRODUCTION

The purpose of this section is to describe the proposed project in a manner that will be meaningful for review by the public, reviewing agencies, and decision makers in accordance with the California Environmental Quality Act (CEQA), Public Resources Code sections 21000 et seq., and the CEQA Guidelines (14 CCR 15000 et seq.). For purposes of CEQA, a complete project description must contain the following information: (a) the precise location and boundaries of the proposed project, shown on a detailed map, along with a regional map of the project's location; (b) a statement of the objectives sought by the proposed project, which should include the underlying purpose of the project; (c) a general description of the project's technical, economic, and environmental characteristics; and (d) a statement briefly describing the intended uses of the environmental impact report (EIR), including a list of the agencies that are expected to use the EIR in their decision making, a list of permits or other approvals required to implement the project, and a list of related environmental review and consultation requirements imposed by federal, state, or local laws, regulations, or policies (CEQA Guidelines Section 15124). The description of the project should not supply extensive detail beyond that needed for evaluation and review of environmental impacts. This section of the EIR includes the required information, and later sections provide additional detail on these topics.

3.2 PROJECT OVERVIEW

The proposed project involves improvements to Sherbeck Field, which is located on the campus of Fullerton College. Fullerton College is part of the North Orange County Community College District (District). Fullerton College was formed in 1913 and is the District's oldest campus. As one of the first community colleges operating in California, it afforded students the opportunity to complete the first 2 years of college within their community. Fullerton College currently is comprised of 51 permanent and temporary buildings that occupy 549,115 assignable square feet, or 815,734 gross square feet. The campus is compact and designed with multistory buildings and few interior roadways. A portion of the Fullerton Union High School campus is on the Fullerton College campus.

Sherbeck Field is 4.36 acres and currently consists of a turf football field that is surrounded by a 400-meter-long track, with a two-story field house at the western edge of the field and a scoreboard at the eastern end of the field. Currently, Sherbeck Field does not have permanent seating or lighting.

The proposed project would involve the following improvements to Sherbeck Field, which are described in greater detail in Section 3.5 below:

- Permanent prefabricated aluminum bleachers with capacity for 4,417 spectators;

- Six field lighting stanchions, with two stanchions on the north side of the field, two stanchions at the south side of the field, one stanchion on the eastern edge of the field, and one stanchion on the western edge of the field;
- Sound system to be used exclusively for athletic competition events;
- Press box at the south side of the field; and
- Storage building to be located to the west of the bleachers at the north side of the field.

3.3 PROJECT LOCATION

Sherbeck Field is located in the northeastern portion of the Fullerton College campus. Student Parking Lots 4 and 5 are located immediately north and west of the project site. Farther north are the Horticulture Building 1600 Complex and Child Development classrooms. North Berkeley Avenue borders the eastern side of the field, and farther east are single-family residences. Softball, baseball, and soccer fields are located south of Sherbeck Field.

Fullerton College is located at 321 East Chapman Avenue in the City of Fullerton (City) and occupies an approximately 70-acre site in northern Orange County. The City is surrounded by the Cities of La Habra and Brea to the north, Placentia to the east, Anaheim to the south, and Buena Park to the west. Figure 3-1, Project Location, shows the campus's regional location. Specifically, Fullerton College is bounded by residential development to the north, south, and east, and Fullerton Union High School to the west. The location of Sherbeck Field is shown on Figure 3-2, Existing Project Site.

3.4 BACKGROUND AND PROJECT HISTORY

3.4.1 History

Sherbeck Field was originally constructed in 1956 to 1957. The field was renamed in 1992 after Coach Hal Sherbeck (Fullerton College Centennial 2017). The field house, existing turf, and rubberized track were constructed in 2010 (California Community Colleges 2016).

Funding for the proposed Sherbeck Field Improvements Project (proposed project) would come from several years of savings generated from accumulated campus fund carryover (Saghieh, pers. comm. 2017a). Funding for the proposed project would not come from Measure J funds.[1]

[1] In 2014, voters passed a $574 million Measure J Facilities/Bond Program. The Measure J Bond Program will help make upgrades to lecture halls, technology, and instructional equipment to better prepare students for growing fields of study and high-skill careers for all District campuses. It also allows the District to enhance classroom space and training centers. It will allow the District to expand veterans' services, as well as job placement centers to train and retrain veterans as they transition into the civilian workforce (District 2016).

3.4.2 Existing Programming

Sherbeck Field is currently used for academic instruction, competitive athletics, and rentals. A description of these uses is provided in this section. Table 3-1 provides a schedule of the existing uses per semester for the 2016/2017 academic year. Scheduling and programming can vary, but the 2016/2017 academic year provides the most current representation of programming and scheduling at Sherbeck Field.

Academic Instruction

Fullerton College currently offers intercollegiate athletic courses for track and field, cross country, football, and soccer, as well as various fitness courses. Courses are offered on weekdays only and are offered in the mornings, afternoon, and evenings. The earliest classes begin at 6:20 a.m. and the latest classes end at 7:05 p.m. Course sizes typically range from 24 to 32 students.

Athletics

Football

Sherbeck Field is used for in-season Fullerton College football practice in the fall and off-season conditioning and skill development in the spring. These sessions are typically held on weekdays in the afternoon and evening, for approximately 2 hours. There are approximately 80 practice sessions in the 16-week fall semester (Saghieh, pers. comm. 2017b).

Saturday afternoon and occasional evening games are currently held at the Yorba Linda High School field. Fullerton College football games typically last for 3 hours. There are approximately five regular season and up to two playoff football games per year, with approximately 350 to 1,600 attendees per game (Saghieh, pers. comm. 2017c). In 2017, Fullerton College rented out Whittier College for two playoff games (Whittier College Department of Athletics 2017). However, location of the playoff games is subject to field availability, and the field must meet California Community College Athletic Association Regulations, Bylaw 4.26A sizing requirements to qualify for use in playoff games.

Soccer

Sherbeck Field is used for Fullerton College soccer practice, which is typically held on weekdays in the morning for 2 hours. There are approximately 80 practice sessions in the 16-week fall semester (Saghieh, pers. comm. 2017b).

Friday evening games are held at Sherbeck Field. Fullerton College soccer games typically last for 2 hours. There are approximately three soccer games per year, with approximately 100 attendees per game (Saghieh, pers. comm. 2017d).

Track and Field

Sherbeck Field is used for track and field practice from Mondays through Fridays during the fall and spring semesters. Team practices occur during the morning from 7:00 a.m. to 9:00 a.m. and during the afternoon from 12:00 p.m. to 2:00 p.m. There are approximately 80 practice sessions in the 16-week fall semester and approximately 80 practice sessions in the 16-week spring semester.

Track and field events are held at Sherbeck Field. Fullerton College track and field competition events occur on Fridays only, and the frequency is only one track and field event per year during the spring semester at Fullerton College, usually from 10:00 a.m. to 4:00 p.m. There are approximately 100 attendees at competition events.

Orange Lutheran High School uses the Fullerton College track in the spring and hosts up to four track meets per year, usually on a Tuesday, Wednesday, or Thursday. Practice and meets are held in the afternoon from 3:00 p.m. to 6:00 p.m., and events include approximately 150 attendees.

Rentals

Fullerton College rents out Sherbeck Field for private schools to host athletic events and practice. Specifically, Hope International University, Rosary High School, CDA Slammers, Anaheim Soccer, Seahorse Soccer, CAL South, Troy High School, Prep Football America Camp, and Orange Lutheran rent Sherbeck Field for athletic practice sessions. Additionally, Sherbeck Field is rented out by the Buena Park Police Department three times per year for training purposes (Saghieh, pers. comm. 2017d). Sherbeck Field is rented out at various times on weekdays, Saturdays, and Sundays, as shown in Table 3-1.

Commencement Ceremony

The annual commencement ceremony occurs in late May or early June at Sherbeck Field. Student check-in typically occurs from 8:00 a.m. to 9:30 a.m. Commencement is held on Saturday and typically begins at 10:00 a.m. and ends in the afternoon. There are approximately 7,200 students and guests that attend the commencement ceremony (Saghieh, pers. comm. 2017d).

Table 3-1
Sherbeck Field 2016/2017 Academic Year Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Spring Semester (2017)							
6:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	—	—
7:00 a.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	—
8:00 a.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
9:00 a.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
10:00 a.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Boot Camp Workout 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Boot Camp Workout 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
11:00 a.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
12:00 p.m.	Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Track 12:00 p.m.–2:05 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Track 12:00 p.m.–2:05 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.

Table 3-1
Sherbeck Field 2016/2017 Academic Year Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1:00 p.m.	Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer (Rental) 7:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
2:00 p.m.	Track 12:00 p.m.–2:05 p.m. Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Track 12:00 p.m.–2:05 p.m. Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Track 12:00 p.m.–2:05 p.m. Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Track 12:00 p.m.–2:05 p.m. Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
3:00 p.m.	Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
4:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
5:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
6:00 p.m.	—	—	—	—	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 7:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
7:00 p.m.	—	—	—	—	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	—	—
8:00 p.m.	—	—	—	—	—	—	—
9:00 p.m.	—	—	—	—	—	—	—
10:00 p.m.	—	—	—	—	—	—	—

Table 3-1
Sherbeck Field 2016/2017 Academic Year Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Summer Semester (2017)							
6:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	—
7:00 a.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	—
8:00 a.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
9:00 a.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
10:00 a.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
11:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
12:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
1:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.

Table 3-1
Sherbeck Field 2016/2017 Academic Year Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
2:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
3:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
4:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.

Table 3-1
Sherbeck Field 2016/2017 Academic Year Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
5:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:30 a.m.–6:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–6:00 p.m.
6:00 p.m.	Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	—	—
7:00 p.m.	Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	—	—
8:00 p.m.	—	—	—	—	—	—	—
9:00 p.m.	—	—	—	—	—	—	—
10:00 p.m.	—	—	—	—	—	—	—
Fall Semester (2017)							
6:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–5:30 p.m. Cross Country 6:30 a.m.–8:25 a.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m. Cross Country 6:30 a.m.–8:25 a.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m. Cross Country 6:30 a.m.–8:25 a.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–5:30 p.m. Cross Country 6:30 a.m.–8:25 a.m.	—	—
7:00 a.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.

Table 3-1
Sherbeck Field 2016/2017 Academic Year Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:00 a.m.	Cross Country 6:30 a.m.–8:25 a.m. Boot Camp Workout; Conditioning for Athletes – Strength; Soccer 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Conditioning for Athletes – Circuit 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Boot Camp Workout; Conditioning for Athletes – Strength; Soccer 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Conditioning for Athletes – Circuit 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
9:00 a.m.	Boot Camp Workout; Conditioning for Athletes – Strength; Soccer 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Conditioning for Athletes – Circuit 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Boot Camp Workout; Conditioning for Athletes – Strength Soccer 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Conditioning for Athletes – Circuit 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
10:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
11:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
12:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
1:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.

Table 3-1
Sherbeck Field 2016/2017 Academic Year Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
2:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
3:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
4:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
5:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–6:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–5:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
6:00 p.m.	—	—	—	—	—	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
7:00 p.m.	—	—	—	—	—	Soccer or Other (Rental) 7:00 a.m.–7:30 p.m.	Soccer or Other (Rental) 7:00 a.m.–7:00 p.m.
8:00 p.m.	—	—	—	—	—	—	—
9:00 p.m.	—	—	—	—	—	—	—
10:00 p.m.	—	—	—	—	—	—	—

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3.5 PROPOSED PROJECT

3.5.1 Construction and Installation

Bleachers

The proposed project would involve installation of 4,417 permanent prefabricated aluminum bleachers. On the home side of the field (south), 2,861 seats would be provided, and on the visitors' side (north), 1,556 seats would be provided. The height of the bleachers would be approximately 19 feet high on the home side[2] and 14 feet high on the visitors' side. Figure 3-3 depicts the proposed site plan for Sherbeck Field.

Lighting

The proposed project would include installation of six field lighting stanchions. Two stanchions would be located on the visitors' side of the field (north). One of these stanchions would be located on the west side of the field (F1), while the other would be located on the east side (F2). The F1 stanchion would be located north of the westernmost row of the bleachers. The F2 stanchion would be located north of the east bleacher ramp. The F1 and F2 stanchions would be approximately 100 feet tall. Football light fixtures would be located at a height of approximately 25 feet and 100 feet. Egress, or house, light fixtures would be located at a height of approximately 80 feet. F1 and F2 would each have a power load of 16.9 kilowatts (kW).

Two stanchions would be located on the home side of the field (south). One of these stanchions would be located on the west side of the field (F3), while the other would be located on the east side (F4). The F3 stanchion would be located south of the west bleacher ramp and the F4 stanchion would be located south of the east bleacher ramp. The F3 and F4 stanchions would be approximately 120 feet tall. Football light fixtures would be located at a height of approximately 30 feet and 120 feet. House light fixtures would be located at a height of approximately 80 feet. F3 and F4 would each have a power load of 19.6 kW.

One stanchion would be located on the eastern edge of the field (P1) and one on the western edge of the field (P2). The P1 stanchion would be located south of an access gate. The P2 stanchion would be located south of the scoreboard. The P1 and P2 stanchions would be approximately 60 feet tall. Track light fixtures would be located at a height of approximately 60 feet. P1 and P2 would each have a power load of 3.45 kW.

2 The press box would be located on the home side and would be approximately 9 feet tall. Therefore, the press box would reach approximately 28 feet tall, including the height of the bleachers.

The total power load of the field lighting would be 79.9 kW. The stanchions would be made of galvanized steel and would be grey or silver.

On Monday through Thursday evenings, field lights would operate until 9:15 p.m. to accommodate classes and rentals, and house lights would operate until 9:30 p.m. to allow students to exit the field safely.[3] On Friday evenings, field lights would operate until 8:15 p.m. at the latest, and house lights would operate until 8:30 p.m. at the latest to allow students to exit the field safely. On Saturday evenings, field lights would operate until 10:00 p.m. at the latest, and house lights would operate until 10:30 p.m. at the latest to accommodate football games. On Sunday evenings, field lights would operate until 6:00 p.m. at the latest to accommodate soccer rentals.

Sound System

A sound system would be installed and used for athletic competition events and rentals. The sound system would not be used for classes. There would be 12 speaker arrays in total. Seven speaker arrays, which would be 36 feet high, would be located behind the bleachers on the east side of the field. Five speaker arrays, which would be 33 feet high, would be located behind the bleachers on the west side of the field. The speakers and speaker poles would be silver in color.

For a daytime Fullerton College football game, the sound system would be employed from 12:00 p.m. until approximately 5:00 p.m. In the event of the occasional Saturday evening football game, the sound system would operate until 10:00 p.m. If a Fullerton College soccer match were to be held in the evening, the sound system would be employed from 5:00 p.m. to approximately 8:00 p.m. For a Fullerton College track and field event, the sound system would be employed from approximately 1:00 p.m. to 5:00 p.m. Third-party rentals would have to comply with the time periods specified in Table 3-2.

Press Box

The press box would be located on the home side of the field and would be on top of the bleachers. The press box would be divided into three portions: the home press box, the coaches' box, and the visitors' press box. The press box would be 9 feet tall and would reach 28 feet tall combined with the height of the bleachers. The home and visitors' press boxes would each be approximately 15 feet long and 9 feet deep and would house the home and visitors' coaches. The 24-foot-long and 9-foot-deep box would house the Sport Information Director, statistician, announcer, scorekeeper, score clock operator, radio and television broadcasters, and local media and press. A railing would be provided on top of the press box. Windows would be located across the front of the press box, and two interior doors and two exterior doors would provide access. In total, the press box would

[3] The evening class schedule for Fullerton College is Mondays, Tuesdays, Wednesdays, and Thursdays from 6:15 p.m. to 7:40 p.m. and 7:50 p.m. to 9:15 p.m. No evening classes are offered on Fridays.

be approximately 500 square feet in area and would not have roof access or elevator access. It is anticipated the press box would be used during field events, such as football games, soccer games, and track and field events.

Storage Building

A storage building would be installed west of the visitors' bleachers. The building would be 14 feet tall, 30 feet wide, and 20 feet deep, for a total area of 600 square feet. A roll-up door would provide easy access. The storage building would be used for various athletic equipment (i.e., football equipment and track and field hurdles). This equipment is currently being stored in the boiler room of the field house, causing access issues for maintenance staff, and damage to equipment that gets near the boilers. The boiler room is also too small to accommodate the equipment storage needs of the college.

Scoreboard

No new scoreboard would be constructed as part of the proposed project. The existing scoreboard, located at the eastern side of the field, would continue to be used.

3.5.2 Proposed Programming

Sherbeck Field would be used for academic instruction, competitive athletics, and rentals. A description of these uses is provided in this section. Table 3-2 provides a schedule of the proposed uses per semester. Because much of the proposed programming would remain the same from the existing schedule, new programming elements are provided in **bold** text.

Academic Instruction

Fullerton College would continue to offer courses for track and field, cross country, football, and soccer, as well as various fitness courses. Courses would be offered on weekdays only in the mornings, afternoons, and early evenings before nightfall. The inclusion of field lighting as part of the field improvements project would allow Fullerton College to add more evening classes, to offer a balanced schedule, and provide more class options for students who may not be able to take physical education during the day. The earliest classes would begin at 6:20 a.m. and the latest classes would end at 9:15 p.m. Classes would run 1 hour and 25 minutes 2 nights per week. Evening classes would start at 6:15 p.m. A 9:15 ending time accounts for classes that start at 7:50 p.m. 2 nights per week (Monday and Wednesday or Tuesday and Thursday). Course sizes would range from 24 to 32 students (Saghieh, pers. comm. 2017d; Moscol, pers. comm. 2018). Fullerton College would hold a maximum of two classes at the field simultaneously (Moscol, pers. comm. 2018). The addition of lighting would allow up to 256 additional students to be enrolled in physical education classes each semester.

Competitive Athletics

Football

With regard to Fullerton College football practice, there would be no change from the existing use in terms of frequency and timing. Sherbeck Field would continue to be used for Fullerton College football practice during weekdays in the afternoon and evening, for 2 hours. There would be approximately 80 practice sessions in the 16-week fall semester.

Saturday afternoon and occasional evening games[4] would be held at Sherbeck Field. Fullerton College football games would last for 3 hours. There would be approximately five regular and up to two playoff football games per year held at Sherbeck Field. There would be five away games held at other campuses. Fullerton College football games would be scheduled from the last week of August to the last week of November. Based on attendance counts at off-site games at Yorba Linda High School, there have been approximately 1,600 attendees for a regular season football game and approximately 3,000 attendees for a playoff game (Saghieh, pers. comm. 2017d). Fullerton College anticipates that once games are held at the campus, the attendance may increase due to the improved convenience for students, faculty and staff. Parking on campus would be provided at no charge for football game attendees.

Soccer

Sherbeck Field would continue to be used for Fullerton College soccer practice, which would be held on weekdays in the morning for 2 hours. There are approximately 80 practice sessions in the 16-week fall semester.

Friday evening soccer games would be held at Sherbeck Field. Fullerton College soccer games would typically last for 2 hours. There would be approximately three soccer games per year and approximately 200 attendees per game based on attendance counts from previous games at Sherbeck Field without permanent bleacher seating.[5] Parking would be provided at no charge for soccer game attendees.

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4 Evening games would only be held in special circumstances during hot weather events or depending on the distance the opposing college has to travel. This is based on the Southern California Football Association bylaws. Evening games would not be regularly scheduled.

5 For the purposes of the Traffic Impact Analysis (Appendix E), 200 attendees per game was assumed for soccer games. This number is based on estimates from previous soccer games held at Sherbeck Field.

Table 3-2
Proposed Sherbeck Field Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Spring Semester							
6:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	—	—
7:00 a.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	—	—
8:00 a.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
9:00 a.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
10:00 a.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Boot Camp Workout 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Boot Camp Workout 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes 7:00 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
11:00 a.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Body Conditioning and Fitness 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.

Table 3-2
Proposed Sherbeck Field Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
12:00 p.m.	Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Track 12:00 p.m.–2:05 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Track 12:00 p.m.–2:05 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
1:00 p.m.	Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Body Conditioning and Fitness 11:45 a.m.–1:10 p.m. Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
2:00 p.m.	Track 12:00 p.m.–2:05 p.m. Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Track 12:00 p.m.–2:05 p.m. Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Track 12:00 p.m.–2:05 p.m. Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Track 12:00 p.m.–2:05 p.m. Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Track 12:00 p.m.–2:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
3:00 p.m.	Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:30 p.m.–3:55 p.m. Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
4:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
5:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 3:30 p.m.–5:55 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
6:00 p.m.	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
7:00 p.m.	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.

Table 3-2
Proposed Sherbeck Field Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:00 p.m.	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
9:00 p.m.	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	—	—	—
10:00 p.m.	—	—	—	—	—	—	—
Summer Semester							
6:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	—	—
7:00 a.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	—	—
8:00 a.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:00 a.m.–8:50 a.m. Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
9:00 a.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
10:00 a.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 7:30 a.m.–10:20 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
11:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
12:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
1:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.

Table 3-2
Proposed Sherbeck Field Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
2:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
3:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
4:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.

Table 3-2
Proposed Sherbeck Field Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
5:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Strength 2:00 p.m.–5:20 p.m. Conditioning for Athletes – Strength 2:30 p.m.–5:50 p.m. Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
6:00 p.m.	Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 2:30 p.m.–6:05 p.m. Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	— Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
7:00 p.m.	Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Defense 2:30 p.m.–7:05 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
8:00 p.m.	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	—	—	—
9:00 p.m.	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	**Classes Evening to 9:15 p.m.**	—	—	—
10:00 p.m.	—	—	—	—	—	—	—
Fall Semester							
6:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m. Cross Country 6:30 a.m.–8:25 a.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m. Cross Country 6:30 a.m.–8:25 a.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m. Cross Country 6:30 a.m.–8:25 a.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m. Cross Country 6:30 a.m.–8:25 a.m.	—	—
7:00 a.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	—	—

Table 3-2
Proposed Sherbeck Field Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:00 a.m.	Cross Country 6:30 a.m.–8:25 a.m. Boot Camp Workout; Conditioning for Athletes – Strength; Soccer 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Conditioning for Athletes – Circuit 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Boot Camp Workout; Conditioning for Athletes – Strength; Soccer 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Conditioning for Athletes – Circuit 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Cross Country 6:30 a.m.–8:25 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
9:00 a.m.	Boot Camp Workout; Conditioning for Athletes – Strength; Soccer 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Circuit 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Boot Camp Workout; Conditioning for Athletes – Strength; Soccer 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Conditioning for Athletes – Circuit 8:35 a.m.–10:00 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
10:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 800 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
11:00 a.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Boot Camp Workout 10:10 a.m.–11:35 a.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
12:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
1:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m. **Football games** **1:00–5:00 p.m.** **(August through October: Five Regular Football Games and Two Playoff Football Games per Year)**	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.

Table 3-2
Proposed Sherbeck Field Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
2:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m. **Football games** **1:00–5:00 p.m.** **(August through October: Five Regular Football Games and Two Playoff Football Games per Year)**	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
3:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 AM–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football – Offense 1:25 p.m.–3:20 p.m. Football – Defense 1:30 p.m.–3:20 p.m. Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m. **Football games** **1:00–5:00 p.m.** **(August through October; Five Regular Football Games and Two Playoff Football Games per Year)**	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
4:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m. **Football games** **1:00–5:00 p.m.** **(August through October: Five Regular Football Games and Two Playoff Football Games per Year)**	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
5:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Football 3:30 p.m.–5:25 p.m. Soccer or Other (Rental) 6:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
6:00 p.m.	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Soccer Games** **5:00 p.m. to 8:15 p.m.** **(Three Soccer Games per Year)**	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
7:00 p.m.	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Soccer Games** **5:00 p.m. to 8:15 p.m.** **(Three Soccer Games per Year)**	**Football Games** **7:00 p.m.–10:00 p.m.** **(two football games per year would occur in the evening)**	Soccer or Other (Rental) 8:00 a.m.–8:00 p.m.
8:00 p.m.	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Soccer Games** **5:00 p.m. to 8:15 p.m.** **(Three Soccer Games per Year)**	**Football Games** **7:00 p.m.–10:00 p.m.** **(two football games per year would occur in the evening)**	—

Table 3-2
Proposed Sherbeck Field Schedule and Programming

Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
9:00 p.m.	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	**Classes** **Evening to 9:15 p.m.**	—	**Football Games** **7:00 p.m.–10:00 p.m.** **(two football games per year would occur in the evening)**	—
10:00 p.m.	—	—	—	—	—	**Football Games** **7:00 p.m.–10:00 p.m.** **(two football games per year would occur in the evening)**	—

Note: New programming elements are provided in **bold** text.

Track and Field

Sherbeck Field would continue to be used for track and field practice Mondays through Fridays during the fall and spring semesters. Team practices would occur during the morning from 7:00 a.m. to 9:00 a.m. and during the afternoon from 12:00 p.m. to 2:00 p.m. There would be approximately 80 practice sessions in the 16-week fall semester and approximately 80 practice sessions in the 16-week spring semester.

Track and field events would continue to be held at Sherbeck Field. One Fullerton College track and field team event would occur per year, on a Friday during the spring semester. This event would begin at 10:00 a.m. and end at 4:00 p.m. Based on attendance counts from previous events at Sherbeck Field, there have been approximately 100 attendees at these events.[6]

Orange Lutheran High School would continue to use the track in the spring and host up to four track meets per year, usually on a Tuesday, Wednesday, or Thursday. Practice and meets would be held in the afternoon from 3:00 p.m. to 6:00 p.m. and would include approximately 150 attendees.

Rentals

Fullerton College would continue to rent out Sherbeck Field to private schools and organizations to host athletic courses and practice. Specifically, Hope International University, Rosary High School, CDA Slammers, Anaheim Soccer, Seahorse Soccer, CAL South, Troy High School, Prep Football America Camp, and Orange Lutheran rent Sherbeck Field for athletic practice sessions. Additionally, Sherbeck Field would be rented out by the Buena Park Police Department three times per year for training purposes. Sherbeck Field would be rented out at various times on weekdays, Saturdays, and Sundays, as shown in Table 3-2. Rentals would be limited to the following time frames: 6:00 a.m. to 9:00 a.m. Mondays through Fridays, 1:00 p.m. to 8:00 p.m. on Mondays through Fridays, and 8:00 a.m. to 8:00 p.m. on Saturdays and Sundays. Organizations renting the field for events would be permitted to use the Fullerton College PA system as part of their rental agreements and would not be permitted to bring their own sound systems. Third-party rentals would have to comply with the time periods specified in Table 3-2.

Commencement Ceremony

The proposed project would not result in any change from the existing conditions as it relates to timing of and number of attendees at the annual commencement ceremony for Fullerton College. The commencement ceremony would continue to occur once per year in late May or early June at Sherbeck Field. Student check-in would occur from 8:00 a.m. to 9:30 a.m. Commencement would

[6] For the purposes of the Traffic Impact Analysis (Appendix E), 100 attendees was assumed for track and field events. This number is based on estimates from previous track and field events held at Sherbeck Field.

be held on Saturday, beginning at 10:00 a.m., and end in the afternoon. There would be approximately 7,500 students and guests attending the commencement ceremony.

3.5.3 Project Objectives

CEQA Guidelines Section 15124 requires an EIR to include a statement of objectives sought by the proposed project. The objectives assist the District as the lead agency in developing a reasonable range of alternatives to be evaluated in the EIR. The project objectives also aid decision makers in preparing findings and a statement of overriding considerations, if necessary. The statement of objectives also is to include the underlying purpose of the proposed project.

The proposed project's main objectives are as follows:

- Provide a facility for the Fullerton College football program at Fullerton College that meets the college field and goalpost sizing requirements of the California Community College Athletic Association Regulations, Bylaw 4.26A.
- Provide a facility for the Fullerton College football program for full-season play so that the college does not have to request waivers from the Southern California Football Association to play at high school fields.
- Provide field lighting to allow for more evening class options for the physical education program to meet student demand, and to allow for evening soccer games and occasional evening football games.
- Install permanent bleachers so that Fullerton College can host regular season and playoff football games at the college.
- Install permanent bleachers so that Fullerton College can reduce the costs associated with renting bleachers for the annual Fullerton College commencement ceremony.
- Construct a press box, which is required for football games in order to house football coaching staff, media, and statisticians.
- Construct a storage building to address the inadequacy of the current storage of football equipment and track and field equipment at the field house.

3.6 CONSTRUCTION ACTIVITIES AND PHASING

It is anticipated that the Sherbeck Field improvements would occur over 4 months, beginning in January 2020 and continuing through April 2020 (Saghieh, pers. comm. 2018). Planned construction phasing is as follows:

- Site preparation
- Grading
- Trenching
- Construction

- Paving
- Architectural coating

Site preparation would involve the removal of some existing pavement, excavation, and rough grading. Grading would consist of over-excavation within the bleacher areas, ramp areas, storage building area, and proposed paved areas to an average depth of 3 feet. During the grading phase, soils would be removed, replaced, and compacted. No export of soils is expected. The trenching phase would involve the trenching for the proposed bioswale on the northern and southern sides of the project site. Construction would involve the installation of the press box, storage building, bleachers, sound system, and light stanchions. The paving phase would involve the pavement of asphalt surfaces, specifically for the bleacher area, storage building area, and walkways. Architectural coating would involve the application of athletic field striping to the track and field and painting the press box.

3.7 CUMULATIVE PROJECTS

Section 15130(b)(1)(A) of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) allows for the preparation of a list of past, present, and reasonably anticipated future projects as a viable method of determining cumulative impacts. Table 3-3 presents development proposals within the City. Several development proposals and projects in proximity to the proposed project site have been submitted for consideration or have been recently approved. Together with the proposed project, they may result in an increase in construction-related environmental impacts. The projects listed in Table 3-3 serve as the foundation on which the cumulative analysis approach has been based for each of the environmental topics discussed in this EIR. This analysis is provided in the Cumulative Impacts subsection of each environmental resource section in Chapter 4, Environmental Analysis.

Table 3-3
Cumulative Projects

Cumulative Project	Address/Location	Description
Fullerton College Development		
Facilities Master Plan	321 Chapman Avenue	Build-out of the 10-year campus master plan
City of Fullerton Development		
Apartments on East Brookdale	131 East Brookdale Place	9-unit apartment building
Church	464 West Commonwealth Avenue	608-seat sanctuary with children's play area, multipurpose rooms, and offices
Fullerton Supportive Housing Mixed-Use	1220 East Orangethorpe Avenue	36 affordable housing units 2,000 square feet of commercial
Harbor Walk Specific Plan Townhomes	770 South Harbor Boulevard	150-unit apartment building
Laurel Residential Project	3125 Laurel Avenue	17 detached single-family residential units
Orangefair Multifamily Development	1445 South Lemon Street	2 four-story apartment buildings (323 units)

Table 3-3
Cumulative Projects

Cumulative Project	Address/Location	Description
West Coyote Hills	North of Rosecrans Avenue, south of the Fullerton/La Habra city boundary, east of the Hawks Pointe development (off Beach Boulevard), and west of Euclid Street	301 acres of open space 161 acres for single-family attached and detached homes (maximum 760 units) 17 acres for a multiple-use site (residential and open space/recreational uses) 5 acres for a commercial center 24 acres for vehicular, bicycle, and pedestrian circulation
East Wilshire Bike Boulevard Pilot Program	East Wilshire Avenue between Pomona Avenue and Woods Avenue	Bike boulevard
Red Oak Development Mixed-Use	600 West Commonwealth Avenue and 628 West Williamson Avenue	295 multifamily units 4,822 square feet of retail use
The Fox Block Mixed-Use	Harbor Boulevard and Chapman Avenue	Residential and retail
Beckman Business Center	4300 North Harbor Boulevard	8 industrial buildings ranging in size from 41,435 square feet to 309,350 square feet
Commonwealth Row	1501 and 1525 West Commonwealth Avenue	19 townhomes
Ladera Vista Drive Subdivision	1900 block of North Ladera Vista Drive	2 single-family residences
Mixed-Use Development	100 West Amerige Avenue	124 residential units 40,000 square feet commercial use
Fullerton Fox Theatre	500–512 North Harbor Boulevard	Redevelopment and restoration of Fox Theatre property and parking area
Retail on South Placentia	South Placentia Avenue at West Crowther Avenue	Demolition and reconstruction of buildings to create a new retail center and gas station in the Home Depot/Sam's Club center
Coffeehouse at Brea and Harbor	1400 North Harbor Boulevard	Subdivision of lot to construct new coffee shop with drive-through
Apartments on Associated Road	2656 Associated Road	Addition of 40 new apartment units in an existing apartment complex
Self-Storage Facility	201 South Balcom Avenue	Construction of a self-storage facility at a former tow-yard site
Industrial Building on Palm Street	4150 Palm Street	Demolition of an existing industrial building and construction of a new 184,200-square-foot industrial building
Commercial Building on Raymond	181 North Raymond Avenue	Addition to a commercial building
Affordable Housing	West Avenue, West Valencia Drive, and South Ford Avenue	Affordable housing construction
Senior Residential Care	433–459 West Bastanchury Road	112-bed senior housing facilities
Commercial Building on Orangethorpe	201 West Orangethorpe	New four-story commercial building and demolition of existing building

Table 3-3
Cumulative Projects

Cumulative Project	Address/Location	Description
Law Office	128–138 East Amerige Avenue	27,000-square-foot two-story office building with basement
Shopping Center on Raymond	104 North Raymond	Remodel of existing shopping center
Shopping Center on North Harbor Boulevard	4100 North Harbor Boulevard	Remodel of existing shopping center
Automobile Dealership	1100 South Euclid Street	Remodel of existing automobile dealership
Commercial Building on Orangethorpe	1700 West Orangethorpe	Remodel of existing commercial building

Source: City of Fullerton 2018.

3.8 EIR INTENDED USES/PROJECT ACTIONS AND APPROVALS

3.8.1 Intended Uses

The EIR analyzes the proposed project at the "project" level of review. The EIR examines all phases of development and operation of the proposed project; no further CEQA review will be required prior to project implementation. This EIR will be used by the District's Board of Trustees to evaluate the potential environmental impacts associated with adoption of the proposed project. Additionally, the EIR could be relied upon by responsible agencies, if any, with permitting or approval authority over any project-specific action to be implemented as part of the project.

3.8.2 Required Permits and Approvals

The District, as lead agency for the proposed project, is responsible for CEQA clearance and site plan review. A public agency, other than the lead agency, that has discretionary approval over the project is known as a "responsible agency," as defined by the CEQA Guidelines (14 CCR 15000 et seq.). The responsible agencies and their corresponding approvals for this project are listed below.

State of California

- Division of the State Architect (approval of construction drawings)

Regional Agencies

- Orange County Fire Authority (emergency access)

3.9 REFERENCES

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

California Community Colleges. 2016. “FUSION/Assessment Report: FCI Report—North Orange County Community College District—Fullerton College.” September 16, 2016.

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Moscol, M. 2018. “Confirmation of Sherbeck Field Class Information for EIR.” Email from M. Moscol (Assistant Project Manager/Campus Capital Projects, Fullerton College) to R. Struglia (Dudek). May 4, 2018.

Saghieh, O. 2017a. “Sherbeck Field Funding.” Phone conversation between O. Saghieh (Project Manager/Campus Capital Projects, Fullerton College) and C. Munson (Dudek). December 7, 2017.

Saghieh, O. 2017b. “Existing and Proposed Sherbeck Field Schedule.” Email from O. Saghieh (Project Manager/Campus Capital Projects, Fullerton College) to C. Munson (Dudek). September 19, 2017.

Saghieh, O. 2017c. “2016 Fullerton College Football Attendance.” Email from O. Saghieh (Project Manager/Campus Capital Projects, Fullerton College) to C. Munson (Dudek). October 16, 2017.

Saghieh, O. 2017d. “Sherbeck Field Event Attendance.” Email from O. Saghieh (Project Manager/Campus Capital Projects, Fullerton College) to C. Munson (Dudek). September 25, 2017.

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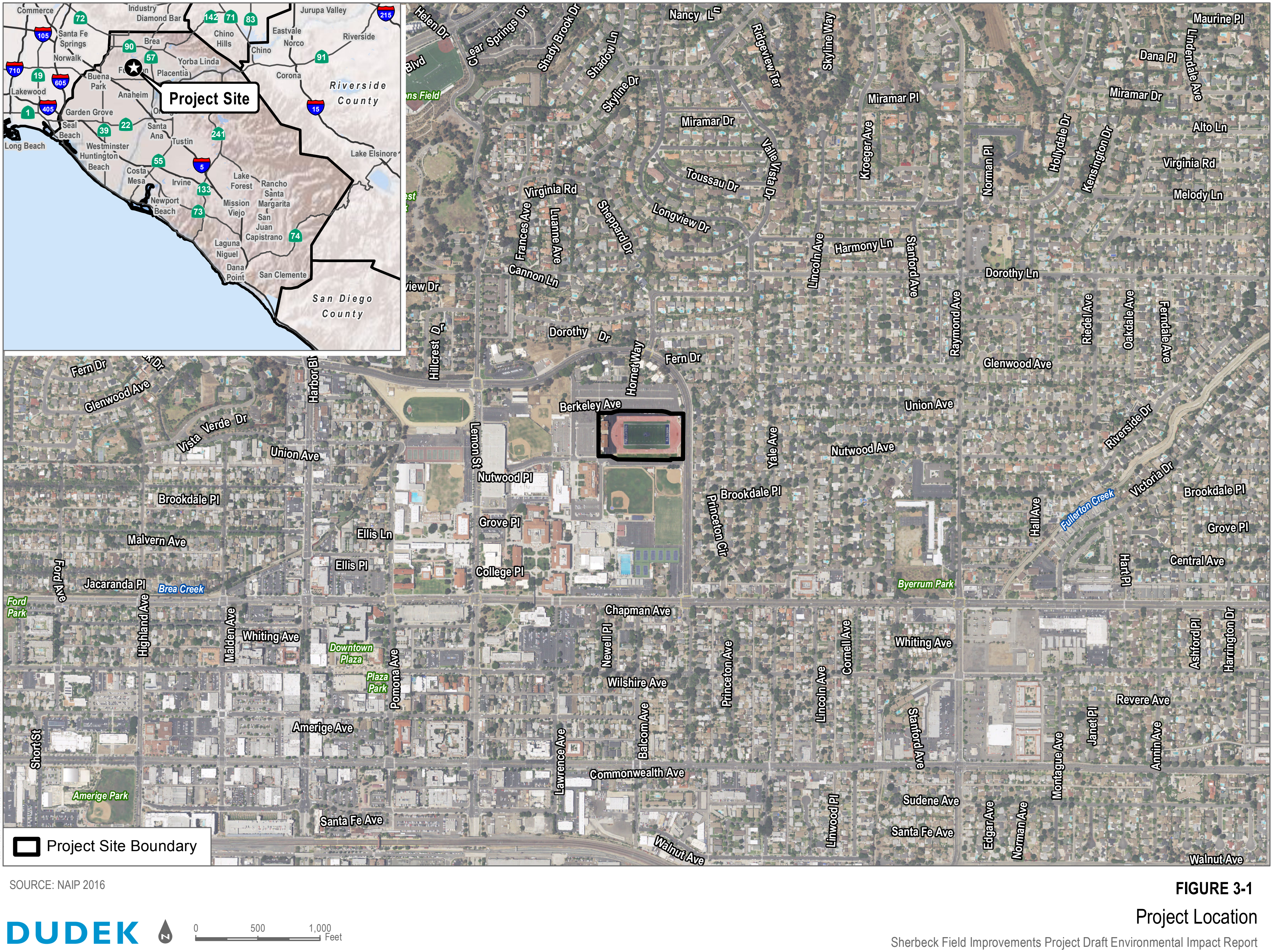

SOURCE: NAIP 2016

DUDEK

FIGURE 3-1

Project Location

Sherbeck Field Improvements Project Draft Environmental Impact Report

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SOURCE: Bing Maps

DUDEK

0 100 200 Feet

FIGURE 3-2

Existing Project Site

Sherbeck Field Improvements Project Draft Environmental Impact Report

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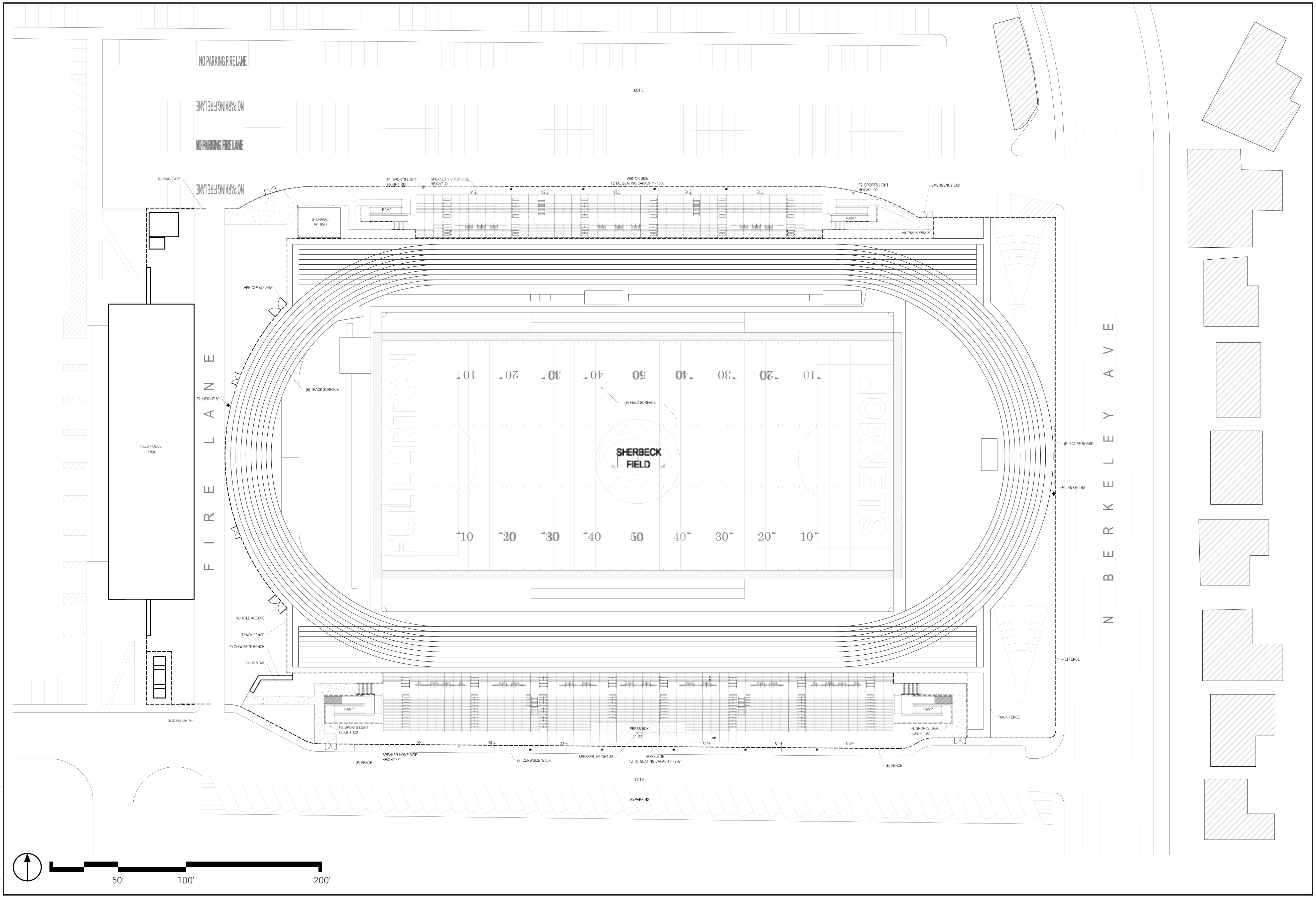

SOURCE: DLR Group, 2018

FIGURE 3-3

Proposed Site Plan

Sherbeck Field Improvements Project Draft Environmental Impact Report

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CHAPTER 4
ENVIRONMENTAL ANALYSIS

The following environmental analyses provide information relative to 12 environmental topics as they pertain to the proposed Sherbeck Field Improvements Project (proposed project). Each section of this chapter describes existing environmental and regulatory conditions, presents the criteria used to determine whether an impact would be significant, analyzes significant impacts, identifies mitigation measures for each significant impact, discusses the significance of impacts after mitigation has been applied, and discusses cumulative impacts.

This chapter includes a separate section for each of the following issue areas:

- Section 4.1, Aesthetics
- Section 4.2, Air Quality
- Section 4.3, Greenhouse Gas Emissions
- Section 4.4, Hazards and Hazardous Materials
- Section 4.5, Noise
- Section 4.6, Public Services
- Section 4.7, Recreation
- Section 4.8, Transportation
- Section 4.9, Tribal Cultural Resources
- Section 4.10, Utilities and Service Systems
- Section 4.11, Energy
- Section 4.12, Wildfire

Issues for which impacts were found not to be significant are agriculture and forestry resources, biological resources, cultural resources, geology and soils, hydrology and water quality, land use and planning, mineral resources, and population and housing. These environmental topics are discussed in Section 5.5, Effects Found Not to Be Significant, of Chapter 5, Other CEQA Considerations, of this environmental impact report (EIR), and are not discussed in further detail pursuant to the California Environmental Quality Act (CEQA) Guidelines, Section 15128 (14 CCR 15000 et seq.).

Analysis Format

This EIR assesses how the proposed project would impact the issue areas listed above. Each environmental issue addressed in this EIR is presented in terms of the following subsections:

- **Introduction.** Discusses the resource area to be evaluated and describes the methodology used for the analysis, including any surveys and documentation reviewed to conduct the analysis of existing conditions and potential impacts.
- **Existing Conditions.** Describes the existing setting on or surrounding the project site that may be subject to change as a result of implementation of the proposed project. This section describes the conditions that existed when the notice of preparation was sent to responsible agencies and the State Clearinghouse.
- **Regulatory Framework.** Describes relevant federal, state, and local policies and regulations pertaining to the particular issue area.
- **Thresholds of Significance.** Provides criteria for determining the significance of project impacts for each environmental issue.
- **Impacts Analysis.** Provides a discussion of the characteristics of the proposed project that may have an impact on the environment, analyzes the nature and extent to which the proposed project is expected to change the existing environment, and indicates whether the project's impacts would meet or exceed the levels of significance thresholds.
- **Cumulative Analysis.** Provides a discussion of the past, present, and reasonably foreseeable projects relevant to each resource topic analysis and documents cumulatively considerable environmental impacts that cannot be feasibly mitigated or avoided; cumulatively considerable environmental impacts that can be feasibly mitigated or avoided; and environmental impacts that are not cumulatively considerable. Mitigation measures to reduce cumulative impacts are included where necessary.
- **Mitigation Measures.** Identifies mitigation measures to reduce significant adverse impacts to the extent feasible.
- **Level of Significance after Mitigation.** Provides a discussion of significant adverse environmental impacts that cannot be feasibly mitigated or avoided, significant adverse environmental impacts that can be feasibly mitigated or avoided, and adverse environmental impacts that are not significant.
- **References.** Lists the sources consulted during preparation of the EIR.

References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

4.1 AESTHETICS

This section describes the existing visual setting of the project site and vicinity, identifies associated regulatory requirements, and evaluates potential impacts related to implementation of the Sherbeck Field Improvements Project (proposed project).

Comments received in response to the notice of preparation included concerns regarding the introduction of field lighting and expanded use of the field by parties other than Fullerton College academic and athletic departments. Specifically, commenters expressed concern that the new field bleachers and lights would have potentially significant impacts to existing nighttime views provided to residential areas to the north and east of Sherbeck Field, would impact scenic views, and would block existing long views that extend to Santa Catalina Island. In addition, commenters expressed concern regarding cumulative lighting effects of the project in combination with lighting from the Centennial parking structure, and skyglow associated with nightly operation of project lighting. Two commenters suggested mitigation measures for the stadium lighting, including limiting the size of lights and limiting the programming of Sherbeck Field to evening classes, the Fullerton College football program, and the Fullerton College annual commencement ceremony only; putting a dome over Sherbeck Field; lowering Sherbeck Field to below grade; and establishing a formal communication line to resolve specific complaints.

4.1.1 Existing Conditions

4.1.1.1 Project Site

The project site, Sherbeck Field, encompasses 4.36 acres of developed lands within the northeastern portion of the Fullerton College campus in the City of Fullerton (City). Because the project site is developed, the topography is flat from east to west and north to south. The majority of the site consists of field turf playing surface, rubberized 400-meter track, paved and dirt areas, and a field house structure. Limited landscaping is installed on the project site. For example, flowering vines are planted along chain-link fencing lining the northern, eastern, and southern site boundaries. The vines are regularly cut back by college maintenance staff. A single, approximately 10-foot-high jacaranda tree (*Jacaranda mimosifolia*) currently exists in the southeastern corner of the project site, adjacent to the shotput event area. Jacaranda trees currently also exist in the northwestern and southwestern corners of the project site, north and south of the field house structure. Planters are installed within the hardscape area to the immediate west of the field house structure, and in addition to six approximately 15-foot-high Chinese elm trees (*Ulmus parvifolia*) that are generally planted 30 feet on center, low (2–4 feet) to moderately high (4–5 feet) shrubs are included in the planter areas. In addition, a rectangular, regularly maintained, approximately 960-foot-long by 90-foot-wide natural turf area is located along the southern site boundary, generally paralleling the rubberized track. Lastly, three approximately 20-foot-high concrete poles spaced 160 feet on center and topped by two arched arms supporting downward-directed lighting fixtures are installed along the chain-link fence that borders the turf area on the south.

As stated previously, the majority of the project site consists of field turf playing surface, rubberized 400-meter track, paved and dirt areas. The approximately 750-foot-long by 225-foot-wide rectangular field turf playing surface is in the center of the site and is surrounded on all sides by the rubberized track surface (see Photo A, Figure 4.1-1, Existing Visual Character of the Project Site). In addition to football field hash marks and 5-yard lines that stretch from sideline to sideline, yardage numbers in increments of 10 up to 50 are painted on the playing surface. End zone areas are also painted dark blue with large, block white letters in the west end zone ("Fullerton") and east end zone ("Hornets"). In the center of the field, at the 50-yard line, a dark blue oval with double white lines encircling white "FC" block lettering is painted on the field. White field goal posts are installed at the back of each end zone (see Photo B, Figure 4.1-1).

The rubberized track surrounds the field turf playing area. The textured, brick-red track surface is painted for track use and features eight parallel running lanes and small block numbers for running lane assignments (see Photo C, Figure 4.1-1). The rubberized track is approximately 45 feet wide to the north and south of the field turf playing surface and approximately 100 feet wide to the east and west of the football field end zones. The wider areas feature limited line marking and paint and are used for non-running track and field events. Two dirt areas are located between the rubberized track to the west and the dark-green-painted, 6-foot-high chain-link fencing installed along the eastern site boundary. These areas are chalked and lined to support shotput throwing practices and events and are also used for the storage of low metal benches, soccer goals, tires, and other materials (see Photo D, Figure 4.1-1). An electronic scoreboard is installed immediately east of the rubberized track along the eastern site boundary. The rectangular scoreboard is approximately 25 feet long and 6 to 8 feet wide and is supported by three dark-blue-painted steel beams. Tall, thin, white flagpoles flank the scoreboard to the north and south (see Photo D, Figure 4.1-1).

Greyish-black asphalt-paved areas are located to the immediate north and west of the rubberized track (see Photo E, Figure 4.1-2, Existing Visual Character of the Project Site). These areas are generally used for the storage of temporary bleachers, lighting, and hurdles. In addition, two beige-colored steel shipping containers used for secure storage are installed in the northwest corner of the project site, adjacent to the field house structure.

The field house structure is located west of the field turf playing surface, rubberized track, and asphalt-paved area (Photos B and C on Figure 4.1-1 include the east elevation of the field house structure). The primarily two-story structure is rectangular in plan and at the top of the angular pitched roofs, the building is approximately 30 feet high. The paneled, beige stucco exterior structure features patios and walkways on the second floor and a 50-foot-long by 35-foot-wide open deck area that appears to separate the structure into two buildings (see Photo F, Figure 4.1-2).

The east and west elevations of the structure are rectangular in form and the north and south elevations display five sided polygonal forms (the pointed polygonal forms are visible in Photo G, Figure 4.1-2). Windows on the north, south, west, and east elevations of the structure are rectangular in form and feature thin, brown, straight and angular window trimming. Doors and entry points on the west and east elevations are generally recessed and are located at an arched or rectangular building opening that occasionally features blue tiled elements. A staircase is constructed on the west elevation of the structure and provides exterior access between the ground level and the second-floor space (see Photo G, Figure 4.1-2). The structure features an angular roof topped with red masonry tiles. Chain-link fencing and taller masonry walls with arched openings are located to the north and south of the structure. Public access to Sherbeck Field is provided through double doors installed within the 10-foot-high masonry walls extending north and south from the field house structure (see Photo H, Figure 4.1-2).

4.1.1.2 Surrounding Area

Student Parking Lots 4 and 5 are located immediately west and north of the project site. The asphalt-paved parking lots feature right-angle parking spaces (Parking Lot 5) or angular/45° parking spaces (Parking Lot 4), thin concrete islands/walkways between lines of parking spaces, and end caps near stop signs. There are 25- to 35-foot-high metal poles on concrete bases topped with two arched arms supporting downward-directed lighting fixtures in the northern and southern portions of Parking Lot 5 (see Photo I, Figure 4.1-3, Existing Visual Character of the Project Site). Three lighting poles of similar character to those installed in Parking Lot 5 are installed within the Parking Lot 4 area and along the paved road bordering Parking Lot 4 on the west. Staff Parking Lot 3 is located farther to the west (there is one lighting pole in the lot) and the Fullerton Union High School baseball field (no field lights) and the large, rectangular, three-story Fullerton College Parking Structure are located west of the staff parking lot (see Photo J, Figure 4.1-3). Fullerton Union High School Stadium is located west of the parking structure and approximately 0.20 miles west of the project site. The stadium features a synthetic turf field surface, rubberized track, permanent home and visitors' bleachers (a press box is installed at the top of the home bleachers, which are approximately 30 to 35 feet high), and field lights. Specifically, banks of lights are directed onto the field and track surface and are installed atop six thin metal poles (three poles each are installed on the home and visitors' bleacher structures) (see Photo K, Figure 4.1-3).

The Fullerton College Horticulture Building 1600 Complex and Child Development Center Building 1800 are located north of Parking Lots 4 and 5, approximately 230 feet north of the project site. Approximately eight aged, single-story, primarily temporary buildings and greenhouse structures are scattered across an approximately 3.15-acre site. The buildings and structures are partially screened from the view of passing motorists on North Berkeley Avenue by trees and low wooden-post fencing installed near the North Berkeley Avenue/Hornet Way intersection. Tree plantings on the site are relatively dense and include tall eucalyptus trees

(*Eucalyptus* sp.) and Italian cypress (*Cupressus sempervirens*). Trees are scattered throughout the site but are concentrated near buildings and along the southern and northern boundaries, paralleling North Berkeley Avenue (see Photo L, Figure 4.1-3).

North Berkeley Avenue borders the northern and eastern boundaries of Fullerton College and parallels the eastern limits of the project site for approximately 365 feet. The paved road features two travel lanes; an undivided, striped central median; and bike lanes and sidewalks on both sides. Tall streetlights are installed along the avenue in a staggered manner (i.e., streetlights are installed on the north and south sides of the street, but not directly across from one another) (see Photo M, Figure 4.1-4, Existing Visual Character of the Project Site). North Berkeley Avenue is generally located adjacent to single-family residences to the north and east. To the north and northwest of Fullerton College and North Berkeley Avenue, the topography gradually rises such that residential lots are located at a higher elevation than North Berkeley Avenue and Fullerton College structures, including Sherbeck Field. More specifically, Sherbeck Field is situated at an elevation of approximately 175 feet above mean sea level (amsl) and the high point of the rising terrain to the north is approximately 325 feet amsl. While public views from roads throughout the residential neighborhoods are limited by the presence of residences and landscaping, the rising terrain and elevated building pads and vantage points may provide opportunities for long views to the south, southwest, and southeast from private residences and yards. Photo N, Figure 4.1-4, demonstrates the characteristics of local topography to the immediate north of Fullerton College and depicts single-family residential development located atop elevated terrain north of North Berkeley Avenue.

One- and two-story single-family homes on 0.2- to 0.3-acre lots line striped and unstriped two-lane neighborhood roads, including (but not limited to) Dorothy Drive, Dorothy Lane, Sheppard Drive, Cannon Lane, and Harmony Lane. Homes display a variety of styles and exterior colors, and residential lots are typically landscaped with trees, shrubs, and groundcover (see Photo O on Figure 4.1-4, which looks west from Sheppard Drive to residential development along Dorothy Drive). Mature street trees and natural turf or rock parkways are installed along several roads featuring sidewalks, including Dorothy Drive, Dorothy Lane, and Harmony Lane, while residential lots elsewhere, including on Sheppard Drive and Luanne Avenue, extend to the roadway curb (no sidewalks or street trees are installed). Sources of night lighting in residential areas to the north of the project site include exterior mounted floodlights and other lighting fixtures at garages and doors, soft lighting emanating from building interiors, regularly spaced streetlights atop approximately 20-foot-high concrete poles, and lamppost-style streetlights installed atop 12- to 15-foot-high dark-green-painted metal poles. Streetlights supported by concrete poles are installed along roads bordered by sidewalks and lamppost-style lights are installed along streets where sidewalks are not present.

Single-family residential development is also located to the northeast, east, and southeast of the project site across North Berkeley Avenue. The local topography abruptly rises to the northeast, reaching a high point of approximately 500 feet amsl at a pronounced ridge atop which two large cylindrical water towers are located (the towers are approximately 2.4 miles from Sherbeck Field). The topography to the east and southeast of the project site gradually rises, but in a less abrupt manner than the topography to the north. For example, the local terrain rises approximately 50 feet from the project site east to North State College Boulevard (a distance of 2.8 miles). As a result, residences to the east and southeast are not provided elevated vantage points or potentially long views (see Photo P, Figure 4.1-4). The topography of the surrounding area is illustrated in Figure 4.1-5, Characteristics of Local Topography.

With the exception of larger two-story residences on 0.5-acre and larger, densely landscaped, gated residential lots, residential neighborhoods to the northeast of the project site include a similar assortment of one- and two-story homes and lighting sources as the neighborhoods to the north of the project site. The neighborhoods closest to the project site, including those on Princeton Circle West and East and Brookdale Place, consist of narrow streets lined by mature eucalyptus trees in landscaped parkways bordering the sidewalks. Homes are primarily single story, and front yards feature turf lawns, shrubs below extruded building exteriors, and occasional single trees. Streetlights are installed along the narrow roads between street tree plantings and exterior and interior lighting typical of single-family residential neighborhoods is present. A row of angled parking spaces (Student Parking Lot 6); the Fullerton College baseball, softball, and soccer fields; and a staff parking lot (B-2 East) are located to the south of the project site. Student Parking Lot 6 is narrow, constituting a single row of parking spaces, and backs to an east–west road providing interior access to Fullerton College from North Berkeley Avenue. Three intercollegiate athletic fields are located south of the parking lot and are tightly packed next to one another. Field lighting is not installed on any of these natural turf and dirt playing fields. Farther to the south are the Aquatics Center and Tennis Court Complexes, at which overhead lighting is installed to facilitate evening and nighttime use.

The Fullerton College Classroom Office Building (Building 1400) is located to the southwest of the project site. The modern two-story structure has a large, C-shaped floor plan and features multiple arches supported by cream-colored rectangular columns at the ground floor (the cream color is prominent on the exterior of the building), beige trim, and a red tile roof. Lighting fixtures are installed at intervals on the building’s west elevation and lamppost-style lighting is present along the walkway bordering the building on the west.

4.1.2 Regulatory Framework

Federal

There are no applicable federal regulations regarding the protection of visual resources that would be applicable to the proposed project or the project site.

State

Division of the State Architect

DSA provides oversight for new construction and alteration projects for California school and community college districts. DSA's oversight for structural safety of school facilities is governed by the provisions of the Field Act contained in the California Education Code, Section 17280 et seq., for K–12 schools, and Section 81130 et seq., for community colleges. The Field Act imposes stricter requirements on California schools related to seismic safety, which are not present in other types of construction approval projects. DSA is also responsible for ensuring compliance with Title 5 of the California Code of Regulations (School Facilities Construction).

California Building Standards Code

Title 24 of the California Code of Regulations, also known as the California Building Standards Code, consists of regulations to control building standards throughout the state. More specifically, the California Electrical Code (24 CCR, Part 3) and California Green Building Standards Code (also referred to as the CALGreen Code; 24 CCR, Part 11) stipulate minimum light intensities for safety and security at pedestrian pathways, circulation ways, and paths of egress. All lighting for the proposed project will comply with the requirements of the California Building Code.

California Energy Code

The California Energy Code (24 CCR, Part 6) provides allowances for lighting power and lighting control requirements for various lighting systems, with the goal of reducing energy consumption through efficient and effective use of lighting equipment.

Section 130.2 sets forth requirements for Outdoor Lighting Controls and Luminaire Cutoff. All outdoor luminaires rated above 150 watts shall comply with the backlight, uplight, and glare (BUG) ratings in accordance with IES TM-15-11, Addendum A, and shall be provided with a minimum of 40% dimming capability activated to full on by motion sensor or other automatic control. This requirement does not apply to streetlights for the public right-of-way, signs, or building façade lighting.

Section 140.7 requires outdoor lighting power density allowances in terms of watts per area for lighting sources other than signage. The lighting allowances are provided by Lighting Zone, as defined in Section 10-114 of the California Energy Code. Under Section 10-114, all urban areas within California are designated as Lighting Zone 3.

Section 130.3 requires that sign lighting controls for any outdoor sign that is on day and night must include a minimum 65% dimming at night. Section 140.8 of the California Energy Code sets forth lighting power density restrictions for signs.

California Green Building Standards Code

The CALGreen Code (24 CCR, Part 11, Paragraph 5.106.8, Light Pollution Reduction) provides that all nonresidential outdoor lighting must comply with the following:

- The minimum requirements in the California Energy Code for Lighting Zones 1–4 as defined in Chapter 10 of the California Administrative Code; and
- BUG ratings as defined in the Illuminating Engineering Society's Technical Memorandum on Luminaire Classification Systems for Outdoor Luminaires; and
- Allowable BUG ratings not exceeding those shown in Table A5.106.8 in Section 5.106.85 of the CALGreen Code; or
- A local ordinance lawfully enacted pursuant to Section 101.7 of the CALGreen Code, whichever is more stringent.

Local

Although the North Orange County Community College District (District) and Fullerton College are not subject to local plans, policies, or ordinances related to aesthetics, this analysis presents relevant policies from the local jurisdiction as guidance only.

The Fullerton Plan

The Fullerton Plan (i.e., the City's general plan) is the City's governance tool focused on achieving the Fullerton Vision by aligning City efforts, reaching out to partners in Fullerton and the region, and engaging the Fullerton community (City of Fullerton 2012). The "Fullerton Vision" is a statement of aspirations associated with improved quality of life included in The Fullerton Plan. Part 2 of The Fullerton Plan consists of individual elements and goals and Master Element A, the Fullerton Built Environment, which contains goals and policies relevant to aesthetic resources. Fullerton College is identified as a School land use in The Fullerton Plan, with a zoning designation of Public Land (P-L) (City of Fullerton 2012), relevant Goals of the Fullerton Built Environment element include the following:

- **Goal 1:** Resilient and vital neighborhoods and districts.

- **Goal 2:** A positive identity and distinctive image.

Relevant overarching policies of the Fullerton Built Environment Element related to community development and design include the following:

- **P1.5 Maintenance and Improvements of Existing Built Environment.** Support projects, programs, policies and regulations to maintain positive attributes of the built environment and seek continual improvement.
- **P1.8 Consideration of Neighborhood Impacts.** Support projects, programs, policies and regulations to evaluate and consider short- and long-term impacts of significant planning efforts or developments on nearby neighborhoods.
- **P1.11 Compatibility of Design and Uses.** Support programs, policies and regulations to consider the immediate and surrounding contexts of projects to promote positive design relationships and use compatibility with adjacent built environments and land uses, including the public realm.
- **P2.2 Distinctive and Memorable Places.** Support projects, programs, policies and regulations to promote distinctive, high-quality built environments whose form and character respect Fullerton's historic, environmental and architectural identity and create modern places that enrich community life and are adaptable over time.
- **P2.4 Sense of Place.** Support projects, programs, policies and regulations to reinforce the character and sense of place of established neighborhoods and districts by preserving and enhancing the attributes which contribute to neighborhood and district identity, vitality and livability.
- **P2.8 Responsiveness to Context.** Support projects, programs, policies and regulations to respect the local context, including consideration of cultural and historic resources, existing scale and character and development patterns of the surrounding neighborhood or district.

The Fullerton Built Environment element also contains an exhibit that depicts existing and proposed scenic corridors. Exhibit 10, Scenic Corridors, primarily depicts existing corridors identified by the City as displaying scenic qualities; however, details regarding specific scenic qualities are not included in The Fullerton Plan. Also, The Fullerton Plan does not contain development regulations or establish limitations on development located adjacent to identified scenic corridors. Starting north of Berkeley Avenue, Harbor Boulevard, and Brea Boulevard are City-designated scenic corridors. At Berkeley Avenue, Harbor Boulevard is located 0.45 miles northwest of Sherbeck Field, and the southern extent of Brea Boulevard is located 0.57 miles northwest of Sherbeck Field.

4.1.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to aesthetics are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.). According to Appendix G of the CEQA Guidelines, a significant impact related to aesthetics would occur if, the project would:

1. Have a substantial adverse effect on a scenic vista.
2. Substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway.
3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings. (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning, and other regulations governing scenic quality.
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

Thresholds 1 and 2 were eliminated from further consideration in the Initial Study. The Fullerton Plan does not identify any scenic areas, vistas, or corridors in the vicinity of the Fullerton College campus (City of Fullerton 2012). A designated scenic corridor is located at the intersection of Brea Boulevard and Harbor Boulevard, approximately 0.4 miles northwest of the project site (City of Fullerton 2012); however, views to Fullerton College from the corridor are screened by intervening terrain, vegetation, and development.

The proposed bleachers (up to 28 feet high on the home side and 14 feet high on the visitors' side) could shorten the length of existing views from locations in the surrounding area. In addition, proposed light stanchions installed on the project site would be between 60 and 120 feet high and would be visible from public roads and private residences in the surrounding area. Views to the west from North Berkeley Avenue along the segment bordering Sherbeck Field are relatively short in extent and are limited by existing landscaping and structures located on the Fullerton College campus (see Figure 4.1-6, Existing Off-Site Views toward the Project Site). Therefore, these existing views are not considered scenic vistas. In addition, existing trees and structures associated with the Fullerton College Horticulture Building 1600 Complex and Child Development Center 1800 Building limit the availability of long, scenic public views from North Berkeley Drive and residences located to the north and northeast of Sherbeck Field (see Photo L, Figure 4.1-3, and Figure 4.1-6). Where motorists and residents in the surrounding area are provided elevated vantage points and roads and homes are situated atop rising topography to the northwest, north, and northeast of the project site, homes and residential lots are typically located at elevations higher than that of the proposed top of bleachers on the home and visitors' sides of Sherbeck Field. As such, existing views would not be substantially interrupted by the proposed bleachers. With the exception of rectangular banks of lights, the proposed stanchions would be tall and relatively narrow features in the landscape. The tall and narrow stanchions would be visible from residential neighborhoods to the north and east of Sherbeck Field; however, these features would not obstruct scenic resources from view or result in substantial view blockage as experienced from public or private vantage points in the local area. Lastly, CEQA does not generally protect private views such as those available from residential lots located to the north and east of the project site. Because there are no designated scenic vistas in the City, development on the Fullerton College campus would not be visible from the nearest City-designated scenic corridor, and proposed project components would not substantially obstruct or detract from existing public or private broad and long views, the project would not have a substantial adverse effect on a scenic vista. No impacts to scenic vistas would occur; therefore, this threshold is not further analyzed in the EIR.

According to the California Department of Transportation, the nearest eligible state scenic roadway in the project area is the segment of State Route (SR) 57 from SR-90 to SR-60 (Caltrans 2018). This highway (located approximately 1.9 miles from the project site) is not an officially designated state scenic highway, but it is considered eligible for official designation. The nearest officially designated state scenic highway is SR-91 east of SR-55, which is approximately 5.6 miles from the project site at its closest point (Caltrans 2018). There are no County of Orange designated scenic highways near the Fullerton College campus (County of Orange 2005). As proposed, the project would not result in damage to or removal of trees, rock outcroppings, and historic buildings. The project site is an existing athletic field on the Fullerton College campus. Lastly, development of the project would not damage scenic resources as viewed from SR-57 and SR-91 and would not be overly visible from these highways due to distance and the screening effect of intervening development and landscaping. As such, no aesthetic impacts to a state scenic highway would occur; therefore, this threshold of significance is not further analyzed in the EIR.

4.1.4 Impacts Analysis

Would the project conflict with applicable zoning and other regulations governing scenic quality?

Regulations Governing Scenic Quality

The project site is zoned Public Land (P-L). Permitted and conditionally permitted uses within the P-L zone are described in Sections 15.25.020 and 15.25.025 of the Fullerton Zoning Code. No development standards or design criteria have been established for the P-L zone. As the Fullerton Zoning Code does not identify regulations governing scenic quality for development in the P-L zone, the proposed project would not conflict with applicable zoning.

The project site is designated as a School land use in The Fullerton Plan. The Fullerton Plan does not contain specific development regulations regarding scenic quality for School land uses. Further, the policies from the Fullerton Plan listed in Section 4.1.2 above are not specific to scenic quality. Potential impacts to scenic quality and views were previously considered in the Initial Study and as detailed in Section 4.1.3, above, project components including proposed bleachers and light stanchions would not substantially interrupt existing views or obstruct scenic resources from view. As such, the proposed project would not conflict with the City's ability to implement the goals and policies of The Fullerton Plan related to community development and design. Impacts would be less than significant.

Visual Character or Quality

According to the Appendix G of the CEQA Guidelines, a discussion of whether a project substantially degrades the existing visual character or quality of public views of a site and its surroundings is required only for projects located in non-urbanized areas. The project site is located in an urbanized area, and thus, the previous discussion addressed the proposed project's potential impacts related to conflict with applicable zoning governing scenic quality. Nonetheless, for informational purposes only, the following discussion addresses the proposed project's potential to degrade the existing visual character or quality of the site.

As detailed in Section 4.1.1, Existing Conditions, the 4.36-acre site is developed and consists of the field turf playing surface, rubberized 400-meter track, and paved and dirt areas. The two-story field house structure is located immediately west of Sherbeck Field and east of Student Parking Lot 4. The project site is located in the northeastern corner of Fullerton College, an approximately 70-acre campus that currently houses 51 permanent and temporary buildings in urban/suburban Fullerton. The site is bounded by perimeter roads and surrounding uses consist of Fullerton Union High School to the west and Fullerton College buildings and single-family residences to the north and south. Single-family residences are also located to the east across North Berkeley Avenue.

As proposed, the project would involve the installation of permanent, prefabricated bleachers with Americans with Disabilities Act (ADA)-compliant ramps. The home side bleachers would be approximately 360 feet long by 45 feet wide by 19 feet high. A rectangular, approximately 9-foot-high press box structure would also be installed atop the home side bleachers, which would increase the high point of the home side bleachers to 28 feet high. The visitors' side bleachers would be approximately 270 feet long by 27 feet wide by 14 feet high. Field lighting would also be installed and would consist of six lighting stanchions. Two of these stanchions would be installed near the home side bleachers, and two would be installed near the visitors' side bleachers, with the home side stanchions measuring approximately 120 feet high and the visitors' side stanchions measuring 100 feet high. In addition, one 60-foot-high stanchion would be installed near the existing scoreboard, and another 60-foot-high stanchion would be installed between the track surface and the field house structure. Additional project features include a sound system (to be used for athletic competitions only) and a storage building that would be installed west of the visitors' bleachers. Figure 3-2, Site Plan, depicts the location of proposed bleachers and lighting stanchions and provides approximate heights for these features. In addition, Figure 4.1-7, Aerial Rendering of Proposed Bleachers and Field Lighting at Sherbeck Field, and Figure 4.1-8, Rendering of Sherbeck Field with Proposed Bleachers and Field Lighting, provide artistic depictions of the proposed project.

The proposed scale and massing of the home and visitors' side bleachers would be comparable to the scale and mass of existing bleachers installed at the Fullerton Union High School football field as it appears to residences to the north and motorists traveling along local roads. As detailed in Section 4.1.1, the high school football field is located approximately 0.20 miles to the west of Sherbeck Field. The existing bleachers are approximately 315 feet long by 63 feet wide by 30 to 35 feet high (home side) and 315 feet long by 30 feet wide by 15 feet high (visitors' side). In addition to the high school field bleachers, nearby existing development on the Fullerton College campus is comparable to or exceeds the scale and mass of the proposed home and visitors' bleachers. For example, the three-level Fullerton College Parking Structure is located 850 feet west of Sherbeck Field and the rectangular structure is 200 feet long by 580 feet wide. Also, nearby campus buildings to the southwest, including Classroom Office Building 1400, Auto/Machining/Printing 900, and Technical Education Building 700, are two-story (approximately 20- to 25-foot-high) structures with long, rectangular floor plans. The field house (approximately 50 feet long by 200 feet wide by 30 feet high) is also constructed with a rectangular floor plan. While the mass of the bleachers would be larger than that of single-family residences located to the north and east of Sherbeck Field, development of comparable or greater mass and scale occurs nearby on the Fullerton Union High School campus and on the northern portion of the Fullerton College campus. In addition, the proposed bleachers would be set back more than 200 feet from the nearest residences and would be separated from residential development by North Berkeley Avenue (which is approximately 60 feet wide). The setbacks would slightly reduce the apparent scale of the bleacher structures as viewed from off-campus public roads and residences in the surrounding areas. Therefore, the mass and scale of proposed bleachers would be consistent with the mass and scale of existing athletic field development in the area and existing nearby development on the Fullerton College campus. As such, impacts would be less than significant.

As proposed, prefabricated aluminum bleachers would be installed at Sherbeck Field. Aluminum bleachers are also installed at the nearby Fullerton Union High School stadium. In addition, aluminum bleachers are commonplace at high school and college athletic fields in the Fullerton area, including at the Fullerton Union High School baseball field (500 feet west of Sherbeck Field), the Troy High football field (1.30 miles east of Sherbeck Field), and Titan Stadium on the California State University, Fullerton, campus (1.63 miles northeast of Sherbeck Field). While the scale of the Fullerton Union High School stadium and Titan Stadium bleacher systems is comparable to or larger than that of the proposed system at Sherbeck Field, the installation of permanent aluminum bleachers for future spectators at Sherbeck Field would be consistent with the material used for existing bleacher systems at high school and college athletic fields in the Fullerton area. Impacts would be less than significant.

The proposed six lighting stanchions installed at Sherbeck Field would range in height from 60 feet to 120 feet. Although field lighting is installed at the nearby Fullerton Union High School and streetlights and distribution lines supported by tall wooden poles are located along streets near the college campus, proposed stanchions of up to 100 and 120 feet in height would be taller than these existing features. Based on observations made during a site visit conducted by Dudek in June 2018, existing field lights installed at Fullerton Union High School are approximately 65 to 75 feet high. Further, existing streetlights and distribution line poles are generally less than 60 feet high, and existing development at the Fullerton College campus is generally between one and three stories. As such, light stanchions of 100 and 120 feet high would be taller than existing field lighting, utility, and college development in the area and would be taller than the one- to two-story residential structures located to the north and east of Sherbeck Field. Despite the visible scale contrast between proposed stanchions (specifically, those stanchions installed near the home and visitors' side bleachers, which would be up to 100 and 120 feet high), the total number of stanchions (six) would be limited. In addition, the stanchions would display a relatively narrow form and would not result in substantial view blockage or impediment. Also, tall field lights are a typical feature of high school (Fullerton Union) and college (California State University, Fullerton) athletic fields in the Fullerton area that are also located near residential and other development of considerably less prominent scale. Given that the existing character of the eastern and northern portion of Fullerton College is partially defined by athletic fields and because the total number of stanchions would be limited and would display a narrow form, the introduction of stanchions would not substantially degrade the existing character of the site and surrounding area. Impacts would be less than significant.

The proposed storage building would be installed west of the visitors' bleachers. The building would likely be constructed of steel and would be 30 feet long by 20 feet wide by 14 feet high. As such, the building would be of a comparable height to the proposed visitors' bleachers (also 14 feet high) and would be obscured from the view of northbound North Berkeley Avenue motorists by intervening features. Specifically, proposed home-side bleachers (up to 28 feet high), climbing vines planted at the base of existing chain-link fencing lining the eastern boundary of Sherbeck Field, and the proposed visitors' side bleachers would generally block the proposed storage building from the view of northbound motorists on North Berkeley Avenue as they approach and parallel Sherbeck Field. The storage building would be entirely obscured from the view of southbound motorists on North Berkeley Drive on the approach toward Sherbeck Field from the north, as well as from the view of the majority of residents in the surrounding area. Tall mature trees north and east of the Horticulture Building 1600 Complex and Child Development Center

1800 Building, trees in a narrow parkway to the immediate east of Student Parking Lot 5, and the proposed visitors' side bleachers would block the storage building from view. In addition, the storage building would be viewed in the context of the existing and proposed development of greater mass and scale (i.e., proposed home-side bleachers and the existing two-story field house structure) and would not be a dominant visual feature. As such, the introduction of the proposed storage building would not degrade the existing character or quality of the site and its surroundings, and impacts would be less than significant.

Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Lighting

Permanent field lights are not currently installed on Sherbeck Field; however, temporary field lights are occasionally used on site during the winter months to provide lighting for practices. The storage of relatively small, temporary field lights was observed on site by Dudek during a site visit conducted in May 2018.

The proposed project would include installation of six field lighting stanchions. Two stanchions would be located on the visitors' side of the field (north). One of these stanchions would be located on the west side of the field (F1), while the other would be located on the east side (F2). The F1 stanchion would be located north of the westernmost row of the bleachers. The F2 stanchion would be located north of the east bleacher ramp. The F1 and F2 stanchions would be approximately 100 feet tall. Football light fixtures would be located at a height of approximately 25 feet and 100 feet. Egress, or house, light fixtures would be located at a height of approximately 80 feet. F1 and F2 would each have a power load of 16.9 kilowatts (kW).

Two stanchions would be located on the home side of the field (south). One of these stanchions would be located on the west side of the field (F3), while the other would be located on the east side (F4). The F3 stanchion would be located south of the west bleacher ramp and the F4 stanchion would be located south of the east bleacher ramp. The F3 and F4 stanchions would be approximately 120 feet tall. Football light fixtures would be located at a height of approximately 30 feet and 120 feet. House light fixtures would be located at a height of approximately 80 feet. F3 and F4 would each have a power load of 19.6 kW.

One stanchion would be located on the eastern edge of the field (P1) and one on the western edge of the field (P2). The P1 stanchion would be located south of an access gate. The P2 stanchion would be located south of the scoreboard. The P1 and P2 stanchions would be approximately 60 feet tall. Track light fixtures would be located at a height of approximately 60 feet. P1 and P2 would each have a power load of 3.45 kW.

The total power load of the field lighting would be 79.9 kW. The stanchions would be made of galvanized steel and would be grey or silver. As proposed, field lighting would be hooded and individual fixtures would be directed downward onto the playing field surface and bleachers. The inclusion of hooded fixtures would limit opportunities for excessive light trespass or spillage off the Fullerton College campus and onto North Berkeley Avenue and residential neighborhoods to the north and east of Sherbeck Field. Hooded fixtures and downward-directed lighting would also reduce potential skyglow associated with the operation of field lighting during evening and nighttime hours. While streetlights and parking lot lights operate in the immediate project area, the kilowatt load associated with the field lights would be greater, as is necessary to illuminate the playing field surface and the home and visitors' bleachers.

As proposed, Sherbeck Field would be used for academic instruction, competitive athletics, and rentals. On Monday through Thursday evenings, field lights would operate until 9:15 p.m. to accommodate classes and rentals, and house lights would operate until 9:30 p.m. to allow students to exit the field safely. On Friday evenings, field lights would operate until 8:15 p.m. at the latest, and house lights would operate until 8:30 p.m. at the latest to allow students to exit the field safely. On Saturday evenings, field lights would operate until 10:00 p.m. at the latest, and house lights would operate until 10:30 p.m. at the latest to accommodate the occasional/special circumstance football games that would occur during the 16-week fall semester (evening games would not be regularly scheduled). On Sunday evenings, field lights would operate until 6:00 p.m. at the latest to accommodate soccer rentals.

To better understand the lighting levels associated with the operation of proposed field lighting, Fullerton College contacted Musco Lighting to prepare an illumination summary (Appendix C; see Figure 4.1-9, Illumination Summary – Spill Lighting from Proposed Field Lights). The illumination summary depicts the calculated lighting levels (in foot-candles) of the field lighting at specific mounting heights on proposed galvanized steel support poles to be installed at Sherbeck Field. Musco prepared calculations to ensure that sufficient lighting would be cast on the playing surface and visitor areas. In addition, calculations were prepared to determine the level of field lighting that would be cast outside the Sherbeck Field boundary and "spillover" onto adjacent areas. As indicated on Figure 4.1-9, average spill lighting level at the eastern curb of North Berkeley Avenue (east of Sherbeck Field) was calculated to be 0.014 foot-candles, and maximum spill lighting level was calculated to be 0.08 foot-candles. A foot-candle is a unit of illuminance or illumination equivalent to the illumination produced by a source of one candle at a distance of 1 foot. In addition, foot-candles are generally the most common unit of measure used by lighting professionals to calculate light levels in businesses and outdoor spaces (Appendix C).

The District, the City, and Appendix G of the CEQA Guidelines do not have established foot-candle thresholds for spill lighting associated new development. While not applicable to the project and referenced only for comparison, the County of San Diego has an established significance guideline that sets a light trespass threshold of 0.2-foot candles as measured 5 feet onto adjacent property to determine significant lighting effects (County of San Diego 2007). As mentioned above, the maximum spill lighting level was calculated to be 0.08 foot-candles at the eastern curb of North Berkeley Drive. While spill lighting levels for the project were not calculated at residential properties located east of North Berkeley Avenue, the additional distance between the eastern curb and residential property lines (approximately 75 feet) would conceivably result in slightly lower spill lighting levels at residential properties. Given that the calculated spill lighting levels on the nearest residential properties are anticipated to be lower than the maximum levels (i.e., 0.08 foot-candles) calculated at the eastern curb of North Berkeley Drive (see Figure 4.1-9), and lighting would be hooded and directed downward, impacts associated with lighting and would be less than significant.

Glare

As indicated in Chapter 3, Project Description, the six stanchions to be installed at Sherbeck Field would be made of galvanized steel and would be grey or silver in color. Although metal elements can be a potential source of glare during daytime hours, there is a low likelihood of incoming sunlight reflecting off the proposed stanchions and being received by motorists along North Berkeley Drive (and other local roads) and by area residents. Firstly, galvanized steel is less reflective than other metallic elements such as polished steel or stainless steel. Further, the proposed stanchions would be cylindrical and would have limited flat surfaces for reflecting incoming light. In addition, the presence of existing trees along North Berkeley Avenue and along public and private roads in local neighborhoods to the north and east of Sherbeck Field would help to intercept incoming light reflected off the installed stanchions. Lastly, only six lighting stanchions would be installed, and this limited number of galvanized steel poles at Sherbeck Field would not constitute the introduction of highly reflective materials or elements to the project site and area.

In addition to calculating spill lighting from the proposed field lights, Musco assessed potential environmental glare impacts (Appendix C). According to Musco, the highest levels of potential glare would occur on the playing field surface of Sherbeck Field and would be contained within the boundaries of the Fullerton College campus. Some glare may be experienced by North Berkeley Avenue motorists to the immediate east of Sherbeck Field (where the road parallels the field (at a distance of approximately 375 feet)) while the proposed field lights are in operation. However, clear and unimpeded views to luminaires atop the stanchions would be obscured by existing landscaping/ trees installed on the Fullerton College campus to the west of North Berkeley Avenue. Due to the height of stanchions and the viewing angle provided along North Berkeley Avenue, directly viewing the newly installed lighting would require motorists to look up and at an angle that would take their eyes off the road. The curving alignment of the road, automobiles entering the roadway from college parking lots and East Brookdale Place, and the presence of automobiles parked along the road are variables requiring the focus of motorists on the road. Regarding reception of glare on residential properties to the north and east of Sherbeck Field, the Musco Lighting report indicates that properties east of North Berkeley Avenue would generally experience minimal to no glare during field lighting use (see Figure 4.1-10, Glare Impact) (Appendix C).

Based on the rationale provided above, the installation of six lighting stanchions and operation of field lights would not introduce a new source of substantial glare that would adversely affect day or nighttime views in the area. Impacts would be less than significant.

4.1.5 Cumulative Analysis

In addition to buildout of the 10-year Facilities Master Plan for Fullerton College, approximately 30 proposed, in construction, or constructed development projects in the City of Fullerton were considered in the cumulative analysis scenario. Table 3-3, Cumulative Projects, in Chapter 3 details the location and provides a brief description of each of the projects considered in the cumulative scenario. None of the 30 projects under the land use jurisdiction of the City entails the installation of bleachers and field lights. With the exception of the West Coyote Hills Project (which is located 3.4 miles northwest of Sherbeck Field), the vast majority of cumulative development within the City of Fullerton would be located in an urban/suburban setting and on previously developed sites. In addition, proposed residential development, including the Apartments on East Brookdale (a nine-unit apartment building located 0.4 miles west of Sherbeck Field), Ladera Vista Drive Subdivision (two single-family residences located 1.45 miles northeast of Sherbeck Field), and the Apartments on Associated Road Project (an addition of 40 apartments to an existing apartment complex; located 2.3 miles northeast of Sherbeck Field), is located adjacent to existing residential development of comparable scale and mass. Similarly, the proposed two-story law office development (located 0.6 miles southwest of Sherbeck Field) and mixed-use development (located 0.70 miles southwest of Sherbeck Field) on West Amerige Avenue are proposed in developed locations that support existing two-story office and commercial development, a five-story office building (The Chapman Building), and an existing three-story mixed-use development. The three-story mixed-use development is located east of North Malden Avenue, north of West Wilshire Avenue, and south of West Whiting Avenue.

As with the proposed project, cumulative development would be generally located on previously developed sites within the urban/suburban setting of the City of Fullerton. Further, cumulative development projects within the City would be subject to CEQA and would be required to evaluate potential effects on the environment, including effects on existing views and visual character. The cumulative projects would be required to comply with applicable zoning and regulations regarding scenic quality. Because the majority of cumulative projects identified in the City would occur on previously developed sites that generally support structures of similar scale, mass, and use, the likelihood for cumulative effects to existing character and quality of particular sites and surrounding areas is low. Although none of the identified cumulative projects would entail the introduction of similar elements as the proposed project (i.e., bleachers and field lighting), proposed, in construction, and constructed development would generally be compatible with existing development in the surrounding area and would not substantially degrade the character and quality of the area. Therefore, the project would not contribute to a cumulative effect to visual character and quality, and project impacts would not be cumulatively considerable.

The urbanized area setting of the Fullerton College campus supports numerous nighttime lighting sources and contains buildings and facilities that have incorporated glass features and other reflective elements. In addition to existing field lights installed on the Fullerton Union High School stadium (approximately 0.20 miles west of Sherbeck Field), streetlights and traffic signals are commonplace along local roads, and interior and exterior building lighting is typical of residential neighborhoods. Because most of the identified cumulative projects are located on previously developed sites in the urban/suburban setting of the City of Fullerton, the introduction of proposed and in construction development would not entail the introduction of new sources of substantial light and glare. Rather, proposed and in construction development would generally generate the same type of lighting (i.e., interior lighting and exterior-mounted fixtures) that currently operates in the surrounding area. Existing development included in the cumulative scenario, such as the Laurel Residential Project (located 2.15 miles northeast of Sherbeck Field), the Orangefair Multifamily Development (located 1.4 miles southwest of Sherbeck Field), and The Fox Block Mixed Use Project (located 0.40 miles southwest of Sherbeck Field), currently contributes lighting typical of single- and multifamily residential development to the existing nighttime environment in the City. Further, because each of the identified cumulative projects would be subject to CEQA, each would be required to demonstrate that proposed lighting and building materials would not create a new source of substantial light or glare that would affect day- or nighttime views. The lighting and glare impacts of the proposed project were determined to be less than significant. In addition, the vast majority of identified cumulative projects would be located on previously developed sites and would include lighting and building materials similar to that which is currently supported in the surrounding area. As such, the introduction of field lights at Sherbeck Field would not contribute to a cumulative effect on day- and nighttime views due to lighting and glare, and project impacts would not be cumulatively considerable.

4.1.6 Mitigation Measures

Impacts were determined to be less than significant (see Section 4.1.4, Impacts Analysis); therefore, no mitigation measures would be required and no mitigation measures are proposed.

4.1.7 Level of Significance After Mitigation

Impacts were determined to be less than significant and no mitigation measures are required.

4.1.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

Caltrans (California Department of Transportation). 2018. "List of Eligible and Officially Designated State Scenic Highways." Accessed July 18, 21018. http://www.dot.ca.gov/design/lap/livability/scenic-highways/index.html.

City of Fullerton. 2012. *The Fullerton Plan*. Adopted May 1, 2012.

County of Orange. 2005. "Scenic Highway Plan: Orange County, California." County of Orange, Planning and Development Services, Resources and Development Management Department. April 2005.

County of San Diego. 2007. "County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements: Dark Skies and Glare." County of San Diego, Department of Public Works, Department of Planning and Land Use, Land Use and Environment Group. July 30, 2007; modified January 15, 2009.

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Photo A: View east from near field house structure to track and playing field

Photo B: View west from playing field towards field house structure

Photo C: View west from east end of track towards field house structure

Photo D: View north from southeastern corner of project site to shotput field and Sherbeck Field scoreboard

FIGURE 4.1-1

Existing Visual Character of the Project Site

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Photo E: View west from northeast corner of the Project site towards paved area used for bleachers and temporary storage

Photo F: View northwest from onsite turf area towards east elevation of field house structure

Photo G: View east from Student Parking Lot 4 towards west elevation of field house structure

Photo H: View west from southwest corner of project site towards public access points to Sherbeck Field

FIGURE 4.1-2

Existing Visual Character of the Project Site

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Photo I: View northwest from North Berkeley Avenue to Student Parking Lot 5 and Horticular Center complex

Photo J: View west from Student Parking Lot 4 towards Fullerton College Parking Structure

Photo K: View west from North Lemon Street toward Fullerton High School Stadium

Photo L: View south from North Berkeley Avenue to existing landscaping near Horticultural Center and Child Development Center complexes

FIGURE 4.1-3

Existing Visual Character of the Project Site

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Photo M: View south along North Berkeley Avenue towards East Chapman Avenue

Photo N: View north from North Berkeley Avenue sidewalk towards residential development on elevated terrain

Photo O: View west from Sheppard Drive towards Dorothy Drive

Photo P: View west from North Berkeley Avenue towards single-family residences

FIGURE 4.1-4

Existing Visual Character of the Project Site

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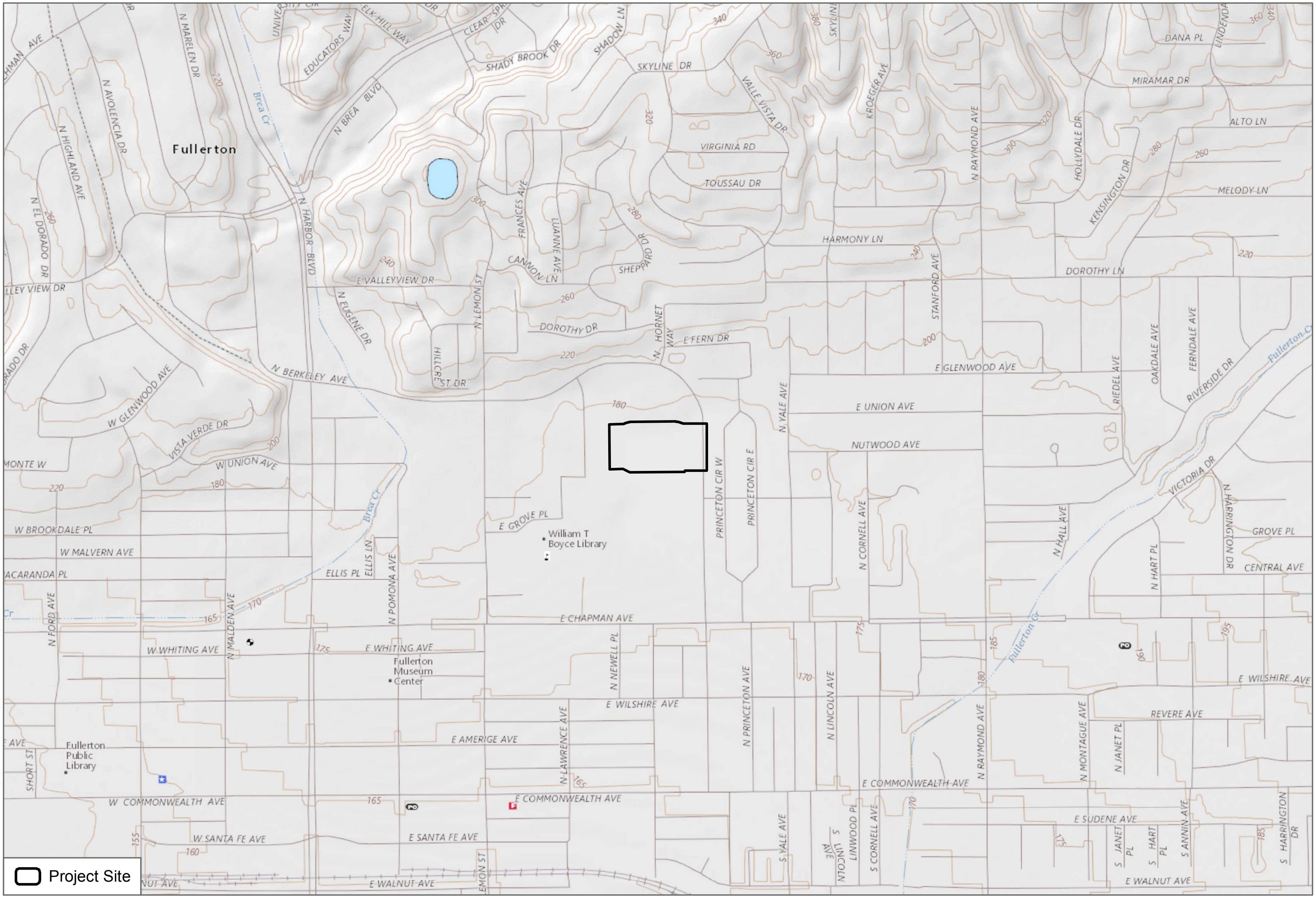

SOURCE: USGS 2018

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FIGURE 4.1-5

Characteristics of Local Topography

Sherbeck Field Improvements Project Draft Environmental Impact Report

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View west from North Berkeley Avenue towards Sherbeck Field


View south from North Hornet Way towards Sherbeck Field

FIGURE 4.1-6

Existing Offsite Views towards the Project Site

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Source: DLR Group 2018

DUDEK

FIGURE 4.1-7

Aerial Rendering of Proposed Bleachers and Field Lighting at Sherbeck Field

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Source: DLR Group 2018

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FIGURE 4.1-8

Rendering of Sherbeck Field with Proposed Bleachers and Field Lighting

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EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
2	F1-F2	100'	-	25'	TLC-BT-575	2	2	0
				80'	TLC-LED-400	2	2	0
				100'	TLC-LED-1150	13	13	0
2	F3-F4	120'	-	30'	TLC-BT-575	2	2	0
				80'	TLC-LED-400	3	3	0
				120'	TLC-LED-1150	15	15	0
2	P1-P2	60'	-	60'	TLC-LED-1150	3	3	0
6	TOTALS					80	80	0

Sherbeck Field

Fullerton, CA

GRID SUMMARY

Name:	Spill
Spacing:	30.0'
Height:	3.0' above grade

ILLUMINATION SUMMARY

MAINTAINED HORIZONTAL FOOTCANDLES

	Entire Grid
Scan Average:	0.006
Maximum:	0.04
Minimum:	0.00
No. of Points:	17

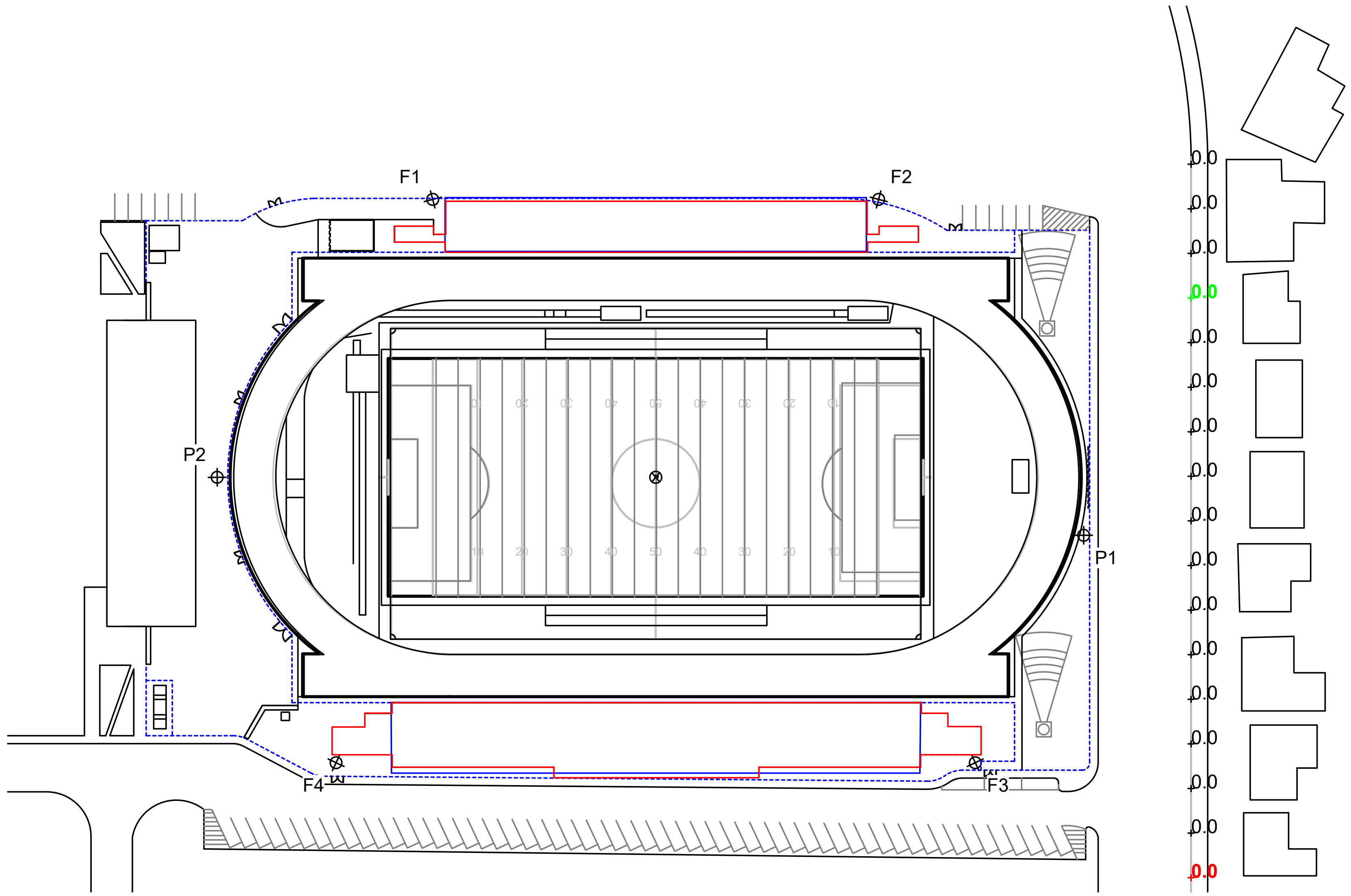
LUMINAIRE INFORMATION

Color / CRI:	5700K - 75 CRI
Luminaire Output:	121,000 / 38,600 / 52,000 lumens
No. of Luminaires:	**80**
Total Load:	79.9 kW

Lumen Maintenance

Luminaire Type	L90 hrs	L80 hrs	L70 hrs
TLC-LED-1150	>51,000	>51,000	>51,000
TLC-LED-400	61,000	>72,000	>72,000
TLC-BT-575	--	--	--

Reported per TM-21-11. See luminaire datasheet for details.



Pole location(s) ⊕ dimensions are relative to 0,0 reference point(s) ⊗

Source: Musco 2018

FIGURE 4.1-9

Illumination Summary - Spill Lighting from Proposed Field Lights

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Sherbeck Field
Fullerton, CA

GLARE IMPACT
Summary

Map indicates the maximum candela an observer would see when facing the brightest light source from any direction.

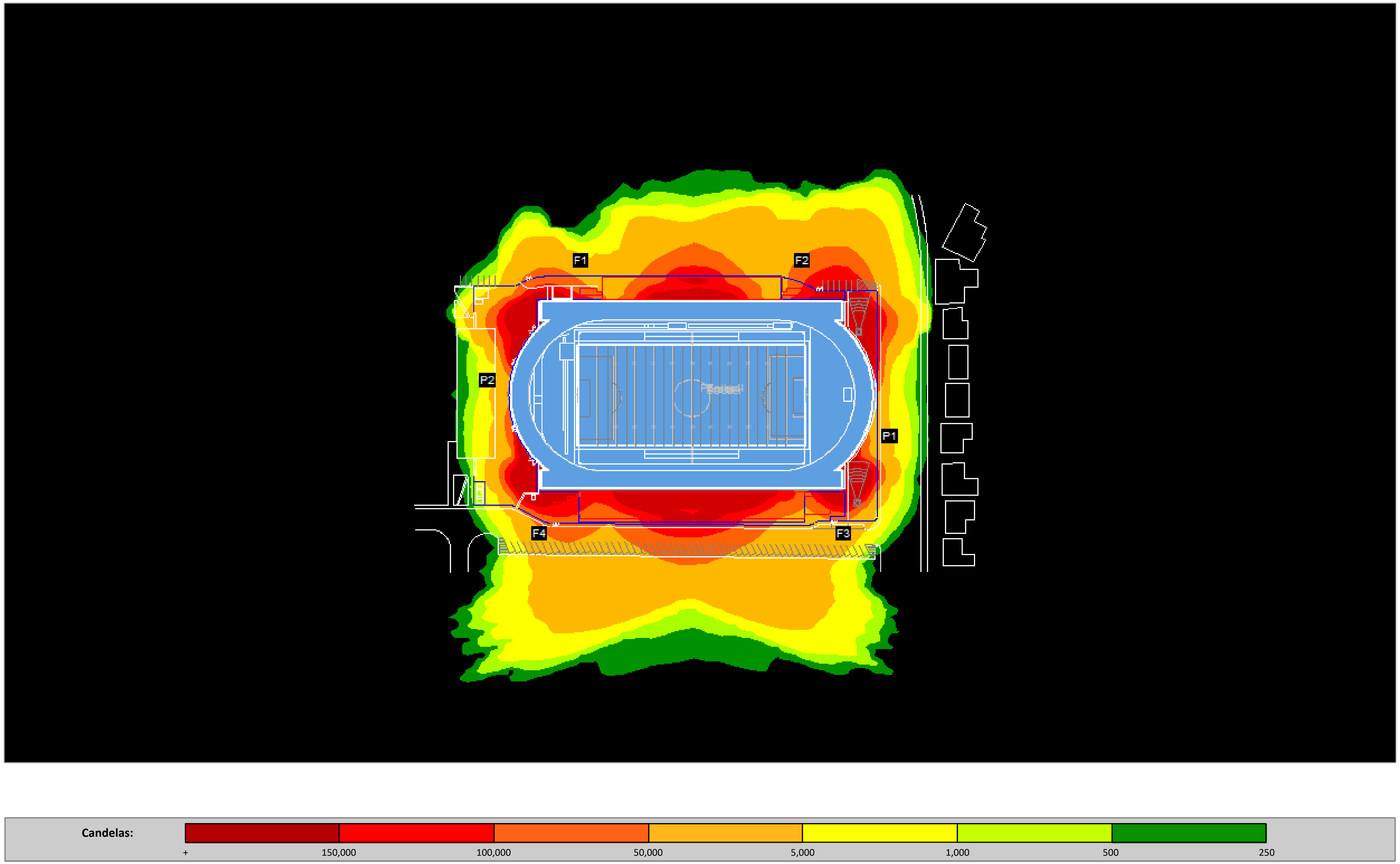
A well-designed lighting system controls light to provide maximum useful on-field illumination with minimal destructive off-site glare.

GLARE
Candela Levels

High Glare: 150,000 or more candela
Should only occur on or very near the lit area where the light source is in direct view. Care must be taken to minimize high glare zones.

Significant Glare: 25,000 to 75,000 candela
Equivalent to high beam headlights of a car.

Minimal to No Glare: 500 or less candela
Equivalent to 100W incandescent light bulb.



Source: Musco 2018

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FIGURE 4.1-10

Glare Impact

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4.2 AIR QUALITY

This section describes the existing air quality setting of the proposed Sherbeck Field Improvements Project (proposed project) area; identifies associated regulatory requirements; evaluates the project's potential impacts, including cumulative impacts; and identifies any mitigation measures recommended to address the proposed project's significant impacts, if any. Air quality modeling data and associated information have been included as part of Appendix D.

4.2.1 Existing Conditions

The project site is located within the northeastern portion of the Fullerton College campus, which itself is bounded by residential developments and Fullerton Union High School. Of relevance to the EIR's air quality analysis, the proposed project is within the South Coast Air Basin (SCAB). The SCAB is a 6,745-square-mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SCAB is within the jurisdictional boundaries of the South Coast Air Quality Management District (SCAQMD).

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted. Meteorological and topographical conditions, however, are also important. Factors such as wind speed and direction, air temperature gradients and sunlight, and precipitation and humidity interact with physical landscape features to determine the movement and dispersal of air pollutants.

The SCAB's air pollution problems are a consequence of the combination of emissions from the nation's second-largest urban area, meteorological conditions that hinder dispersion of those emissions, and mountainous terrain surrounding the SCAB that traps pollutants as they are pushed inland with the sea breeze (SCAQMD 2017). Meteorological and topographical factors that affect air quality in the SCAB are described below. The discussion of meteorological and topographical conditions of the SCAB is based on information provided in the *Final 2016 Air Quality Management Plan* (SCAQMD 2017).

4.2.1.1 Climate and Meteorology

The SCAB is characterized as having a Mediterranean climate (typified as semiarid with mild winters, warm summers, and moderate rainfall). The region lies in the semi-permanent, high-pressure zone of the eastern Pacific. As a result, the climate is mild and tempered by cool sea breezes. Moderate temperatures, comfortable humidity, and limited precipitation characterize the climate in the SCAB. The average annual temperature varies little throughout the SCAB, averaging 75 degrees Fahrenheit (°F). However, with a less-pronounced oceanic influence, the eastern inland portions of the SCAB show greater variability in annual minimum and maximum temperatures. All portions of the SCAB have recorded temperatures over 100°F in recent years. Although the

SCAB has a semiarid climate, the air near the surface is moist because of the presence of a shallow marine layer. Except for infrequent periods when dry air is brought into the SCAB by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70% at the coast and 57% in the eastern part of the SCAB. Precipitation in the SCAB is typically 9 to 14 inches annually and is rarely in the form of snow or hail because of typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the SCAB. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds.

Fullerton's climate is characterized by relatively low rainfall, with warm summers and mild winters. Average temperatures range from a high of 87°F in August to a low of 45°F in December (WRCC 2017).[1] Annual precipitation averages about 10 inches, falling mostly from October through April (WRCC 2017).

4.2.1.2 Sunlight

The presence and intensity of sunlight are necessary for the formation of photochemical smog. Under the influence of the ultraviolet radiation of sunlight, certain "primary" pollutants (mainly reactive hydrocarbons and oxides of nitrogen (NO_x))[2] react to form "secondary" pollutants (primarily oxidants). Since this process is time dependent, secondary pollutants can be formed many miles downwind of the emission sources.

Southern California has abundant sunshine, which drives the photochemical reactions that form pollutants such as ozone (O_3) and a substantial portion of fine particulate matter ($PM_{2.5}$, particles less than 2.5 microns in diameter). In the SCAB, high concentrations of O_3 are normally recorded during the late spring, summer, and early autumn months, when more intense sunlight drives enhanced photochemical reactions. Because of the prevailing daytime winds and time-delayed nature of photochemical smog, oxidant concentrations are highest in the inland areas of Southern California.

4.2.1.3 Temperature Inversions

Under ideal meteorological conditions and irrespective of topography, pollutants emitted into the air intermix and disperse into the upper atmosphere. However, the Southern California region frequently experiences temperature inversions during which pollutants are trapped and accumulate close to the ground. The inversion, a layer of warm, dry air overlaying cool, moist marine air, is a normal condition in coastal Southern California. The cool, damp, hazy sea air capped by coastal

1 Local climate data for Fullerton are based on the closest and most representative station measured by the Western Regional Climate Center, which is located at the Fullerton Municipal Airport in Fullerton, California.

2 NO_x is a general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen.

clouds is heavier than the warm, clear air, which acts as a lid through which the cooler marine layer cannot rise.

The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above mean sea level (amsl), the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet amsl, the terrain prevents the pollutants from entering the upper atmosphere, resulting in the pollutants settling in the foothill communities. Below 1,200 feet amsl, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Usually, inversions are lower before sunrise than during the daylight hours.

Mixing heights for inversions are lower in the summer and inversions are more persistent, being partly responsible for the high levels of O_3 observed during summer months in the SCAB. Smog in Southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods, allowing them to form secondary pollutants by reacting in the presence of sunlight. The SCAB has a limited ability to disperse these pollutants due to typically low wind speeds and the surrounding mountain ranges.

As with other cities within the SCAB, Fullerton is susceptible to air inversions, which trap a layer of stagnant air near the ground where pollutants are further concentrated. These inversions produce haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, furnaces, and other sources. Elevated concentrations of coarse particulate matter (PM_{10}, particles less than 10 microns in diameter) and of $PM_{2.5}$ can occur in the SCAB throughout the year, but they occur most frequently in fall and winter. Although there are some changes in emissions by day of the week and by season, the observed variations in pollutant concentrations are primarily the result of seasonal differences in weather conditions.

4.2.1.4 Pollutants and Effects

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards. The federal and state standards have been set, with an adequate margin of safety, at levels above which outdoor concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include ozone or O_3, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), PM_{10}, and $PM_{2.5}$, and lead. In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants. These pollutants, as well as toxic air contaminants (TACs), are discussed in the following paragraphs.[3]

Ozone

O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors. These precursors are mainly NO_x and volatile organic compounds (VOCs). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies.

O_3 exists in the upper atmosphere (stratospheric O_3) and at Earth's surface in the lower atmosphere (tropospheric O_3).[4] The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" O_3. Stratospheric, or "good," O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

O_3 in the troposphere (i.e., at ground level) causes numerous adverse health effects. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013). These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Nitrogen Dioxide

NO_x is a general term pertaining to compounds of nitric oxide (NO), nitrogen dioxide (NO_2), and other oxides of nitrogen. NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant NO, which is a colorless, odorless gas. NO_x plays a major role, together with VOCs in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and

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3 The descriptions of each of the criteria air pollutants and associated health effects are based on the U.S. Environmental Protection Agency's Criteria Air Pollutants (EPA 2017a) and the California Air Resources Board's Glossary of Air Pollutant Terms (CARB 2018).

4 The troposphere is the layer of Earth's atmosphere nearest to the surface of Earth. The troposphere extends outward about 5 miles at the poles and about 10 miles at the equator.

may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utilities and industrial boilers. NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (EPA 2016).

Carbon Monoxide

CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbons, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for the majority of CO emissions.

CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions — primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the body’s ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of function in the central nervous system.

Sulfur Dioxide

SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Coarse particulate matter (PM_{10}) consists of particulate matter that is 10 microns or less in diameter, which is about one-seventh the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) consists of particulate matter that is 2.5 microns or less in diameter, which is roughly one-twenty-eighth the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also produce haze, reducing regional visibility, and damage and discolor surfaces on which they settle.

People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in PM_{10} and $PM_{2.5}$ (EPA 2009).

Lead

Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly

95%. With the phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead.

Volatile Organic Compounds

Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry-cleaning solutions, and paint.

The primary health effects of VOCs result from the formation of O_3 and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for VOCs as a group.

Sulfates

Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere and can result in respiratory impairment, as well as reduced visibility.

Vinyl Chloride

Vinyl chloride is a colorless gas with a mild, sweet odor, which has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

Hydrogen Sulfide

Hydrogen sulfide is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of hydrogen sulfide include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to hydrogen sulfide can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

Visibility-Reducing Particles

Visibility-reducing particles are any particles in the air that obstruct the range of visibility. Effects of reduced visibility can include obscuring the viewshed of natural scenery, reducing airport safety, and discouraging tourism. Sources of visibility-reducing particles are the same as for $PM_{2.5}$ described above.

Non-Criteria Air Pollutants

Toxic Air Contaminants

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a TAC.

TACs are identified by federal and state agencies based on a review of available scientific evidence. In the state of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the California Legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples of TACs include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Non-carcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Diesel Particulate Matter

Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90% of DPM is less than 1 micrometer in diameter (about one-seventieth the diameter of a human hair); thus, it is a subset of $PM_{2.5}$ (CARB 2016). DPM is typically composed of carbon particles ("soot," also called black carbon) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB 2016).

CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM) as a TAC in August 1998 (17 CCR 93000). DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a diesel risk reduction plan in 2000 (CARB 2000). Because DPM is part of $PM_{2.5}$, DPM also contributes to the same noncancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2016). Those most vulnerable to noncancer health effects are children, whose lungs are still developing, and the elderly, who often have chronic health problems.

Odorous Compounds

Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. In a phenomenon known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

4.2.1.5 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. The people most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Facilities and structures where these air-pollution-sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses where air-pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005). SCAQMD identifies sensitive receptors as residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993).

The closest off-site sensitive receptors to the project site include residences approximately 85 feet to the east.

4.2.2 Regulatory Framework

Regulatory oversight for air quality in the SCAB is maintained by EPA at the federal level, CARB at the state level, and SCAQMD at the local level. Applicable laws, regulations, and standards of these three agencies are described in the following subsections.

Federal

Criteria Air Pollutants

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. EPA is responsible for implementing most aspects of the Clean Air Act, including setting National Ambient Air Quality Standards (NAAQS) for major air pollutants; setting hazardous air pollutant (HAP) standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric O_3 protection measures, and enforcement provisions. Under the Clean Air Act, NAAQS are established for the following criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead. The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS for lead and CO are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated timeframes.

Hazardous Air Pollutants

The 1977 federal Clean Air Act amendments required EPA to identify National Emission Standards for Hazardous Air Pollutants to protect public health and welfare. HAPs include certain VOCs, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal Clean Air Act amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

State

Criteria Air Pollutants

In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. As stated previously, an ambient air quality standard defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harm to the public’s health. For each pollutant, concentrations must be below the relevant CAAQS before a geographical area can attain the corresponding CAAQS. Air quality is considered “in attainment” if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, $PM_{2.5}$, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

California air districts have based their thresholds of significance for CEQA purposes on the pollutant levels that scientific and factual data demonstrate that the air basin can accommodate without affecting the attainment date for the NAAQS or CAAQS. Since an ambient air quality standard is based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of the ambient air quality standard, this means that the thresholds established by air districts are also protective of human health.

The NAAQS and CAAQS are presented in Table 4.2-1.

Table 4.2-1
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1 hour	0.09 ppm (180 μg/m³)	—	Same as primary standard[f]
	8 hours	0.070 ppm (137 μg/m³)	0.070 ppm (137 μg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as primary standard
	Annual arithmetic mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 μg/m³)	0.075 ppm (196 μg/m³)	—
	3 hours	—	—	0.5 ppm (1,300 μg/m³)
	24 hours	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 μg/m³	150 μg/m³	Same as primary standard
	Annual arithmetic mean	20 μg/m³	—	
$PM_{2.5}$[i]	24 hours	—	35 μg/m³	Same as primary standard
	Annual arithmetic mean	12 μg/m³	12.0 μg/m³	15.0 μg/m³
Lead[j,k]	30-day average	1.5 μg/m³	—	—
	Calendar quarter	—	1.5 μg/m³ (for certain areas)[k]	Same as primary standard
	Rolling 3-month average	—	0.15 μg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 μg/m³)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 μg/m³)	—	—
Sulfates	24 hours	25 μg/m³	—	—
Visibility reducing particles	8 hours (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to the number of particles when the relative humidity is less than 70%	—	—

Source: CARB 2016.
Notes: O_3 = ozone; ppm = parts per million by volume; μg/m³ = micrograms per cubic meter; NO_2 = nitrogen dioxide; CO = carbon monoxide; mg/m³ = milligrams per cubic meter; SO_2 = sulfur dioxide; PM_{10} = coarse particulate matter (particulate matter with an aerodynamic diameter less

than or equal to 10 microns); $PM_{2.5}$ = fine particulate matter (particulate matter with an aerodynamic diameter less than or equal to 2.5 microns); PST = Pacific standard time.

[a] California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter (PM_{10}, $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in section 70200 of title 17 of the California Code of Regulations.

[b] National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 $\mu g/m^3$ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[g] To attain the national 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the national 1-hour standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ were also retained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.

[j] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 700 pollutants, of which carcinogenic and noncarcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs.

In 1987, the Legislature enacted the Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) to address public concern over the release of TACs into the atmosphere. AB 2588 law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, the facility operator is required to communicate the results to the public in the form of notices and public meetings.

In 2000, CARB approved a comprehensive diesel risk reduction plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). The regulation is anticipated to result in an 80% decrease in statewide diesel health risk in 2020 compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment Program. These regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There are also several airborne toxic control measures that reduce diesel emissions, including the In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025) regulations.

California's TAC identification and control program is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including federal HAPs, and is adopting appropriate control measures for sources of these TACs. The following measures are required by state law to reduce diesel particulate emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, Section 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to 5 minutes; electric auxiliary power units should be used whenever possible.

California Health and Safety Code Section 41700

Section 41700 of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local

South Coast Air Quality Management District

SCAQMD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in the SCAB, where the project site is located. SCAQMD operates monitoring stations in the SCAB, develops rules and regulations for stationary sources and equipment, prepares emissions inventory and air quality management planning documents, and conducts source testing and inspections. SCAQMD's air quality management plans (AQMPs) include control measures and strategies to be implemented to attain NAAQS and CAAQS in the SCAB. The SCAQMD then implements these control measures as regulations to control or reduce criteria pollutant emissions from stationary sources or equipment.

The most recently adopted AQMP is the 2016 AQMP (SCAQMD 2017), which was adopted by the SCAQMD's Governing Board on March 3, 2017. The 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gas emissions and toxic risk, as well as efficiencies in energy use, transportation, and goods movement (SCAQMD 2017a). Because mobile sources are the principal contributor to SCAB's air quality challenges, SCAQMD has been and will continue to be closely engaged with CARB and the EPA, who have primary responsibility for these sources. The 2016 AQMP recognizes the critical importance of working with other agencies to develop funding and other incentives that encourage the accelerated transition of vehicles, buildings, and industrial facilities to cleaner technologies in a manner that benefits not only air quality but also local businesses and the regional economy. These "win-win" scenarios are key to implementation of this 2016 AQMP with broad support from a wide range of stakeholders.

While striving to achieve the NAAQS for O_3 and $PM_{2.5}$ and the CAAQS for O_3, PM_{10}, and $PM_{2.5}$ through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in SCAB. Projects are considered consistent with, and would not conflict with or obstruct, implementation of the AQMP if growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP. The demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) are based on general plans for cities and counties in SCAB. Those forecasts were used by SCAG in its own 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) (SCAG 2016), and also were used by SCAQMD to estimate future emissions in the 2016 AQMP (SCAQMD 2017a).

The 2016 AQMP's overall control strategy is an integral approach relying on fair-share emission reductions from sources regulated by federal, state, and local agencies. Therefore, the 2016 AQMP outlines stationary and mobile source emission reductions from traditional regulatory control measures, incentive-based programs, co-benefits from climate programs, mobile source strategies, and reductions from federal sources (SCAQMD 2017). These control strategies are to be implemented in partnership with CARB and EPA.

The previous AQMP was the 2012 AQMP, which was adopted in February 2013 (SCAQMD 2013). The 2012 AQMP proposed policies and measures to achieve federal and state standards for improved air quality in the SCAB and those portions of the Salton Sea Air Basin (formerly named the Southeast Desert Air Basin) that are under SCAQMD jurisdiction. The 2012 AQMP is designed to meet applicable federal and state requirements for O_3 and particulate matter. The 2012 AQMP documents that attainment of the federal 24-hour $PM_{2.5}$ standard is impracticable by 2015 and the SCAB should be classified as a serious nonattainment area along with the appropriate federal requirements. The 2012 AQMP includes the planning requirements to meet the 1-hour O_3 standard. The 2012 AQMP demonstrates attainment of the federal 24-hour $PM_{2.5}$ standard by 2014 in the SCAB through adoption of all feasible measures. Finally, the 2012 AQMP updates the EPA-approved 8-hour O_3 control plan with new measures designed to reduce reliance on the Clean Air Act Section 182(e)(5) long-term measures for NO_x and VOC reductions. The 2012 AQMP reduction and control measures, which are outlined to mitigate emissions, are based on existing and projected land use and development. EPA, with a final ruling on April 14, 2016, approved the Clean Air Act planning requirements for the 24-hour $PM_{2.5}$ standard portion and on September 3, 2014, approved the 1-hour O_3 Clean Air Act planning requirements.

Applicable Rules

Emissions that would result from emission sources during construction and operation of the proposed project are subject to SCAQMD's rules and regulations. The SCAQMD rules applicable to the project may include the following:

- **Rule 401 – Visible Emissions:** This rule establishes the limit for visible emissions from stationary sources.
- **Rule 402 – Nuisance:** This rule prohibits the discharge of air pollutants from a facility that cause injury, detriment, nuisance, or annoyance to the public or damage to business or property.
- **Rule 403 – Fugitive Dust:** This rule requires fugitive dust sources to implement best available control measures for all sources and prohibits all forms of visible particulate matter from crossing any property line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust.

- **Rule 431.2 – Sulfur Content of Liquid Fuels:** The purpose of this rule is to limit the sulfur content in diesel and other liquid fuels for the purpose of reducing the formation of SO_X and particulates during combustion and of enabling the use of add-on control devices for diesel-fueled internal combustion engines. The rule applies to all refiners, importers, and other fuel suppliers such as distributors, marketers, and retailers, as well as to users of diesel, low-sulfur diesel, and other liquid fuels for stationary-source applications in the SCAQMD. The rule also affects diesel fuel supplied for mobile sources.
- **Rule 1108 – Cutback Asphalt:** This rule prohibits the sale of cutback asphalt containing more than 0.5% by volume organic compounds which evaporate at 260°C (500°F) or lower as determined by ASTM method D402 or other test method.
- **1108.1 – Emulsified Asphalt:** This rule prohibits the sale of emulsified asphalt containing organic compounds which evaporate at 260°C (500°F) or lower as determined by ASTM method D244 or other test method.
- **Rule 1110.2 – Emissions from Gaseous- and Liquid-Fueled Engines:** This rule applies to stationary and portable engines rated at greater than 50 horsepower. The purpose of Rule 1110.2 is to reduce NO_x, VOC, and CO emissions from engines. Emergency engines, including those powering standby generators, are generally exempt from the emissions and monitoring requirements of this rule because they have permit conditions that limit operation to 200 hours or less per year as determined by an elapsed operating time meter.
- **Rule 1113 – Architectural Coatings:** This rule requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories.

Southern California Association of Governments

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated metropolitan planning organization for the Southern California region and is the largest metropolitan planning organization in the United States.

With respect to air quality planning and other regional issues, SCAG has prepared the 2008 Regional Comprehensive Plan: Helping Communities Achieve a Sustainable Future (2008 RCP) for the region (SCAG 2008). The 2008 RCP sets the policy context in which SCAG participates in and responds to the SCAQMD AQMPs and builds off the SCAMQD AQMP processes that are designed to meet health-based criteria pollutant standards in several ways (SCAG 2008). First, it complements AQMPs by providing guidance and incentives for public agencies to consider best practices that support the technology-based control measures in AQMPs. Second, the 2008 RCP emphasizes the need for local initiatives that can reduce the region's GHG emissions that contribute to climate change, an issue that is largely outside the focus of local attainment plans. Third, the 2008 RCP emphasizes the need for better coordination of land use and transportation planning, which heavily influences the emissions inventory from the transportation sectors of the economy. This also minimizes land use conflicts, such as residential development near freeways, industrial areas, or other sources of air pollution.

On April 7, 2016, SCAG's Regional Council adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS). The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The 2016 RTP/SCS charts a course for closely integrating land use and transportation so that the region can grow smartly and sustainably. The 2016 RTP/SCS was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. In June 2016, SCAG received its conformity determination from the Federal Highway Administration and the Federal Transit Administration indicating that all air quality conformity requirements for the 2016 RTP/SCS and associated 2015 Federal Transportation Improvement Program Consistency Amendment through Amendment 15-12 had been met (SCAG 2016). SCAQMD's 2016 AQMP applies the updated SCAG growth forecasts assumed in the 2016 RTP/SCS.

South Coast Air Basin Attainment Designation

Pursuant to the 1990 federal Clean Air Act amendments, EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant based on whether the NAAQS have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are redesignated as maintenance areas and must have approved maintenance plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on the CAAQS rather than the NAAQS. Table 4.2-2 depicts the current attainment status of the SCAB with respect to the NAAQS and CAAQS.

Table 4.2-2
South Coast Air Basin Attainment Classification

Pollutant	Designation/Classification	
	Federal Standards	*State Standards*
Ozone (O3), 1-hour	No federal standard	**Nonattainment**
Ozone (O3), 8-hour	**Extreme nonattainment**	**Nonattainment**
Nitrogen dioxide (NO2)	Unclassifiable/attainment	Attainment
Carbon monoxide (CO)	Attainment/maintenance	Attainment
Sulfur dioxide (SO2)	Unclassifiable/attainment	Attainment
Coarse particulate matter (PM10)	Attainment/maintenance	**Nonattainment**
Fine particulate matter (PM2.5)	**Serious nonattainment**	**Nonattainment**
Lead (Pb)	**Nonattainment (Partial)**[1]	Attainment
Hydrogen sulfide	No federal standard	Unclassified
Sulfates	No federal standard	Attainment
Visibility-reducing particles	No federal standard	Unclassified
Vinyl chloride	No federal standard	No designation

Sources: EPA 2018 (federal); CARB 2017a (state).
Notes: Bold text = not in attainment; attainment = meets the standards; attainment/maintenance = achieves the standards after a nonattainment designation; nonattainment = does not meet the standards; unclassified or unclassifiable = insufficient data to classify; unclassifiable/attainment = meets the standard or is expected to be meet the standard despite a lack of monitoring data.
1 Partial Nonattainment designation – Los Angeles County portion of SCAB only for near-source monitors. Redesignation to attainment is expected based on current monitoring data.

In summary, the SCAB is designated as a nonattainment area for federal and state O_3 standards and federal and state $PM_{2.5}$ standards. The SCAB is designated as a nonattainment area for state PM_{10} standards; however, it is designated as an attainment area for federal PM_{10} standards. The SCAB is designated as an attainment area for federal and state CO standards, federal and state NO_2 standards, and federal and state SO_2 standards. While the SCAB has been designated as nonattainment for the federal rolling 3-month average lead standard, it is designated attainment for the state lead standard (EPA 2018; CARB 2017a).

Despite the current nonattainment status, air quality within the SCAB has generally improved since the inception of air pollutant monitoring in 1976. This improvement is mainly a result of lower-polluting on-road motor vehicles, more stringent regulation of industrial sources, and the implementation of emission reduction strategies by the SCAQMD. This trend toward cleaner air has occurred in spite of continued population growth. PM_{10} levels have declined almost 50% since 1990, and $PM_{2.5}$ levels have also declined 50% since measurements began in 1999 (SCAQMD 2013). Similar improvements are observed with O_3, although the rate of O_3 decline has slowed in recent years.

Local Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. The SCAQMD monitors local ambient air quality within the SCAB, where the project site is located. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations.

The most recent background ambient air quality data from 2015 to 2017 are presented in Table 4.2-3. Table 4.2-3 presents air quality data from the monitoring stations closest to the project site within the SCAB that monitors each pollutant. The Anaheim-Pampas Lane Monitoring Station, located at 1630 West Pampas Lane in the City of Anaheim, is the nearest air monitoring station to the project site. Because SO_2 levels were not monitored at the Anaheim–Pampas Lane Monitoring Station, measurements were taken from the Costa Mesa Monitoring Station. The data collected at these stations are considered representative of the air quality experienced within the project site.

Table 4.2-3
Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2015	2016	2017	2015	2016	2017
Ozone (O_3)										
Anaheim	ppm	Maximum 1-hour concentration	State	0.09	0.100	0.103	0.090	1	2	0
	ppm	Maximum 8-hour concentration	State	0.070	0.082	0.081	0.076	1	4	4
			Federal	0.070	0.081	0.080	0.076	1	4	4
Nitrogen Dioxide (NO_2)										
Anaheim	ppm	Maximum 1-hour concentration	State	0.18	0.059	0.064	0.081	0	0	0
			Federal	0.100	0.059	0.064	0.0.081	0	0	0
	ppm	Annual concentration	State	0.030	0.014	0.015	0.015	—	—	—
			Federal	0.053	0.015	0.015	0.014	—	—	—
Carbon Monoxide (CO)										
Anaheim	ppm	Maximum 1-hour concentration	State	20	—	—	—	—	—	—
			Federal	35	3.1	2.6	2.5	0	0	0
	ppm	Maximum 8-hour concentration	State	9.0	—	—	—	—	—	—
			Federal	9	2.2	2.1	2.1	0	0	0
Coarse Particulate Matter (PM_{10})[a]										
Anaheim	μg/m³		State	50	59.0	ND	—	12.1 (2)	ND (ND)	— (—)

Table 4.2-3
Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2015	*2016*	*2017*	*2015*	*2016*	*2017*
		Maximum 24-hour concentration	Federal	150	59.0	49.0	128	0 (0)	0 (0)	0 (0)
	µg/m³	Annual concentration	State	20	25.3	ND	—	—	—	—
Fine Particulate Matter (PM$_{2.5}$)[a]										
Anaheim	µg/m³	Maximum 24-hour concentration	Federal	35	45.8	32.0	53.9	ND (0)	ND (3)	ND (ND)
	µg/m³	Annual concentration	State	12	14.8	ND	12.1	—	—	1
			Federal	12.0	ND	ND	ND	—	—	—
Sulfur Dioxide (SO_2)										
Costa Mesa	ppm	Maximum 1-hour concentration	Federal	0.075	0.045	0.033	0.019	0	0	0
	ppm	Maximum 24-hour concentration	Federal	0.14	0.014	0.011	0.005	0	0	0
	ppm	Annual concentration	Federal	0.030	0.001	0.001	ND	—	—	—

Sources: CARB 2017b; EPA 2017b.
Notes: ppm = parts per million; — = not available; µg/m³ = micrograms per cubic meter; ND = insufficient data available to determine the value.
Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata) represent the highest concentrations experienced over a given year.
Exceedances of federal and state standards are shown only for O_3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM$_{10}$ and PM$_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed federal or state standards during the years shown. There is no federal standard for 1-hour ozone, annual PM$_{10}$, or 24-hour SO_2, nor is there a state 24-hour standard for PM$_{2.5}$.
a Measurements of PM$_{10}$ and PM$_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

4.2.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to air quality are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.). According to Appendix G, a significant impact related to air quality would occur if the project would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations.

4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Appendix G indicates that, where available, the significance criteria established by the applicable air quality management district or pollution control district may be relied on to determine whether the project would have a significant impact on air quality. SCAQMD's CEQA Air Quality Handbook, as revised in March 2015, sets forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality. Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 4.2-4 are exceeded.

Table 4.2-4
SCAQMD Air Quality Significance Thresholds

Criteria Pollutants Mass Daily Thresholds		
Pollutant	*Construction (Pounds per Day)*	*Operation (Pounds per Day)*
VOCs	75	55
NO_x	100	55
CO	550	550
SO_x	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55
Lead[a]	3	3
TACs and Odor Thresholds		
TACs[b]	Maximum incremental cancer risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic and acute hazard index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants[c]		
NO_2 1-hour average NO_2 annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.030 ppm (state) and 0.0534 ppm (federal)	
CO 1-hour average CO 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)	
PM_{10} 24-hour average PM_{10} annual average	10.4 $\mu g/m^3$ (construction)[d] 2.5 $\mu g/m^3$ (operation) 1.0 $\mu g/m^3$	
$PM_{2.5}$ 24-hour average	10.4 $\mu g/m^3$ (construction)[d] 2.5 $\mu g/m^3$ (operation)	

Source: SCAQMD 2015.

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; TAC = toxic air contaminant; SCAQMD = South Coast Air Quality Management District; NO_2 = nitrogen dioxide; ppm = parts per million by volume; $\mu g/m^3$ = micrograms per cubic meter.

[a] The phase-out of leaded gasoline started in 1976. Since gasoline no longer contains lead, the project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

[b] TACs include carcinogens and non-carcinogens.

[c] Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.

[d] Ambient air quality threshold are based on SCAQMD Rule 403.

The evaluation of whether the project would conflict with or obstruct implementation of the applicable air quality plan is based on the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993), Chapter 12, Sections 12.2 and 12.3. As provided in that Handbook, the first criterion of relevance to the significance evaluation assesses if the project would result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP, which is addressed in detail under in Section 4.2.2. The second criterion provided in that Handbook assesses if the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

To evaluate the potential for the project to result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard, this analysis applies the SCAQMD's construction and operational criteria pollutants mass daily thresholds, as shown in Table 4.2-4. A project would result in a significant impact to O_3, which is a nonattainment pollutant, if the project's construction or operational emissions would exceed the SCAQMD's VOC or NO_x thresholds shown in Table 4.2-4. These emission-based thresholds for O_3 precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O_3 impacts to occur) because O_3 itself is not emitted directly (see the discussion of O_3 and its sources in Section 4.2-1, Existing Conditions), and the effects of an individual project's emissions of O_3 precursors (VOCs and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods.

The assessment of the project's potential to expose sensitive receptors to substantial pollutant concentrations includes a localized significance threshold (LST) analysis, as recommended by the SCAQMD, to evaluate the potential of localized air quality impacts to sensitive receptors in the immediate vicinity of the project from construction. For project sites of 5 acres or less, the SCAQMD's Final LST Methodology (2008) includes lookup tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., the emissions would not cause an exceedance of the applicable concentration limits for NO_2, CO, PM_{10}, and $PM_{2.5}$) without performing project-specific dispersion modeling. The project site is approximately 4.36 acres; therefore, an LST evaluation is used for this analysis.

The LST significance thresholds for NO_2 and CO represent the allowable increase in concentrations above background levels in the vicinity of a project that would not cause or contribute to an exceedance of the relevant ambient air quality standards, while the threshold for PM_{10} represents compliance with Rule 403 (Fugitive Dust). The LST significance threshold for $PM_{2.5}$ is intended to ensure that construction emissions do not contribute substantially to existing exceedances of the $PM_{2.5}$ ambient air quality standards. The allowable emission rates depend on the following parameters:

- Source-receptor area (SRA) in which the project is located
- Size of the project site
- Distance between the project site and the nearest sensitive receptor (e.g., residences, schools, hospitals)

The project site is located in SRA 16 (North Orange County). The SCAQMD provides guidance for applying the California Emissions Estimator Model (CalEEMod) to the LSTs. LST pollutant screening level concentration data are currently published for 1-, 2-, and 5-acre sites for varying distances. It was estimated that the maximum acres on the project site that would be disturbed by off-road equipment would be the entire site, or 4.36 acres per day.

The nearest sensitive-receptor land use (single-family residences) is located approximately 85 feet east of the project site. As such, the LST receptor distance was assumed to be 82 feet (25 meters), which is the shortest distance provided by the SCAQMD lookup tables. The LST values from the SCAQMD lookup tables for SRA 16 (North Orange County) for a 4.36-acre project site and a receptor distance of 82 feet are shown in Table 4.2-5.

Table 4.2-5
Localized Significance Thresholds for Source Receptor Area 16
(North Orange County)

Pollutant	Screening Threshold (Pounds per Day)
NO_2	205
CO	1,194
PM_{10}	10
$PM_{2.5}$	6

Source: SCAQMD 2008.
Notes: NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
LST thresholds were determined based on the values for 4.36-acre site at a distance of 82 feet (25 meters) from the nearest sensitive receptor.

In addition to the construction-related LST assessment, the analysis of the potential for the project to expose sensitive receptors to substantial pollutant concentrations also evaluates potential health effects associated with CO hotspots, TACs, and criteria air pollutants.

The potential for the project to result in other emissions, specifically an odor impact, is based on the project's land use type and anticipated construction activity, and the potential for the project to create an odor nuisance pursuant to SCAQMD Rule 402.

4.2.4 Impacts Analysis

Would the project conflict with or obstruct implementation of the applicable air quality plan?

As previously discussed, the project site is located within the SCAB and under the jurisdiction of SCAQMD, which is the local agency for administration and enforcement of air quality regulations for the area. SCAQMD has established criteria for determining consistency with the 2016 AQMP in Chapter 12, Sections 12.2 and 12.3, in SCAQMD's CEQA Air Quality Handbook (SCAQMD 1993). The criteria are as follows (SCAQMD 1993):

- **Consistency Criterion No. 1:** The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP.
- **Consistency Criterion No. 2:** The proposed project will not exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Consistency Criterion No. 1 – Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis completed for the proposed project, construction and operational emissions would not result in in a significant and unavoidable impact associated with the violation of an air quality standard. Because the proposed project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, the project would not conflict with Consistency Criterion No. 1 of the SCAQMD CEQA Air Quality Handbook.

Consistency Criterion No. 2 – Exceed Assumptions in the AQMP?

While striving to achieve the NAAQS for O_3 and $PM_{2.5}$ and the CAAQS for O_3, PM_{10}, and $PM_{2.5}$ through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in the SCAB. Projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook). As discussed in Section 4.2.2 (Relevant Plans, Policies, and Ordinances), the demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by SCAG for their 2016–2040 RTP/SCS, which are based on general plans for cities and counties in the SCAB, were used to estimate future emissions in the 2016 AQMP (SCAQMD 2017). Accordingly, the 2016 AQMP is generally consistent with local government plans.

The project site is zoned for Public Land (P-L); and, since the project would not change the site's zoning designations or land use designations, the project would be consistent with the existing general plan, and in turn the assumptions utilized in SCAG's RTP/SCS and SCAQMD's AQMP. Additionally, given the nature of the activity uses associated with the project, the project would not change the population, housing, or employment forecast considered by SCAG and SCAQMD in their regional planning documents. Therefore, implementation of the proposed project would not result in a conflict with, or obstruct implementation of, the applicable air quality plan (i.e., the 2016 AQMP). Accordingly, the project would meet Consistency Criterion No. 2 of SCAQMD's CEQA Air Quality Handbook.

Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

When considering cumulative impacts from the proposed project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SCAB is designated as nonattainment for the CAAQS and NAAQS. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003).

Construction and operation of the proposed project would result in emissions of criteria air pollutants from mobile, area, and/or stationary sources, which may cause exceedances of federal and state ambient air quality standards or contribute to existing nonattainment of ambient air quality standards. The following discussion identifies potential short-term construction and long-term operational impacts that would result from implementation of the project.

Construction Emissions

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., vendor trucks and worker vehicle trips). Construction emissions can vary substantially from day to day depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

Construction criteria air pollutant emissions associated with the proposed project's temporary construction activities were quantified using CalEEMod. Construction emissions were calculated for the estimated worst-case day associated with each phase of the approximately 4-month construction period and reported as the maximum daily emissions estimated during the calendar year in which construction would occur (2020). Construction schedule assumptions, including phase type, duration, and sequencing, were based on information default values provided in CalEEMod and are intended to represent a reasonable scenario based on the best information available.

To estimate project emissions, and based on information provided by the North Orange County Community College District (District), it is assumed that construction of the project would begin in January 2020 and would last approximately 4 months, ending in April 2020. The analysis is based on the following assumptions (duration of phases is approximate):

- Site preparation: 1 week (January 2020)
- Trenching: 1 Month (January 2020–February 2020)
- Building construction: 3.5 months (January 2020–April 2020)
- Paving: 2 weeks (February 2020)
- Architectural coating: 1 week (April 2020)

The site preparation phase would involve the removal of some existing pavement and over-excavation within the bleacher, ramp, storage building, and proposed paved areas to an average depth of 3 feet. Soils will be removed, replaced, and compacted. No export of soil material is anticipated. The trenching phase would involve the trenching of soil for placement of necessary underground utilities, such as stormwater, domestic water, electrical lines, and data distribution. Building construction would involve the installation of the press box, storage building, bleachers, sound system, and light stanchions. The paving phase would include the pavement of asphalt surfaces, specifically for the bleacher and storage building areas as well as walkways. The architectural coating phase would involve the application of athletic field striping to the track and field and painting of the press box. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site 5 days per week (22 days a month) during project construction. Construction worker estimates and vendor truck trips by construction phase were based on CalEEMod default values. Because no import or export of soils is anticipated, no haul truck trips were assumed. CalEEMod default trip length values were used for all construction-related trips.

The construction equipment mix and vehicle trips used for estimating the project-generated construction emissions are shown in Table 4.2-6.

Table 4.2-6
Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Site preparation	18	0	0	Rubber-tired dozers	3	8
				Tractors/loaders/backhoes	4	8
Trenching	8	0	0	Excavators	1	6
				Tractors/loaders/backhoes	1	7
Building construction	80	32	0	Cranes	1	7
				Forklifts	3	8
				Generator sets	1	8
				Tractors/loaders/backhoes	1	7
				Welders	3	8
Paving	16	0	0	Cement and mortar mixers	2	6
				Pavers	1	8
				Paving equipment	2	6
				Rollers	2	6
				Tractors/loaders/backhoes	1	8
Architectural coating	20	0	0	Air compressors	1	6

Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in PM_{10} and $PM_{2.5}$ emissions. The project would be required to comply with SCAQMD Rule 403 to control dust emissions generated during the grading activities. Standard construction practices that would be employed to reduce fugitive dust emissions include watering of the active sites three times per day, depending on weather conditions. Internal-combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. The application of architectural coatings, such as exterior application/interior paint and other finishes, and asphalt pavement would also produce VOC emissions; however, the contractor is required to procure architectural coatings from a supplier in compliance with the requirements of SCAQMD's Rule 1113 (Architectural Coatings).

Table 4.2-7 presents the estimated maximum daily construction emissions generated during construction of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emissions are provided in Appendix D.

Table 4.2-7
Estimated Maximum Daily Construction Emissions

Year	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
2020	4.54	42.48	39.89	0.07	9.45	5.95
SCAQMD threshold	*75*	*100*	*550*	*150*	*150*	*55*
Threshold exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; SCAQMD = South Coast Air Quality Management District.
See Appendix D for complete results.
The values shown are the maximum summer or winter daily emissions results from CalEEMod. These emissions reflect CalEEMod "mitigated" output, which assumes watering of graded areas three times per day to account for compliance with SCAQMD Rule 403 (Fugitive Dust).

As shown in Table 4.2-7, construction activities would not generate emissions in excess of the SCAQMD daily construction emissions thresholds for VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$. As such, impacts would be less than significant. No mitigation is required.

Cumulative localized impacts would potentially occur if project-related construction were to occur concurrently with construction activities associated with another, off-site project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be speculative.[5] However, future projects would be subject to air quality analysis prepared in accordance with CEQA and, where necessary (i.e., if the project exceeds SCAQMD thresholds), mitigation. Criteria air pollutant emissions associated with construction activity of future projects also would be reduced through implementation of control measures required by SCAQMD. For example, cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD. Based on the previous considerations, the project would not result in a cumulatively considerable localized increase in emissions of nonattainment pollutants. Impacts would be less than significant.

Operational Emissions

The project involves the operation of a press box, stadium lighting, and sound system, as well as expanded use of Sherbeck Field. Operation of the project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips from students and event attendees; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment; and energy sources, including natural gas

[6] Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Consumer products would result in VOC emissions, though anticipated to be minor.

consumption for the proposed press box and storage building. Pollutant emissions associated with long-term operations were quantified using CalEEMod, as explained below.

CalEEMod was used to estimate criteria pollutant emissions from the project's area sources, which include operation of gasoline-powered landscape maintenance equipment, consumer product[6] use, and application of architectural coatings[7] for repainting. CalEEMod default values were used to estimate emissions from the project area sources. While operation of the existing field involves use of landscape maintenance equipment, landscape equipment emissions were conservatively estimated in CalEEMod and represented as an increase compared to existing use. Landscape equipment emissions are anticipated to be minimal.

The estimation of operational energy source[8] emissions was based on CalEEMod defaults and total area (i.e., square footage) of the project's land uses. The energy use from nonresidential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. Energy source emissions from combustion of fuels used for space and water heating were based on CalEEMod default values.

Emissions associated with project-generated daily traffic were modeled using trip-generation rates provided in the Traffic Impact Analysis (TIA) (Appendix F). The default vehicle mix provided in CalEEMod 2016.3.2, which is based on CARB's Mobile Source Emissions Inventory model, EMFAC, version 2014, was applied. Emission factors representing 2020 were used to estimate emissions associated with buildout of the project consistent with the TIA. Under existing conditions, vehicle trips associated with football games are occurring at a neighboring field, which would be redirected to the project site. However, consistent with the traffic analysis, this air quality analysis conservatively does not net out vehicle trips and associated mobile source emissions that are currently occurring.

Table 4.2-8 summarizes the maximum daily mobile, energy, and area emissions of criteria pollutants that would be generated by the development of the project, and how project-generated emissions would compare to the SCAQMD thresholds of significance. The values shown are the maximum summer or winter daily emissions (i.e., foreseeable worst case) results in CalEEMod. Details of the emissions calculations are provided in Appendix D.

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6 Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Consumer products would result in VOC emissions, though anticipated to be minor.

7 VOC off-gassing emissions would result from evaporation of solvents contained in surface coatings, such as in paints and primers, using during building maintenance.

8 As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for greenhouse gas emissions in CalEEMod, since criteria pollutant emissions occur at the site of the power plant, which is typically off site.

Table 4.2-8
Estimated Maximum Daily Operational Emissions

Emission Source	VOC	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Area	0.50	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.01	0.01	0.00	0.00	0.00
Mobile	7.09	33.60	77.72	0.25	19.30	5.33
Total	**7.59**	**33.61**	**77.73**	**0.25**	**19.30**	**5.33**
SCAQMD threshold	*55*	*55*	*550*	*150*	*150*	*55*
Threshold exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

Source: SCAQMD 1993, 2015.
Notes: VOC = volatile organic compound; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
Area sources = consumer product use, architectural coatings, and landscape maintenance equipment. Energy sources = natural gas. Mobile sources = motor vehicles.
See Appendix D for detailed results.
The values shown are the maximum summer or winter daily emissions results from CalEEMod.

As shown in Table 4.2-8, operation of the proposed project would not exceed the SCAQMD thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. Therefore, impacts during operation of the proposed project would be less than significant. No mitigation is required.

As discussed in Section 4.2.2 under "South Coast Air Basin Attainment Classification," the SCAB has been designated as a federal nonattainment area for O_3 and $PM_{2.5}$ and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operation of the project would generate VOC and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. However, as indicated in Tables 4.2-7 and 4.2-8, project-generated construction and operational emissions, respectively, would not exceed the SCAQMD emission-based significance thresholds for VOC, NO_x, PM_{10}, or $PM_{2.5}$.

Based on the previous considerations, the project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants. Impacts would be less than significant and no mitigation is required.

Would the project expose sensitive receptors to substantial pollutant concentrations?

Localized Significance Thresholds Analysis

As discussed in Section 4.2.1.5 (Sensitive Receptors), sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. According to SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The project is located in close proximity to several single-family homes, which are approximately 85 feet to the east of the project site.

An LST analysis has been prepared to determine potential impacts to nearby sensitive receptors during construction of the project. As indicated in Section 4.2.3, Thresholds of Significance, the SCAQMD recommends the evaluation of localized NO_2, CO, PM_{10}, and $PM_{2.5}$ impacts to sensitive receptors in the immediate vicinity of the project site that would occur as a result of construction activities. The impacts of the proposed project were analyzed using methods consistent with those in the SCAQMD's Final LST Methodology (2008).

Construction activities associated with the project would result in temporary sources of on-site fugitive dust and construction equipment emissions. The maximum allowable daily emissions that would satisfy the SCAQMD LSTs for SRA 16 are presented in Table 4.2-9 and compared with the maximum daily on-site construction emissions generated during the project.

Table 4.2-9
Localized Significance Thresholds Analysis for Project Construction

Maximum On-Site Emissions	NO_2	CO	PM_{10}	$PM_{2.5}$
	Pounds per Day			
Construction emissions	42.42	21.51	9.24	5.89
SCAQMD LST	*205*	*1,194*	*10*	*6*
LST exceeded?	No	No	No	No

Source: SCAQMD 2008.
Notes: LST = localized significance threshold; NO_2 = nitrogen dioxide; CO = carbon monoxide; PM_{10} = particulate matter; $PM_{2.5}$ = fine particulate matter.
See Appendix D for detailed results.
Localized significance thresholds are shown for 4.36-acre project sites corresponding to a distance to a sensitive receptor of 25 meters.
These estimates reflect control of fugitive dust required by Rule 403.
Greatest on-site NO_x, CO, PM_{10}, and $PM_{2.5}$ emissions are associated with the site preparation phase.

As shown in Table 4.2-9, construction activities would not generate emissions in excess of site-specific LSTs; therefore, site-specific construction impacts during construction of the project would be less than significant and no mitigation is required.

Carbon Monoxide Hotspots

Mobile source impacts occur on two scales of motion. Regionally, project-related travel would add to regional trip generation and increase the vehicle miles traveled within the local airshed and the SCAB. Locally, project-generated traffic would be added to the City of Fullerton's roadway system near the project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles cold-started and operating at pollution-inefficient speeds, and operates on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing.

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. To verify that the project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hotspots was conducted. The potential for CO hotspots was evaluated based on the results of the TIA and in accordance with the California Department of Transportation (Caltrans) Institute of Transportation Studies' CO Protocol (Caltrans 2010). CO hotspots are typically evaluated when (1) the level of service (LOS) of an intersection decreases to LOS E or worse; (2) signalization and/or channelization is added to an intersection; and (3) sensitive receptors such as residences, schools, and hospitals are located in the vicinity of the affected intersection or roadway segment.

The TIA (see Appendix F) evaluated whether there would be a decrease in the LOS (i.e., increased congestion) at the intersections affected by the project. The project's TIA evaluated 31 intersections. As determined by the TIA, the following intersections under the Cumulative Year (2030) operate at LOS E or worse during the AM or PM peak hours:

- Harbor Boulevard/Bastanchury Road (LOS F in Weekday PM)
- Harbor Boulevard/Berkeley Avenue (LOS E in Weekday PM)
- Euclid Street/Malvern Avenue (LOS E in Weekday PM)
- Harbor Boulevard/Chapman Avenue (LOS F in Weekday PM)
- Lemon Street/Chapman Avenue (Los E in Weekday PM)
- Raymond Avenue/Chapman Avenue (LOS F in Weekday PM)
- State College Boulevard/Chapman Avenue (LOS F in Weekday PM and Weekend arrival/departure)
- SR-57 NB Ramp/Chapman Avenue (LOS F in Weekday PM)
- Harbor Boulevard/Valencia Drive (LOS E in Weekday PM)
- Harbor Boulevard/Orangethorpe Avenue (LOS F in Weekday PM and Weekend arrival/departure)
- Lemon Street/Orangethorpe Avenue (LOS F in Weekday PM)
- Lemon Street/Berkeley Avenue (LOS E in Weekend departure)
- Berkeley Avenue/College Driveway No. 1 (LOS F in Weekend arrival/departure)

- Berkeley Avenue/College Driveway No. 2 (LOS F in Weekend Departure)

For each scenario studied in the TIA (existing with project; existing with ambient growth and the proposed project; existing with ambient growth, cumulative projects, and the proposed project), the screening evaluation presents LOS with project improvements (mitigation). According to the CO Protocol, there is a cap on the number of intersections that need to be analyzed for any one project. For a single project with multiple intersections, only the three intersections representing the worst LOS ratings of the project, and, to the extent they are different intersections, the three intersections representing the highest traffic volumes, need be analyzed. For each intersection failing a screening test as described in this protocol, an additional intersection should be analyzed (Caltrans 2010). Thus, the three intersections with the worst LOS and highest traffic volumes were selected for screening.

Based on the CO hotspot screening evaluation (Appendix D), the intersections that exceeded the CO hotspot screening criteria shown above all have similar geometries and are signalized. Therefore, three intersections with an LOS of F that exceeded the CO hotspot screening criteria were evaluated. The potential impact of the project on local CO levels was assessed at this intersection with the Caltrans CL4 interface based on the California LINE Source Dispersion Model (CALINE4), which allows microscale CO concentrations to be estimated along each roadway corridor or near intersections (Coe et al. 1998).

The emissions factor represents the weighted average emissions rate of the local SCAB vehicle fleet expressed in grams per mile per vehicle. Consistent with the TIA, emissions factors for 2030 were used for the analysis. Emissions factors for 2030 were predicted by EMFAC 2017[9] based on a 5-mile-per-hour average speed for all of the intersections for approach and departure segments. The hourly traffic volume anticipated to travel on each link, in units of vehicles per hour, was based on the traffic report. Modeling assumptions are outlined in Appendix D.

Four receptor locations at each intersection were modeled to determine CO ambient concentrations. A receptor was assumed on the sidewalk at each corner of the modeled intersections, for a total of four receptors adjacent to the intersection, to represent the future possibility of extended outdoor exposure. CO concentrations were modeled at these locations to assess the maximum potential CO exposure that could occur in 2030. A receptor height of 5.9 feet (1.8 meters) was used in accordance with Caltrans recommendations for all receptor locations (Coe et al. 1998).

The maximum CO concentration measured at the Anaheim monitoring station over the last 3 years was 6.1 parts per million, which was measured in 2017. The 1-hour average CO concentration was added the ambient concentration to compare to the CAAQS. The 8-hour average CO concentration

9 The air quality analysis uses the current version of emission estimator models, including EMFAC 2017, which is the current EMFAC version.

was added to the SCAQMD 8-hour CO ambient concentration of 4.6 parts per million for 2017 from the Anaheim monitoring station to compare to the CAAQS.

The CALINE4 predicted CO concentrations are shown in Table 4.2-10. Model input and output data are provided in Appendix D.

Table 4.2-10
CALINE4 Predicted Carbon Monoxide Concentrations

Intersection	Maximum Modeled Carbon Monoxide Impact (ppm)	
	1-hour	*8-hour*
Lemon Street and Berkeley Avenue	3.5	2.48
State College Boulevard and Chapman Avenue	4.1	2.90
Berkeley Avenue and College Driveway No.2	3.6	2.55

Source: Coe et al. 1998.
Notes: ppm = parts per million.

As shown in Table 4.2-10, the maximum CO concentration predicted for the 1-hour averaging period at the studied intersections would be 4.1 ppm, which is below the 1-hour CO CAAQS of 20 ppm (CARB 2016). The maximum predicted 8-hour CO concentration of 2.90 ppm at the studied intersections would be below the 8-hour CO CAAQS of 9.0 ppm (CARB 2016). Neither the 1-hour nor 8-hour CAAQS would be equaled or exceeded at any of the intersections studied. Accordingly, the project would not cause or contribute to violations of the CAAQS, and would not result in exposure of sensitive receptors to localized high concentrations of CO. As such, impacts would be less than significant to sensitive receptors with regard to potential CO hotspots resulting from project contribution to cumulative traffic-related air quality impacts, and no mitigation is required.

Health Effects of Other Criteria Air Pollutants

Construction and operational emissions of the project would not exceed the SCAQMD thresholds for any criteria air pollutants, including VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$.

As previously discussed in Section 4.2.1, health effects associated with O_3 include respiratory symptoms, worsening of lung disease leading to premature death, and damage to lung tissue (CARB 2019). VOCs and NO_x are precursors to O_3, for which the SCAB is designated as nonattainment with respect to the NAAQS and CAAQS. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SCAB due to O_3 precursor emissions tend to be found downwind of the source location because of the time required for the photochemical reactions to occur. Further, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur, because exceedances of the O_3 NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. Due to the lack of quantitative methods to assess this complex photochemistry, the holistic effect of a single project's emissions of O_3 precursors is speculative. That being said, because the proposed project would not exceed the SCAQMD thresholds and would be subject to applicable rules and regulations for the reduction of O_3 precursors (e.g., SCAQMD Rule 1113, Architectural Coatings), the proposed project would not contribute to health effects associated with O_3.

Health effects associated with NO_x include lung irritation and enhanced allergic responses (see Section 4.2.1; CARB 2019). Because project-related NO_x emissions would not exceed the SCAQMD mass daily thresholds, and because the SCAB is a designated attainment area for NO_2 and the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards, it is not anticipated that the proposed project would contribute to exceedances of the NAAQS and CAAQS for NO_2 or result in potential health effects associated with NO_2 and NO_x.

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (see Section 4.2.1; CARB 2019). CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots was discussed previously and determined to be less than significant. Thus, the project's CO emissions would not contribute to significant health effects associated with this pollutant.

Health effects associated with PM_{10} include premature death and hospitalization, primarily for worsening of respiratory disease (see Section 4.2.1; CARB 2019). Construction and operation of the project would not exceed thresholds for PM_{10} or $PM_{2.5}$, would not contribute to exceedances of the NAAQS and CAAQS for particulate matter, and would not obstruct the SCAB from coming into attainment for these pollutants. The project would also not result in substantial DPM emissions during construction and operation. Additionally, the project would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction and operation, the project is not anticipated to result in health effects associated with PM_{10} or $PM_{2.5}$.

In summary, construction and operation of the proposed project would not result in exceedances of the SCAQMD significance thresholds for criteria pollutants, and potential health effects associated with criteria air pollutants would be less than significant.

Health Impacts of Toxic Air Contaminants

Project impacts may result from emissions of pollutants identified by the state and federal government as TACs or HAPs, respectively.

The greatest potential for TAC emissions during construction would be DPM emissions from heavy equipment operations and heavy-duty trucks during construction of the project and the associated health impacts to sensitive receptors. The closest sensitive receptors are existing residences located approximately 85 feet from the project site's eastern boundary. As shown in Table 4.2-9, maximum daily particulate matter (PM_{10} or $PM_{2.5}$) emissions generated by construction equipment operation during site preparation (exhaust particulate matter, or DPM), combined with fugitive dust generated by equipment operation and vehicle travel, would be well below the SCAQMD significance thresholds. Moreover, total construction of the project would last approximately 4 months, after which project-related TAC emissions would cease.

No residual TAC emissions and corresponding cancer risk are anticipated after construction, and no long-term sources of TAC emissions are anticipated during operation of the project. Thus, the project would not result in a long-term (i.e., 9-year, 30-year, or 70-year) source of TAC emissions. Therefore, the exposure of sensitive receptors to project-related TAC emission impacts would be less than significant.

Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would potentially be generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would result from concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding facilities (SCAQMD 1993). The project entails operation of a sports field and would not result in the creation of a land use that is commonly associated with odors. Therefore, project operations would result in an odor impact that would be less than significant.

4.2.5 Cumulative Analysis

Because of the cumulative nature of air quality impacts, cumulative impacts to air quality are addressed in Section 4.2.4 in the second threshold discussion. Impacts would be less than significant.

4.2.6 Mitigation Measures

No mitigation is required.

4.2.7 Level of Significance After Mitigation

No mitigation is required as impacts would be less than significant.

4.2.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

17 CCR 93000. Substances Identified as Toxic Air Contaminants. In Subchapter 7, Toxic Air Contaminants.

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4.3 GREENHOUSE GAS EMISSIONS

This section describes the existing setting related to greenhouse gas (GHG) emissions and global climate change, identifies associated regulatory requirements, evaluates potential impacts (including cumulative impacts), and identifies any mitigation measures recommended to address the proposed Sherbeck Field Improvements Project's (proposed project) significant impacts, if any. The impact analysis contained in this section is based on emissions estimated for construction and operation of the proposed project, as provided in Appendix D. Other sources consulted are listed in Section 4.3.8, References.

4.3.1 Existing Conditions

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period (decades or longer). The Earth's atmosphere depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in the Earth's energy balance, including variations in the sun's energy reaching the Earth, changes in the reflectivity of the Earth's atmosphere and surface, and changes in the "greenhouse effect," which affects the amount of heat retained by the Earth's atmosphere (EPA 2017).

The "greenhouse effect" is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is the natural process that contributes to regulating the Earth's temperature. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperatures to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-twentieth century and are the most significant driver of observed climate change (EPA 2017; IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further in Section 4.3.1.4, Potential Effects of Climate Change.

4.3.1.1 Greenhouse Gases

As defined in California Health and Safety Code, Section 38505(g), for purposes of administering many of the state's primary GHG emissions reductions programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). See also California Environmental Quality Act (CEQA) Guidelines, Section 15364.5. Some GHGs, such as CO_2, CH_4, and N_2O, are emitted to the atmosphere through natural processes *and* human activities. Of these gasses, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, and are associated with certain industrial products and processes.

The following paragraphs provide a summary of the most common GHGs and their sources.[1,2]

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities, and is the principal human-caused GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are the combustion of coal, oil, natural gas, and wood.

Methane. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and the use of N_2O as a propellant (such as in rockets, racecars, aerosol sprays).

Fluorinated Gases. Fluorinated gases (also referred to as F-gases) are synthetic powerful GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for

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1 Climate forcing substances include GHGs and other substances, such as black carbon and aerosols. This section's analysis focuses on the GHGs that are estimated by CalEEMod (i.e., CO_2, CH_4, and N_2O), and provides a summary of the seven GHGs identified in California Health and Safety Code Section 38505.

2 The descriptions of these GHGs are summarized from the Intergovernmental Panel on Climate Change's Second Assessment Report and Fourth Assessment Report (IPCC 1995, 2007), the California Air Resources Board's Glossary of Terms Used in GHG Inventories (2015), and the U.S. Environmental Protection Agency's Glossary of Climate Change Terms (EPA 2016).

stratospheric ozone-depleting substances (e.g., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). The most prevalent fluorinated gases include the following:

- **Hydrofluorocarbons:** HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.
- **Perfluorocarbons:** PFCs are a group of human-made chemicals composed of carbon and fluorine only. Like HFCs, these chemicals were introduced as alternatives to ozone-depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.
- **Sulfur Hexafluoride:** SF_6 is a colorless gas soluble in alcohol and ether, and slightly soluble in water. SF_6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.
- **Nitrogen Trifluoride:** NF_3 is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.

4.3.1.2 Global Warming Potential

GHGs in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo) (EPA 2016).

The Intergovernmental Panel on Climate Change developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2e).

The current version of CalEEMod (version 2016.3.2) used in this analysis assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

4.3.1.3 Sources of Greenhouse Gas Emissions

Per the 2018 U.S. Environmental Protection Agency (EPA) Inventory of U.S. GHG Emissions and Sinks: 1990–2016, total U.S. GHG emissions were approximately 6,511.3 million metric tons (MMT) CO_2e in 2016 (EPA 2018). The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81.6% of total GHG emissions (5,310.9 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.5% of CO_2 emissions in 2016 (4,966.0 MMT CO_2e). Relative to the 1990 emissions level, gross U.S. GHG emissions in 2016 are 2.4% higher; however, the gross emissions are down from a high of 15.7% above the 1990 level that occurred in 2007. GHG emissions decreased from 2015 to 2016 by 1.9% (126.8 MMT CO_2e) and, overall, net emissions in 2016 were 11.1% below 2005 levels (EPA 2018).

According to California's 2000–2016 GHG emissions inventory (2018 edition), California emitted 429.40 MMT CO_2e in 2016, including emissions resulting from out-of-state electrical generation (CARB 2018). The sources of GHG emissions in California include transportation, industry, electric power production from both in-state and out-of-state sources, residential and commercial activities, agriculture, high GWP substances, and recycling and waste. The California GHG emissions source categories and their relative contributions in 2016 are presented in Table 4.3-1.

Between 2000 and 2016, per capita GHG emissions in California have dropped from a peak of 14.0 MT per person in 2001 to 10.8 MT per person in 2016, representing a 23% decrease. In addition, total GHG emissions in 2016 were approximately 12 MMT CO_2e less than 2015 emissions. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below the statewide 2020 reduction target of 431 MT CO_2e, which is discussed below in Section 4.3.2 (CARB 2018).

Table 4.3-1
GHG Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percentage of Total[a]
Transportation	169.38	39%
Industrial[b]	89.61	21%
Electricity generation[c]	68.58	16%
Residential and commercial uses	39.36	9%
Agriculture	33.84	8%
High GWP substances	19.78	5%
Recycling and waste	8.81	2%
Totals	**429.40**	**100%**

Source: CARB 2018.
Notes: Emissions reflect the 2016 California GHG inventory.
GHG = greenhouse gas; MMT = million metric tons; CO_2e = carbon dioxide equivalent; GWP = global warming potential.

[a] Percentage of total has been rounded, and total may not sum due to rounding.
[b] The Aliso Canyon natural gas leak event released 1.96 MMT CO_2e of unanticipated emissions in 2015 and 0.53 MMT CO_2e in 2016. These leak emissions will be fully mitigated according to legal settlement and are tracked separately from routine inventory emissions.
[c] Includes emissions associated with imported electricity, which account for 26.28 MMT CO_2e annually.

4.3.1.4 Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The Intergovernmental Panel on Climate Change's 2014 Synthesis Report indicated that warming of the climate system is unequivocal and that many of the changes observed since the 1950s are unprecedented. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, and rising sea levels (IPCC 2014).

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010). A brief summary of current and future climate change impacts to resource areas in California, as discussed in *Safeguarding California: Reducing Climate Change Risk* (CNRA 2014), is provided below.

Agriculture. Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events; significant shifts in water availability and water quality; changes in pollinator lifecycles; temperature fluctuations; increased risks from invasive species and weeds, agricultural pests, and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production.

Biodiversity and Habitat. Specific climate challenges to biodiversity and habitat include species migration, range shift, and novel combinations of species; pathogens, parasites, and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss occurs).

Energy. Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events, and sea level rise. Increasing temperatures and reduced snowpack negatively impact the availability of a steady flow of snowmelt to hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants because power plant cooling is less efficient at higher ambient temperatures. Natural gas infrastructure in coastal California is threatened by sea level rise and extreme storm events.

Forestry. The most significant climate-change-related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large-scale mortalities and combined with increasing temperatures have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts, and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat, and decreased carbon absorption.

Ocean and Coastal Ecosystems and Resources. Sea level rise, changing ocean conditions, and other climate-change-related stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems, in addition to threatening people and infrastructure located along the California coastline and in coastal communities.

Public Health. Climate change can impact public health through various environmental changes and is the largest threat to human health in the twenty-first century. Changes in precipitation patterns affect public health primarily through the potential for altered water supplies and through extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity, and duration of extreme heat and heat waves is likely to increase the risk of mortality due to heat-related illness as well as exacerbating existing chronic health conditions. Other extreme weather events are likely to negatively impact air quality and increase or intensify respiratory illness such as asthma and allergies.

Transportation. The transportation industry is vulnerable to climate change risks, including sea level rise and erosion, which threaten many coastal California roadways, airports, seaports, transit systems, bridge supports, and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure, which can impair movement of peoples and goods or potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion risks, landslides, mudslides, and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety.

Water. Climate change could seriously impact the timing, form, and amount of precipitation; runoff patterns; and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can impact water supply availability, natural ecosystems, and winter recreation. Water supply availability during the intensely dry summer months is heavily dependent on the snowpack accumulated during the winter. Increased risk of flooding can affect a variety of public health issues, including water quality, public safety, property damage, displacement, and post-disaster mental health problems. Prolonged and intensified droughts can also negatively affect groundwater reserves and result in increased overdraft and subsidence.

In March 2016, the California Natural Resources Agency released *Safeguarding California: Implementation Action Plans,* a document that shows how California is acting to convert the recommendations contained in the 2014 *Safeguarding California* plan into action (CNRA 2016). Additionally, in January 2018, the California Natural Resources Agency released the *Safeguarding California Plan: 2018 Update*, which provides a roadmap for state agencies to protect communities, infrastructure, services, and the natural environment from climate change impacts. The 2018 update includes 69 recommendations across 11 sectors and more than 1,000 ongoing actions and next steps developed by scientific and policy experts across 38 state agencies (CNRA 2018). As with previous state adaptation plans, the 2018 update addresses the following: acceleration of warming across the state, more intense and frequent heat waves, greater riverine flows, accelerating sea level rise, more intense and frequent drought, more severe and frequent wildfires, more severe storms and extreme weather events, shrinking snowpack and less overall precipitation, and ocean acidification, hypoxia, and warming.

4.3.2 Regulatory Framework

Federal

Massachusetts v. EPA

In *Massachusetts v. EPA* (April 2007), the U.S. Supreme Court directed the EPA administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision.

In December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act

The Energy Independence and Security Act of 2007 (December 2007), among other key measures, requires the following, which aid in the reduction of national GHG emissions (PL 110–140):

- Increase the supply of alternative fuel sources by setting a mandatory Renewables Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
- Set a target of 35 mpg for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
- Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards

In response to the U.S. Supreme Court ruling in *Massachusetts v. EPA*, the George W. Bush Administration issued Executive Order (EO) 13432 in 2007 directing EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and in 2010, EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016.

In 2010, President Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017–2025 light-duty vehicles. The proposed standards projected to achieve 163 grams/mile of CO_2 in model year 2025, on an average industry fleet-wide basis, which is equivalent to 54.5 mpg if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021. On January 12, 2017, EPA finalized its decision to maintain the current GHG emissions standards for model years 2022–2025 cars and light trucks.

In addition to the regulations applicable to cars and light-duty trucks described above, in 2011, EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6%–23% over the 2010 baselines.

In August 2016, EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018–2027 for certain trailers, and model years 2021–2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

In August 2018, EPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new standards for model years 2021 through 2026. Compared to maintaining the post-2020 standards now in place, the 2018 proposal would increase U.S. fuel consumption by about half a million barrels per day (2–3 percent of total daily consumption, according to the Energy Information Administration) and would impact the global climate by 3/1000th of one degree Celsius by 2100 (EPA NHTSA 2018). California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. Thus, the timing and consequences of the 2018 federal proposal are speculative at this time.

State

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes executive orders, legislation, regulations, and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

State Climate Change Targets

EO S-3-05

S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, GHG emissions should be reduced to 1990 levels by 2020, and GHG emissions should be reduced to 80% below 1990 levels by 2050.

Assembly Bill 32 and CARB's Climate Change Scoping Plan

In furtherance of the goals established in EO S-3-05, the Legislature enacted Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, the California Air Resources Board (CARB) is responsible for and is recognized as having the expertise to carry out and develop the programs and requirements necessary to achieve the GHG emissions reduction mandate of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions from specified sources. This program is used to monitor and enforce compliance with established standards. CARB also is required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emission limitation, emission reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for calendar year 2020 consistent with the determined 1990 baseline (427 MMT CO_2e). CARB's adoption of this limit is in accordance with California Health and Safety Code, Section 38550.

Further, in 2008, CARB adopted the *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan) in accordance with California Health and Safety Code, Section 38561. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction features by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program.

In 2014, CARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework* (First Update). The stated purpose of the First Update is to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80% below 1990 levels by 2050." The First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80% below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the First Update, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050." Those six areas are energy transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure) agriculture water waste management, and natural and working lands. The First Update identifies key recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

Based on CARB's research efforts presented in the First Update, it has a "strong sense of the mix of technologies needed to reduce emissions through 2050." Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient and clean energy technologies.

In December 2017, CARB adopted *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan)(CARB 2017). This update sets forth CARB's strategy for achieving the state's 2030 GHG target as established in Senate Bill (SB) 32, which is addressed below. When discussing project-level GHG emissions reduction actions and thresholds in the context of CEQA, the 2017 Scoping Plan states that "achieving no net additional increase in GHG emissions, resulting in no contribution to GHG impacts, is an appropriate overall objective for new development" for project-level CEQA analysis, but also recognizes that such a standard may not be appropriate or feasible for every development project. The 2017 Scoping Plan further provides that "the inability of a project to mitigate its GHG emissions to net zero does not imply the project results in a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA."

SB 32 and AB 197

SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction target; make changes to CARB's membership, and increase legislative oversight of CARB's climate-change-based activities; and expand dissemination of GHG and other air-quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified a 2030 emissions reduction target that requires CARB to ensure that statewide GHG emissions are reduced to 40% below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, in order to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs and other pollutants from reporting facilities; and, requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

EO B-55-18

Issued in September 2018, EO B-55-18 establishes a new statewide goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." The EO directs CARB to "work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal."

Building Energy

Title 24, Part 6

Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. While not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. The California Energy Commission (CEC) is required by law to adopt standards every 3 years that are cost effective for homeowners over the 30-year lifespan of a building. These standards are updated to consider and incorporate new energy-efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2016 Title 24 standards are the currently applicable building energy efficiency standards, and became effective on January 1, 2017. The 2019 Title 24 standards, which will be effective January 1, 2020, will further reduce energy used and associated GHG emissions compared to current standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy than those built to the 2016 standards due to energy efficiency measures; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53% less energy than those under the 2016 standards (CEC 2018). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018).

Title 24, Part 11

In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as CALGreen, and establishes minimum mandatory standards as well as voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality. The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, state-owned buildings, and schools and hospitals. The CALGreen 2016 standards, which are the current standards, became effective on January 1, 2017. The CALGreen 2019 standards will continue to improve upon the 2016 CALGreen standards, and will go into effect on January 1, 2020.

The mandatory CALGreen standards require the following:

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance
- 65% of construction and demolition waste to be diverted from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations
- Low-pollutant emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards

Title 20

Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include, but are not limited to, refrigerators, freezers, air conditioners, dishwashers, clothes washers and dryers, cooking products, and televisions and consumer audio and video equipment. Title 20 presents protocols for testing for each type of appliance covered under the regulations and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

Renewable Energy and Energy Procurement

Renewables Portfolio Standard

SB 1078 (2002) established the RPS program, which requires an annual increase in renewable generation by the utilities. Initially, the RPS required utilities to obtain 20% of their power from renewable sources by 2010. SB X1-2 (2011) subsequently expanded the RPS by establishing that 33% of the total electricity sold to retail customers in California per year by December 31, 2020, and in subsequent years, be secured from qualifying renewable energy sources. SB 350 (2015) further expanded the RPS by establishing that 50% of the total electricity sold to retail customers in California per year by December 31, 2030, be secured from qualifying renewable energy sources. And, SB 100 (2018) has further accelerated the RPS, requiring achievement of a

50% RPS by December 31, 2026 and a 60% RPS by December 31, 2030. SB 100 also established a new state policy goal that calls for eligible renewable energy resources and zero-carbon resources to supply 100% of electricity retail sales and 100% of electricity procured to serve all state agencies by December 31, 2045.

Under the program, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location.

Mobile Sources

AB 1493

In response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 (2002) required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles primarily used for noncommercial personal transportation. The bill specifically required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. The near-term (2009–2012) standards were estimated to result in a reduction of about 22% in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term (2013–2016) standards were estimated to result in a reduction of about 30%.

EO S-1-07

Issued in 2007, EO S-1-07 set a declining Low Carbon Fuel Standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The initial target of the Low Carbon Fuel Standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. The Low Carbon Fuel Standard was subsequently amended in 2018 to require a 20% reduction in carbon intensity by 2030. This new requirement aligns with the California's overall 2030 target of reducing climate changing emissions 40% below 1990 levels by 2030, set by SB 32. CARB has adopted implementing regulations for both the 10% and 20% carbon intensity reduction targets.

SB 375

SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations are then responsible for preparing a Sustainable Communities

Strategy (SCS) within their Regional Transportation Plan (RTP). The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets.

Pursuant to California Government Code, Section 65080(b)(2)(K), an SCS does not (i) regulate the use of land; (ii) supersede the land use authority of cities and counties; or (iii) require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In 2010, CARB adopted the first round of SB 375 targets for the regional metropolitan planning organizations. The targets for the Southern California Association of Governments (SCAG) adopted in 2010 are a 9% reduction in per capita, passenger vehicle GHG emissions by 2020 and a 13% reduction by 2035, relative to 2005 levels. In 2018, CARB adopted the second round of SB 375 reduction targets, and increased SCAG's 2035 target to a 19% reduction in per capita, passenger vehicle GHG emissions relative to 2005 levels (CARB 2019).

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, a new emissions-control program for model years 2015 through 2025. The program includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2011). CARB's GHG standards for model year 2017 to 2025 vehicles are estimated to reduce GHG emissions by 34% in 2025. The Zero Emissions Vehicle (ZEV) program acts as the focused advanced technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in the 2018 to 2025 model years. The Clean Fuels Outlet regulation relatedly ensures that fuels, such as electricity and hydrogen, are available to meet the fueling needs of the new advanced technology vehicles as they come to the market.

EO B-16-12

EO B-16-12 (2012) directs state entities under the Governor's direction and control to support and facilitate development and distribution ZEVs. This EO also sets a long-term target of reaching 1.5 million ZEVs on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80% less emissions than 1990 levels by 2050. In furtherance of this EO, the Governor convened an Interagency Working Group on ZEVs that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet.

AB 1236

AB 1236 (2015), as enacted in California's Planning and Zoning Law, requires local land use jurisdictions to approve applications for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless there is substantial evidence in the record that the proposed installation would have a specific adverse impact upon the public health or safety and there is no feasible method to satisfactorily mitigate or avoid the specific adverse impact.

SB 350

In 2015, SB 350, the Clean Energy and Pollution Reduction Act, was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (see California Public Utilities Code, Section 740.12).

EO B-48-18

Issued in 2018, EO B-48-18 launches an eight-year initiative to accelerate the sale of EVs through a mix of rebate programs and infrastructure improvements. The order also sets a new EV target of five million EVs in California by 2030. EO B-48-18 includes funding for multiple state agencies including the CEC to increase EV charging infrastructure and CARB to provide rebates for the purchase of new EVs and purchase incentives for low-income customers.

Solid Waste

AB 939 and AB 341

In 1989, AB 939, known as the Integrated Waste Management Act (California Public Resources Code, Section 40000 et seq.), was passed because of the increase in waste stream and the decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed where jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by the year 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by the year 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority strategies that CalRecycle believes would assist the state in reaching the 75% goal by 2020.

Water

EO B-29-15

In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the EO extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The EO includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increases the requirements for landscape water use efficiency and broadens its applicability to include new development projects with smaller landscape areas.

Other State Regulations and Goals

SB 97

SB 97 (2007) directed the Governor's Office of Planning and Research to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Office of Planning and Research issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities. The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant (OPR 2008).

Subsequent to the release of the Office of Planning and Research advisory and its development of proposed CEQA Guidelines provisions, the California Natural Resources Agency adopted CEQA Guidelines amendments pertaining to GHG emissions in December 2009, which became effective in March 2010. In December 2018, the California Natural Resources Agency finalized various additional amendments to the CEQA Guidelines, including Section 15064.4 therein. The amendments became effective on December 28, 2018 (OPR 2018). Section 15064.4, as most recently amended in 2018, was considered in this analysis.

With respect to GHG emissions, the CEQA Guidelines state that lead agencies "shall make a good faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions (14 CCR 15064.4(a)). The CEQA Guidelines also note that lead agencies shall quantify emissions by selecting a "model or methodology" of its choosing or rely on "qualitative analysis or performance based standards" (14 CCR 15064.4(a), (c)). The CEQA Guidelines further state that lead agencies should consider the following when assessing the significance of impacts from GHG emissions on the environment: (1) the extent a project may increase or reduce GHG emissions as compared to the existing environmental setting; (2) whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and (3) the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

Local

South Coast Air Quality Management District

Air districts typically act in an advisory capacity to local governments in establishing the framework for environmental review of air pollution impacts under CEQA. This may include recommendations regarding significance thresholds, analytical tools to estimate emissions and assess impacts, and mitigation for potentially significant impacts. Although air districts will also address some of these issues on a project-specific basis as responsible agencies, they may provide general guidance to local governments on these issues (SCAQMD 2008). As discussed in Section 4.3.3, Thresholds of Significance, SCAQMD has recommended (but not adopted) numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects.

Southern California Association of Governments

As discussed above, SB 375 requires metropolitan planning organizations to include an SCS in their RTP. The SCAG Regional Council adopted the 2012 RTP/SCS in April 2012 (SCAG 2012), and the 2016–2040 RTP/SCS (2016 RTP/SCS) was adopted in April 2016. Both the 2012 and 2016 RTP/SCS establish a development pattern for the region that, when integrated with the transportation network and other policies and measures, would reduce GHG emissions from transportation (excluding goods movement).

City of Fullerton

Climate Action Plan

The City of Fullerton (City), as part of The Fullerton Plan Environmental Impact Report (EIR), prepared a climate action plan (CAP) (City of Fullerton 2012a). The purpose of the CAP is to address the main sources of emissions that contribute to global climate change. The CAP provides the City's community-wide GHG emissions 2009 baseline inventory of 1,711,836 MT CO_2e. Additionally, the CAP includes strategies aimed at reducing GHG emissions generated within the City. The four reduction strategies are as follows (City of Fullerton 2012a).

- **Transportation and Mobility Strategy:** Promote a balanced transportation system that promotes the use of public transportation and bicycles, reduces congestion, and helps encourage residents to engage in healthy and active lifestyles.
- **Energy Use and Conservation Strategy:** Reduce the carbon footprint of municipal operations to serve as a leader for the community and support the construction of buildings that are energy efficient and incorporate clean, renewable energy sources.
- **Water Use and Efficiency Strategy:** Conserve and protect water resources and promote efficiency through public education.
- **Solid Waste Reduction and Recycling Strategy:** Manage solid waste generation and diversion in order to achieve a zero-waste future.

Each of the strategies recommends measures and actions, including the GHG reduction potential if the performance criteria are met.

The Fullerton Plan

The Fullerton Plan, adopted May 1, 2012 (City of Fullerton 2012b and 2012c), serves as the City's general plan and includes the following goals and policies that apply to the project.

The Built Environment

Goal 5 A balanced system promoting transportation alternatives that enable mobility and an enhanced quality of life.

Policy 5.2: Support regional and subregional efforts to increase alternatives to and infrastructure supporting reduction of single occupant vehicle trips.

Policy 5.13: Support projects, programs, policies and regulations to encourage transit improvements that incentivize investment and link neighborhoods, while fitting the scale and traffic patterns of the surrounding area.

Policy 5.16: Support projects, programs, policies and regulations to encourage the development of private and/or public infrastructure facilitating the use of alternative fuel vehicles.

Goal 6 A bicycle-friendly city where bicycling is a safe and convenient alternative to motorized transportation and a recreational opportunity for people of all ages and abilities.

Policy 6.1: Support regional and subregional efforts to ensure bicyclists are considered when developing new or retrofitting existing transportation facilities and systems.

Policy 6.4: Support projects, programs, policies and regulations to recognize that every street in Fullerton is a street that a bicyclist can use.

Policy 6.7: Support projects, programs, policies, and regulations to reduce negative impacts to and increase opportunities for bicycle users and the bicycle network in private and public development projects.

Policy 6.14: Support projects, programs, policies and regulations to consider bicycle friendly design using new technologies and innovative treatments.

The Natural Environment

Goal 19 An adequate, safe, and reliable water supply.

Policy 19.2: Support regional and subregional efforts to promote water efficiency and conservation.

Policy 19.3: Support projects, programs, policies and regulations to encourage the use of new technologies which reduce water use.

Policy 19.7: Support projects, programs, policies and regulations to encourage water efficient practices in site and building design for private and public projects.

Goal 22 Participation in regional efforts to address climate change and its local impacts.

Policy 22.1: Support regional and subregional efforts to reduce greenhouse gas emissions associated with transportation through land use strategies and policies, transportation system improvements, and transportation demand management programs.

Policy 22.2: Support regional and subregional efforts to reduce greenhouse gas emissions associated with electrical generation through energy conservation strategies and alternative/ renewable energy programs.

Policy 22.3: Support regional and subregional efforts to reduce greenhouse gas emissions associated with water conveyance through water conservation strategies and alternative supply programs

Policy 22.4: Support regional and subregional efforts to reduce emissions associated with solid waste through increased recycling programs and reduced waste strategies.

Policy 22.6: Support projects, programs, policies and regulations to reduce greenhouse gas emissions from waste through improved management of waste handling and reductions in waste generation.

Policy 22.9: Support projects which voluntarily desire to implement site and/or building design features exceeding minimum requirements to reduce project greenhouse gas emissions.

Goal 23 Safe and efficient management of waste.

Policy 23.1: Support regional and subregional efforts to increase recycling, waste reduction, and product reuse.

Policy 23.3: Support projects, programs, policies and regulations to promote practices to reduce the amount of waste disposed in landfills.

Policy 23.7: Support projects, programs, policies and regulations to consider project level solid waste management needs at the site and building design stages.

4.3.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts associated with GHG emissions are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). According to Appendix G, a significant impact related to GHG emissions would occur if the project would:

1. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Global climate change is a cumulative impact; as such, an individual project's potential impact is measured through its incremental contribution of GHG emissions combined with the contribution of all other sources of GHGs.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment of project-specific GHG emissions, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009b).

The State of California has not adopted emission-based thresholds for GHG emissions under CEQA. The Office of Planning and Research Technical Advisory, *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review*, states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008). Further, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice" (OPR 2008). The CEQA Guidelines specify that "when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)).

To address the first threshold of significance identified in Appendix G of the CEQA Guidelines, this analysis uses the SCAQMD-recommended (not adopted) numeric CEQA significance thresholds for GHG emissions that it developed for lead agencies to use in assessing GHG impacts of residential and commercial development projects.

As background, in October 2008, SCAQMD recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects as presented in its Interim CEQA GHG Significance Threshold (SCAQMD 2008). This guidance document, which builds on the previous guidance prepared by CAPCOA, explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, SCAQMD adopted an interim 10,000 MT CO_2e per year screening level threshold for stationary source/industrial projects for which SCAQMD is the lead agency (see SCAQMD Resolution No. 08-35, December 5, 2008).

SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, SCAQMD hosted working group meetings and revised the draft threshold proposal several times. The most recent proposal, issued in September 2010 (SCAQMD 2010), uses the following tiered approach to evaluate potential GHG impacts from various uses:

Tier 1 Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2 Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.

Tier 3 Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_2e per year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4 Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per service population for project level analyses and 6.6 MT CO_2e per service population for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5 Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

For purposes of this EIR, the proposed project's GHG emissions will be conservatively compared to the SCAQMD recommendation of a project-level screening threshold of 1,400 MT CO_2e per year for commercial projects. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the project, which is assumed to be 30 years (SCAQMD 2008). Thus, this impact analysis compares estimated operational emissions plus amortized construction emissions to the recommended SCAQMD threshold of 1,400 MT CO_2e per year.

4.3.4 Impacts Analysis

Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Construction Emissions

Construction of the project would result in GHG emissions that would primarily be associated with the use of off-road construction equipment, on-road hauling and vendor trucks, and worker vehicles. As discussed previously, the SCAQMD *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* (2008) recommends that, "construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies." Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 1,400 MT CO_2e per year. Therefore, the determination of significance is addressed in the operational emissions discussion following the estimated construction emissions.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 4.2, Air Quality. Construction of the project is anticipated to commence in January 2020 and would last approximately 4 months, ending in April 2020. On-site sources of GHG emissions include off-road equipment and off-site sources include trips from worker vehicles, vendor trucks, and haul trucks. Table 4.3-2 presents construction emissions for the proposed project in 2020 from on-site and off-site emissions sources.

Table 4.3-2
Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2020	175.01	0.03	0.00	175.81
Amortized construction emissions				**5.86**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix D for complete results.

As shown in Table 4.3-2, the estimated total GHG emissions during construction would be approximately 176 MT CO_2e in 2020. Estimated project-generated construction emissions amortized over 30 years would be approximately 6 MT CO_2e per year. As with project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the project would be short term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis in the following text.

Operational Emissions

Operation of the project would include the use of the proposed lighting and sound systems, the enclosed press box building, the 600-square-foot storage building and more intensive use of Sherbeck Field for games and events. Operation of the proposed project would generate GHG emissions through motor vehicle trips to and from the project site; landscape maintenance equipment operation; energy use (natural gas and generation of electricity consumed by the project); solid waste disposal; and generation of electricity associated with water supply, treatment, and distribution, and wastewater treatment. Annual GHG emissions from these sources were estimated using CalEEMod, as discussed below.

CalEEMod was used to estimate GHG emissions from the project's area sources, including operation of gasoline-powered landscape maintenance equipment, which was estimated using CalEEMod default values. While operation of the existing field involves use of landscape maintenance equipment, landscape equipment emissions were conservatively estimated in CalEEMod and represented as an increase compared to existing use. Landscape equipment emissions would be minimal. Consumer product use and architectural coatings result in VOC emissions, which are analyzed in air quality analysis only (see Section 4.2, Air Quality); those sources result in little to no GHG emissions.

The estimation of operational energy emissions was based on CalEEMod land use defaults and total area (i.e., square footage) of the project's land uses. Additionally, to account for outdoor lighting and sound systems associated with the project, modified lighting kilowatt hour rates were applied in CalEEMod. The energy use from nonresidential land uses is calculated in CalEEMod based on the California Commercial End-Use Survey database. Emissions are calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kilowatt-hour for electricity or 1,000 British thermal units for natural gas) for CO_2 and other GHGs (CAPCOA 2017).

CalEEMod default energy intensity factors (CO_2, CH_4, and N_2O mass emissions per kilowatt hour) for Southern California Edison (SCE) are based on the value for SCE's energy mix in 2012. As explained in Section 4.7.2, the RPS imposes a target of 33% from renewable energy sources for all electricity providers in California by 2020 and 60% by 2030. The CO_2 emissions intensity factor for utility energy use in CalEEMod was adjusted consistent with SCE's 2016 Power Content Label, which reported that 28% of the power mix was generated by eligible renewable sources (SCE 2017). Because SCE is required to meet the 33% RPS by December 31, 2020, the CO_2 emissions intensity factor is anticipated to be less than assumed in CalEEMod at project operation (2020), which would reflect the increase in percentage of renewable energy in SCE's energy portfolio. As such, GHG emissions from operational energy consumption likely would be lower than reported in this section.

Mobile source and on-site road vehicular emissions associated with the project were modeled using the trip-generation rates from the project's Traffic Impact Analysis (TIA) (see Appendix F to this EIR). For more details regarding mobile source emissions assumptions, refer to the Impacts Analysis discussion in Section 4.2, Air Quality, of this EIR. Of importance, under existing conditions, vehicle trips associated with football games are occurring at a neighboring field, which would be redirected to the project site. However, consistent with the traffic analysis, this GHG emissions analysis conservatively does not net out vehicle trips and associated mobile source emissions that are currently occurring.

The project would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste. Project compliance with statewide solid waste diversion goals would reduce project-generated GHG emissions associated with solid waste disposal.

Supply, conveyance, treatment, and distribution of water for the project require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the project requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment. CalEEMod default values were utilized for estimating water consumption estimates for both indoor and outdoor water use, and it was assumed that wastewater treatment would be 100% aerobic.

The estimated operational GHG emissions from project area sources, energy consumption, motor vehicles, solid waste, water consumption, and wastewater treatment associated with the proposed project at full buildout in 2020 are shown in Table 4.3-3. Details of the emissions calculations are provided in Appendix D.

Table 4.3-3
Estimated Annual Operational GHG Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area[a]	<0.01	0.00	0.00	<0.01
Energy	3.97	0.00	0.00	3.99
Mobile[b]	1,025.56	0.06	0.00	1,026.97
Solid waste	0.08	0.00	0.00	0.19
Water supply and wastewater	23.97	0.19	0.00	30.19
Total	**1,053.58**	**0.25**	**0.00**	**1,061.34**
Amortized construction emissions				*5.86*
Operation + amortized construction total				**1,067.20**
SCAQMD threshold				1,400
Threshold exceeded?				**No**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; SCAQMD = South Coast Air Quality Management District.

[a] As discussed above, this estimate conservatively assumes that all landscaping-related emissions are new, additional emissions, even though Sherbeck Field currently is subject to landscaping-related activities.

[b] As discussed above, this estimate conservatively assumes that all mobile-related emissions are new, additional emissions, even though some of the vehicular trips currently occur and only would be re-directed to Sherbeck Field as a result of the project (due to the project's proposal to accommodate more college-related functions at Sherbeck Field and not at off-site facilities).

See Appendix D for detailed results.

As shown in Table 4.3-3, estimated annual project-generated operational emissions in 2020 plus amortized project construction emissions would be approximately 1,067 MT CO_2e per year. The project would not exceed the proposed SCAQMD threshold of 1,400 MT CO_2e for commercial sources. Therefore, the project's GHG contribution would be not cumulatively considerable and is less than significant.

Would the project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Consistency with the City CAP

As previously discussed, in February 2012, the City adopted its CAP, which is a long-range plan to reduce GHG emissions from municipal operations and community activities within the City. The CAP would also help the City adapt to effects of climate change. The City is committed to reducing its GHG emissions by 15% below 2009 levels by 2020, consistent with AB 32.

To reduce City-wide GHG emissions, the CAP identifies a series of climate action strategies that guide the City in four focus areas (transportation and mobile strategy, energy and conservation strategy, water use and efficiency strategy, and solid waste and recycling strategy) (City of Fullerton 2012a). However, most of the measures outlined in the CAP would not be directly applicable to the proposed project and are intended for the City to implement. Measures applicable to the proposed project include compliance with green building standards identified in Title 24, installation of energy-efficient lighting and equipment, and diversion of construction and demolition debris. For solid waste, the proposed project would comply with the 75% waste diversion requirement consistent with AB 341. Therefore, the proposed project would not conflict with the City's CAP.

Consistency with the SCAG 2016 RTP/SCS

SCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region. The 2016 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. The 2016 RTP/SCS is not directly applicable to the proposed project because the underlying purpose of the 2016 RTP/SCS is to provide direction and guidance by making the best transportation and land use choices for future development. In this case, the proposed project involves focused improvements to an existing athletic field that will enhance its athletic, academic and institutional functionalities, and does not propose to site a new land use in a new location. However, development of the proposed project would support goals of the 2016 RTP/SCS by using energy-efficient design, including conforming to the CALGreen code and installing low-flow plumbing fixtures. Additionally, the project is located near existing bus routes, which allows for the use of multi-modal transportation options by users of and visitors to the field.

Consistency with the CARB Scoping Plan

As discussed in Section 4.3.2, Relevant Plans, Policies, and Ordinances, the Scoping Plan approved by CARB in 2008 and updated in 2014 and 2017 provides a framework for actions to reduce California's GHG emissions. The Scoping Plan also requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.[3] Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Table 4.3-4 highlights measures that have been, or will be, developed under the Scoping Plan and the project's consistency with Scoping Plan measures. To the extent that these regulations are applicable to the proposed project and its inhabitants or uses, the project would comply will all regulations adopted in furtherance of the Scoping Plan to the extent required by law.

Table 4.3-4
Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Transportation Sector		
Advanced Clean Cars	T-1	Not applicable.
Low Carbon Fuel Standard	T-2	Not applicable.
Regional Transportation-Related GHG Targets	T-3	As discussed in Section 4.2, Air Quality, according to the SCAG Growth Forecast (an appendix to the 2016 RTP/SCS), student and employee growth would be minimal in comparison to the anticipated increase of the SCAG Growth Forecast. Therefore, the proposed project would not increase population to a level above what is assumed in local and regional land use plans or in projections made by regional planning authorities. Therefore, the project would not conflict with the 2016 RTP/SCS' attainment of CARB's adopted GHG reduction targets.
Vehicle Efficiency Measures	T-4	Not applicable.

[3] The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009a).

Table 4.3-4
Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil 4. Solar-Reflective Automotive Paint and Window Glazing		
Ship Electrification at Ports (Shore Power)	T-5	Not applicable.
Goods Movement Efficiency Measures 1. Port Drayage Trucks 2. Transport Refrigeration Units Cold Storage Prohibition 3. Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification 4. Goods Movement Systemwide Efficiency Improvements 5. Commercial Harbor Craft Maintenance and Design Efficiency 6. Clean Ships 7. Vessel Speed Reduction	T-6	Not applicable.
Heavy-Duty Vehicle GHG Emission Reduction 1. Tractor-Trailer GHG Regulation 2. Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)	T-7	Not applicable.
Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive Project	T-8	Not applicable.
High-Speed Rail	T-9	Not applicable.
Electricity and Natural Gas Sector		
Energy Efficiency Measures (Electricity)	E-1	The project will comply with energy-efficiency standards for electrical appliances and other devices in Title 24, Part 6, of the California Code of Regulations in effect at the time of building construction.
Energy Efficiency (Natural Gas)	CR-1	The project will comply with energy-efficiency standards for natural gas appliances and other devices in Title 24, Part 6, of the California Code of Regulations in effect at the time of building construction.
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	Applicable for residential projects only.
Combined Heat and Power	E-2	Applicable to combined heat and power system owners only.
Renewables Portfolio Standard (33% by 2020)	E-3	The electricity used by the proposed project will benefit from reduced GHG emissions resulting from increased use of renewable energy sources. SCE sourced 29% of their power from renewable energy sources in 2017 (SCE 2018), and is on track to attain the 2020 RPS of 33%.

Table 4.3-4
Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	Not applicable.
Water Sector		
Water Use Efficiency	W-1	While not a part of the proposed project, Fullerton College is planning to install an automatic weather-sensing irrigation control system that would further reduce and manage water consumption on the campus.
Water Recycling	W-2	Recycled water is not available to the site.
Water System Energy Efficiency	W-3	This is applicable for the transmission and treatment of water, but it is not applicable for the project.
Reuse Urban Runoff	W-4	Not applicable.
Renewable Energy Production	W-5	Applicable for wastewater treatment systems. Not applicable for the project.
Green Buildings		
1. State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	The project will be required to be constructed in compliance with state green building standards in effect at the time of building construction.
2. Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	The project's buildings would meet green building standards in effect at the time of design and construction.
3. Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	The project will be constructed in compliance with green building standards in effect at the time of building construction.
4. Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	Applicable for existing residential and commercial buildings only. Not applicable for the proposed project.
Industry Sector		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	Not applicable.
Oil and Gas Extraction GHG Emission Reduction	I-2	Not applicable.
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	Not applicable.
Refinery Flare Recovery Process Improvements	I-4	Not applicable.
Work with the Local Air Districts to Evaluate Amendments to Their Existing Leak Detection and Repair Rules for Industrial Facilities to Include Methane Leaks	I-5	Not applicable

Table 4.3-4
Project Consistency with Scoping Plan GHG Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Recycling and Waste Management Sector		
Landfill Methane Control Measure	RW-1	Not applicable.
Increasing the Efficiency of Landfill Methane Capture	RW-2	Not applicable.
Mandatory Commercial Recycling	RW-3	During both construction and operation of the project, the project would comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended. During construction, all wastes would be recycled to the maximum extent possible.
Increase Production and Markets for Compost and Other Organics	RW-3	Not applicable.
Anaerobic/Aerobic Digestion	RW-3	Not applicable.
Extended Producer Responsibility	RW-3	Not applicable (applicable to product designer and producers).
Environmentally Preferable Purchasing	RW-3	Not applicable (applicable to product designer and producers).
Forests Sector		
Sustainable Forest Target	F-1	Not applicable.
High GWP Gases Sector		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	Fullerton College students and employees would be prohibited from performing air-conditioning repairs and would be required to use professional servicing.
SF_6 Limits in Non-Utility and Non-Semiconductor Applications	H-2	Not applicable.
Reduction of Perfluorocarbons in Semiconductor Manufacturing	H-3	Not applicable.
Limit High GWP Use in Consumer Products	H-4	Not applicable.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	Not applicable.
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	Not applicable.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	Not applicable.
SF_6 Leak Reduction Gas Insulated Switchgear	H-6	Not applicable.
Agriculture Sector		
Methane Capture at Large Dairies	A-1	Not applicable.

Source: CARB 2014.
Notes: GHG = greenhouse gas; SCAG = Southern California Association of Governments; RTP/SCS = Regional Transportation Plan/Sustainable Communities Plan; SB = Senate Bill; SF_6 = sulfur hexafluoride; GWP = global warming potential.

Based on the analysis in Table 4.3-4, the proposed project would be consistent with the applicable strategies and measures in the Scoping Plan.

The project also would not impede the attainment of the GHG reduction goals for 2030 or 2050 identified in EO S-3-05 and SB 32. As discussed in Section 4.3.2, EO S-3-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. SB 32 establishes for a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory toward meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

To begin, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update states the following (CARB 2014):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and EO S-3-05. This is confirmed in the 2017 Scoping Plan, which states (CARB 2017):

> This Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

The proposed project would not interfere with implementation of any of the above-described GHG reduction goals for 2030 or 2050 because the project would not exceed SCAQMD's recommended draft interim threshold of 1,400 MT CO_2e per year (SCAQMD 2008). Additionally, the proposed project would not change the existing land use and would improve the existing facilities at the project site to better serve the college's needs, thereby reducing the need for the campus to use off-site facilities and amenities to accommodate its operations. This analysis provides support for the conclusion that the project would not impede the state's trajectory toward the above-described statewide GHG reduction goals for 2030 or 2050.

In addition, because the specific path to compliance for the state with regard to long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the proposed project would be speculative and cannot be identified at this time. The project's consistency with the Scoping Plan would assist in meeting the City's contribution to GHG emission reduction targets in California. With respect to future GHG targets under SB 32 and EO S-3-05, CARB has also made clear its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030 and EO S-3-05's 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets. Based on the above considerations, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and no mitigation is required. This impact would be less than significant.

4.3.5 Cumulative Analysis

Because GHG and climate change impacts are always considered cumulatively, cumulative impacts associated with the proposed project are addressed in Section 4.3.4, Impacts Analysis. Impacts would be less than significant.

4.3.6 Mitigation Measures

No mitigation is required.

4.3.7 Level of Significance After Mitigation

No mitigation is required. Impacts would be less than significant without mitigation.

4.3.8 References

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4.4 HAZARDS AND HAZARDOUS MATERIALS

This section describes the existing hazardous materials within the vicinity of the project site, identifies associated regulatory requirements, evaluates potential impacts (including cumulative impacts), and identifies any necessary mitigation measures related to implementation of the proposed Sherbeck Field Improvements Project (proposed project).

4.4.1 Existing Conditions

This section describes the environmental conditions of the proposed project site as it relates to hazardous materials.

Hazardous Materials Definition

The term "hazardous materials" refers to hazardous substances and hazardous waste. Under federal and state laws, any substance, including waste, may be considered hazardous if it is specifically listed by statute as such or if it is toxic (causes adverse human health effects), ignitable (has the ability to burn), corrosive (causes severe burns or damage to materials), or reactive (causes explosions or generates toxic gases). A "hazardous material" is defined as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment (California Health and Safety Code, Chapter 6.95, Section 25501(n)(1)). Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, or contaminated, or is being stored prior to proper disposal.

In some cases, past industrial or commercial activities on a site may have resulted in spills or leaks of hazardous materials to the ground, resulting in soil and/or groundwater contamination. Hazardous materials may also be present in building materials and released during building demolition activities. If improperly handled, hazardous materials and wastes can cause public health hazards when released to the soil, groundwater, or air. The four basic exposure pathways through which an individual can be exposed to a chemical agent include inhalation, ingestion, bodily contact, and injection. Exposure can come as a result of an accidental release during transportation, storage, or handling of hazardous materials. Disturbance of subsurface soil during construction can also lead to exposure of workers or the public from stockpiling, handling, or transportation of soils contaminated by hazardous materials from previous spills or leaks.

Regulatory Database Review

The California Environmental Quality Act (CEQA) requires review of Section 65962.5 of the California Government Code, also known as the "Cortese List," to identify whether the project crosses or is in close proximity to a site known to have had a hazardous materials release or to represent a threat to human health and the environment. Because this statute was enacted more than 20 years ago, some of the provisions refer to agency activities that were conducted many years ago and are no longer being implemented and, in some cases, the information to be included in the Cortese List does not exist. California Government Code, Section 65962.5, makes reference to the preparation of a "list," but many changes have occurred related to web-based information access since 1992, and this information is now largely available on the Internet sites of the responsible organizations. The following sources, databases, and lists comprise the Cortese List:

- **Hazardous waste and substance sites from the Department of Toxic Substances Control (DTSC) EnviroStor database.** The EnviroStor database is an online search and GIS tool for identifying sites that have known contamination or sites for which there may be reasons to investigate further. The EnviroStor database includes the following site types: Federal Superfund sites (National Priorities List); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. As discussed below, this list was reviewed for cleanup sites within 0.5 miles of Fullerton College.
- **List of leaking underground storage tank (UST) sites from the State Water Resources Control Board (SWRCB) GeoTracker database.** GeoTracker is SWRCB's online search and GIS tool for sites that impact groundwater or have the potential to impact groundwater. GeoTracker contains sites that require groundwater cleanup (Leaking USTs, Department of Defense, and Site Cleanup Program), as well as permitted facilities that could impact groundwater (Irrigated Lands, Oil and Gas Production, Operating USTs, and Land Disposal sites.) As discussed below, this list was reviewed for cleanup sites within 0.5 miles of Fullerton College.
- **List of solid waste disposal sites identified by SWRCB with waste constituents higher than hazardous waste levels outside the waste management unit.** Review of this list revealed one site within the City of Fullerton (City). The site is the "McColl sludge disposal site," but it is not close to Fullerton College (i.e., approximately 4 miles to the northwest) (CalEPA 2017).
- **List of active cease-and-desist orders and cleanup and abatement orders from SWRCB.** Review of this list revealed no sites within the City (CalEPA 2017).
- **List of hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the California Health and Safety Code, as identified by DTSC.** This list only includes two sites in California, neither of which is near the proposed project site (CalEPA 2017).

The SWRCB GeoTracker database and the DTSC EnviroStor database were reviewed to determine the location, type, and cleanup status of sites within 0.5 miles of the Fullerton College campus (DTSC 2017; SWRCB 2017). EnviroStor and GeoTracker are state databases that track the status and compliance activities of sites undergoing cleanup or remediation under the jurisdiction of DTSC and SWRCB. SWRCB generally oversees site assessment and cleanup activities for land uses and activities with potential for adverse effects on the state's water quality and drinking water supplies (including groundwater), and DTSC oversees cleanup cases that have resulted in soil contamination that may pose a threat to human health or the environment. These databases are presented as geographic map viewers, and the location of cleanup sites are stored in a point database that can be queried using GIS.

Based on this review, 13 sites were identified in the GeoTracker database as leaking UST sites, all of which have received case closure from SWRCB (SWRCB 2017). Case closure means that SWRCB has determined that the site no longer poses a significant threat to the environment (i.e., through a determination that the contaminants of concern have been adequately contained and pose little risk of migration) or that the site has been adequately remediated. The closest site is a record for Fullerton College that indicates a prior release of petroleum (spillage from overfilling), discovered during UST closure in 1993 (Hydrologue 2003). A cleanup action addressed the issue, and a "no further action" letter was issued by the Regional Water Quality Control Board (RWQCB) in 2004 (SWRCB 2017).

In addition, Fullerton Union High School is listed in the EnviroStor database as a School Cleanup Program site. A proposed school expansion project prompted an environmental investigation to examine potential concerns associated with four USTs, a boiler room, numerous pad-mounted transformers, and potential lead- or asbestos-containing materials (DTSC 2017). Environmental investigation included a records search, site reconnaissance, and soil and soil gas samples for metals, PCBs, volatile organic compounds, and total petroleum hydrocarbons (Hydrologue 2003). Based on these investigations, DTSC's "no further action" letter indicates that "no actual or potential release of hazardous material nor the presence of naturally occurring hazardous material which would pose a threat to human health or the environment under any land use was indicated at the site" (DTSC 2004).

According to environmental records searches (Hydrologue 2003), Fullerton College has five USTs:

- A 2,000-gallon single-walled unlined carbon steel tank (waste oil) installed in 1958
- A 1,000-gallon single-walled carbon steel tank (waste oil) installed in 1961
- A 8,500-gallon unlined carbon steel tank (waste oil) installed in 1964
- A 10,000-gallon single-walled unlined carbon steel tank (waste oil) installed in 1975
- A 10,000-gallon unlined carbon steel tank (waste oil) installed in 1975

The Fullerton Fire Department and the Orange County Health Care Agency Environmental Health Division (OC Environmental Health) were contacted to obtain records pertaining to the Fullerton

College campus, including hazardous materials inventories and the hazardous materials business plan. According to the documents received, the USTs were associated with a boiler plant and have been removed or abandoned in place (Fullerton Fire Department n.d.).

In summary, there is one site within Fullerton College identified in the Cortese List. The Fullerton College site references a prior release of petroleum (spillage from overfilling) discovered during UST closure in 1993 (SWRCB 1993). A cleanup action addressed the issue, and a no further action letter was issued by the RWQCB in 2004 (SWRCB 2017).

Hazardous Materials Contingency Plan

Due to the potential for encountering contaminated soils during construction activities on the Fullerton College Campus, a hazardous materials contingency plan (Contingency Plan) was prepared in accordance with Mitigation Measure HAZ-3, identified in the Fullerton College Facilities Master Plan Program Environmental Impact Report (Master Plan Program EIR; District 2017). The proposed project would comply with the actions and procedures identified within the Contingency Plan, as described below.

The Contingency Plan was prepared by Black Rock Geosciences on behalf of Fullerton College in February 2018. It details the procedures to be followed within the campus if potentially contaminated soils or contaminated sources (such as buried fuel tanks) are encountered during excavation activities. This Contingency Plan also discusses the treatment and disposal of contaminated groundwater, if encountered during construction activities.

A search for areas with potential soil contamination within the Fullerton College campus was conducted as part of the preparation for the Contingency Plan. These areas were determined via a campus reconnaissance and a review of historical aerial photographs, historical topographic maps, Sanborn maps, and agency records. The reconnaissance of the Fullerton College campus was conducted on January 27, 2018. As a result of the search, the potential contaminant sources identified within the campus include transformers, railroad, USTs, orchards, older buildings, and Building 900 (Black Rock Geosciences 2018). The transformers, railroad, older buildings, and Building 900 were not near Sherbeck Field; therefore, they will not be discussed further.

As previously mentioned, Fullerton College has five USTs. The locations of these former tanks were not identified in the background materials reviewed for the campus. The waste oil tank, which is suspected to have been located adjacent to the former automotive training shop, was removed in 1993. The soils adjacent to this tank were impacted with waste oil as a result of spillage from overfilling. This case was closed by the RWQCB, indicating that the impacted soils were remediated, or that the extent and nature of the impacts were not significant. Oil-impacted soil may still underlie this former tank area (Black Rock Geosciences 2018).

The disposition of the four remaining USTs could not be ascertained using the data collected during the preparation of the Contingency Plan. Their status is currently "Not Reported." There are no USTs currently registered within the campus. Fill ports, vent lines, fuel dispensers, and other indications of USTs were not encountered during a reconnaissance of the campus. As such, these tanks are no longer suspected to be present within the Fullerton College campus. It is not known whether diesel-impacted soils remain beneath these former tanks. Such contamination can be readily identified in soil via diesel odors and staining (gray, dark gray, and/or greenish-gray soils). The Contingency Plan identifies procedures for characterizing and managing contaminated soils, and specifies those responsible for the actions summarized within the Contingency Plan.

Additionally, the Contingency Plan noted that orchards were located on the Fullerton College campus between at least 1938 and 1953, and therefore recommended that sampling be conducted in known orchard areas prior to construction activities to confirm that pesticide concentrations do not exceed regulatory levels. The former orchards are located on the eastern portion of the campus, including the project site and surrounding area. Sampling for pesticides will be collected prior to construction activities from the following six planned building areas identified in the Master Plan Program EIR:

- New Instruction Building planned between Buildings 1400 and 1200
- Horticulture and Vocational Services Center
- New Centennial Parking Structure west of Sherbeck Field
- Realignment area of campus access to the Centennial Parking Structure
- New parking lot to be located north of Berkeley Avenue (Building 3000 area)
- Aquatics Center

In the event that any pesticide concentration exceeds its screening level or arsenic concentrations are greater than 20 milligrams per kilogram, the removal of these soils should be conducted in accordance with the guidelines provided in the Contingency Plan. The Contingency Plan provides methods for the identification, excavation, and transportation of contaminated soils (Black Rock Geosciences 2018).

Although orchards were formerly located within the Fullerton College campus and specifically the project site, the potential for impacts to soil is considered low (Black Rock Geosciences 2018). Further, as a result of both time and mixing (clean deeper soils mixed with near-surface soils during field development), pesticide levels will be reduced or not detectable. At the time the existing field was developed, the earthwork processes would have reduced any existing pesticide concentrations (Kinnebrew, pers. comm. 2018).

4.4.2 Regulatory Framework

Federal

CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (42 U.S.C. 9601–9675), commonly known as "Superfund," was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. Through CERCLA, the U.S. Environmental Protection Agency (EPA) was given power to seek out those parties responsible for any release and assure their cooperation in the cleanup. EPA cleans up orphan sites when potentially responsible parties cannot be identified or located, or when they fail to act. Through various enforcement tools, EPA obtains private-party cleanup through orders, consent decrees, and other small-party settlements. EPA is authorized to implement CERCLA in all 50 states and U.S. territories. Superfund site identification, monitoring, and response activities in states are coordinated through the state environmental protection or waste management agencies.

Emergency Planning and Community Right-to-Know Act

Authorized by Title III of the Superfund Amendments and Reauthorization Act, the Emergency Planning and Community Right-to-Know Act was enacted by Congress as the national legislation on community safety. This law is designed to help local communities protect public health, safety, and the environment from chemical hazards. To implement the act, Congress requires each state to appoint a State Emergency Response Commission. The State Emergency Response Commissions are required to divide their states into Emergency Planning Districts and to name a Local Emergency Planning Committee for each district. Broad representation by firefighters, health officials, government and media representatives, community groups, industrial facilities, and emergency managers ensures that all necessary elements of the planning process are represented.

Hazardous Materials Transportation Act

The U.S. Department of Transportation regulates hazardous materials transportation under Title 49 of the United States Code. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the California Highway Patrol and the California Department of Transportation (Caltrans). These agencies also govern permitting for hazardous materials transportation. Title 49 of the Code of Federal Regulations reflects laws passed by Congress as of January 2, 2006.

Occupational and Safety Health Act

Congress passed the Occupational and Safety Health Act to ensure worker and workplace safety. Its goal was to make sure employers provide their workers a place of employment free from recognized hazards to safety and health, such as exposure to toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. In order to establish standards for workplace health and safety, the Occupational and Safety Health Act also created the National Institute for Occupational Safety and Health as the research institution for the Occupational Safety and Health Administration (OSHA). OSHA is a division of the U.S. Department of Labor that oversees the administration of the Occupational and Safety Health Act and enforces standards in all 50 states.

RCRA

The Resource Conservation and Recovery Act (RCRA) gives EPA the authority to control hazardous waste from “cradle to grave.” This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from USTs storing petroleum and other hazardous substances. The Federal Hazardous and Solid Waste Amendments are the 1984 amendments to RCRA that focused on waste minimization and phasing out land disposal of hazardous waste, as well as corrective action for releases. Some of the other mandates of this law include increased enforcement authority for EPA, more stringent hazardous waste management standards, and a comprehensive UST program.

State

Cortese List

California Government Code, Section 65962.5, requires that information regarding environmental impacts of hazardous substances and wastes be maintained and provided at least annually to the Secretary for Environmental Protection. Commonly referred to as the Cortese List, this information must include the following: sites impacted by hazardous wastes, public drinking water wells that contain detectable levels of contamination, USTs with unauthorized releases, solid waste disposal facilities from which there is migration of hazardous wastes, and all cease and desist and cleanup and abatement orders. This information is maintained by various agencies, including DTSC, the State Department of Health Services, SWRCB, and the local (typically, county)

Certified Unified Program Agency (CUPA). Each of the agencies has their own databases/records; thus, the Cortese List is not just a single list.

California Occupational Safety and Health Administration

The California Occupational Safety and Health Administration is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. California Occupational Safety and Health Administration standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR 330 et seq.). The regulations specify requirements for employee training, availability of safety equipment, accident prevention programs, and hazardous substance exposure warnings.

California Hazardous Waste Control Act

DTSC is responsible for the enforcement of the Hazardous Waste Control Act (California Health and Safety Code, Section 25100 et seq.), which creates the framework under which hazardous wastes are managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA cradle-to-grave waste management system in California. It also provides for the designation of California-only hazardous waste and development of standards that are equal to or, in some cases, more stringent than federal requirements. The Hazardous Waste Control Act lists chemicals and common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal, and transportation; and identifies some wastes that cannot be disposed of in landfills.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

The Unified Hazardous Waste and Hazardous Materials Management Regulatory Program was created in 1993 by Senate Bill 1082 to consolidate, coordinate, and make consistent the administrative requirements, permits, inspections, and enforcement activities of environmental and emergency management programs. The program is implemented at the local government level by CUPAs. The program consolidates, coordinates, and makes consistent the following hazardous materials and hazardous waste programs:

- Hazardous Waste Generation (including on-site treatment under Tiered Permitting)
- Aboveground Petroleum Storage Tanks (only the spill prevention control and countermeasure plan)
- USTs

- Hazardous Material Release Response Plans and Inventories
- California Accidental Release Prevention Program (CalARP)
- Uniform Fire Code Hazardous Material Management Plans and Inventories

The CUPA with jurisdiction over the City is OC Environmental Health. OC Environmental Health was designated as the CUPA for Orange County (the County) on January 1, 1997.

CalARP

Similar to the EPA Risk Management Program, the CalARP Program (19 CCR 2735.1 et seq.) regulates facilities that use or store regulated substances, such as toxic or flammable chemicals, in quantities that exceed established thresholds. The overall purpose of CalARP is to prevent accidental releases of regulated substances and reduce the severity of releases that may occur. The CalARP Program meets the requirements of the EPA Risk Management Program, which was established pursuant to the Clean Air Act Amendments.

The Accidental Release Prevention Law is implemented by the CUPA and requires that any business where the maximum quantity of a regulated substance exceeds the specified threshold quantity register with the County as a manager of regulated substances and prepare a risk management plan. A risk management plan must contain an off-site consequence analysis, a 5-year accident history, an accident prevention program, an emergency response program, and a certification of the truth and accuracy of the submitted information. Businesses submit their plans to the CUPA, which makes the plans available to emergency response personnel.

California Health and Safety Code

In California, the handling and storage of hazardous materials is regulated by Division 20, Chapter 6.95, of the California Health and Safety Code (Section 25500 et seq.). Under Sections 25500–25543.3, facilities handling hazardous materials are required to prepare a hazardous materials business plan. Hazardous materials business plans contain basic information about the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of in the state.

Chapter 6.95 of the California Health and Safety Code establishes minimum statewide standards for hazardous materials business plans (California Health and Safety Code, Section 25503.5). Each business must prepare a hazardous materials business plan if that business uses, handles, or stores a hazardous material (including hazardous waste) or an extremely hazardous material in quantities greater than or equal to the following:

- 500 pounds of a solid substance
- 55 gallons of a liquid

- 200 cubic feet of compressed gas
- A hazardous compressed gas in any amount (highly toxic with a threshold limit value of 10 parts per million or less)
- Extremely hazardous substances in threshold planning quantities

In addition, in the event that a facility stores quantities of specific acutely hazardous materials above the thresholds set forth by California code, facilities are also required to prepare an EPA Risk Management Program plan and a CalARP plan. The EPA Risk Management Program plan and CalARP plan provide information about the potential impact zone of a worst-case release and require plans and programs designed to minimize the probability of a release and mitigate potential impacts.

California Emergency Services Act

Under the Emergency Services Act (California Government Code, Section 8550 et seq.), the State of California developed an emergency response plan to coordinate emergency services provided by federal, state, and local agencies. Rapid response to incidents involving hazardous materials or hazardous waste is an integral part of the emergency response plan, which is administered by the Governor's Office of Emergency Services. The Office of Emergency Services coordinates the responses of other agencies, including the California Environmental Protection Agency (CalEPA), California Highway Patrol, RWQCB, air quality management districts, and county disaster response offices.

Local

The North Orange County Community College District (District) and Fullerton College are not subject to local plans, policies, or guidelines, so this analysis uses relevant policies from the local jurisdiction as guidance only. The District, however, is subject to regulation by the local CUPA, described below.

Certified Unified Program Agency

A CUPA is a local agency that has been certified by CalEPA to implement the local Unified Program. The CUPA can be a county, city, or joint powers authority. A participating agency is a local agency that has been designated by the local CUPA to administer one or more Unified Programs within their jurisdiction on behalf of the CUPA. A designated agency is a local agency that has not been certified by CalEPA to become a CUPA but is the responsible local agency that would implement the six Unified Programs until they are certified.

OC Environmental Health is the designated CUPA for the City. OC Environmental Health was designated the CUPA for the County by the state Secretary for Environmental Protection on

January 1, 1997. The CUPA is the local administrative agency that coordinates the regulation of hazardous materials and hazardous wastes in the County for six programs: Hazardous Waste, UST, Aboveground Petroleum Storage Tank, Hazardous Materials Disclosure, Business Emergency Plan, and CalARP. County and City fire agencies within the County have joined in partnership with the CUPA as participating agencies. In the City, OC Environmental Health administers the Hazardous Waste and Aboveground Petroleum Storage Tank Programs, while the City Fire Department administers the UST, Hazardous Materials Disclosure, Business Emergency Plan, and CalARP Programs (City of Fullerton 2012a).

The Fullerton Plan

The following policies from The Fullerton Plan (the City's general plan) are related to hazardous materials and emergency response:

- **P13.2 Adequate Resources for Emergencies:** Support policies and programs that ensure adequate resources are available in all areas of the City to respond to health, fire and police emergencies (City of Fullerton 2012b).
- **P13.3 Disaster Hazard Reduction:** Support policies, projects, programs and regulations that reduce structural and nonstructural hazards to life safety, minimize property damage and resulting social, cultural and economic dislocations resulting from future disasters (City of Fullerton 2012b).
- **P13.4 Disaster Risk Reduction:** Support programs that promote greater public awareness of disaster risks, personal and business risk reduction, and personal and neighborhood emergency response (City of Fullerton 2012b).
- **P13.5 Community Emergency Preparedness:** Support policies, programs and regulations that ensure the City, its residents, businesses, and services are prepared for effective response and recovery in the event of emergencies or disasters, including the provision of information about the current nature and extent of local safety hazards and emergency plans, including evacuation plans and procedures to accommodate special needs populations (information should be provided in multiple languages to maximize understanding by community members) (City of Fullerton 2012b).
- **P23.2 Hazardous Waste:** Support projects, programs, policies and regulations to promote safe handling and disposal by households, businesses, and City operations of solid waste which has specific disposal requirements (City of Fullerton 2012c).

Fullerton Municipal Code

Pursuant to Municipal Code Section 5.25.010 (Hazardous Materials Cleanup), the Fullerton Fire Department Fire Chief is authorized to clean up or abate the effects of any hazardous substance or waste unlawfully released, discharged, or deposited upon or into any property or facilities within the City. In the event that any person undertakes to clean up or abate the effects of any hazardous substance or waste unlawfully released, discharged, or deposited upon or into any property or facilities within the City, the Fire Chief may take such action as is necessary to supervise or verify the adequacy of the cleanup or abatement.

4.4.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to hazards and hazardous materials are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). According to Appendix G, a significant impact related to hazards and hazardous material would occur if the project would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as result, would create a significant hazard to the public or the environment.
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area.
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires.

Thresholds 1, 2, 3, 5, 6, and 7 were eliminated from further consideration in the Initial Study. Hazardous substances and waste that could be transported to and stored, used, and generated on the project site during construction would include fuels for machinery and vehicles, motor oil, cleaning solvents, paints, and other substances and wastes typical of a construction site. However, these materials would be transported, used, and disposed of in accordance with all federal, state, and local laws regulating the management and use of hazardous materials. All waste would be removed and transported to a permitted waste facility for treatment, storage, or disposal. Once operational, the proposed project would involve very little transport, storage, use, or disposal of hazardous materials.

Any such materials would be associated with janitorial, maintenance, and repair activities (e.g., commercial cleaners, lubricants, or paints and household cleaning supplies). Use of these materials would be limited, and transport, storage, use, and disposal of these materials would be subject to all federal, state, and local laws regulating the management and use of hazardous materials. Because hazardous materials/chemicals used during construction and operations would be used in accordance with all federal, state, and local laws regulating the management and use of hazardous materials, impacts would be less than significant.

The proposed project is outside the planning area for Fullerton Municipal Airport or any other airport land use plan. Additionally, mandated fire department and Division of the State Architect fire and life safety review on the project plans would ensure implementation of the proposed project would not interfere with an adopted emergency response or evacuation plan. Further, the project site is in an urbanized area with no adjacent wildlands, so the risk of wildland fires is very low. For these reasons, the impacts of the project with respect to public use airports, private airstrips, an emergency evacuation plan, and wildland fires were determined to be nonexistent or less than significant.

4.4.4 Impacts Analysis

Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as result, would it create a significant hazard to the public or the environment?

As described in Section 4.4.1, Existing Conditions, there is one site within the Fullerton College campus identified in the Cortese List. The Fullerton College site references a prior release of petroleum (spillage from overfilling) discovered during UST closure in 1993 (SWRCB 1993). A cleanup action addressed the issue, and a no further action letter was issued by the RWQCB in 2004 (SWRCB 2017). However, because release cases can be closed with residual contamination in place in soils, a hazardous materials contingency plan (Contingency Plan) was prepared for Fullerton College to reduce any impacts from potentially contaminated soils.

The Contingency Plan details the procedures to be followed within the campus if potentially contaminated soils or contaminated sources (such as buried fuel tanks) are encountered during excavation activities. The Contingency Plan notes that potential soil contaminants within the project area include diesel from USTs and pesticides and arsenic from the former orchards located on the eastern portion of campus. However, diesel-impacted soils are easily identified via odors and staining, and the construction contractor is required to cease excavation if contaminant sources are found or suspected in the soil. The Contingency Plan requires the construction contractor to ensure that all workers are appropriately trained to identify contaminated soils. Additionally, because the potential for pesticides and arsenic to impact the soil is considered low, and because the earthwork processes that took place to develop the current field would have reduced any existing pesticide concentrations, impacts related to the former orchard would be less than significant (Black Rock Geosciences 2018; Kinnebrew, pers. comm. 2018). Should construction activities at the project site not follow applicable procedures, impacts would be potentially significant. Procedures outlined in the Contingency Plan would further reduce any impacts from potentially contaminated soils to less than significant. The proposed project would comply with the procedures to be followed within the project site if potentially contaminated soils or contaminant sources are encountered during excavation activities (MM-HAZ-1). Compliance with the Contingency Plan would ensure that hazards to the public or environment as a result of contaminated soils would not occur. Therefore, with implementation of MM-HAZ-1 impacts relating to location on a site included on a list of hazardous materials sites would be less than significant.

4.4.5 Cumulative Analysis

Cumulative impacts related to hazards and hazardous materials would result from projects that combine to increase exposure to hazards and hazardous materials. As described in Sections 4.4.1 through 4.4.6, the proposed project would have less than significant impacts or no impacts with incorporation of MM-HAZ-1. The proposed project would comply with all federal, state, and local regulations pertaining to the use, transport, and release of hazardous materials. The potential release of hazardous materials during ground-disturbing activities would be reduced by compliance with the Contingency Plan. Although cumulative projects have the potential to result in significant impacts to hazards and hazardous materials, these projects would also be subject to federal, state, and local regulations that would help reduce potential impacts. Cumulative projects may also require mitigation measures to help further reduce potential impacts. Therefore, the proposed project combined with the cumulative projects provided in Table 3-3 of Chapter 3, Project Description, would not result in a cumulative significant impact related to hazards and hazardous materials.

4.4.6 Mitigation Measures

MM-HAZ-1 The North Orange County Community College District is responsible for ensuring the proposed Sherbeck Field project complies with applicable procedures set forth in the Hazardous Materials Contingency Plan for Fullerton College, 321 East Chapman Avenue Fullerton, California 92832, and dated February 2018. The Hazardous Materials Contingency Plan, as it applies to the Sherbeck Field project, shall be followed during construction activities.

4.4.7 Level of Significance After Mitigation

With incorporation of MM-HAZ-1, impacts associated with potentially contaminated soil would be less than significant.

4.4.8 References

8 CCR 330–344.90. California Occupational Safety and Health Regulations.

19 CCR 2735.1–2785.1 and Appendix A. CalARP Program Detailed Analysis.

42 U.S.C. 9601–9675. Comprehensive Environmental Response, Compensation, and Liability Act of 1980.

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California Government Code, Sections 8550–8668. California Emergency Services Act.

California Government Code, Section 65962.5. "Cortese List" Statute.

California Health and Safety Code, Sections 25100–25258.2. Hazardous Waste Control Act.

California Health and Safety Code, Sections 25500–25543.3. Hazardous Materials Management.

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SWRCB. 2017. "Fullerton College Regulatory Profile." Geotracker Record for Fullerton College (T0605901509). Accessed March 16, 2017. https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0605901509.

4.5 NOISE

This section evaluates the potential short-term (construction) and long-term (operational) noise impacts associated with implementation of the proposed Sherbeck Field Improvements Project (proposed project). Noise generation sources from future implementation of the proposed project would include stadium noise, traffic, and noise during construction of the improvements. Noise concepts and a summary of existing conditions are provided in Section 4.5.1, Existing Conditions. The regulatory setting is provided in Section 4.5.2, Regulatory Framework. Potential noise impacts associated with stadium noise, vehicular traffic, and construction were modeled, assessed, and are discussed in Section 4.5.4, Impacts Analysis. Noise calculations for the proposed project are provided in Appendix E and data used to model noise from vehicular traffic was derived from the project-specific traffic impact analysis report prepared by Linscott, Law and Greenspan (Appendix F).

Comments received in response to the notice of preparation included concerns regarding the noise associated with extended hours of operation, operation of the public announcement system, spectator and band/music noise, as well as concerns regarding the compatibility of the proposed project with nearby residential land uses.

4.5.1 Existing Conditions

4.5.1.1 Noise Concepts

The following is a brief discussion of noise terminology, and fundamental noise concepts.

Sound is measured in terms of intensity, which describes the sound’s loudness and is measured in decibels (dB); frequency or pitch, which is measured in cycles per second or hertz; and duration. Human hearing is limited in the range of audible frequencies, being less sensitive to very low and very high frequencies than to medium frequencies that correspond with human speech. Sound level meters adjust for the weight the human ear gives to certain frequencies, applying a correction to each frequency range to approximate the human ear’s sensitivity within each range. This is called “A-weighting” and is commonly used in measurements of community environmental noise. The A-weighted decibel (dBA) is determined to be the most appropriate unit of measure for community noise.

Due to fluctuations in instantaneous noise levels over time, a single measurement called the equivalent sound level (L_{eq}) is often used to describe the time-varying character of community noise. L_{eq} is the energy-averaged A-weighted sound level during a measured time interval; it is equal to the level of a continuous, steady sound containing the same total acoustical energy over the averaging period as the actual time-varying sound.

A unit of measure (i.e., noise metric) for the cumulative effect of community noise is the community noise equivalent level (CNEL), which is a weighted average noise level for a 24-hour period. The CNEL is often used to describe the relationship of a continuous noise source, such as traffic, to the desirable ambient noise level (normal and existing noise level). The CNEL is adjusted to reflect the greater sensitivity to noise during evening and nighttime hours, with a 5 dB penalty assigned to noise between 7:00 p.m. and 10:00 p.m., and a 10 dB penalty assigned to noise between 10:00 p.m. and 7:00 a.m. A similar noise metric is the day/night average sound level (L_{dn}). Like the CNEL noise metric, the L_{dn} is a 24-hour average A-weighted sound level with a 10 dB penalty added to the nighttime hours from 10:00 p.m. to 7:00 a.m. Unlike the CNEL metric, the L_{dn} metric has no penalty for noise occurring between 7 p.m. and 10 p.m. Resulting values from application of L_{dn} versus CNEL rarely differ by more than 1 dB (see definition below); therefore, these two methods of describing average noise levels are often considered interchangeable.

To respond to the human ear's sensitivity to sound, the range of audible sounds exists on a logarithmic scale that takes into account the large differences in audible sound intensities. On this scale, for example, a 10 dB increase is normally perceived as a doubling of sound. A sound level of 0 dBA is approximately the threshold of human hearing. Normal speech has a sound level of approximately 60 dBA. Sound levels above approximately 120 dBA begin to be felt inside the human ear as discomfort and eventually as pain at slightly higher levels. The minimum change in the sound level of individual events that an average human ear can detect is approximately 3 dB.

There are three conceptual components to noise: the source, the transmission path, and the receiver. Noise can be reduced by lowering noise at its source; by lengthening or interrupting the transmission path through diversion, absorption, or dissipation; or by protecting the receiver through noise insulation. The most efficient and effective means of abating noise is to reduce noise at its source. The source noise can be controlled through regulation, such as following restrictions outlined in noise ordinances; muffling techniques; or soundproofing. The transmission path can be interrupted by creating a buffer between the source and the receiver, such as a noise wall, earth embankment, or building. The receiver can be protected from noise impacts through insulation, building orientation, or shielded areas.

Noise sources can be classified in two forms: (1) point sources, such as stationary equipment (e.g., pumps), and (2) line sources, such as a roadway with a large number of pass-by sources (e.g., motor vehicles). Sound generated by a point source typically diminishes (attenuates) at a rate of 6 dB for each doubling of distance from the source to the receptor. For example, a 60 dBA noise level measured at 50 feet from a point source would be 54 dBA at 100 feet from the source and 48 dBA at 200 feet from the source. Sound generated by a line source typically attenuates at a rate of 3 dB and 4.5 dB per doubling of distance from the source to the receptor for hard and soft sites, respectively. Typical sound levels generated by various activities are indicated in Table 4.5-1.

Table 4.5-1
Typical Sound Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110	Rock band
Jet fly-over at 1,000 feet		
	100	
Gas lawnmower at 3 feet		
	90	
Diesel truck at 50 feet at 50 miles per hour		Food blender at 3 feet
	80	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60	
		Large business office
Quiet urban daytime	50	Dishwasher next room
Quiet urban nighttime	40	Theater, large conference room (background)
Quiet suburban nighttime		
	30	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20	
		Broadcast/recording studio
	10	
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013.
Note: dBA = A-weighted decibels.

Sound levels can also be attenuated by built or natural barriers. Intervening noise barriers, such as solid walls or berms, typically reduce noise levels by 5 to 10 dB. Structures can also provide noise reduction by insulating interior spaces from outdoor noise. The exterior-to-interior noise attenuation provided by typical California building structures ranges from 15 to 25 dB with windows open and closed, respectively. Acoustically designed enclosures and buildings can provide up to approximately 50 dB of noise reduction, depending on the noise abatement treatments.

Vibration tolerance typically depends on the type of structures that are affected. Structural response to vibration is typically evaluated in terms of peak particle velocity, generally expressed in inches per second (in/sec). Peak particle velocity is often used since it is related to the stresses that are experienced by the buildings. Various general standards are contained in the International Standards Organization's Standards 3945, 4866, and 7626-1. Limits set by these standards indicate a low probability of structural damage occurring to common structures at a peak particle velocity of 2.0 in/sec. Older (and non-reinforced) masonry structures would have a limit of 0.75 to 1.0 in/sec (Caltrans 2004). The Federal Transit Administration identifies a vibration damage threshold criterion of 0.20 in/sec for non-engineered timber and masonry buildings (i.e., fragile buildings) or 0.12 in/sec for buildings extremely susceptible to vibration (i.e., fragile historic buildings) (FTA 2006).

4.5.1.2 Existing Noise Environment

The project site is bounded by North Berkeley Avenue to the east, parking lots to the north and west, and Nutwood Place to the south (Figure 4.5-1, Noise Measurement and Modeling Locations). Residences exist to the east of the project site, just east of North Berkeley Avenue, as well as to the northeast and southeast.

A sound level survey was conducted December 15 through December 18, 2017, to evaluate existing sound levels and assess potential project noise impacts on the surrounding area. Short-term (ST; 1 hour or less) attended sound level measurements were taken with Brüel & Kjær Type 2270 sound level meters, which conform to ANSI S.14-1961 for Type 1 precision sound level meters. Measurements were conducted using Brüel and Kjær Type 4189 microphones. Short-term sound levels were measured adjacent to three representative residences (ST1, ST2, and ST3) near the project site, as shown on Figure 4.5-1. Additionally, a long-term (LT; 3-day duration) noise measurement was conducted at the eastern project site boundary (LT1), also shown on Figure 4.5-1).

The sound measuring instrument used for the survey was set to the "slow" time response and the dBA scale for all noise measurements. To ensure accuracy, the laboratory calibration of the instrument was field checked before and after each measurement period using an acoustical calibrator. The accuracy of the acoustical calibrator is maintained through a program established through the manufacturer and traceable to the National Institute of Standards and Technology. The sound measurement instrument meets the requirements of ANSI Standard S 1.4-1983 and International Electrotechnical Commission Publications 804 and 651. In all cases, the microphone height was 5 feet above the ground and the microphone was equipped with a windscreen.

During the short-term field measurements, physical observations of the predominant noise sources were noted. The major noise source on the project site was vehicle traffic. Other secondary noise sounds included noise from aircraft, distant conversations, and other community noises. The results of the short-term sound level measurements are summarized in Table 4.5-2. As shown in Table 4.5-2, measured noise levels ranged from 67 dBA L_{eq} at ST2 to 70 dBA L_{eq} at ST1 when rounded to whole numbers, as is customary for community noise measurements.

Table 4.5-2
Short-Term Sound Level Measurement Results

Measurement Site	Description	Duration (Minutes)	L_{eq} (dBA)
ST1	Public right-of-way east of North Berkeley Avenue, west of single-family residential property at 621 Princeton Circle West	60	70
ST2	Public right-of-way east of North Berkeley Avenue, west of single-family residential property at 601 Princeton Circle West	20	67
ST3	Public right-of-way east of North Berkeley Avenue, west of empty lot to the south of 600 East Glenwood Avenue	20	69

Source: Veneklasen Associates 2018 (included in Appendix E).
Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels.

The results of the long-term noise measurements are summarized in Table 4.5-3.

Table 4.5-3
Long-Term Sound Level Measurement Results (December 15–18, 2017)

Measurement Site	Description	Measurement Dates	L_{eq} (dBA) Day/Night	L_{max}	L_{min}
LT1	East property line of existing Sherbeck Field on Fullerton College property on west side of North Berkeley Avenue	12/15/17–12/16/17 (Friday–Saturday)	66/58	70	53
		12/16/17–12/17/17 (Saturday–Sunday)	65/57	71	50
		12/17/17–12/18/17 (Sunday–Monday)	62/57	67	49

Source: Veneklasen Associates 2018 (included in Appendix E).
Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels; L_{max} = maximum instantaneous sound level; L_{min} = minimum instantaneous sound level.

Simultaneously measured sound levels at each of the measurement sites, as well as calculated sound level offset values, are shown in Table 4.5-4. Calculated hourly sound levels at each of the measurement locations using this offset are shown in Table 4.5-5. As shown in Table 4.5-5, the lowest hourly average daytime (7:00 a.m. to 10:00 p.m.) noise levels at ST1, ST2, and ST3 are 63, 63, and 65 dBA L_{eq}, respectively (shown in **bold**).

Table 4.5-4
Simultaneously Measured Existing Sound Levels and Offset Values

Measurement Site	Measured Sound Level (L_{eq} (dBA))		Offset (dB)
	Site LT1	*ST Sites*	
ST1	68	70	2
ST2	65	67	2
ST3	65	69	4

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels; dB = decibels; LT = long term; ST = short term.

Table 4.5-5
Residential Receptor Existing Sound Levels

Time of Day	Hourly Existing Sound Level at Corresponding Residential Receptor (L_{eq} (dBA))		
	ST1	*ST2*	*ST3*
00:00	57	57	59
01:00	55	55	58
02:00	55	55	57
03:00	53	53	55
04:00	55	55	57
05:00	59	59	61
06:00	61	61	63
07:00	65	65	67
08:00	64	64	66
09:00	65	65	67
10:00	66	67	69
11:00	66	66	68
12:00	66	66	68
13:00	66	66	68
14:00	68	68	70
15:00	68	68	70
16:00	67	67	69
17:00	66	66	68
18:00	65	65	67
19:00	64	64	66
20:00	**63**	**63**	**65**
21:00	65	65	67
22:00	62	62	64
23:00	60	60	62

Notes: L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibels.
bold = The lowest hourly average daytime (7:00 a.m. to 10:00 p.m.) noise levels

4.5.2 Regulatory Framework

Federal

The Noise Control Act of 1972 recognized the role of the federal government in dealing with major commercial noise sources that require uniform treatment. Because Congress has the authority to regulate interstate and foreign commerce, regulation of noise generated by such commerce also falls under congressional authority. The federal government specifically preempts local control of noise from aircraft, railroads, and interstate highways. The U.S. Environmental Protection Agency has identified acceptable noise levels for various land uses to protect the public with an adequate margin of safety and has established noise standards for interstate commerce.

The Department of Housing and Urban Development standards define day/night average sound levels (L_{dn}) for outdoors at less than 65 dBA as acceptable for residential areas. Outdoor levels up to 75 dBA L_{dn} may be acceptable, if there is appropriate insulation in buildings.

The Federal Interagency Committee on Noise (FICON) was initiated by Federal Aviation Administration (FAA) and Environmental Protection Agency (EPA) in 1991 to assess the noise impacts around airports. In 1992, FICON published its findings in a report entitled *Federal Agency Review of Selected Airport Noise Analysis Issues* (FICON 1992). FICON provided recommendations based upon studies that relate aircraft and traffic noise levels to the percentage of persons highly annoyed by the noise. Annoyance is a qualitative measure of the adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment.

The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of L_{dn} (see Section 4.5.1.1, Noise Concepts, for an explanation of the L_{dn} noise metric). The changes in noise exposure that are shown in Table 4.5-6 are expected to result in equal changes in annoyance at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are used in this analysis to define a substantial increase in community noise levels related to all transportation noise sources and permanent non-transportation noise sources.

Table 4.5-6
Measures of Substantial Increase for Community Noise Sources

Ambient Noise Level Without Project (L_{dn})	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels by:
<60 dBA	+ 5 dB or more
60–65 dBA	+ 3 dB or more
>65 dBA	+ 2 dB or more

Notes: L_{dn} = day/night average sound level; dBA = A-weighted decibels; dB = decibels.

State

California Code of Regulations Title 24

The pertinent noise regulations for California, as defined in the California Code of Regulations Title 24, Noise Insulation Standards, establish the acceptable interior environmental noise level (45 dBA L_{dn}) for multiple-family dwellings (which may be extended by local legislative action to include single-family dwellings). Guidance in the California Code of Regulations, Title 24, Section 65302(f) requires local land use planning jurisdictions to prepare a general plan. The Noise Element is a mandatory component of general plans. It may include general community noise guidelines developed by the California Department of Health Services and specific planning guidelines for noise/land use compatibility developed by the local jurisdiction. The state guidelines also recommend that the local jurisdiction consider adopting a local noise control ordinance. The California Governor's Office of Planning and Research developed State of California General Plan Guidelines, which include guidelines for community noise acceptability for use by local agencies (OPR 2017). Selected relevant levels are as follows (L_{dn} may be considered nearly equivalent to CNEL):

- CNEL below 60 dBA—normally acceptable for low-density residential use
- CNEL of 55 to 70 dBA—conditionally acceptable for low-density residential use
- CNEL below 65 dBA—normally acceptable for high-density residential use
- CNEL of 60 to 70 dBA—conditionally acceptable for high-density residential use, transient lodging, churches, and educational and medical facilities
- CNEL below 70 dBA—normally acceptable for playgrounds and neighborhood parks

"Normally acceptable" is defined as satisfactory for the specified land use, assuming that normal, conventional construction is used in buildings. "Conditionally acceptable" may require some additional noise attenuation or special study. Under most of these land use categories, overlapping ranges of acceptability and unacceptability are presented, leaving some ambiguity in areas where noise levels fall within the overlapping range.

California also regulates the noise levels of licensed motor vehicles traveling on public thoroughfares, sets noise limits for certain off-road vehicles and watercraft, and sets required sound levels for light-rail transit vehicle warning signals. The extensive state regulations pertaining to worker noise exposure are, for the most part, applicable only to the construction phase of any project (e.g., the California Occupational Safety and Health Administration's Occupational Noise Exposure Regulations (8 CCR 5095 et seq.)) or to workers in a central plant and/or maintenance facility or involved in the use of landscape maintenance equipment or heavy machinery.

California Energy Commission

The California Energy Commission, in their Staff Assessment Reports, has utilized an increase of greater than 10 dB above existing ambient noise levels as a threshold of significance under CEQA, for both operational and construction-related project noise levels (CEC 2012). This threshold is used in this analysis to define a substantial increase in community noise levels related to project-related construction.

Local

The proposed project is located within the City of Fullerton (City). The North Orange County Community College District (District) and Fullerton College are not subject to local plans, policies, or guidelines related to noise, so this analysis uses relevant policies from the local jurisdiction as guidance only.

City of Fullerton Municipal Code, Noise Control Ordinance

The City's Municipal Code addresses noise standards and regulations in Chapter 15.90 of its zoning code (Title 15). Chapter 15.90 establishes allowable hours for construction and exterior and interior noise standards. With the exception of emergency machinery or work, construction activities are allowable only Monday through Saturday, 7:00 a.m. to 8:00 p.m. Construction activities are prohibited on Sunday and on City-recognized holidays. Construction equipment, vehicles, and work for properties with residential zoning are exempt from the interior and exterior noise level standards shown in Table 4.5-7, provided that construction activities take place within the allowable time period (City of Fullerton 2001).

Table 4.5-7
City of Fullerton Noise Standards

Location	Sound Level (dBA)	Time Period
Exterior	55	7:00 a.m.–10:00 p.m.
	50	10:00 p.m.–7:00 a.m.
Interior	55	7:00 a.m.–10:00 p.m.
	45	10:00 p.m.–7:00 a.m.
It is unlawful for noise levels to exceed:		
a) Noise level standards for a cumulative period of more than 30 minutes within a 1-hour period		
b) Noise level standards plus 5 dB for a cumulative period of more than 15 minutes but less than 30 minutes within a 1-hour period		
c) Noise level standards plus 10 dB for a cumulative period of more than 5 minutes but less than 15 minutes within a 1-hour period		
d) Noise level standards plus 15 dB for a cumulative period of more than one minute but less than 5 minutes within a 1-hour period		
e) Noise level standards plus 20 dB for a cumulative period of less than one minute within a 1-hour period		

Source: City of Fullerton 2001.
Note: dBA = A-weighted decibel; dB = decibel.

Section 15.90.040, Activities Exempt from Standards, specifies activities that are exempt from sound level standards discussed in this chapter of the Fullerton Municipal Code. Item A-1 in this section specifies "[s]chool bands, school athletic and school entertainment events" as exempt activities. Item A-2 in this section specifies "[o]utdoor gatherings, public dances, shows and sporting and entertainment events provided the events are conducted pursuant to a permit and/or license issued by the city" as exempt activities. Item A-3 in this section specifies "[a]ctivities conducted on public parks, public playgrounds and public or private school grounds" as exempt activities.

Based on the Fullerton Municipal Code, the proposed project is exempt from City of Fullerton on-site operational noise standards due to the exemption in Section 15.90.040.A.1. However, sound levels from the proposed project have been analyzed to quantify the predicted sound levels at residential receptor locations in the vicinity of the project site with respect to the existing ambient sound levels at these receptors, and to estimate the potential for a substantial project-related noise increase relative to the ambient noise levels.

The Fullerton Plan

The Noise Element in The Fullerton Plan (the City's general plan; City of Fullerton 2012) ensures compliance with federal and state requirements through a comprehensive, long-range program of achieving acceptable noise levels throughout the City. The Noise Element identifies noise-generating uses and activities within City limits, primarily consisting of State Route 57, State Route 91, major and minor arterial roadways, and Fullerton Municipal Airport. The Noise Element also presents future noise contours so that the City can include noise impact considerations in development programs. Relevant policies within the Noise Element (City of Fullerton 2012) that could pertain to the proposed project include the following:

P8.3 Support projects, programs, policies and regulations which ensure noise-compatible land use planning.

P8.4 Support projects, programs, policies and regulations to control and abate noise generated by stationary sources.

P8.5 Support projects, programs, policies and regulations to evaluate ways to ensure noise-compatible land use planning as part of community-based planning of Focus Areas.

P8.6 Support projects, programs, policies and regulations to permit uses where the noise level of the surroundings-after taking into account noise insulation features and other control techniques of the use-is not detrimental to the use.

P8.7 Support projects, programs, policies and regulations to permit uses and/or activities where the noise generated by the use and/or activity is not detrimental or otherwise a nuisance to the surroundings.

Table 8 of the Noise Element, provided in this section as Table 4.5-8, describes the noise level ranges considered compatible within the City for various land use types. These standards are most frequently used to ensure suitability of new land uses (such as new residential developments), but may also be used to ensure that existing land uses do not exceed a threshold (i.e., from acceptable to unacceptable) as a result of construction of a nearby proposed project.

Table 4.5-8
Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure (dBA CNEL)			
	Normally Acceptable	*Conditionally Acceptable*	*Normally Unacceptable*	*Clearly Unacceptable*
Residential – Low-Density, Single-Family, Duplex, Mobile Homes	50–60	55–70	70–75	75–85
Residential – Multiple-Family	50–65	60–70	70–75	70–85
Transient Lodging – Motel, Hotels	50–65	60–70	70–80	80–85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50–70	60–70	70–80	80–85
Auditoriums, Concert Halls, Amphitheaters	N/A	50–70	N/A	65–85
Sports Arenas, Outdoor Spectator Sports	N/A	50–75	N/A	70–85
Playgrounds, Neighborhood Parks	50–70	N/A	67.5–77.5	72.5–85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50–70	N/A	70–80	80–85
Office Buildings, Business Commercial and Professional	50–70	67.5–77.5	75–85	N/A
Industrial, Manufacturing, Utilities, Agriculture	50–75	70–80	75–85	N/A

Source: Based on City of Fullerton 2012, Noise Element, Table 8.
Notes: dBA = A-weighted decibels; CNEL = community noise equivalent level; N/A = not applicable.
Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features have been included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Normally Unacceptable: New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made, and needed noise insulation features must be included in the design.
Clearly Unacceptable: New construction or development should generally not be undertaken.

4.5.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts related to noise are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.). According to Appendix G, a significant impact related to noise would occur if the project would:

1. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. Result in generation of excessive groundborne vibration or groundborne noise levels.
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

Threshold 3 was eliminated from further consideration in the Initial Study for the proposed project. The project site is not located within the planning area for Fullerton Municipal Airport or any other airport land use plan (ALUC 2005), and the proposed project is not located within the vicinity of a private airstrip. Therefore, people residing in or working at the proposed project site would not be exposed to excessive noise levels from an airport or a private airstrip. Impacts would be less than significant.

4.5.4 Impacts Analysis

Would the proposed project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Implementation of the proposed project would result in two primary types of potential noise impacts: short-term (i.e., temporary) noise during construction and long-term noise during operation of the facilities associated with the proposed project.

Short-Term Construction Noise

Construction of the proposed project would generate noise that could expose nearby receptors to elevated noise levels that may disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment, duration of the construction, distance between the noise source and receiver, and intervening structures. This section of the report discusses the noise levels calculated to result from construction of the project, at nearby sensitive receptors (i.e., residences, schools, churches, and parks).

It is anticipated that construction of the proposed project would take place over a period of approximately 4 months. During that time frame, the equipment in operation would include rubber-tired dozers, excavators, backhoes, graders, forklifts, compressors, paving equipment, and welders. The typical maximum noise levels for various pieces of construction equipment at a distance of 50 feet are presented in Table 4.5-9. Note that the equipment noise levels presented in Table 4.5-9 are maximum noise levels. Typically, construction equipment operates in alternating cycles of full power and low power, producing average noise levels less than the maximum noise level. The average sound level of construction activity also depends on the amount of time that the equipment operates and the intensity of the construction activities during that time.

Table 4.5-9
Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Saw	76
Dozer	85

Table 4.5-9
Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dBA) 50 Feet from Source
Backhoe	80
Air compressor	81
Generator	81
Compactor	82
Crane, mobile	83
Concrete mixer	85
Grader	85
Loader	85
Pneumatic tool	85
Paver	89
Roller	74
Truck	88

Source: FTA 2006.
Note: dBA = A-weighted decibel.

The maximum noise levels at 50 feet for typical equipment would range up to 89 dBA for the type of equipment normally used for this type of construction project, although the hourly noise levels would vary. Construction noise in a well-defined area typically attenuates at approximately 6 dB per doubling of distance. Project construction would take place at distances ranging from approximately 85 (the nearest area of project construction) to 250 feet (the approximate center of construction activity) from adjacent, existing noise-sensitive uses.

The Federal Highway Administration's Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at the nearest occupied noise-sensitive land uses. Although the model was funded and promulgated by the Federal Highway Administration, the RCNM is often used for non-roadway projects, because the same types of construction equipment used for roadway projects are also used for other project types. Input variables for the RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two graders, a loader, a tractor), the duty cycle for each piece of equipment (e.g., percentage of hours the equipment typically works per day), and the distance from the noise-sensitive receiver. No topographical or structural shielding was assumed in the modeling. The RCNM has default duty-cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty-cycle values were used for this noise analysis.

Using the Federal Highway Administration's RCNM and construction information (types and number of construction equipment by phase), the estimated noise levels from construction were calculated for a representative range of distances, as presented in Table 4.5-10. The RCNM inputs and outputs are provided in Appendix E.

Table 4.5-10
Construction Noise Modeling Results Summary

Construction Phase	L_{eq} (dBA)	
	Nearest Source-Receiver Distance (Approximately 85 Feet)	*Typical Source-Receiver Distance (Approximately 250 Feet)*
Demolition	76	71
Site preparation	77	72
Trenching	75	68
Building construction	73	70
Paving	79	73
Architectural coating	69	68

L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibel.

As shown in Table 4.5-10, noise levels when construction takes place near the eastern side of the project site are estimated to range from approximately 69 to approximately 79 dBA L_{eq} at nearby residences. This represents a temporary increase in noise levels of up to 12 dB, compared to measured ambient noise levels.[1] The loudest construction phases would be during project site paving and site preparation. More typically, construction noise levels are estimated to range from approximately 68 to 73 dBA L_{eq}.

Fullerton College is part of a state agency subject to building permit approvals by the Division of the State Architect, but the City's Noise Control Ordinance provides guidance regarding normal hours for construction activities (Monday through Saturday, 7:00 a.m. to 8:00 p.m.) (City of Fullerton 2001). As part of the standard construction procedures for the project, the District would limit construction activities to those hours set by the City's Noise Control Ordinance. No construction activities are expected on Sundays or on City-recognized holidays, and construction would not occur after 8:00 p.m. on Mondays through Saturdays. Accordingly, the proposed project would not result in generation of noise levels in excess of standards established in the City's Noise Control Ordinance or other applicable noise standards.

However, the proposed project would generate noise from construction that would be audible and would temporarily elevate the local ambient noise level at locations within several hundred feet of construction. In addition, the predicted temporary increase in the ambient noise level would exceed the CEC threshold of 10 dB; therefore, impacts are considered potentially significant. In an effort to avoid construction noise impacts, Mitigation Measure (MM) NOI-1 (see Section 4.5.5, Mitigation Measures) is required to control construction noise to the extent practicable and feasible.

With implementation of MM-NOI-1, construction noise impacts would be less than significant. No additional mitigation is required for construction activities.

[1] As shown in Table 4.5-2, measured daytime ambient noise levels ranged from 67 to 70 dBA L_{eq}; 79 dBA L_{eq} minus 67 dBA L_{eq} represents a difference of 12 dB.

Long-Term Operational Noise

Potential operational noise impacts associated with the proposed project would include periodic increases in on-site noise resulting from the proposed improvements to Sherbeck Field (see Chapter 3, Project Description, for a detailed description of the proposed project). The other potential operational noise impact associated with the proposed project would consist of off-site traffic noise. Each of these is addressed below.

On-Site Noise Impacts

A detailed analysis of noise from on-site activities associated with the proposed project was conducted (Veneklasen Associates 2018; included in Appendix E to this environmental impact report (EIR)). The Brüel & Kjær Predictor acoustical modeling software was used to create an acoustical model of the proposed project site and surrounding project area. The resulting model was used to evaluate and quantify sound levels generated by the proposed project and their impact on nearby residential receptors. The selected calculation method for this project was LimA – International Organization for Standardization (ISO) 9613.1/2. The detailed report is included in Appendix E.

Acoustical models were generated for projected crowd noise, on-field/sideline noise, projected noise levels from the proposed speaker system, and existing traffic noise in the project area. The acoustical model includes shielding and reflections generated by buildings, walls, and other structures in the area. The noise model also includes terrain elevation data.

Crowd Noise and On-Field/Sideline Noise. A variety of measured data sets (from previous projects) were used to determine the average sound levels generated by crowds at sporting events. The data was then normalized for both measured distance and crowd size. The analysis also used measurement data collected for the Harvard-Westlake Middle School (located in Los Angeles, California) Campus Modernization Project Draft Noise Assessment Technical Report, prepared by PCR Services Corporation in January 2004 (as cited in Veneklasen Associates 2018). These data sets were normalized to obtain the sound power (source sound level) characteristics of a crowd of 4,200 spectators. The noise model was generated using a crowd size of 2,725 people on the home side bleachers and 1,475 people on the visitors' side bleachers (95% maximum capacity on both sides). This is well above the anticipated attendance of 1,600 attendees for a regular season football game and 3,000 attendees for a playoff game (Saghieh, pers. comm. 2017). The acoustical model additionally included 300 total people (150 home and 150 visitors) at grade elevation on the field sidelines, to evaluate noise exposure from players, coaches, and referees.

Speaker/PA System Noise. The speaker/public address (PA) system for the Sherbeck Field project was designed by PlanNet, and used speaker arrays designed by L-Acoustics Inc. Speaker design models and other associated information were provided in a Soundvision audio/visual model. Speaker locations and orientations were incorporated into the Predictor acoustical model for evaluation of sound level exposure. Seven speaker arrays were specified on the home sideline to the south (including the press box), at a height of approximately 36 feet above grade elevation (33 feet above grade for the press box speaker array). Five speaker arrays were specified on the visitors' sideline to the north, at a height of approximately 33 feet above grade elevation. The directivities of both speaker arrays were determined using the EASE audio/visual model, using inputs on each speaker type provided by L-Acoustics.

Reference sound levels from various sources were used to evaluate sound level exposure through the PA system, including sound level spectra for rock music and for human speech. Both spectra were normalized to a sound level (sound pressure level, or L_p) of 91 dBA in the bleachers, which is 10 dB above the level generated by the crowd at an identical location. Using the reference sound levels for both music and speech over the PA system, a composite time-weighted sound power level for the PA system was determined. The reference sound power level spectra for both PA music and speech were weighted with respect to time, to determine the maximum average hourly contribution of each noise source. The two time-weighted spectra were combined to determine the composite time-weighted maximum average hourly noise level contribution of each array of the PA system.

Existing Ambient (Traffic) Noise. Using the measured sound levels previously described, an acoustical model was generated to evaluate the existing sound level from traffic at each residential receptor in the project area (for comparison with predicted on-site project noise). The measured sound level spectrum measured at site ST1 (nearest to North Berkeley Avenue, along the residential property line) was normalized to the quietest measured hour at site LT1. Using this procedure, the existing quietest hour due to traffic noise was calculated.

Combined Project Noise. These acoustical models were combined to generate the combined on-site predicted maximum hourly sound levels generated by the proposed project. Existing quietest hourly sound levels, predicted sound levels due to the crowd, predicted sound levels due to the proposed speaker system, combined sound levels, and maximum future sound level increase are shown in Table 4.5-11 for the nearest residences, located east of the project site, along the east side of North Berkeley Avenue.

Table 4.5-11
Property Line Maximum Hourly Sound Exposure Level Results

Receptor	Existing Sound Level (L_{eq} (dBA))[a]	Predicted Sound Levels (L_{eq} (dBA))			Combined Future Sound Level (L_{eq} (dBA))	Sound Level Increase (dB) Due to Crowd and PA System Total
		Crowd	*PA System*	*Total*		
601 East Glenwood Avenue	62	62	67	69	69	7
600 East Glenwood Avenue	62	63	67	68	69	7
637 Princeton Circle West	62	65	71	72	72	10
633 Princeton Circle West	63	66	74	74	75	12
629 Princeton Circle West	63	66	73	74	74	11
625 Princeton Circle West	63	67	74	75	75	12
621 Princeton Circle West	63	67	75	76	76	13
617 Princeton Circle West	63	68	75	76	76	13
613 Princeton Circle West	63	68	74	75	75	12
609 Princeton Circle West	63	68	74	75	75	12
605 Princeton Circle West	63	66	71	73	73	10
601 Princeton Circle West	63	67	71	72	73	10
545 Princeton Circle West	63	64	67	69	70	7

L_{eq} = equivalent continuous sound level (time-averaged sound level); dBA = A-weighted decibel; dB = decibel; PA = public address.
[a] Existing sound level on receptor property was calculated using an acoustical model for North Berkeley Avenue, calibrated to minimum hourly sound level, as measured on site.

Quantitative sound level results shown are at the property line location closest to the project site at a height of 5 feet above grade. Any potential noise reduction from existing property line walls was omitted in order to attain a conservative noise analysis. For the majority of residential receptors in the study area, there is a 4-foot-high property line wall between the residential property and the public right-of-way. Each receptor location is therefore approximately 1 foot above the top of this property line wall. Therefore, noise reduction from such walls would be minimal.

As Table 4.5-11 shows, the primary on-site noise source would be from the proposed PA system. Combined sound levels range from approximately 69 dBA L_{eq} at residences to the northeast of the project site, to approximately 76 dBA L_{eq} at the nearest residences, due east of the proposed project site. Compared to the existing modeled noise levels, the periodic sound level increase at the nearby residences would range from approximately 7 to 13 dB.[2]

Based on the Fullerton Municipal Code, the proposed project is exempt from City on-site operational noise standards (shown in Table 4.5-7) due to the exemption in Section 15.90.040.A.1 of the Noise Ordinance. Therefore, the standards provided in the Noise Ordinance are not applicable. However, the

2 The noise levels reflect a conservative analysis for the anticipated approximately five regular and up to two playoff football games per year that would be held at Sherbeck Field.

periodic increase in noise of up to 13 dB is considered a substantial noise increase based on the FICON guidance as described in Section 4.5.2, and as shown in Table 4.5-6. Therefore, the on-site operational noise associated with the project would be a significant noise impact.

Various mitigation measures were considered, including noise barriers on the project property line, the proposed bleachers, and at the residential property line, and were determined to be either ineffective or infeasible.[3] Other potential mitigation measures included a focused PA speaker system and reduced seating capacity, which were determined to result in overall noise reductions of between 3 and 6 dB. Such scenarios would not reduce the periodic noise increases to a level of less than significant.[4] A reduced project alternative is considered in Chapter 6, Alternatives. Alternative speaker placement (i.e., in front of the grandstands) was investigated but was found to be infeasible because proper placement of these loudspeakers would require installation in the center of the proposed track. The analysis also indicated no significant sound level reductions would be afforded by this option. To reduce operational noise impacts, the District would restrict field event times at Sherbeck Field in accordance with MM-NOI-2. However, this would not reduce noise levels during Fullerton College-hosted events to a less than significant level. Therefore, the on-site operational noise from the proposed project is considered to be a significant unavoidable adverse impact.

Off-Site Noise Impacts

Potential noise effects from vehicular traffic associated with a variety of project-related operational scenarios were assessed using the Federal Highway Administration's TNM Version 2.5 (FHWA 2004). Data used to model noise from vehicular traffic was derived from the project-specific traffic impact analysis report prepared by Linscott, Law and Greenspan in 2018 (see Appendix F). Information used in the model consisted of project geometry, traffic volumes (aggregated turn movements), and speeds (posted speed limits) for the following scenarios:

- Existing Weekday PM Peak Hour
- Existing plus Project Weekday PM Peak Hours
- Existing Saturday Arrival Hours
- Existing Saturday Plus Project Arrival Hours

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3 Due to the height of the speakers and grandstands, noise barrier walls to shield these sources would need to be constructed to a very high elevation to provide acoustic shielding to residential receptors, as speaker arrays and the top row of the crowd are located at elevations of 30 feet above grade. Similarly, noise barrier walls on the bleachers would likely add significant structural weight for little acoustic benefit, and are therefore also not considered feasible.

4 As shown in Tables 6 through 13 of the Veneklasen Associates report (see Appendix E), the increase in combined (or cumulative) noise compared to existing would be up to 11 dB under these alternative scenarios.

- Existing Saturday Departure Hours
- Existing Saturday Plus Project Departure Hours
- Year 2030 Weekday PM
- Year 2030 Plus Project Weekday PM
- Year 2030 Saturday Arrival Hours
- Year 2030 Plus Project Saturday Arrival Hours
- Year 2030 Saturday Departure Hours
- Year 2030 Plus Project Saturday Departure Hours

Noise levels were modeled at representative noise-sensitive receivers. The receivers were modeled to be 5 feet above the local ground elevation. TNM modeling input and output files are provided in Appendix E.

Fourteen receivers (M1 through M14) represented existing off-site residences or other noise-sensitive land uses (in this instance, a school (Fullerton Union High School) and a park (Byerrum Park). All 14 of these receptors are adjacent to arterial roadways in the proposed project area, along which project-related traffic is anticipated to travel (see Figure 4.5-2, Traffic Noise Modeling Locations). Traffic volumes were obtained from the traffic study conducted for the proposed project site for the scenarios listed above, and used to model noise levels under those scenarios. Traffic noise impacts were calculated by comparing the various Existing baseline conditions, Existing Plus Project, Year 2030 Without Project, and Year 2030 With Project traffic scenarios.

The information provided from this modeling was compared to the noise impact significance criteria to assess whether project-related traffic noise would cause a significant impact, and, if so, where. The results of the comparisons for the existing scenarios are presented in Table 4.5-12. The results of the comparisons for the Year 2030 scenarios are presented in Table 4.5-13.

As shown in Table 4.5-12, typical existing weekday PM noise levels would not increase as a result of the proposed project. This is because additional project trips associated with the proposed weekday activities (i.e., academic instruction and practice) would be relatively few in number. On the Saturdays on which football games would take place, greater numbers of vehicle trips would be generated during the approximately 2 hours of arrival time (generally in the late morning/early afternoon hours) and 2 hours of departure time (generally in the late afternoon hours). As shown, during these periods, project-related peak-hour traffic noise levels are predicted to increase approximately 0 to 6 dB, depending on the location. The higher traffic noise increases would occur at receivers near the project site (primarily M1 through M4), along the east side of North Berkeley Avenue. Periodic changes in the traffic noise level of 5 to 6 dB are considered clearly audible. At receivers located along arterials more distant from the project site, project-related peak-hour traffic noise levels would increase by 0 to 2 dB. Changes in noise level of this order are typically not audible, in the context of the community noise environment (i.e., outside of a listening laboratory or similar controlled condition).

The results for the Year 2030 scenarios are similar to those for the existing cases. As shown in Table 4.5-13, typical Year 2030 weekday PM noise levels would not increase as a result of the proposed project. This is because additional project trips associated with the proposed weekday activities (i.e., academic instruction and practice) would be relatively few in number. On the Saturdays on which football games would take place, greater numbers of vehicle trips would be generated during the approximately 2 hours of arrival time (generally in the late morning/early afternoon hours) and 2 hours of departure time (generally in the late afternoon hours). As shown, during these periods, project-related peak-hour traffic noise levels are predicted to increase approximately 0 to 5 dB, depending on the location. The higher traffic noise increases would occur at receivers near the project site (primarily M1 through M4), along the east side of North Berkeley Avenue. Periodic changes in the traffic noise level of 5 dB are considered to be clearly audible. At receivers located along arterials more distant from the project site, project-related peak-hour traffic noise levels would increase by 0 to 2 dB. Changes in noise level of this order are typically not audible, in the context of the community noise environment (i.e., outside of a listening laboratory or similar controlled condition).

Because the project-related traffic noise increases are predicted to occur for relatively short periods (for the 2 hours prior to and 2 hours after the games), these increases would not result in a significant change in the overall 24-hour noise levels. The maximum periodic traffic noise of 6 dB would result in a 1 dB or less increase in terms of the CNEL noise level. Nonetheless, based on the FICON thresholds for increases in community noise (discussed in Section 4.5.3 and shown in Table 4.5-6), the periodic noise increase (in terms of hourly average (L_{eq})) at residences along the east side of North Berkeley Avenue between East Chapman Avenue and North Lemon Street is considered substantial. Because the project would result in periodic noise level increases of up to 6 dB, this is considered a significant unavoidable adverse impact.

Table 4.5-12
Modeled Traffic Noise With and Without Project – Existing Scenarios (L_{eq} (dBA))

Representative Noise Receiver	Existing Weekday PM	Existing Plus Project Weekday PM	Difference (dB)	Existing Saturday Arrival	Existing Saturday Plus Project Arrival	Difference (dB)	Existing Saturday Departure	Existing Saturday Plus Project Departure	Difference (dB)
M1 – Residences east of project site; adjacent to North Berkeley Avenue	67	67	0	64	66	**2**	63	67	**4**
M2 – Residences northeast of project site; adjacent to North Berkeley Avenue	67	67	0	65	66	1	63	66	**3**
M3 – Residences southeast of project site; adjacent to North Berkeley Avenue	68	68	0	63	68	**5**	62	68	**6**
M4 – Residences north of project site; adjacent to North Berkeley Avenue	55	55	0	53	54	1	51	54	3
M5 – Residences northwest of project site; adjacent to North Lemon Street	61	61	0	59	59	0	58	58	0
M6 – Residences northwest of project site; adjacent to North Lemon Street and North Berkeley Avenue	67	67	0	64	65	1	63	64	1
M7 – Residences northwest of project site; adjacent to North Berkeley Avenue	60	60	0	56	57	1	55	56	1
M8 – Residences south of project site; adjacent to North Berkeley Avenue	57	57	0	52	53	1	52	53	1
M9 – Residences southwest of project site; adjacent to East Chapman Avenue	65	65	0	63	64	1	63	64	1
M10 – Residences southwest of project site; adjacent to North Lemon Street	65	65	0	62	63	1	62	63	1
M11 – Park southeast of project site; adjacent to North Chapman Avenue	68	68	0	65	66	1	64	66	2
M12 – Residences east of project site; adjacent to North Raymond Avenue	64	64	0	61	62	1	61	62	1
M13 – Residences southeast of project site; adjacent to North Raymond Avenue	62	62	0	58	60	2	58	60	2
M14 – School southwest of project site; adjacent to East Chapman Avenue	67	67	0	64	66	2	64	66	2

Sources: FHWA 2004; Appendix E.
Notes: L_{eq} = equivalent noise level; dBA= A-weighted decibel; dB = decibel. **Bolded** numbers indicate a substantial noise increase based on FICON noise recommendations (shown in Table 4.5-6). Traffic noise levels are rounded to the nearest whole numbers.

Table 4.5-13
Modeled Traffic Noise With and Without Project – Year 2030 Scenarios (L_{eq} (dBA))

Representative Noise Receiver	2030 Weekday PM	2030 Plus Project Weekday PM	Difference (dB)	2030 Saturday Arrival	2030 Plus Project Saturday Arrival	Difference (dB)	2030 Saturday Departure	2030 Plus Project Saturday Departure	Difference (dB)
M1 – Residences east of project site; adjacent to North Berkeley Avenue	68	68	0	65	67	**2**	64	67	**3**
M2 – Residences northeast of project site; adjacent to North Berkeley Avenue	68	68	0	65	67	**2**	64	67	**3**
M3 – Residences southeast of project site; adjacent to North Berkeley Avenue	69	69	0	64	69	**5**	64	69	**5**
M4 – Residences north of project site; adjacent to North Berkeley Avenue	56	56	0	53	55	2	52	54	2
M5 – Residences northwest of project site; adjacent to North Lemon Street	61	61	0	59	59	0	59	59	0
M6 – Residences northwest of project site; adjacent to North Lemon Street and North Berkeley Avenue	67	67	0	65	65	0	64	65	1
M7 – Residences northwest of project site; adjacent to North Berkeley Avenue	60	60	0	57	58	1	56	57	1
M8 – Residences south of project site; adjacent to North Berkeley Avenue	58	58	0	54	54	0	54	54	0
M9 – Residences southwest of project site; adjacent to East Chapman Avenue	67	67	0	65	66	1	65	66	1
M10 – Residences southwest of project site; adjacent to North Lemon Street	66	66	0	64	64	0	63	64	1
M11 – Park southeast of project site; adjacent to North Chapman Avenue	69	69	0	67	68	1	67	68	1
M12 – Residences east of project site; adjacent to North Raymond Avenue	65	65	0	62	63	1	62	63	1
M13 – Residences southeast of project site; adjacent to North Raymond Avenue	63	63	0	60	61	1	60	61	1

Table 4.5-13
Modeled Traffic Noise With and Without Project – Year 2030 Scenarios (L_{eq} (dBA))

Representative Noise Receiver	2030 Weekday PM	2030 Plus Project Weekday PM	Difference (dB)	2030 Saturday Arrival	2030 Plus Project Saturday Arrival	Difference (dB)	2030 Saturday Departure	2030 Plus Project Saturday Departure	Difference (dB)
M14 – School southwest of project site; adjacent to East Chapman Avenue	68	68	0	66	67	1	66	67	1

Source: FHWA 2004; Appendix E.
Notes: dBA= A-weighted decibel; L_{eq} = equivalent noise level; dB = decibel. **Bolded** numbers indicate a substantial noise increase based on FICON noise recommendations (shown in Table 4.5-6). Traffic noise levels are rounded to the nearest whole numbers.

Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Construction activities that might generate excessive groundborne vibration or groundborne noise could cause a potentially significant impact. Groundborne vibration information related to construction activities has been collected by the California Department of Transportation. This information indicates that continuous vibrations with a peak particle velocity of approximately 0.1 in/sec begin to annoy people (Caltrans 2004). Groundborne vibration is typically attenuated over short distances. The closest residences to the demolition/construction areas would be approximately 85 feet away. More typically, residential land uses would be located approximately 250 feet or more from demolition and construction activities. The heavier pieces of construction equipment, such as large bulldozers and loaded trucks, would have peak particle velocities of approximately 0.089 in/sec or less at a distance of 25 feet (FTA 2006). At a distance of 85 feet and beyond, the peak particle velocity with the anticipated construction equipment would be approximately 0.014 in/sec or less. At 250 feet, the peak particle velocity with the anticipated construction equipment would be approximately 0.003 in/sec. Thus, vibration levels from demolition and construction activities would be below 0.1 in/sec at the adjacent residences. Vibration is very subjective, and some people may be annoyed at continuous vibration levels near the level of perception (or approximately a peak particle velocity of 0.01 in/sec). However, construction activities are not anticipated to result in continuous vibration levels that typically annoy people; therefore, the vibration impact would be less than significant.

Pile driving, blasting, or other special construction techniques are not anticipated to be used for construction of the proposed project; therefore, excessive groundborne vibration and groundborne noise would not be generated. Additionally, groundborne vibration would not be associated with the proposed project following construction activities and no impacts related to excessive groundborne vibration would occur.

4.5.5 Cumulative Analysis

Non-transportation noise sources (e.g., project operation) and construction noise impacts are typically project-specific and highly localized (i.e., these do not generally affect the community noise level at distances beyond several hundred feet). Construction activities associated with proposed or future development within the area would contribute to cumulative noise levels, but in a geographically limited and temporary manner. As other development occurs in the area, noise from different types of uses (e.g., traffic, aircraft, fixed noise sources) would continue to combine, albeit on a localized basis, to cause increases in overall background noise conditions within the area. As a result, such sources do not significantly contribute to cumulative noise impacts at distant locations and are not evaluated on a cumulative level.

As shown in Table 4.5-13, the proposed project's traffic-related impacts on a regular basis (i.e., weekdays) would result in a 0 dB increase (rounded to whole numbers) along adjacent roadways. Periodically (on game days), traffic and on-site activity noise levels are anticipated to result in substantial noise increases. These increases may be additive to other cumulative project noise. Therefore, the increase in noise associated with cumulative traffic and on-site activities would be cumulatively considerable and significant.

4.5.6 Mitigation Measures

Section 15126.4 of the CEQA Guidelines requires EIRs to describe feasible measures to minimize significant adverse impacts. The following mitigation measure has been evaluated for feasibility and is incorporated to reduce potentially significant impacts related to increases in noise levels from construction of the proposed project and operation (permanent impacts) at the project site.

MM-NOI-1 Prior to initiation of construction on the Fullerton College campus, the North Orange County Community College District shall approve a construction noise mitigation program to include the following:

- Construction equipment shall be properly outfitted and maintained with feasible noise-reduction devices to minimize construction-generated noise.
- Stationary noise sources such as generators shall be located away from noise-sensitive land uses if feasible.
- Laydown and construction vehicle staging areas shall be located away from noise-sensitive land uses if feasible.
- A temporary construction noise barrier shall be constructed at the eastern boundary of the project site. The noise barrier shall be a minimum of 8 feet in height, must have a surface density of at least 4 pounds per square foot, and be free of openings and cracks.
- Whenever possible, academic, administrative, and residential areas that will be subject to construction noise shall be informed 1 week before the start of construction.
- All construction pursuant to the proposed project shall be required to implement the above measures for control of construction noise.

MM-NOI-2 The Fullerton College Athletic Department shall require the Facilities Department and any rental agreements to restrict field events at Sherbeck Field to occur only during the following times:

- Spring Semester: Monday through Thursday between 6:00 a.m. to 9:15 p.m.; Friday between 6:00 a.m. to 8:00 p.m.; Saturday and Sunday between 8:00 a.m. to 8:00 p.m.

- Summer Semester: Monday through Thursday between 6:00 a.m. to 9:15 p.m.; Friday between 6:00 a.m. to 8:00 p.m.; Saturday and Sunday between 8:00 a.m. to 8:00 p.m.
- Fall Semester: Monday through Thursday between 6:00 a.m. to 9:15 p.m.; Friday between 6:00 a.m. to 8:15 p.m.; Saturday and Sunday between 8:00 a.m. to 8:00 p.m. (with the exception of up to two Fullerton College football games per year from 7:00 p.m. to 10:00 p.m.).
- Third-party rentals will also be required to use the College's PA system during the rental period.

4.5.7 Level of Significance After Mitigation

Construction Noise

Effectiveness of mitigation measure MM-NOI-1 would vary from several decibels (which in general is a relatively small change) to 10 or more decibels (which subjectively would be perceived as a substantial change), depending upon the specific equipment and the original condition of that equipment, the specific locations of the noise sources and the receivers, etc. Installation of more effective silencers could range from several decibels to well over 10 dB. Installation of the temporary noise barrier would provide a minimum of 6 dB of noise reduction, based upon barrier insertion loss calculations (provided in Appendix E). Cumulatively, these measures would result in substantial decreases in the noise from construction, and the temporary noise increase compared to the ambient noise levels would be less than 10 dB. With implementation of MM-NOI-1, short-term construction impacts associated with exposure of persons to or generation of noise levels in excess of established standards would be less than significant.

Operational Noise

The proposed project would implement MM-NOI-2 to limit operational noise impacts. However, noise impacts associated with periodic operation of the proposed project would remain as significant unavoidable adverse impacts.

4.5.8 References

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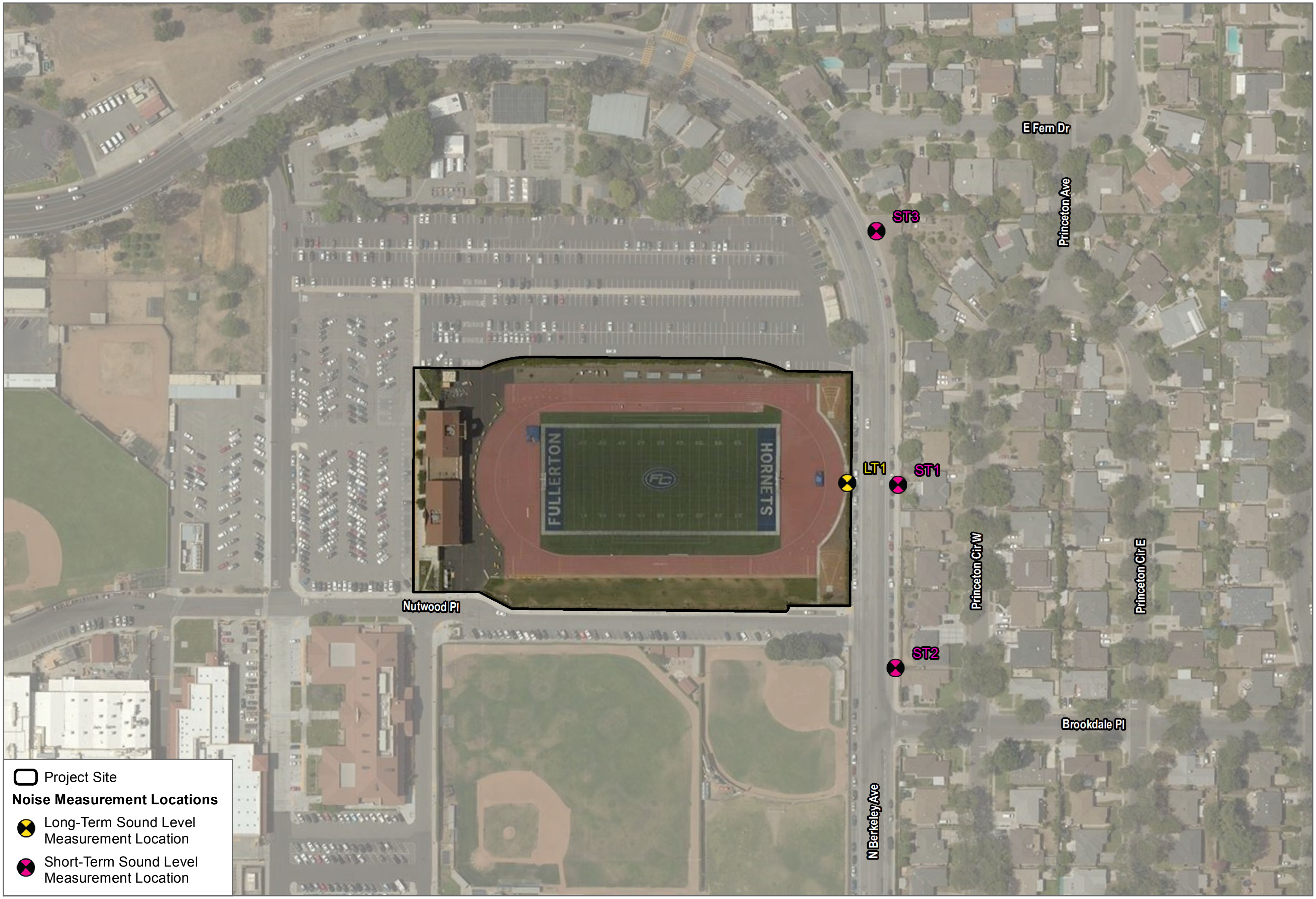

SOURCE: Bing Maps 2018

DUDEK

0 100 200 Feet

FIGURE 4.5-1

Noise Measurement Locations

Sherbeck Field Improvements Project Draft Environmental Impact Report

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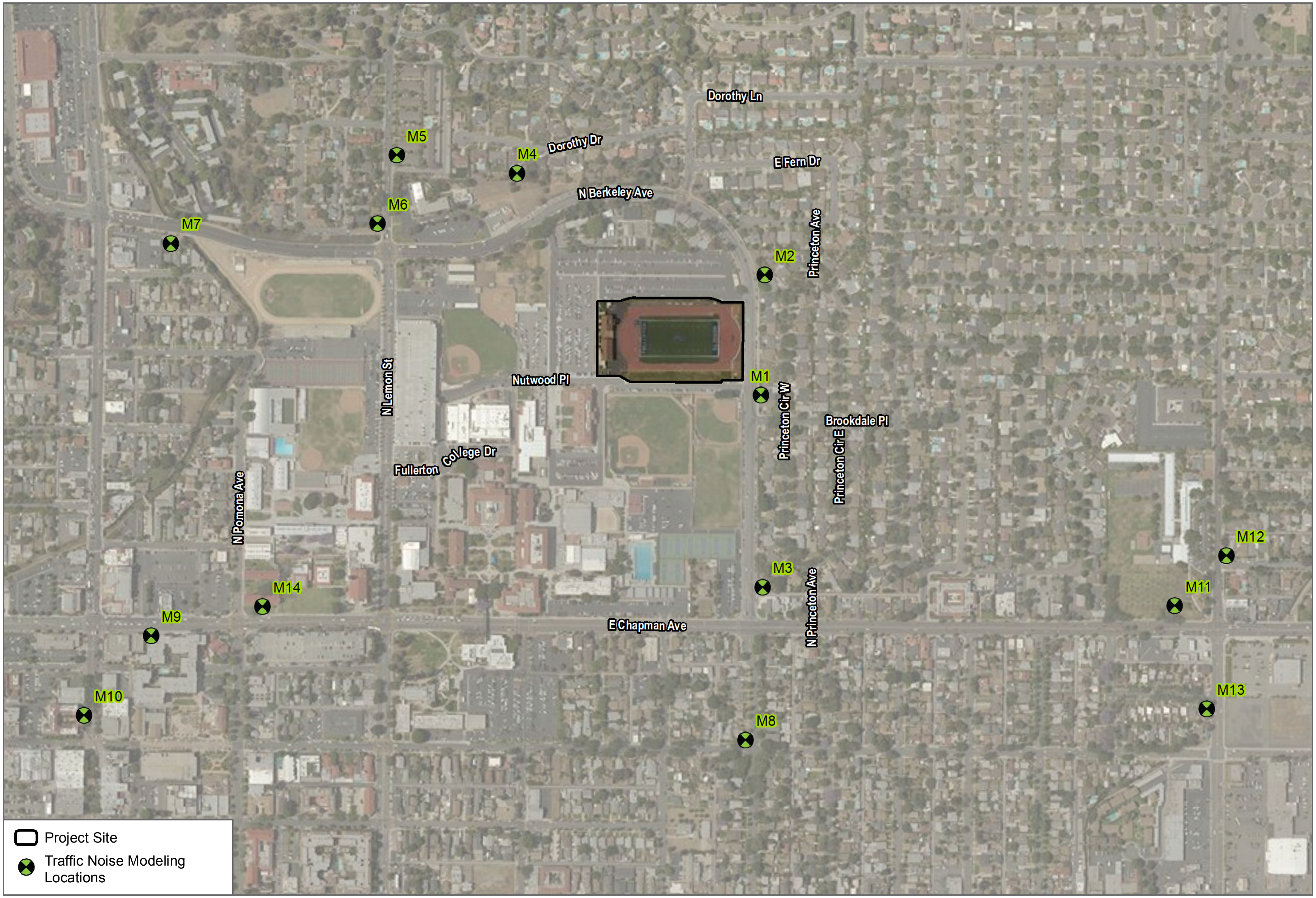

SOURCE: Bing Maps 2018

DUDEK

0 250 500 Feet

FIGURE 4.5-2

Traffic Noise Modeling Locations

Sherbeck Field Improvements Project Draft Environmental Impact Report

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4.6 PUBLIC SERVICES

This section describes the existing conditions with regard to fire protection and emergency medical response and police protection services within the project site and vicinity. This section also identifies associated regulatory requirements, evaluates the potential impacts, and identifies mitigation measures, if applicable, related to implementation of the proposed Sherbeck Field Improvements Project (proposed project).

4.6.1 Existing Conditions

The following information is based on communications with individuals from the Fullerton Fire Department, the Fullerton Police Department, the Orange County Fire Authority (OCFA), and the Orange County Sheriff's Department (OCSD). Online resources such as annual safety and security reports from Fullerton College Campus Safety Department (Campus Safety Department), the Fullerton Fire Department, and the Fullerton Police Department were also used.

The proposed project is located within the City of Fullerton, and as such, events occurring on the project site would be within the jurisdiction of the Fullerton Fire Department and the Fullerton Police Department. Under the existing conditions, Fullerton College football games occur at Yorba Linda High School (19900 Bastanchury Road, Yorba Linda, California 92886) within OCFA and OCSD jurisdiction. The Fullerton Fire Department and Fullerton Police Department do not provide coverage for games outside of the City of Fullerton boundaries. Additionally, Fullerton College Campus Safety does not provide coverage for off campus events. In case of emergency, OCSD personnel are dispatched to Yorba Linda High School (Giles, pers. comm. 2018).

4.6.1.1 Emergency Response

Fullerton College Campus Safety Department

The Campus Safety Department is the first responder to emergency calls made on campus. If a call regarding a medical emergency is received and additional assistance is required, the Campus Safety Department will coordinate with the Fullerton Fire Department and the Fullerton Police Department. In all cases where an incident requires additional assistance, the Campus Safety Department will coordinate with either the Fullerton Fire Department and the Fullerton Police Department, or both, depending on the type of emergency. The Campus Safety Department would contact either the Fullerton Fire Department or Fullerton Police Department directly by dialing 911. Campus Safety Officers are non-sworn and enforce parking regulations, college regulations, and board policy (Fullerton College 2018a).

The Campus Safety Office is located in Safety Building 1500 on the eastern portion of campus, south of the existing student parking structure and north of Media Services/Academic Computing/

Maintenance and Operation Shops Building 2300. Emergency cell boxes are located throughout the campus and will connect the caller directly to Campus Safety. In the event of a major emergency on campus, the Incident Command Center (ICC) will be activated at the Campus Safety Office and the Office-In-Charge will assume command. The Campus Safety Department operates 24 hour a day, 7 days a week (Fullerton College 2018a).

As required by the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, codified at 20 U.S.C. 1092(f) as a part of the Higher Education Act of 1965, Fullerton College publishes its Annual Security Report every year. Table 46-1 presents a summary of these statistics (presented annually) for 2017.

Table 4.6-1
Fullerton College Campus Safety Authority Annual Statistics (2017)

Category	Number of Incidents – On Campus (2017)
Crimes	
Murder/non-negligent manslaughter	0
Negligent manslaughter	0
Forcible sex offenses	1
Rape	0
Fondling	0
Non-forcible sex offenses	0
Arson	0
Robbery	0
Aggravated assault	0
Burglary	0
Motor vehicle theft	2
Domestic violence	1
Dating violence	0
Sexual assault	1
Stalking	0
Special Category Arrest	
Weapons possession	0
Drug abuse violation	0
Liquor laws	0
Hate crimes	0
Arrests and Disciplinary Referrals	
Violations of weapons	0
Violations of drugs	1
Violations of liquor laws	1
Total	**7**

Source: Fullerton College 2018a

Fire Protection

The Campus Safety Department would contact the Fire Department during a fire or medical emergency on campus by calling 911. During a fire or medical emergency at Sherbeck Field, the first-in station would be Fire Station 1 (located at 312 East Commonwealth Avenue, Fullerton, California 92832). If the Fire Station 1 crew were present at their station during the time of the call they would be the first-use responder. The back-up responder would be Station 3 (located at 700 South Acacia Avenue, Fullerton, California 92831) (Ramirez, pers. comm. 2018). Fire Station 1 is located approximately 0.5 miles south of Sherbeck Field. Fire Station 3 is located at 700 South Acacia Avenue, Fullerton, California 92831, approximately 1.3 miles southeast of Sherbeck Field. Table 4.6-2 lists the equipment and personnel available at Fire Stations 1 and 3.

Table 4.6-2
Fullerton Fire Stations

Location	Equipment/Personnel
Station 1 (Headquarters) (312 East Commonwealth Avenue)	1 Advanced Life Support Engine (4-person crew) 1 Basic Life Support Truck Company (4-person crew) 1 Battalion Chief
Station 3 (700 South Acacia Drive)	1 Advanced Life Support Engine (4-person crew)

Source: City of Fullerton 2012

The Fullerton Fire Department's goal is to achieve the National Fire Protection Association response time standard of 6 minutes and 30 seconds for 90% of calls. In 2017 and 2018, the Fullerton Fire Department had average response times of 8 minutes and 49 seconds and 8 minutes and 47 seconds, respectively. These averages take into account the multi-unit fire and traffic collision responses (Ramirez, pers. comm. 2019).

Orange County Fire Authority

During the 2017 Fullerton College football season, a total of four home games occurred at Yorba Linda High School, beginning at 1:00 p.m. (Fullerton College 2018b). Although the OCFA does not provide coverage for games played at Yorba Linda High School, the OCFA responds to medical-related emergencies within their jurisdiction. Based on communications with OCFA, one incident occurred during the four Fullerton College home games in 2017. An Emergency Medical Service call was made at 1:54:05 p.m., October 21, 2017, to 199000 Bastanchury Road, Yorba Linda, California 92886 (Rivers, pers. comm. 2018; FCA 2017).

4.6.1.2 Police Protection

The Campus Safety Department maintains a strong partnership with the Fullerton Police Department. Fullerton College has a memorandum of understanding with the Fullerton Police

Department to handle crime-related reporting and investigations on the Fullerton College campus. All criminal incidents are reported to the Fullerton Police Department (Fullerton College 2018a).

Table 4.6-1 (see Section 4.6.1.1, Fire Protection and Emergency Medical Response) presents crime statistics for 2017 (Fullerton College 2017a). The Campus Safety Department would contact the Fullerton Police Department during an on-campus emergency where additional support is required. The Fullerton Police Department is located at 237 West Commonwealth Avenue, Fullerton, California 92832, approximately 0.5 miles southwest of the Fullerton College campus. The Fullerton Police Department (as of 2018) is composed of 22 employees and 150 sworn and 70 civilian positions. Additionally, the City includes several specialized units, including community services, crimes persons, crimes property, directed enforcement, drug recognition expert, echo, family crimes, forensic crime scene investigation, gangs, homeless liaison officer, K-9 program, narcotics and vice, SWAT, and traffic bureau (City of Fullerton 2018b).

The most recent Fullerton Police Department Annual Report available is for 2015. The Fullerton Police Department reported 4,645 crimes in the City for the year 2015. The majority of crimes were attributed to grand and petty theft, vehicle burglary, and theft from vehicle. In 2015, the Fullerton Police Department processed a total of 206,968 phone calls, consisting of 58,325 incoming 911 calls, 93,387 non-emergency calls, and 55,256 outbound calls (City of Fullerton 2015). Based on communication with the Fullerton Police Department, the total number of calls in 2017 was 52,621 (Wright, pers. comm. 2019a). Additionally, in 2018 there were no calls from Sherbeck Field to the Fullerton Police Department (Wright, pers. comm. 2019a).

The average response times for the Fullerton Police Department in 2017 and 2018 were 6 minutes and 32 seconds, and 5 minutes and 50 seconds, respectively. Dispatch's objective is to dispatch received calls for service in 2 minutes or less, and 60% of calls are dispatched in 1 minute or less (Wright, pers. comm. 2019b).

Orange County Sheriff's Department

During the 2017 Fullerton College football season, a total of four home games occurred at Yorba Linda High School, beginning at 1:00 p.m. (Fullerton College 2018b). During 2017, Fullerton College funded the costs for one deputy to attend each of these games (Mette, pers. comm 2018). However, OCSD discontinued service for the 2018 season and subsequent years due to lack of personnel. In case of emergency, OCSD will send a dispatcher (Giles, pers. comm. 2018). Based on communication with OCSD, one medical aid call was made on October 21, 2017. No additional calls for service occurred during the other three games (Mette, pers. comm. 2018).

4.6.2 Regulatory Framework

Federal

There are no federal laws or regulations related to public services that are applicable to the proposed project.

State

California Fire Code 2016

California Code of Regulations, Title 24, Part 9, incorporates adoption of the 2015 International Fire Code of the International Code Council with necessary California Amendments. The California Fire Code establishes minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The California Fire Code applies to construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure within the State of California (24 CCR, Part 9).

Local

The North Orange County Community College District (District) and Fullerton College are not subject to local plans, policies, or guidelines, so this analysis uses relevant policies from the local jurisdiction as guidance only.

The Fullerton Plan: The Fullerton Community

The City's General Plan, The Fullerton Plan, has the following relevant public-services-focused policies that promote fire protection and police protection:

<u>Public Safety</u>

- **P12.2 Collaboration with Outside Agencies**: Support regional and subregional efforts to prevent violence, child abuse, sexual assault, domestic violence, illegal use of firearms, violence associated with substance abuse, crimes against property and other similar issues.
- **P12.4 Balance Safety Needs:** Support policies, projects, programs, and regulations that balance the need to reduce vehicle accidents, injuries, and deaths through traffic calming and street design with the need to facilitate emergency response times.

- **P12.5 Community Preservation:** Support policies, programs and regulations pertaining to proactive code enforcement methods which reinforce the proper maintenance of properties, buildings and landscapes, and adherence to applicable regulations, while discouraging conditions that foster vandalism and more serious crime.
- **P12.6 Youth Community Safety Partnership:** Support programs that involve young people in discussions about crime and prevention, increase youths' attachment to the community, engage youth in productive activities, and reinforce success in education.
- **P12.7 Fire Code Amendments:** Support policies, programs and regulations that give the Fire Marshall flexibility to approve streets and fire lanes with reduced clearance requirements when other fire safety factors are incorporated into the project (such as street connectivity, traffic safety and the presence of sprinkler systems).
- **P12.13 Safety through Design:** Support policies, projects, programs and regulations that make crime prevention and the maintenance of public safety service levels considerations in design and management of existing and new private and public spaces.
- **P13.2 Adequate Resources for Emergencies:** Support policies and programs that ensure adequate resources are available in all areas of the City to respond to health, fire and police emergencies.
- **P13.3 Disaster Hazard Reduction:** Support policies, projects, programs and regulations that reduce structural and nonstructural hazards to life safety and minimize property damage and resulting social, cultural and economic dislocations resulting from future disasters.
- **P13.4 Disaster Risk Reduction:** Support programs that promote greater public awareness of disaster risks, personal and business risk reduction, and personal and neighborhood emergency response.
- **P13.5 Community Emergency Preparedness:** Support policies, programs and regulations that ensure the City, its residents, businesses and services are prepared for effective response and recovery in the event of emergencies or disasters, including the provision of information about the current nature and extent of local safety hazards and emergency plans, including evacuation plans and procedures to accommodate special needs populations. Information should be provided in multiple languages to maximize understanding by community members.
- **P13.7 New Technologies for Fire and Police Services:** Support policies, programs and regulations which are based on research and evaluation and that implement new technologies and methods to improve the efficiency and effectiveness of fire and police services.
- **P13.8 Staff Training on Structural Risks:** Support programs for ongoing staff training focused on the risks posed by older structures and infrastructure, as well as how to reduce those risks.
- **P13.9 Nuisance Enforcement:** Support policies, programs and regulations that maintain or strengthen code enforcement as an important tool to uphold community health, safety and welfare consistent with the provisions of the Fullerton Municipal Code.

- **P13.11 Crime Reduction Strategies:** Support policies, programs and regulations to create problem-solving strategies and plans for areas with higher crime rates in the City and to reduce crime by implementing these strategies and plans through a range of measures including increased policing activities, neighborhood partnerships and other innovative programs.

Education

- **P17.13 Shared Facilities and Infrastructure:** Support policies and programs that encourage regular communication and coordination between the City and education providers about facility and infrastructure needs of campuses and nearby neighborhoods, and seek opportunities to develop these through collaborative planning and joint-use agreements.
- **P17.16 Project Impact Mitigation:** Support programs that foster coordination between the City and local school districts, colleges and universities to assess and mitigate project impacts pertaining to on- and off-campus development.

4.6.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to public services are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines. According to Appendix G, a significant impact related to public services would occur if the project would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
   a. Fire protection.
   b. Police protection.
   c. Schools.
   d. Parks.
   e. Other public facilities.

Thresholds 1(c), 1(d), and 1(e) were determined to have a less than significant impact or no impact in the Initial Study. The proposed project would not involve the development of campus housing that would generate additional students, resulting in the potential for new public services impacts. Although the field lighting would allow for more evening class options for the physical education program to meet student demand, the proposed project would not directly or indirectly induce substantial population growth because the project has been proposed to meet existing demand on campus. The additional courses would be served by existing professors and/or staff from the Fullerton College faculty. As such, no additional employees would be generated by the proposed project. In addition the proposed project would not generate new permanent residents in the City, generating new schoolchildren. Further, the proposed project would allow Fullerton College football games to occur on the Fullerton College campus, and would not require the use of other public facilities. Therefore, the nearby parks, libraries, and other public facilities would not experience an increase in visitors and acceptable service ratios would be maintained.

As discussed in Section 3.3.2, Proposed Programming, the Fullerton College program with the potential for the greatest number of attendees at Sherbeck Field would be football games. For the purposes of the analysis, it is anticipated that the maximum number of calls for service generated by the proposed project to the Fullerton Fire Department and the Fullerton Police Department would occur during football games.

Since football games do not currently take place at Sherbeck Field, the calls to service to the Fullerton Fire Department and Fullerton Police Department during football games at Fullerton Union High School (located at 201 East Chapman Avenue, Fullerton, California 92832) are used as a proxy to determine the potential number of calls that could be generated by the proposed project in Section 4.6.4, Impacts Analysis. Based on communication with the Fullerton Fire Department, there were no calls to Fullerton Union High School during the 2017 home football games (Ramirez, pers. comm. 2018). Based on communication with the Fullerton Police Department, there were two calls for service to Fullerton Union High School during 2017 home games. One call for service occurred on September 1, 2017, for a Patrol Check and one occurred on November 2, 2017, for Domestic Violence Assault (Wright, pers. comm. 2019a).

4.6.4 Impacts Analysis

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

Fire protection?

The proposed project involves the installation of prefabricated aluminum bleachers, six field lighting stanchions, a new sound system, a press box, and a storage building at the existing Sherbeck Field. Sherbeck Field would continue to be used for academic instruction, competitive athletics, and rentals; however, Sherbeck Field is also proposed to host competitive football games, which are currently held at other locations. As such, the proposed project would generate additional demand for fire protection and emergency medical services by adding additional uses to Sherbeck Field.

During the 2017 football season, Fullerton College football games occurred at Yorba Linda High School, and generated one Emergency Medical Service call to OCFA. As previously discussed, communication with the Fullerton Fire Department regarding Fullerton Union High School football games was used to determine the potential number of calls generated by football games within the Fullerton Fire Department jurisdiction. No calls for service were made during the 2017 football games at Fullerton Union High School.

Based on the information from OCFA and the Fullerton Fire Department, it is anticipated that the proposed project would generate one additional call for service during the fiscal year. In 2017, the Fullerton Fire Department responded to 14,644 total incidents (fire, emergency medical, etc.). In comparison, the proposed project's increase in annual calls represents 0.007%. Considering this nominal increase, the proposed project would have a less than significant impact on fire protection and emergency medical services.

As discussed in Section 4.6.2, in 2017 and 2018, the Fullerton Fire Department had average response times of 8 minutes and 49 seconds, and 8 minutes and 47 seconds, respectively (Ramirez pers. comm. 2019). Thus, the Fullerton Fire Department does not currently meet its objective response time at 6 minutes and 30 seconds. However, considering the proposed project represents 0.007% of the Fullerton Fire Department's annual calls, the proposed project would not substantially impact the Fullerton Fire Department's ability to maintain response time goals.

Because the proposed project would result in a limited number of additional calls for fire or emergency medical service, in combination with the fact that the project would not result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, the proposed project would have a less than significant impact on fire protection and emergency medical services.

Police protection?

The proposed project involves the installation of prefabricated aluminum bleachers, six field lighting stanchions, a new sound system, a press box, and a storage building at the existing Sherbeck Field. Sherbeck Field would continue to be used for academic instruction, competitive athletics, and rentals; however, Sherbeck Field is also proposed to host competitive football games, which are currently held at other locations. As such, the proposed project would generate additional demand for police protection services by adding additional uses to Sherbeck Field.

During the 2017 football season, four Fullerton College games occurred at Yorba Linda High School under the jurisdiction of OCSD. However, OCSD discontinued service for the 2018 season and subsequent years due to lack of personnel. Based on communications with OCSD, one medical aid call was made on October 21, 2017. No additional calls for service occurred during the other three games (Mette, pers. comm. 2018). As previously discussed, communication with the

Fullerton Police Department regarding Fullerton Union High School football games was used to determine the potential number of calls generated by football games within the Fullerton Police Department jurisdiction. Based on communication with the Fullerton Police Department, there were a total of two calls for service to Fullerton Union High School during 2017 home games (Wright, pers. comm. 2019a).

Based on the information from OCSD and the Fullerton Police Department, it is anticipated that the proposed project could result in 1 additional call for service per game, resulting in a total of up to 7 calls for service during the fiscal year.[1] With the addition of 7 calls annually, in comparison to the 52,621 calls that were made in 2017, the proposed project would result in a marginal increase (0.013%) in annual calls. In addition, the Campus Safety Department would continue to be the primary law enforcement agency on campus, and the proposed project site is already part of the normal patrol and enforcement area of the Campus Safety Department.

As previously discussed in Section 4.6.1, the Fullerton Police Department strives to dispatch received calls for service within 2 minutes or less (Wright, pers. comm. 2019b). Considering the proposed project represents 0.0013% of the Fullerton Police Department's annual calls, and that the Fullerton Police Department is located approximately 0.5 miles southwest of the Fullerton College campus, the proposed project would not substantially impact the Fullerton Police Department's ability to maintain dispatch time goals.

Therefore, in light of the proposed project's forecasted effect on existing response times, in combination with the fact that project implementation would not result in the need for new or physically altered governmental facilities, the proposed project would not result in potentially significant impacts to police services, and no mitigation is necessary

4.6.5 Cumulative Analysis

Section 15130(b)(1)(A) of the CEQA Guidelines allows for the preparation of a list of past, present, and reasonably anticipated future projects as a viable method for determining cumulative impacts. This discussion uses the following approach: an initial list and description of all related projects are presented and followed by a discussion of the effects that the project may have on each environmental category of concern. Consistent with CEQA (California Public Resources Code, Section 21000 et seq.), this discussion is guided by the standards of practicality and reasonableness. A list of past, present, and reasonably foreseeable projects that the City determined were most relevant to the proposed project are provided in Table 3-3, Cumulative Projects, of Chapter 3, Project Description.

1 Approximately five regular and up to two playoff football games per year would be held at Sherbeck Field.

The geographic extent for the analysis of cumulative impacts associated with public services consists of the City, because fire and police protection services are provided by the City.

As described in Section 4.6.1.1, during a fire or medical emergency at Sherbeck Field, the closest Fullerton Fire Department unit would respond at the time of the call. However, if the Fire Station 1 crew were present at their station during the time of the call, they would be the first-use responder. The second-use responder would be Station 3 (Ramirez, pers. comm. 2018). As described in Section 4.6.4, Impacts Analysis, the proposed project is not anticipated to have a significant impact with regard to fire protection services. Considering that the proposed project would result in a nominal, if any, increase in calls, the proposed project would not significantly contribute to a cumulatively considerable impact associated with fire protection and emergency medical services. Cumulative development projects could result in cumulatively considerable impacts to the Fullerton Fire Department. However, all development plans would be required to comply with all applicable fire code and ordinance requirements for construction access, water mains, fire flow, and hydrants. In addition, the City reviews budget on an annual basis to plan for fire demand associated with future growth. Funding for fire services and facilities would be paid in part by developer fees. This would ensure that new development would not reduce the staffing, response times, or existing levels of service within the Fullerton Fire Department service area. Therefore, cumulative impacts to fire protection services would be less than significant.

As described in Section 4.6.4, the proposed project would not result in a substantial increase in calls for service to the Fullerton Police Department. Based on the nominal projected increase in calls, response times would remain at similar levels as the existing conditions. Cumulative projects as described in Table 3-3 include multiple residential developments and would contribute to an additional demand for police services. However, the Campus Safety Department would continue to be the primary law enforcement agency on campus, and the Fullerton Police Department would provide additional support only if required. The proposed project would not combine with projects in the vicinity to contribute to significant impacts; therefore, cumulative impacts would be less than significant. Further, considering that the proposed project would result in a nominal increase in calls, the proposed project would not significantly contribute to a cumulatively considerable impact associated with police services. Cumulative projects could result in a cumulatively considerable impact related to calls for service to the Fullerton Police Department. However, individual projects would be reviewed on a project-by-project basis to determine specific safety requirements applicable to the specific development and to ensure compliance with these requirements. In addition, the City reviews budgets on an annual basis and would plan for police demands associated with future growth. Funding for police services and facilities would be paid in part by developer fees and general funds. This would ensure that new developments would not reduce the staffing, response times, or existing service levels within the Fullerton Police Department. Therefore, cumulative impacts to police protection services would be less than significant.

4.6.6 Mitigation Measures

Impacts related to public services were found to be less than significant; therefore, no mitigation measures are necessary.

4.6.7 Level of Significance After Mitigation

Because there would be no significant impacts requiring mitigation, residual impacts would be less than significant.

4.6.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

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Ramirez, C. 2018. "Request for Fire Services Information." Email from C. Ramirez (Fullerton Fire Headquarters) to S. Alonso (Dudek). November 14, 2018.

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Wright, C. 2019b. "Information you requested." Email from C. Wright (Fullerton Police Department) to S. Alonso (Dudek). March 25, 2019.

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4.7 RECREATION

This section describes the existing recreation setting of the project site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Sherbeck Field Improvements Project (proposed project).

4.7.1 Existing Conditions

4.7.1.1 City Setting

City of Fullerton Parks and Recreation Department

The City of Fullerton (City) Parks and Recreation Department (Department) offers a wide variety of recreation, sports, cultural activities, senior programs, services, and events for all age groups. The Department is responsible for maintaining the parks and recreation facilities within the City. The City has 52 parks (City of Fullerton 2018).

The City's parks and open space lands generally include publicly owned properties, which include regional, specialized, or local park facilities; areas under private ownership, which are designed for outdoor recreational activities; and those sites left intentionally in a natural or unimproved state. The Department's land use designation is applied to public parks and recreational facilities, privately owned recreational facilities, landscaped and greenbelt areas, open space conservation areas, public golf course facilities, and areas that are subject to flood and/or seismic hazards.

School facilities, although not formally included in the improved public open space category, offer recreational resources ranging from open playfields and meeting rooms to specialized facilities such as gymnasiums, auditoriums, sports fields, and swimming pools.

4.7.1.2 Campus Setting

Fullerton College Athletics

Fullerton College Athletics has several facilities on campus for recreation, fitness training, and academic purposes. The athletic facilities located on the Fullerton College campus include two newly renovated gymnasiums, an Olympic-size 50-meter swimming pool, eight tennis courts, baseball and softball diamonds, a two-story field house (featuring locker rooms and a training room), and Sherbeck Field, which is encompassed by a 400-meter track. Fullerton College also features a fitness center, strength lab, and the Schoepe Wellness Center for students, faculty, staff, and the local community (FCA 2018). The Fullerton College Physical Education Department offers physical education classes, Vocational Certificates, Education Degrees, and other courses that use these athletic facilities.

The athletic facilities support men and women's basketball, cross country, soccer, tennis, swimming and diving, track and field, volleyball, and water polo. Additionally, these facilities support men's baseball and football; women's beach volleyball, golf, lacrosse, and softball; and spirit quad.

Sherbeck Field

Sherbeck Field is currently used for academic instruction, competitive athletics, and rentals. There are currently no permanent bleacher seats or lights at the field. The field house, synthetic field, and rubberized track were constructed as part of a bond measure in 2010. Descriptions of the current uses are provided below.

Academic Instruction

Fullerton College currently offers intercollegiate athletic courses for track and field, cross country, football, and soccer, as well as various fitness courses. Courses are offered on weekdays only and are offered in the mornings, afternoon, and evenings. The earliest classes begin at 6:20 a.m. and the latest classes end at 7:05 p.m. Course sizes typically range from 24 to 32 students.

Athletics

Football

Sherbeck Field is used for in-season Fullerton College football practice in the fall and off-season conditioning and skill development in the spring, all of which are typically held on weekdays in the afternoon and evening for approximately 2 hours. There are approximately 80 practice sessions in the 16-week fall semester (Saghieh 2017a).

Saturday afternoon and occasional evening games are currently held at the Yorba Linda High School field. Fullerton College football games typically last for 3 hours. There are approximately five regular and up to two playoff football games per year, with approximately 350 to 1,600 attendees per game (Saghieh 2017b).

Soccer

Sherbeck Field is used for Fullerton College soccer practice, which is typically held on weekdays in the morning for 2 hours per practice. There are approximately 80 practice sessions in the 16-week fall semester (Saghieh 2017a).

Friday evening games are held at Sherbeck Field. Fullerton College soccer games typically last for 2 hours. There are approximately two soccer games per year, with approximately 100 attendees per game (Saghieh 2017c).

Track and Field

Sherbeck Field is used for Fullerton College track and field practice from Mondays through Fridays during the fall and spring semester. Team practices occur during the morning from 7:00 a.m. to 9:00 a.m. and during the afternoon from 12:00 p.m. to 2:00 p.m. There are approximately 80 practice sessions in the 16-week fall semester.

Track and field events are held at Sherbeck Field. Fullerton College track and field competition events occur on Fridays only and the frequency is only one track and field event per year during the spring semester at Fullerton College, usually from 10:00 a.m. to 4:00 p.m. There are approximately 100 attendees at competition events.

Orange Lutheran High School uses the Fullerton College track in the spring and hosts up to four track meets per year, usually on a Tuesday, Wednesday, or Thursday. Practices and meets are held in the afternoon from 3:00 p.m. to 6:00 p.m., and events include approximately 150 attendees.

Rentals

Fullerton College rents out Sherbeck Field for private schools to host athletic courses and practice. Specifically, Hope International University, Rosary High School, CDA Slammers, Anaheim Soccer, Seahorse Soccer, CAL South, Troy High School, Prep Football America Camp, and Orange Lutheran High School rent Sherbeck Field for athletic practice sessions. Additionally, the Buena Park Police Department rents Sherbeck Field three times per year for training purposes (Saghieh 2017c). Sherbeck Field is rented out at various times on weekdays, Saturdays, and Sundays, as shown in Table 3-1 (Chapter 3, Project Description).

Commencement Ceremony

The annual commencement ceremony occurs in late May or early June at Sherbeck Field. Student check-in typically occurs from 8:00 to 9:30 a.m. Commencement is held on Saturday and typically begins at 10:00 a.m. and ends in the afternoon. There are approximately 7,200 students and guests that attend the commencement ceremony (Saghieh 2017c) and bleachers are rented by Fullerton College to accommodate the attendees.

4.7.2 Regulatory Framework

Federal

There are no federal laws or regulations related to recreation that are applicable to the proposed project.

State

There are no state laws or regulations related to recreation that are applicable to the proposed project.

Local

The proposed project is located within the City of Fullerton (City). The North Orange County Community College District (District) and Fullerton College are not subject to local plans, policies, or guidelines related to recreation; therefore, this analysis uses relevant policies from the local jurisdiction as guidance only.

The Fullerton Plan: The Fullerton Community

The City's general plan, The Fullerton Plan, has the following relevant parks and recreation-focused policies that promote recreational opportunities:

Parks and Recreation

- **P15.1 North Orange County Parks and Recreation Collaboration**: Support regional and subregional efforts to establish and maintain a collaboration of parks and recreation programs, to share best practices, discuss solutions to common challenges, and explore opportunities for connecting and expanding trails, joint use of parks and recreational facilities, and recreation programming for participating cities.
- **P15.2 Existing Parks and Recreation Resources**: Support policies, projects, programs and regulations that strengthen access to quality recreation programs which, in turn, promote a sense of community and a higher quality of life for Fullerton residents.
- **P15.3 Access to Recreation Programs**: Support policies, projects, programs and regulations that strengthen access to quality recreation programs which, in turn, promote a sense of community and a higher quality of life for Fullerton residents
- **P15.4 Partnerships with Other Agencies**: Support policies and programs that bolster appropriate partnerships between the City and agencies, including educational institutions, railroad franchises, utility companies, etc., to secure, co-locate or otherwise share parks, recreational facilities and trails on school campuses, within public easements and in other similar locations.
- **P15.5 Partnerships with Private Ventures**: Support policies, projects, programs and regulations allowing commercial ventures as ancillary uses in Fullerton parks and recreational facilities when determined they are context-appropriate, complementary to the facilities, viewed as a public benefit, and generate revenue that supports parks and recreational programs and facilities.
- **P15.6 Accessible Citywide Park System**: Support policies, programs and regulations that facilitate the planning, design and development of an extensive system of parks (passive and active), recreational facilities, and trails that meets the current needs of Fullerton

residents and is accessible and within a 15-minute walking distance (i.e., one-quarter to one-half mile) of every Fullerton resident. (Also see Chapter 19: Open Space and Natural Resources, P24.10 Trail Linkages to Open Space.)

- **P15.7 Park-To-Population Ratio**: Support projects and programs that contribute to a citywide minimum park-to-population ratio of 4 acres per 1,000 people.
- **P15.8 Recreation Programming**: Support programs that promote recreational activities that facilitate healthy and community-oriented lifestyles for Fullerton residents
- **P15.9 Community-Based Parks and Recreation Program:** Support policies, projects and regulations that reinforce a City commitment to a community-based parks and recreation program that maximizes opportunities to share information, promote two-way communication, and involve the Fullerton community and user groups in integrating a broad and diverse range of interests and concerns pertaining to the planning, development, enhancement and rehabilitation of parks, recreational facilities and trails.
- **P15.10 Park Dwelling Fee**: Support policies and regulations which require new construction of dwelling units in the City to pay a park dwelling fee that provides for the creation and enhancement of open space, parks and recreational facilities accessible to all residents.
- **P15.11 Park Renovation Considerations**: Support projects and programs for renovating or improving existing parks that consider the needs and desires of the surrounding neighborhoods and districts.
- **P15.12 Parks and Recreational Facilities in Focus Areas:** Support projects, programs, policies and regulations to consider parks, recreational facilities and trails as part of community-based planning of Focus Areas.
- **P15.13 Context-Sensitive Design**: Support projects and programs incorporating design features in parks, recreational facilities and trails that reflect the sense of place and unique characteristics of the local context.
- **P15.14: Compatibility with Adjacent Properties**: Support policies and programs pertaining to public parks, recreational facilities and trails that interface with private property that advance reciprocal compatibility through collaboration, programming and design.
- **P15.15 Community Involvement**: Support projects and programs that involve the Fullerton community in park improvement plans through workshops, focus group discussions, and interviews and surveys with park users.
- **P15.16 Relationships to Development Projects**: Support projects located adjacent to or near parks and trail facilities that facilitate connections and reinforce a positive relationship between private property and public parks and trails.

4.7.3 Thresholds of Significance

The significance criteria used to evaluate project impacts on recreation are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.). According to Appendix G, a significant impact related to recreation would occur if the project would:

1. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.
2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Threshold 1 was eliminated from further consideration in the Initial Study (Appendix A to this environmental impact report (EIR)). The proposed project would not result in an increase in the use of existing parks or recreation areas because the project would be providing additional opportunities for use of a college recreational facility to the community. Therefore, off-site recreational facilities would not experience physical deterioration due to an increase of use under the proposed project.

4.7.4 Impacts Analysis

Would the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

The proposed Sherbeck Field improvements involve the construction and installation of bleachers, lighting, a sound system, a press box, a storage building, and a scoreboard. Although the proposed project would not expand or result in the construction of additional off-site recreational facilities, the proposed project would involve improvements to Sherbeck Field, which could result in an adverse physical effect to the environment. Because the proposed project entails the construction of recreational facilities, the impacts are analyzed throughout this EIR. As such, the potential environmental impacts related to recreational facilities are part of the impacts assessment conducted for the entirety of the proposed project.

The assessment of potential effects related to recreational facilities is based on the analysis provided in other sections of this EIR. Impacts related to these issue areas are summarized below. Refer to individual impact sections in this EIR for detailed analyses of project impacts for each resources area.

Aesthetics

Regulations Governing Scenic Quality

The project site is zoned Public Land (P-L). Permitted and conditionally permitted uses within the P-L zone are described in Sections 15.25.020 and 15.25.025 of the Fullerton Zoning Code. No development standards or design criteria have been established for the P-L zone. As the Fullerton Zoning Code does not identify regulations governing scenic quality for development in the P-L zone, the proposed project would not conflict with applicable zoning.

The project site is designated as a School land use in The Fullerton Plan. The Fullerton Plan does not contain specific development regulations regarding scenic quality for School land uses. Further, the policies from The Fullerton Plan listed in Section 4.1.2 (see Section 4.1, Aesthetics) are not specific to scenic quality. Potential impacts to scenic quality and views were previously considered in the Initial Study (Appendix A), project components including proposed bleachers and light stanchions would not substantially interrupt existing views or obstruct scenic resources from view. As such, the proposed project would not conflict with the City's ability to implement the goals and policies of The Fullerton Plan related to community development and design. Impacts would be less than significant.

Existing Visual Character or Quality

According to the Appendix G of the CEQA Guidelines, a discussion of whether a project substantially degrades the existing visual character or quality of public views of a site and its surroundings is required only for projects located in non-urbanized areas. The project site is located in an urbanized area, and thus, the previous discussion addressed the proposed project's potential impacts related to conflict with applicable zoning governing scenic quality. Nonetheless, for informational purposes only, visual character and quality are further discussed in Section 4.1, Aesthetics. For the reasons described in Section 4.1, Aesthetics, the proposed project would not degrade the existing character or quality of the site and its surroundings and impacts would be less than significant.

Sources of Light

The proposed project would include installation of lighting stanchions and house lighting, which would introduce a new source of nighttime light to the project site.

The total power load of the field lighting would be 79.9 kilowatts. The stanchions would be made of galvanized steel and would be grey or silver. As proposed, field lighting would be hooded and individual fixtures would be directed downward onto the playing field surface and bleachers. The inclusion of hooded fixtures would limit opportunities for excessive light trespass or spillage off the Fullerton College campus and onto North Berkeley Avenue and residential neighborhoods to the north and east of Sherbeck Field. Hooded fixtures and downward-directed lighting would also reduce potential skyglow associated with the operation of field lighting during evening and nighttime hours. While streetlights and parking lot lights operate in the immediate project area, the kilowatt load associated with the field lights would be greater, as is necessary to illuminate the playing field surface and the home and visitors' bleachers. `

As proposed, Sherbeck Field would be used for academic instruction, competitive athletics, and rentals. On Monday through Thursday evenings, field lights would operate until 9:15 p.m. to accommodate classes and rentals, and house lights would operate until 9:30 p.m. to allow students to exit the field safely. On Friday evenings, field lights would operate until 8:15 p.m. at the latest, and house lights would operate until 8:30 p.m. at the latest to allow students to exit the field safely. On Saturday evenings, field lights would operate until 10:00 p.m. at the latest, and house lights would operate until 10:30 p.m. at the latest to accommodate the occasional/special circumstance football games that would occur during the 16-week fall semester (evening games would not be regularly scheduled). On Sunday evenings, field lights would operate until 6:00 p.m. at the latest to accommodate soccer rentals.

To better understand the lighting levels associated with the operation of proposed field lighting, Fullerton College contacted Musco Lighting to prepare an illumination summary (Appendix C; see Figure 4.1-9, Illumination Summary – Spill Lighting from Proposed Field Lights. The illumination summary depicts the calculated lighting levels (in foot-candles) of the field lighting at specific mounting heights on proposed galvanized steel support poles to be installed at Sherbeck Field. Calculations were prepared by Musco to ensure that sufficient lighting would be cast on the playing surface and visitor areas. In addition, calculations were prepared to determine the level of field lighting that would be cast outside the Sherbeck Field boundary and "spillover" onto adjacent areas. As indicated on Figure 4.1-9, average spill lighting level at the eastern curb of North Berkeley Avenue (east of Sherbeck Field) was calculated to be 0.014 foot-candles, and maximum spill lighting level was calculated to be 0.08 foot-candles. A foot-candle is a unit of illuminance or illumination equivalent to the illumination produced by a source of one candle at a distance of 1 foot. In addition, foot-candles are generally the most common unit of measure used by lighting professionals to calculate light levels in businesses and outdoor spaces (Appendix C).

The District, the City, and Appendix G of the CEQA Guidelines do not have established foot-candle thresholds for spill lighting associated new development. While not applicable to the project and referenced only for comparison, the County of San Diego has an established significance guideline that sets a light trespass threshold of 0.2-foot candles as measured 5 feet onto adjacent property to determine significant lighting effects (County of San Diego 2007). As mentioned above, the maximum spill lighting level was calculated to be 0.08 foot-candles at the eastern curb of North Berkeley Drive. While spill lighting levels for the project were not calculated at residential properties located east of North Berkeley Avenue, the additional distance between the eastern curb and residential property lines (approximately 75 feet) would conceivably result in slightly lower spill lighting levels at residential properties. Given that the calculated spill lighting levels on the nearest residential properties are anticipated to be lower than the maximum levels (i.e., 0.08 foot-candles) calculated at the eastern curb of North Berkeley Drive (see Figure 4.1-9, Section 4.1, Aesthetics), and lighting would be hooded and directed downward, impacts associated with lighting and would be less than significant.

Sources of Glare

As indicated in Chapter 3, Project Description, the six stanchions to be installed at Sherbeck Field would be made of galvanized steel and would be grey or silver in color. Although metal elements can be a potential source of glare during daytime hours, there is a low likelihood of incoming sunlight reflecting off the proposed stanchions and being received by motorists along North Berkeley Drive (and other local roads) and by area residents. Firstly, galvanized steel is less reflective than other metallic elements such as polished steel or stainless steel. Further, the proposed stanchions would be cylindrical and would have limited flat surfaces for reflecting incoming light. In addition, the presence of existing trees along North Berkeley Avenue and along public and private roads in local neighborhoods to the north and east of Sherbeck Field would help to intercept incoming light reflected off the installed stanchions. Lastly, only six lighting stanchions would be installed, and this limited number of galvanized steel poles at Sherbeck Field would not constitute the introduction of highly reflective materials or elements to the project site and area.

In addition to calculating spill lighting from the proposed field lights, Musco assessed potential environmental glare impacts (Appendix C). According to Musco, the highest levels of potential glare would occur on the playing field surface of Sherbeck Field and would be contained within the boundaries of the Fullerton College campus. Some glare may be experienced by North Berkeley Avenue motorists to the immediate east of Sherbeck Field (where the road parallels the field, at a distance of approximately 375 feet) while the proposed field lights are in operation. However, clear and unimpeded views to luminaires atop the stanchions would be obscured by existing landscaping/ trees installed on the Fullerton College campus to the west of North Berkeley Avenue. Due to the height of stanchions and the viewing angle provided along North Berkeley Avenue, directly viewing the newly installed lighting would require motorists to look up and at an angle that would take their eyes off the road. The curving alignment of the road, automobiles entering the roadway from college parking lots and East Brookdale Place, and the presence of automobiles parked along the road are variables requiring the focus of motorists on the road. Regarding reception of glare on residential properties to the north and east of Sherbeck Field, the Musco Lighting report indicates that properties east of North Berkeley Avenue would generally experience minimal to no glare during field lighting use (see Figure 4.1-10, Section 4.1, Aesthetics) (Appendix C).

Based on the rationale provided above, the installation of six lighting stanchions and operation of field lights would not introduce a new source of substantial glare that would adversely affect day or nighttime views in the area. Impacts would be less than significant.

Air Quality

Conflict with Applicable Air Quality Plan

The project site is located within the South Coast Air Basin (SCAB) and under the jurisdiction of the South Coast Air Quality Management District (SCAQMD), which is the local agency for administration and enforcement of air quality regulations for the area. SCAQMD has established criteria for determining consistency with the 2016 Air Quality Management Plan (AQMP) in Chapter 12, Sections 12.2 and 12.3, in SCAQMD's CEQA Air Quality Handbook (SCAQMD 1993). The criteria are as follows:

- **Consistency Criterion No. 1:** The proposed project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay the timely attainment of air quality standards of the interim emissions reductions specified in the AQMP.
- **Consistency Criterion No. 2:** The proposed project will not exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

Consistency Criterion No. 1 – Increase in the Frequency or Severity of Violations?

Based on the air quality modeling analysis completed for the proposed project, construction and operational emissions would not result in in a significant and unavoidable impact associated with the violation of an air quality standard. Because the proposed project would not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, the project would not conflict with Consistency Criterion No. 1 of the SCAQMD CEQA Air Quality Handbook.

Consistency Criterion No. 2 – Exceed Assumptions in the AQMP?

While striving to achieve the National Ambient Air Quality Standards (NAAQS) for ozone (O_3) and fine particulate matter ($PM_{2.5}$) and the California Ambient Air Quality Standards (CAAQS) for O_3, coarse particulate matter (PM_{10}), and $PM_{2.5}$ through a variety of air quality control measures, the 2016 AQMP also accommodates planned growth in the SCAB. Projects are considered consistent with, and would not conflict with or obstruct implementation of, the AQMP if the growth in socioeconomic factors (e.g., population, employment) is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook). As discussed in Section 4.2.2 (Relevant Plans, Policies, and Ordinances), the demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by SCAG for their 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), which are based on general plans for cities and counties in the SCAB, were used to estimate future emissions in the 2016 AQMP (SCAQMD 2017). Accordingly, the 2016 AQMP is generally consistent with local government plans.

The project site is zoned for Public Land (P-L); and, since the project would not change the site's zoning designations or land use designations, the project would be consistent with the existing general plan, and in turn the assumptions utilized in SCAG's RTP/SCS and SCAQMD's AQMP. Additionally, given the nature of the activity uses associated with the project, the project would not change the population, housing, or employment forecast considered by the SCAG and SCAQMD in their regional planning documents. Therefore, implementation of the proposed project would not result in a conflict with, or obstruct implementation of, the applicable air quality plan (i.e., the 2016 AQMP). Accordingly, the project would meet Consistency Criterion No. 2 of SCAQMD's CEQA Air Quality Handbook.

Cumulatively Considerable Increase of a Criteria Pollutant

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are relevant in the determination of whether a project's individual emissions would have a cumulatively significant impact on air quality.

When considering cumulative impacts from a proposed project in the SCAB, the analysis must specifically evaluate the project's contribution to the cumulative increase in pollutants for which the SCAB is designated as nonattainment for the CAAQS and NAAQS. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution to nonattainment status in the SCAB. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003).

Construction and operation of the proposed project would result in emissions of criteria air pollutants from mobile, area, and/or stationary sources, which may cause exceedances of federal and state ambient air quality standards or contribute to existing nonattainment of ambient air quality standards. The following discussion identifies potential short-term construction and long-term operational impacts that would result from implementation of the project.

Construction

Construction of the project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment, soil disturbance, and VOC off-gassing) and off-site sources (i.e., vendor trucks and worker vehicle trips). Construction emissions can vary substantially from day to day depending on the level of activity, the specific type of operation, and for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

Construction criteria air pollutant emissions associated with the proposed project's temporary construction activities were quantified using the California Emissions Estimator Model (CalEEMod). Construction emissions were calculated for the estimated worst-case day associated with each phase of the approximately 4-month construction period and reported as the maximum daily emissions estimated during the calendar year in which construction would occur (2020). Construction schedule assumptions, including phase type, duration, and sequencing, were based on information default values provided in CalEEMod and are intended to represent a reasonable scenario based on the best information available. Further details regarding proposed project construction is included in Section 4.2, Air Quality.

Table 4.2-7 (see Section 4.2, Air Quality) presents the estimated maximum daily construction emissions generated during construction of the project. As shown in Table 4.2-7, construction activities would not generate emissions in excess of the SCAQMD daily construction emissions thresholds for VOC, NO_x, carbon monoxide (CO), sulfur oxides (SO_x), PM_{10}, and $PM_{2.5}$. As such, impacts would be less than significant.

Cumulative localized impacts would potentially occur if project-related construction were to occur concurrently with construction activities associated with another, off-site project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be speculative.[1] However, future projects would be subject to air quality analysis prepared in accordance with CEQA and, where necessary (i.e., the project exceeds SCAQMD thresholds), mitigation. Criteria air pollutant emissions associated with construction activity of future projects also would be reduced through implementation of control measures required by SCAQMD. For example, cumulative PM_{10} and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SCAQMD. Based on the previous considerations, the

[1] The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145). This discussion is nonetheless provided in an effort to show good-faith analysis and comply with CEQA's information disclosure requirements.

project would not result in a cumulatively considerable localized increase in emissions of nonattainment pollutants. Impacts would be less than significant.

Operational

The project involves the operation of a press box, stadium lighting, and sound system, as well as expanded use of Sherbeck Field. Operation of the project would generate VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips from students and event attendees; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment; and energy sources, including electricity for the lighting and sound systems as well as the press box and storage building.

Pollutant emissions associated with long-term operations were quantified using CalEEMod. CalEEMod default values were used to estimate emissions from the project area sources. Energy source emissions were based on CalEEMod defaults and information provided by the District to account for the energy demand of the lighting stations and sound system. Mobile source and on-site road vehicular emissions associated with the project were modeled using the trip-generation rates from the project's traffic impact analysis (Appendix F).

Table 4.2-8 (see Section 4.2, Air Quality) summarizes the maximum daily mobile, energy, and area emissions of criteria pollutants that would be generated by the development of the project, and how project-generated emissions would compare to the SCAQMD thresholds of significance. As shown in Table 4.2-8, operation of the proposed project would not exceed the SCAQMD thresholds for VOC, NO_x, CO, SO_x, PM_{10}, or $PM_{2.5}$. Therefore, impacts during operation of the proposed project would be less than significant.

As discussed in Section 4.2.2 (see Section 4.2, Air Quality) under "South Coast Air Basin Attainment Classification," the SCAB has been designated as a federal nonattainment area for O_3 and $PM_{2.5}$ and a state nonattainment area for O_3, PM_{10}, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operation of the project would generate VOC and NO_x emissions (which are precursors to O_3) and emissions of PM_{10} and $PM_{2.5}$. However, as indicated in Tables 4.2-7 and 4.2-8 (see Section 4.2, Air Quality), project-generated construction and operational emissions, respectively, would not exceed the SCAQMD emission-based significance thresholds for VOC, NO_x, PM_{10}, or $PM_{2.5}$.

Based on the previous considerations, the project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants. Impacts would be less than significant.

Exposure of Sensitive Receptors to Substantial Pollutant Concentrations

Localized Significance Thresholds Analysis

Sensitive receptors are those individuals more susceptible to the effects of air pollution than the population at large. According to SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The project is located in close proximity to several single-family homes, which are approximately 85 feet to the east of the project site.

An LST analysis has been prepared to determine potential impacts to nearby sensitive receptors during construction of the project. The impacts of the proposed project were analyzed using methods consistent with those in the SCAQMD's Final LST Methodology (SCAQMD 2008). According to the localized significance thresholds analysis in Section 4.2.4 of this EIR, construction activities would not generate emissions in excess of site-specific localized significance thresholds; therefore, site-specific construction impacts during construction of the project would be less than significant.

Carbon Monoxide Hotspots

Mobile source impacts occur on two scales of motion. Regionally, project-related travel would add to regional trip generation and increase the vehicle miles traveled within the local air shed and the SCAB. Locally, project-generated traffic would be added to the City of Fullerton's roadway system near the project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles cold-started and operating at pollution-inefficient speeds, and operates on roadways already crowded with non-project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic. Because of continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing.

Projects contributing to adverse traffic impacts may result in the formation of CO hotspots. To verify that the proposed project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hotspots was conducted. The potential for CO hotspots was evaluated based on the results of the project-specific traffic impact analysis (Appendix F) and in accordance with the California Department of Transportation (Caltrans) Institute of Transportation Studies' CO Protocal (Caltrans 2010). CO hotspots are typically evaluated when (1) the level of service (LOS) of an intersection decreases to LOS E or worse; (2) signalization and/or channelization is added to an intersection; and (3) sensitive receptors such as residences, schools, and hospitals are located in the vicinity of the affected intersection or roadway segment.

Based on the CO hotspot screening evaluation, the intersections that exceeded the CO hotspot screening criteria shown above all have similar geometries and are signalized. Therefore, three intersections with an LOS of F that exceeded the CO hotspot screening criteria were evaluated. The potential impact of the project on local CO levels was assessed at this intersection with the Caltrans CL4 interface based on the California LINE Source Dispersion Model (CALINE4), which allows microscale CO concentrations to be estimated along each roadway corridor or near intersections.

The maximum CO concentration measured at the Anaheim monitoring station over the last 3 years was 6.1 parts per million, which was measured in 2017. The 1-hour average CO concentration was added the ambient concentration to compare to the CAAQS. The 8-hour average CO concentration was added to the SCAQMD 8-hour CO ambient concentration of 4.6 parts per million for 2017 from the Anaheim monitoring station to compare to the CAAQS.

As shown in Table 4.2-10 (see Section 4.2, Air Quality), the maximum CO concentration predicted for the 1-hour averaging period at the studied intersections would be 4.1 ppm, which is below the 1-hour CO CAAQS of 20 ppm (CARB 2016). The maximum predicted 8-hour CO concentration of 2.90 ppm at the studied intersections would be below the 8-hour CO CAAQS of 9.0 ppm (CARB 2016). Neither the 1-hour nor 8-hour CAAQS would be equaled or exceeded at any of the intersections studied. Accordingly, the project would not cause or contribute to violations of the CAAQS, and would not result in exposure of sensitive receptors to localized high concentrations of CO. As such, impacts would be less than significant to sensitive receptors with regard to potential CO hotspots resulting from project contribution to cumulative traffic-related air quality impacts.

Health Effects of Other Criteria Air Pollutants

Construction and operational emissions of the project would not exceed the SCAQMD thresholds for any criteria air pollutants, including VOC, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$.

Health effects associated with O_3 include respiratory symptoms, worsening of lung disease leading to premature death, and damage to lung tissue (CARB 2019). VOCs and NO_x are precursors to O_3, for which the SCAB is designated as nonattainment with respect to the NAAQS and CAAQS. The contribution of VOCs and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the SCAB due to O_3 precursor emissions tend to be found downwind of the source location because of the time required for the photochemical reactions to occur. Further, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the VOC emissions would occur, because exceedances of the O_3 NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. Due to the lack of quantitative methods to assess this complex photochemistry, the holistic effect of a single project's emissions of O_3 precursors is speculative. That being said, because the proposed project would not exceed the SCAQMD thresholds and would be subject to applicable rules and regulations for the reduction of O_3 precursors (e.g., SCAQMD Rule 1113, Architectural Coatings), the proposed project would not contribute to health effects associated with O_3.

Health effects associated with NO_x include lung irritation and enhanced allergic responses (see Section 4.2.1; CARB 2019). Because project-related NO_x emissions would not exceed the SCAQMD mass daily thresholds, and because the SCAB is a designated attainment area for NO_2 and the existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards, it is not anticipated that the proposed project would contribute to exceedances of the NAAQS and CAAQS for NO_2 or result in potential health effects associated with NO_2 and NO_x.

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (CARB 2019). CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots was discussed previously and determined to be less than significant. Thus, the project's CO emissions would not contribute to significant health effects associated with this pollutant.

Health effects associated with PM_{10} include premature death and hospitalization, primarily for worsening of respiratory disease (CARB 2019). Construction and operation of the project would not exceed thresholds for PM_{10} or $PM_{2.5}$, would not contribute to exceedances of the NAAQS and CAAQS for particulate matter, and would not obstruct the SCAB from coming into attainment for these pollutants. The project would also not result in substantial DPM emissions during construction and operation. Additionally, the project would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction and operation, the project is not anticipated to result in health effects associated with PM_{10} or $PM_{2.5}$.

In summary, construction and operation of the proposed project would not result in exceedances of the SCAQMD significance thresholds for criteria pollutants, and potential health effects associated with criteria air pollutants would be less than significant.

Health Impacts of Toxic Air Contaminants

Project impacts may result from emissions of pollutants identified by the state and federal government as TACs or HAPs, respectively.

The greatest potential for TAC emissions during construction would be DPM emissions from heavy equipment operations and heavy-duty trucks during construction of the project and the associated health impacts to sensitive receptors. The closest sensitive receptors are existing residences located approximately 85 feet from the project site's eastern boundary. As shown in Table 4.2-9 (see Section 4.2, Air Quality), maximum daily particulate matter (PM_{10} or $PM_{2.5}$) emissions generated by construction equipment operation during site preparation (exhaust particulate matter, or DPM), combined with fugitive dust generated by equipment operation and vehicle travel, would be well below the SCAQMD significance thresholds. Moreover, total construction of the project would last approximately 4 months, after which project-related TAC emissions would cease.

No residual TAC emissions and corresponding cancer risk are anticipated after construction, and no long-term sources of TAC emissions are anticipated during operation of the project. Thus, the project would not result in a long-term (i.e., 9-year, 30-year, or 70-year) source of TAC emissions. Therefore, the exposure of sensitive receptors to project-related TAC emission impacts would be less than significant.

Other Emissions

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would potentially be generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would result from concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting operations, refineries, landfills, dairies, and fiberglass molding facilities (SCAQMD 1993). The project entails operation of a sports field and would not result in the creation of a land use that is commonly associated with odors. Therefore, project operations would result in an odor impact that would be less than significant..

Greenhouse Gas Emissions

Generation of Greenhouse Gas Emissions

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency’s discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009). To address impacts associated with greenhouse gas (GHG) emissions generated by the proposed project, the analysis described in Section 4.3, Greenhouse Gas Emissions, of this EIR, uses the SCAQMD recommended (not adopted) numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects. The proposed project's net GHG emissions was conservatively compared to the SCAQMD recommendation of a project-level screening threshold for commercial projects 1,400 metric tons carbon dioxide equivalent (MT CO_2e) per year.

Construction of the proposed project would result in GHG emissions that would primarily be associated with the use of off-road construction equipment, on-road hauling and vendor trucks, and worker vehicles. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the project, which is assumed to be 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 1,400 MT CO_2e per year (SCAQMD 2009).

As shown in Table 4.3-2 (see Section 4.3, Greenhouse Gas Emissions), the estimated total GHG emissions during construction would be approximately 176 MT CO_2e in 2020. Estimated project-generated construction emissions amortized over 30 years would be approximately 6 MT CO_2e per year. As with project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the project would be short term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions.

Operation of the proposed project would generate GHG emissions through motor vehicle trips to and from the project site; landscape maintenance equipment operation; energy use (natural gas and generation of electricity consumed by the project); solid waste disposal; stationary sources, and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. As shown in Table 4.3-3 (see Section 4.3, Greenhouse Gas Emissions), estimated annual project-generated operational emissions in 2020 plus amortized project construction emissions would be approximately 1,067 MT CO_2e per year. The project would not exceed the proposed SCAQMD threshold of 1,400 MT CO_2e for commercial sources. Therefore, the project's GHG contribution would be not cumulatively considerable and impacts would be less than significant.

Conflict with Applicable Greenhouse Gas Reduction Plan

Consistency with the City CAP

The City adopted its Climate Action Plan in February 2012, which is a long-range plan to reduce GHG emissions from municipal operations and community activities within the City. The CAP would also help the City adapt to effects of climate change. The City is committed to reducing its GHG emissions by 15% below 2009 levels by 2020, consistent with AB 32.

To reduce City-wide GHG emissions, the CAP identifies a series of climate action strategies that guide the City in four focus areas (transportation and mobile strategy, energy and conservation strategy, water use and efficiency strategy, and solid waste and recycling strategy) (City of Fullerton 2012a). However, most of the measures outlined in the CAP would not be directly applicable to the proposed project and are intended for the City to implement. Measures applicable to the proposed project include compliance with green building standards identified in Title 24, installation of energy-efficient lighting and equipment, and diversion of construction and demolition debris. For solid waste, the proposed project would comply with the 75% waste diversion requirement consistent with AB 341. Therefore, the proposed project would not conflict with the City's CAP.

Consistency with the SCAG 2016 RTP/SCS

SCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region. The 2016 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. The 2016 RTP/SCS is not directly applicable to the proposed project because the underlying purpose of the 2016 RTP/SCS is to provide direction and guidance by making the best transportation and land use choices for future development. In this case, the proposed project involves focused improvements to an existing athletic field that will enhance its athletic, academic and institutional functionalities, and does not propose to site a new land use in a new location. However, development of the proposed project would support goals of the 2016 RTP/SCS by using energy-efficient design, including conforming to the CALGreen code and installing low-flow plumbing fixtures. Additionally, the project is located near existing bus routes, which allows for the use of multi-modal transportation options by users of and visitors to the field.

Consistency with the CARB Scoping Plan

The Scoping Plan, approved by CARB in 2008 and updated in 2014 and 2017, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHG emissions. The Scoping Plan also requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.[2] Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer

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2 The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009a).

products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. As shown in Table 4.3-4 (see Section 4.3, Greenhouse Gas Emissions), the proposed project would be consistent with the applicable strategies and measures in the Scoping Plan. As such, the proposed project would not conflict with the Scoping Plan.

The project also would not impede the attainment of the GHG reduction goals for 2030 or 2050 identified in Executive Order (EO) S-3-05 and Senate Bill (SB) 32. As discussed in Section 4.3.2, EO S-3-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80% below 1990 levels by 2050. SB 32 establishes for a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40% below 1990 levels by December 31, 2030. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory toward meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

To begin, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update states the following (CARB 2014):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and EO S-3-05. This is confirmed in the 2017 Scoping Plan, which states (CARB 2017):

> This Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while identifying new, technologically feasible, and

> cost-effective strategies to ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

The proposed project would not interfere with implementation of any of the above-described GHG reduction goals for 2030 or 2050 because the project would not exceed SCAQMD's recommended draft interim threshold of 1,400 MT CO_2e per year (SCAQMD 2008). Additionally, the proposed project would not change the existing land use and would improve the existing facilities at the project site to better serve the college's needs, thereby reducing the need for the campus to use off-site facilities and amenities to accommodate its operations. This analysis provides support for the conclusion that the project would not impede the state's trajectory toward the above-described statewide GHG reduction goals for 2030 or 2050.

In addition, because the specific path to compliance for the state with regard to long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the proposed project would be speculative and cannot be identified at this time. The project's consistency with the Scoping Plan would assist in meeting the City's contribution to GHG emission reduction targets in California. With respect to future GHG targets under SB 32 and EO S-3-05, CARB has also made clear its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030 and EO S-3-05's 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets. Based on the above considerations, the proposed project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and no mitigation is required. This impact would be less than significant.

Hazards and Hazardous Materials

CEQA requires review of Section 65962.5 of the California Government Code, also known as the "Cortese List," to identify whether the project crosses or is in proximity to a site known to have had a hazardous materials release or to represent a threat to human health and the environment. The construction of the proposed project could have a potentially significant impact related to proximity to a site identified on the Cortese List. As further discussed in Section 4.4, Hazards and Hazardous Materials, there is one site within the Fullerton College campus identified in the Cortese List. The Fullerton College site references a prior release of petroleum (spillage from overfilling) discovered during underground storage tank closure in 1993 (SWRCB 1993). A cleanup action addressed the issue, and a no further action letter was issued by the RWQCB in 2004 (SWRCB 2017). However, because release cases can be closed with residual contamination in place in soils, a hazardous materials contingency plan (Contingency Plan) was prepared for Fullerton College to reduce any impacts from potentially contaminated soils.

The Contingency Plan details the procedures to be followed within the campus if potentially contaminated soils or contaminated sources (such as buried fuel tanks) are encountered during excavation activities. The Contingency Plan notes that potential soil contaminants within the project area include diesel from underground storage tanks and pesticides and arsenic from the former orchards located on the eastern portion of campus. However, diesel-impacted soils are easily identified via odors and staining, and the construction contractor is required to cease excavation if contaminant sources are found or suspected in the soil. The Contingency Plan requires the construction contractor to ensure that all workers are appropriately trained to identify contaminated soils. Additionally, because the potential for pesticides and arsenic to impact the soil is considered low, and because the earthwork processes that took place to develop the current field would have reduced any existing pesticide concentrations, impacts related to the former orchard would be less than significant (Black Rock Geosciences 2018; Kinnebrew, pers. comm. 2018). Should construction activities at the project site not follow applicable procedures, impacts would be potentially significant. Procedures outlined in the Contingency Plan would further reduce any impacts from potentially contaminated soils to less than significant. The proposed project would comply with the procedures to be followed within the project site if potentially contaminated soils or contaminant sources are encountered during excavation activities (MM-HAZ-1; see Section 4.4 for full text of MM-HAZ-1). Compliance with the Contingency Plan would ensure that hazards to the public or environment as a result of contaminated soils would not occur. Therefore, with implementation of MM-HAZ-1 impacts relating to location on a site included on a list of hazardous materials sites would be less than significant.

Noise

Substantial Temporary or Permanent Increase in Excess of Standards

Short-Term Construction Noise

Construction of the proposed project would generate noise that could expose nearby receptors to elevated noise levels that may disrupt communication and routine activities. As shown in Table 4.5-10 (see Section 4.5, Noise), when construction takes place near the eastern side of the project site noise levels are estimated to range from approximately 69 A-weighted decibels (dBA) energy equivalent level (L_{eq}) to approximately 79 dBA L_{eq} at nearby residences. This represents a temporary increase in noise levels of up to 12 decibels (dB), compared to measured ambient noise levels.[4] The loudest construction phases would be during project site paving and

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[4] As shown in Table 4.5-2, measured daytime ambient noise levels ranged from 67 to 70 dBA L_{eq}; 79 dBA L_{eq} minus 67 dBA L_{eq} represents a difference of 12 dB.

site preparation. More typically, construction noise levels are estimated to range from approximately 68 to 73 dBA L_{eq}.

Fullerton College is part of a state agency subject to building permit approvals by the Division of the State Architect, but the City's Noise Control Ordinance provides guidance regarding normal hours for construction activities (Monday through Saturday, 7:00 a.m. to 8:00 p.m.) (City of Fullerton 2001). As part of the standard construction procedures for the project, the District would limit construction activities to those hours set by the City's Noise Control Ordinance. No construction activities are expected on Sundays or on City-recognized holidays, and construction would not occur after 8:00 p.m. on Mondays through Saturdays. Accordingly, the proposed project would not result in generation of noise levels in excess of standards established in the City's Noise Control Ordinance or other applicable noise standards.

However, the proposed project would generate noise from construction that would be audible and would temporarily elevate the local ambient noise level at locations within several hundred feet of construction. In addition, the predicted temporary increase in the ambient noise level would exceed the California Energy Commission threshold of 10 dB; therefore, impacts are considered potentially significant. In an effort to avoid construction noise impacts, Mitigation Measure (MM) NOI-1 is required to control construction noise to the extent practicable and feasible (see Section 4.5 for full text of MM-NOI-1). With implementation of MM-NOI-1, construction noise impacts would be less than significant.

Long-Term Operational Noise

Potential operational noise impacts associated with the proposed project would include periodic increases in on-site noise resulting from the proposed improvements to Sherbeck Field, and off-site traffic noise. As further explained in Section 4.5, acoustical models were generated for projected crowd noise, on-field/sideline noise, projected noise levels from the proposed speaker system, and for existing traffic noise in the project area.

As shown on Table 4.5-11 (see Section 4.5), the primary on-site noise source would be the proposed PA system. Combined sound levels range from approximately 69 dBA L_{eq} at residences to the northeast of the project site to approximately 76 dBA L_{eq} at the nearest residences (east of the project site). Compared to the existing modeled noise levels, the periodic sound level increase at the nearby residences would range from approximately 7 to 13 dB.[5]

Based on the Fullerton Municipal Code, the proposed project is exempt from City of Fullerton's on-site operational noise standards due to the exemption in Section 15.90.040.A.1 of the Noise

5 The noise levels reflect a conservative analysis for the anticipated approximately five regular and up to two playoff football games per year which would be held at Sherbeck Field.

Ordinance. Therefore, the standards provided in the Noise Ordinance are not applicable. However, the periodic noise increase of up to 13 dB is considered to be a substantial noise increase based on the Federal Interagency Committee on Noise (FICON) guidance described in Section 4.5.2, and as shown in Table 4.5-6 (see Section 4.5, Noise). Therefore, the on-site operational noise associated with the project would be a significant noise impact.

Various mitigation measures were considered, including noise barriers on the project property line, the proposed bleachers, and at the residential property line, and determined to either be ineffective or infeasible.[6] Other potential mitigation measures included a focused PA speaker system and reduced seating capacity, which were determined to result in overall noise reductions of between 3 and 6 dB. Such scenarios would not reduce the periodic noise increases to a level of less than significant.[7] A reduced project alternative is considered in Chapter 6, Alternatives. Alternative speaker placement (i.e., in front of the grandstands) was investigated but was found to be infeasible because proper placement of these loudspeakers would require installation in the center of the proposed track. The analysis also indicated no significant sound level reductions would be afforded by this option. To reduce operational noise impacts, the District would restrict field event times at Sherbeck Field in accordance with MM-NOI-2. However, this would not reduce noise levels during Fullerton College-hosted events to a less than significant level. Therefore, the on-site noise from the proposed project is considered to be a significant unavoidable adverse impact.

Additionally, potential noise effects would result from vehicular traffic associated with a variety of project-related operational scenarios. Data used to model noise from vehicular traffic was derived from the project-specific traffic impact analysis report prepared by Linscott, Law, and Greenspan in 2018 (see Appendix F).

Noise levels were modeled at representative noise-sensitive receivers. The receivers were modeled to be 5 feet above the local ground elevation. Fourteen receivers (M1 through M14) represented existing off-site residences or other noise-sensitive land uses (in this instance, a school (Fullerton Union High School) and a park (Byerrum Park). All 14 of these receptors are adjacent to arterial roadways in the proposed project area, along which project-related traffic is anticipated to travel (see Figure 4.5-2, Traffic Noise Modeling Locations). Traffic volumes were obtained from the traffic study conducted for the proposed project site for the scenarios listed above, and used to model noise levels under those scenarios. Traffic noise impacts were calculated by comparing the various

[6] Due to the height of the speakers and grandstands, noise barrier walls to shield these sources would need to be constructed to a very high elevation to provide acoustic shielding to residential receptors, as speaker arrays and the top row of the crowd are located at elevations of 30 feet above grade. Similarly, noise barrier walls on the bleachers would likely add significant structural weight for little acoustic benefit, and are therefore also not considered feasible.

[7] As shown in Tables 6 through 13 of the Veneklasen Associates report (see Appendix E), the increase in combined (or cumulative) noise compared to existing would be up to 11 dB under these alternative scenarios.

Existing baseline conditions, Existing Plus Project, Year 2030 Without Project, and Year 2030 With Project traffic scenarios.

The information provided from this modeling was compared to the noise impact significance criteria to assess whether project-related traffic noise would cause a significant impact, and, if so, where. The results of the comparisons for the existing scenarios are presented in Table 4.5-12, and the results of the comparisons for the Year 2030 scenarios are presented in Table 4.5-13 (see Section 4.5, Noise).

As shown in Table 4.5-12, typical existing weekday PM noise levels would not increase as a result of the proposed project. This is because additional project trips associated with the proposed weekday activities (i.e., academic instruction and practice) would be relatively few in number. On the Saturdays on which football games would take place, greater numbers of vehicle trips would be generated during the approximately 2 hours of arrival time (generally in the late morning/early afternoon hours) and 2 hours of departure time (generally in the late afternoon hours). As shown, during these periods, project-related peak-hour traffic noise levels are predicted to increase approximately 0 to 6 dB, depending on the location. The higher traffic noise increases would occur at receivers near the project site (primarily M1 through M4), along the east side of North Berkeley Avenue. Periodic changes in the traffic noise level of 5 to 6 dB are considered clearly audible. At receivers located along arterials more distant from the project site, project-related peak-hour traffic noise levels would increase by 0 to 2 dB. Changes in noise level of this order are typically not audible, in the context of the community noise environment (i.e., outside of a listening laboratory or similar controlled condition).

The results for the Year 2030 scenarios are similar to those for the existing cases. As shown in Table 4.5-13, typical Year 2030 weekday PM noise levels would not increase as a result of the proposed project. This is because additional project trips associated with the proposed weekday activities (i.e., academic instruction and practice) would be relatively few in number. On the Saturdays on which football games would take place, greater numbers of vehicle trips would be generated during the approximately 2 hours of arrival time (generally in the late morning/early afternoon hours) and 2 hours of departure time (generally in the late afternoon hours). As shown, during these periods, project-related peak-hour traffic noise levels are predicted to increase approximately 0 to 5 dB, depending on the location. The higher traffic noise increases would occur at receivers near the project site (primarily M1 through M4), along the east side of North Berkeley Avenue. Periodic changes in the traffic noise level of 5 dB are considered to be clearly audible. At receivers located along arterials more distant from the project site, project-related peak-hour traffic noise levels would increase by 0 to 2 dB. Changes in noise level of this order are typically not audible, in the context of the community noise environment (i.e., outside of a listening laboratory or similar controlled condition).

Because the project-related traffic noise increases are predicted to occur for relatively short periods (for the 2 hours prior to and 2 hours after the games), these increases would not result in a significant change in the overall 24-hour noise levels. The maximum periodic traffic noise of 6 dB would result in a 1 dB or less increase in terms of the community noise equivalent level (CNEL), which is not perceptible or significant. Nonetheless, based on the FICON thresholds for increases in community noise, the periodic noise increase (in terms of hourly average (L_{eq})) is considered substantial. Because the project would result in periodic noise level increases of up to 6 dB, and because there is no feasible mitigation to address this vehicular-based noise, this is considered a significant unavoidable adverse impact.

Excessive Groundborne Noise

As further discussed in Section 4.5, Construction activities that might generate excessive groundborne vibration or groundborne noise could cause a potentially significant impact. Groundborne vibration information related to construction activities has been collected by the California Department of Transportation. This information indicates that continuous vibrations with a peak particle velocity of approximately 0.1 in/sec begin to annoy people (Caltrans 2004). Groundborne vibration is typically attenuated over short distances. The closest residences to the demolition/construction areas would be approximately 85 feet away. More typically, residential land uses would be located approximately 250 feet or more from demolition and construction activities. The heavier pieces of construction equipment, such as large bulldozers and loaded trucks, would have peak particle velocities of approximately 0.089 in/sec or less at a distance of 25 feet (FTA 2006). At a distance of 85 feet and beyond, the peak particle velocity with the anticipated construction equipment would be approximately 0.014 in/sec or less. At 250 feet, the peak particle velocity with the anticipated construction equipment would be approximately 0.003 in/sec. Thus, the vibration levels from demolition and construction activities would be below 0.1 inches per second at the adjacent residences. Vibration is very subjective. Continuous vibration levels near the level of perception (or approximately a peak particle velocity of 0.01 inches per second) can be annoying to some. However, construction activities are not anticipated to result in continuous vibration levels that would reach a peak particle velocity of 0.01 inches per second; therefore, the vibration impact would be less than significant.

Pile driving, blasting, or other special construction techniques are not anticipated to be used for construction of the proposed project; therefore, excessive groundborne vibration and groundborne noise would not be generated. Additionally, groundborne vibration would not be associated with the proposed project following construction activities and no impacts related to excessive groundborne vibration would occur.

Public Services

Fire Protection

The proposed project would generate additional demand for fire protection and emergency medical services by adding additional uses to Sherbeck Field (see Section 4.6, Public Services, for more detail). Based on information from Orange County Fire Authority and Fullerton Fire Department, the proposed project is anticipated to generate one additional call for service during the fiscal year. In 2017, the Fullerton Fire Department responded to 14,644 total incidents (fire, emergency medical, etc.). In comparison, the proposed project's increase in annual calls represents 0.007%. Considering this nominal increase, the proposed project would have a less than significant impact to fire protection and emergency medical services.

As discussed in Section 4.6, Public Services, in 2017 and 2018, the Fullerton Fire Department had average response times of 8 minutes and 49 seconds, and 8 minutes and 47 seconds, respectively (Ramirez pers. comm. 2019). Thus, the Fullerton Fire Department does not currently meet its objective response time at 6 minutes and 30 seconds. However, considering the proposed project represents 0.007% of the Fullerton Fire Department's annual calls, the proposed project would not substantially impact the Fullerton Fire Department's ability to maintain response time goals.

Because the proposed project would result in a limited number of additional calls for fire or emergency medical service, in combination with the fact that the project would not result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, the proposed project would have a less than significant impact on fire protection or emergency medical services.

Police Protection

The proposed project would generate additional demand for police protection services by adding additional uses to Sherbeck Field. Based on the information from the Orange County Sheriff's Department and Fullerton Police Department, it is anticipated that the proposed project could result in 1 additional call for service per game, resulting in a total of up to 7 calls for service during the fiscal year.[8] With the addition of 7 calls annually, in comparison to the 52,621 calls that were made in 2017, the proposed project would result in a marginal increase (0.013%) in annual calls. In addition, the Campus Safety Department would continue to be the primary law enforcement agency on campus, and the proposed project site is already part of the normal patrol and enforcement area of the Campus Safety Department.

[8] Approximately five regular and up to two playoff football games per year would be held at Sherbeck Field.

As previously discussed in Section 4.6.1, the Fullerton Police Department strives to dispatch received calls for service within 2 minutes or less (Wright, pers. comm. 2019). Considering the proposed project represents 0.0013% of the Fullerton Police Department's annual calls, and that the Fullerton Police Department is located approximately 0.5 miles southwest of the Fullerton College campus, the proposed project would not substantially impact the Fullerton Police Department's ability to maintain dispatch time goals.

Therefore, in light of the proposed project's forecasted effect on existing response times, in combination with the fact that project implementation would not result in the need for new or physically altered governmental facilities, the proposed project would not result in potentially significant impacts to police services, and no mitigation is necessary.

Traffic and Circulation

Construction Traffic Impact Analysis

Construction-related trips associated with trucks and workers traveling to and from the site in the morning and afternoon may result in some minor traffic delays; however, potential traffic interference caused by construction vehicles would create a temporary/short-term impact to vehicles using Berkeley Avenue and Chapman Avenue in the morning and afternoon hours and the number of construction workers will vary depending on the specific construction activities over time.

Traffic impacts to the adjacent roadway network will be minimal and not long-term. Further, since the construction-related trip generation potential of the proposed project (i.e., all five construction components) is less than that of the proposed project (i.e., weekday academic instruction), and the proposed project (i.e., field event) is not expected to significantly impact any of the key study intersections, no significant impacts resulting from construction traffic are anticipated aside from the nuisance traffic that will occur as a result of construction-related traffic (e.g., construction materials, construction workers). Nonetheless, to reduce the impact of construction-related traffic, the implementation of a Construction Management Plan is recommended to minimize traffic impacts upon the local circulation system in the area (MM-TRA-1). With implementation of MM-TRA-1, impacts associated with construction traffic would be less than significant.

Operational Traffic Impact Analysis

A TIA (Appendix F) was prepared for the proposed project that included LOS calculations for 31 key study intersections for Existing plus Project traffic conditions, Year 2020 plus Project traffic conditions, and Year 2030 Buildout plus Project traffic conditions. Traffic conditions were further evaluated by weekly academic instruction, Saturday field event, and Friday field event impacts. According to the City of Fullerton, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours. The proposed project (weekly academic instruction) would not significantly impact any of the intersections under Existing plus Project, Year 2020 plus Project, or Year 2030 Buildout plus Project traffic conditions. The proposed project (Saturday field event) would significantly impact 3 of the 31 key study intersections under Existing plus Project, Year 2020 plus Project, and Year 2030 Buildout plus Project traffic conditions. The proposed project (Friday field event) would significantly impact 4 of the 31 key study intersections under Existing plus Project and Year 2020 plus Project traffic conditions. The implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 would improve the intersections' LOS operation to an acceptable level. With implementation of MM-TRA-2, cumulative impacts to the four key study intersections would be less than significant.

Additionally, Table 4.8-15 (see Section 4.8, Transportation) indicates that implementation of improvements at the impacted key study intersection of State College Boulevard/Chapman Avenue would completely offset the impact of project traffic (MM-TRA-3). MM-TRA-3 is proposed to mitigate the Year 2030 Buildout plus Project Saturday field event traffic scenario at the intersection of the State College Boulevard/Chapman Avenue. Although implementation of improvements at State College Boulevard/Chapman Avenue would completely offset the impact of project traffic, the proposed project cannot guarantee that these improvements, which are located in the City of Fullerton, will be implemented. Therefore, impacts would be significant and unavoidable.

Under the California Department of Transportation (Caltrans) methodology, Year 2030 Buildout plus Project traffic conditions would impact one of the six state-controlled Caltrans intersections. The remaining five state-controlled study intersections are forecast to continue to operate at acceptable LOS D or better with the addition of project generated traffic in the Year 2030. MM-TRA-4 is proposed to mitigate Year 2030 Buildout plus Project weekly academic instruction traffic scenario under the Caltrans methodology at the state-controlled intersection State Route (SR) 57 northbound (NB) Ramps at Chapman Avenue. Although implementation of improvements at the impacted state-controlled intersection of the SR-57 NB Ramps/Chapman Avenue would completely offset the impact of project traffic, the proposed project cannot guarantee that these improvements, which are located in the City of Fullerton and/or also under the jurisdiction of Caltrans, will be implemented. Therefore, impacts would be significant and unavoidable.

Adequate storage is provided at the off-ramps for all six state-controlled study intersections under Existing plus Project, Year 2020 plus Project, and Year 2030 Buildout plus Project traffic conditions during the weekday PM peak hour, Saturday Event Arrival peak hour, and Saturday Event Departure peak hour. Therefore, impacts associated with off-ramp queuing would be less than significant.

A review of the level of service (LOS) calculations summarized in Tables 4.8-34 through 4.8-40 (see Section 4.8, Transportation) indicates that the development of the proposed project in combination with cumulative development and ambient traffic growth is anticipated to significantly impact one of the eight freeway segments under Existing plus Project Saturday traffic conditions, two of the eight freeway segments under Year 2020 Cumulative plus Project Saturday traffic conditions, and three of the eight freeway segments under Year 2030 Buildout plus Project Saturday traffic conditions. However, SR-57 and SR-91 are controlled exclusively by the State of California and there is no mechanism by which the lead agency can construct or guarantee the construction of any improvements to these freeway segments. Therefore, the proposed project's incremental impacts on these key freeway study segments are considered unmitigatable as there are no feasible mitigation measures that will reduce cumulative mainline impacts to below significance thresholds or achieve acceptable service level goals. Impacts to freeway segments would be significant and unavoidable.

A review of the LOS calculations summarized in Tables 4.8-41 through 4.8-43 (see Section 4.8, Transportation) indicates that the development of the proposed project in combination with cumulative development and ambient traffic growth would not significantly impact any of the eight freeway ramp junctions under Existing plus Project Saturday traffic conditions, one of the eight freeway ramp junctions under Year 2020 Cumulative plus Project Saturday traffic conditions, and three of the eight freeway ramp junctions under Year 2030 Buildout plus Project Saturday traffic conditions. However, SR-57 and SR-91 are controlled exclusively by the state and there is no mechanism by which the lead agency can construct or guarantee the construction of any improvements to these ramp junctions. Therefore, the proposed project's incremental impacts on these freeway ramp junctions are considered unmitigatable as there are no feasible mitigation measures that will reduce cumulative impacts to below significance thresholds or achieve acceptable LOS goals. Impacts to freeway ramp junctions would be significant and unavoidable.

Tribal Cultural Resources

Register of Historical Resources

As part of the Cultural Resources Report (Appendix G) prepared for the Fullerton College Facilities Master Plan, all buildings and structures were photographed, researched, and evaluated for historical significance in consideration of the California Register of Historical Resources (CRHR) and City designation criteria. No listed, or eligible for listing, tribal cultural resources were identified on the project site as a result of the California Historical Resources Information System (CHRIS) records search, Native American Heritage Commission Sacred Lands File search, or Native American consultation. Therefore, no impacts associated with historical resources listed or eligible for listing in the CRHR or a local register would occur pertaining to the Sherbeck Field site.

Public Resource Code Section 5024.1

The proposed project is subject to compliance with Assembly Bill 52 (California Public Resources Code, Section 21074), which requires the consideration of impacts to tribal cultural resources as part of the CEQA process, and requires the District to notify groups that are traditionally or culturally affiliated with the geographic area of the proposed project and who have requested notification. The District received one request from California Native American tribes for Assembly Bill 52 project notification. Specifically, the request came from Andrew Salas, Chairman of the Gabrieleño Band of Mission Indians–Kizh Nation, with whom the District consulted previously on the Fullerton College Facilities Master Plan. Mr. Salas sent a letter to the District, as the lead agency, dated April 1, 2018, to request formal notification of proposed projects within the Gabrieleño Band of Mission Indians–Kizh Nation's geographic area of traditional and cultural affiliation.

Pursuant to Section 15082 of the CEQA Guidelines, a Notice of Preparation (NOP) dated April 9, 2018, was circulated for a 30-day public comment period. During the public review period, the District contacted Mr. Salas on April 12, 2018, via email, to provide formal notification of the proposed Sherbeck Field Improvements Project. The District provided Mr. Salas an attachment of the Initial Study and NOP. In accordance with CEQA Section 21080.3.1, the District had provided formal notification prior to the release of the EIR. However, the California Native American tribe did not responds within 30 days of receipt of the formal notification. The District followed up with an email to Mr. Salas on June 14, 2018, but as of the publication date of the Draft EIR (May 2019), the District has received no response from Mr. Salas or the Gabrieleño Band of Mission Indians–Kizh Nation. Because the District did not receive any response, there was no requirement for consultation, and thus no consultation occurred.

No archaeological resources were identified within the project site as a result of the CHRIS records search or Native American consultation. In addition, grading activities associated with the proposed project would consist of excavation to an average depth of 3 feet. Since the existing project site has already been graded to a depth of greater than 3 feet for the existing utilities and other developments located on site, it is unlikely tribal cultural resources would be exposed during construction. Therefore, the District also has determined that no significant resources pursuant to the criteria set forth in Public Resources Code Section, Section 5024.1(c) exist on Sherbeck Field or would be impacted by the proposed project. In summary, no known geographically defined tribal cultural resources were identified within, or in the immediate vicinity of, the Fullerton College campus.

Nonetheless, because it is always possible that intact archaeological deposits are present at subsurface levels and could be uncovered during ground-disturbing activities, MM-TCR-1 is included to reduce impacts to archaeological resources that are significant under CEQA (14 CCR 15064.5(f); California Public Resources Code, Section 21082) to a less than significant level.

Therefore, given compliance with all applicable rules, ordinances, and regulations and implementation of MM-TRC-1, significant impacts to tribal cultural resources would be reduced to less than significant levels.

Utilities and Service Systems

Potable Water

Water service for the proposed project is and would continue to be obtained through purchase of municipal water from the City. As discussed in Section 4.10, Utilities and Service Systems, the field house is the only water-using feature on the project site. Based on the monthly water bills provided by Fullerton College for January 2009 through January 2016, the average annual water use for the Fullerton College campus is estimated to be 102,000 gallons per day (gpd). The estimated annual indoor water use for the field house is estimated to be 1,361 gpd. The proposed installations would include bleachers, lighting, a sound system, a press box, and a storage building. The proposed installations would allow for additional evening physical education classes, and five regular and up to two playoff football games per year. The evening classes would allow up to 32 students additional students to patronize the water-using features in the field house, while the football games could allow up to 4,417 students.[9] As such, the greatest water demand resulting from the proposed project would likely be during up to seven football games. This increase in use at Sherbeck Field could increase the annual indoor water use for the field house.

The field house is currently the only water-using feature on the project site. The water-using devices at the field house include 29 toilets (1.6 gallons per flush), 4 urinals (1.5 gallons per flush), 25 sinks, and 6 water fountains (Moscol, pers. comm. 2018). As previously discussed in Section 4.10.3.1, Methodology, the proposed project would generate a water demand of 15,360 gallons per year for academic instruction and 136,740 gallons per year for field events, for a total of 152,100 gallons per year.

According to the City of Fullerton's 2015 Urban Water Management Plan, institutional/governmental uses accounted for 605 acre-feet (or 197,140,114 gallons per year) in fiscal year 2014–15. The projected 2020, 2025, 2030, 2035, and 2040 water demand by institutional/government uses is estimated to be 593 acre-feet, 636 acre-feet, 641 acre-feet, 641 acre-feet, and 642 acre-feet, respectively (City of Fullerton 2017). Using the actual water demand from fiscal year 2014–15, the project's projected increase in water demand would be 0.08% of the total water use for institutional/governmental use. Thus, the proposed project's contribution to water demand is considered nominal. Additionally, the 2015 Urban Water Management Plan

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[9] This conservatively assumes the maximum attendance for games based on additional 4,417 seats. However, based on attendance at off-site games, there have been approximately 1,600 attendees for a regular season football game and approximately 3,000 attendees for a playoff game (Saghieh, pers. comm. 2017).

determined that due to the diversified supply and conservation measures, the water supply would meet demand for projected years between 2020 and 2040 under the multiple dry years scenario (City of Fullerton 2017).

Because the City's water demand can be met under multiple dry years, and because supply would meet projected demand due to diversified supply and conservation measures, the proposed project's water demands would be served by the City's projected current and future supplies, especially since the proposed project would use a relatively nominal percentage of the projected supplies available to the City moving forward. Therefore, the proposed project would not result in the relocation or construction of any new or expanded water facilities, and impacts associated with water facilities and supplies would be less than significant.

Wastewater

City sewer lines operating on the Fullerton College campus are connected to Orange County Sanitation District (OCSD) trunk lines, and effluent is treated by the OCSD treatment plants in Huntington Beach and Fountain Valley.

The OCSD treatment plants have a combined primary treatment capacity of 372 million gallons per day (MGD) and are currently processing approximately 187 MGD (OCSD 2009, 2016). Reclamation Plant No. 1, located in Fountain Valley, has a primary capacity of 204 MGD and treats water to be reclaimed by Orange County Water District for landscape irrigation use and groundwater replenishment. To avoid overloading Reclamation Plant No. 1, wastewater can also be diverted to Treatment Plant No. 2, in Huntington Beach, where effluents are mixed, dechlorinated with sodium bisulfite, and disposed of in the ocean (OCSD 2011).

As previously discussed in Section 4.10.1, the average sewer flow for the Fullerton College campus, calculated based on annual water use, was determined to be 65 gpd per thousand square feet. The existing field house is approximately 20,940 GSF and thus generates approximately 1,361 gpd of sewer flow (Psomas 2017).

The proposed project would not result in the construction of new buildings, which would generate new indoor water uses and subsequently sewer flows. However, the additional academic instruction and field events resulting from the proposed project would result in additional water demand of 152,100 gallons per year, which would subsequently enter the City's sewer lines, then OCSD's trunk lines. The existing trunk lines at Sherbeck Field includes a 6-inch sewer line located just east of the existing field house, which gravity flows into an 8-inch pipe that runs along North Berkeley Avenue (Psomas 2017).

Given that the OCSD treatment plants have a remaining capacity of 185 MGD, the proposed project's maximum peak daily flow of 13,674 gallons per day represents 0.007% of the remaining capacity, and thus, would not exceed treatment capacity of the OCSD treatment plants. In addition, the proposed project would generate the same types of municipal wastewater that are currently generated throughout the City. Therefore, the proposed project would not result in the relocation or construction of any new or expanded wastewater facilities, and impacts associated with wastewater treatment facilities would thus be less than significant.

Stormwater

The pervious area on the project site consists of approximately 0.11 acres on the northern portion and 0.57 acres on the southern portion. The project site is largely developed, and implementation of the proposed project would not result in the new construction or installation of stormwater drainage facilities. However, because the proposed project would increase impervious areas on the project site and in response to the City of Fullerton's comment on the notice of preparation regarding anticipated quantities of discharge into storm drains (see Appendix B), a preliminary drainage analysis was performed for the proposed project (Appendix H). The preliminary drainage analysis determined that approximately 90% of the pervious drainage areas would become impervious upon implementation of the proposed project. However, due to the nature of the proposed project it is not anticipated that any major drainage patterns would need to be altered to effectively treat stormwater on the project site (Appendix H). The proposed installation would not substantially change the amount of distribution of impervious surfaces relative to existing conditions because the project site is largely developed and surrounded by urban land uses; therefore, the proposed project is not anticipated to substantially modify existing topography, drainage-shed boundaries, or runoff rates/patterns.

The preliminary drainage analysis prepared for the proposed project conducted a stormwater design and analysis per the Orange County Technical Guidance Document (TGD). In accordance with the TGD, any increase in runoff that would be generated from a project-related increase in impervious areas must be treated through best management practices (BMPs) or captured and reused. Based on the TGD and site characteristics, the proposed project would ensure that the site runoff is captured and directed into bioswales on the northern and southern sides of the site. Each swale would be designed as a trapezoid with side slopes of no more 2:1, with a 3-foot base width, as shown in the preliminary drainage analysis (Appendix H) prepared for the proposed project (MM-UTL-1). Implementation of MM-UTL-1 would ensure that the proposed project would not result in an increase in stormwater runoff from the project site.

Electric Power

The proposed project's operational phase would require electricity for building operation (appliances, lighting, etc.). The project is estimated to have a total electrical demand 10,010 kilowatt-hours per year (or 0.01 gigawatt-hours (GWh) per year. The non-residential electricity demand in 2017

13,285 GWh for Orange County (County) (CEC 2018). The project would be built in accordance with the current Title 24 standards at the time of construction and CalGreen. The energy-using fixtures within the proposed project would likely be newer technologies, utilizing less electricity power. Therefore, the proposed project would not result in increased energy demand that would necessitate the relocation or construction of new or expanded off-site distribution systems, local or regional energy supplies, or power generating capacity, and no significant impacts would result from the proposed project.

Natural Gas

Natural gas consumption during operation would be required for various purposes, including, but not limited to, building heating and cooling of the Field House. The proposed project involves the installation of bleachers, lighting, a sound system, a press box, and a storage building. As such, the proposed improvements would not generate a substantial increase in natural gas use, such that construction or relocation of new or expanded facilities is required. Additionally, the applicant would ensure that the project would meet Title 24 requirements applicable at that time, as required by state regulations through their plan review process. Therefore, no significant impacts associated with natural gas facilities would result from the proposed project.

Telecommunications

The proposed project involves the installation of bleachers, lighting, a sound system, a press box, and a storage building. Since the project site is in an urbanized area and within the existing Fullerton College Campus, there are existing telecommunication facilities that would be able to serve the project site. The proposed installations requiring telecommunication services (e.g., the press box) would be able to connect to existing telecommunication services without the need for expansion or construction on new facilities. Therefore, impacts would be less than significant.

Energy

Implementation of the project would increase the demand for electricity and natural gas at the project site and gasoline consumption in the region during construction and operation.

Electricity

The proposed project would utilize electricity during temporary construction activities and the operational phase of the proposed project. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools and several construction trailers by managerial staff during the hours of construction activities. The operational phase would require electricity for multiple purposes including, but not limited to, building heating and cooling, lighting, appliances, and electronics. The project would be built in accordance with the current Title 24 standards at the time of construction and CALGreen. Therefore, due to the limited amount of electricity use compared to that generated by the project, and the inherent increase in efficiency of building code regulations, the project would not result in a wasteful use of energy. Impacts associated with electricity use would be less than significant.

Natural Gas

Natural gas is not anticipated to be required during construction of the project. Natural gas consumption during operation would be required for various purposes, including, but not limited to, building heating and cooling. The project is subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Title 24, Part 11, contains additional energy measures that are applicable to project under CALGreen. Prior to project approval, the applicant would ensure that the project would meet Title 24 requirements applicable at that time, as required by state regulations through their plan review process. Thus, the natural gas consumption of the project would not be considered inefficient or wasteful. Impacts associated with natural gas use would be less than significant.

Petroleum

Petroleum would be consumed throughout construction of the project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and VMT associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. As shown in Tables 4.11-2 through 4.11-5 (See Section 4.11, Energy), the project is estimated to consume 294,825 gallons of petroleum during the construction phase. By comparison, approximately 6.14 billion gallons of petroleum would be consumed in California over the course of the project's construction phase based on the California daily petroleum consumption estimate of approximately 52.9 million gallons per day (CEC 2016). By comparison, Countywide total petroleum use by vehicles is expected to be 1.4 billion gallons per year by 2020 (CARB 2018). The project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Therefore, because petroleum use during construction would be temporary and relatively minimal, and would not be wasteful or inefficient.

The fuel consumption resulting from the project's operational phase would be attributable to employees and visitors traveling to and from the project site. Mobile sources from the project would result in approximately 1.08 million gallons of gasoline per year beginning in 2020. By comparison, California as a whole consumes approximately 19.3 billion gallons of petroleum per year (CEC 2016). Countywide total petroleum use by vehicles is expected to be 1.4 billion gallons per year by 2020 (CARB 2018). Over the lifetime of the project, the fuel efficiency of the vehicles being used by the employees and visitors is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emissions vehicles in California (CARB 2013). Additionally, in response to SB 375, CARB adopted the goal of reducing per-capita GHG emissions from 2005 levels by 8% by 2020, and 13% by 2035 for light-duty passenger vehicles in the planning area for the Southern California Association of Governments. As such, operation of the project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy. Impacts related to petroleum use would be less than significant.

Wildfire

According to CAL FIRE's Fire Hazard Severity Zone Map, the project site is not located within a Very High Fire Hazard Severity Zone (VFHSZ) (CAL FIRE 2019). The project site is located approximately 2 miles from lands classified as VHFHSZ. As such, the project site is not located in a VHFHSZ area. In addition, the areas between the project site and the nearest VHFHSZ are built-out and connected via local roads. Further, mandated fire department and Division of the State Architect fire and life safety review on the project plans would ensure implementation of the proposed project would not interfere with an adopted emergency response or evacuation plan. Therefore, emergency access would be ensured and the proposed project would not interfere with an adopted emergency response or evacuation plan.

In addition, the project site and surrounding area is urbanized and relatively flat. Therefore, the proposed project would not due to slope, prevailing winds, and other factors, exacerbate wildfire risks. Since the project site is within a developed portion of the City, the proposed project would not require the installation or maintenance of infrastructure that may exacerbate fire risk. There are no existing drainage features located on the project site, which would be subject to downstream flooding. Further, the project site is already developed and would not experience runoff, post-fire slope instability, or drainage changes as a result of being located in or near a VHFHSZ. Impacts would be less than significant.

4.7.5 Cumulative Analysis

The geographic context for analysis of cumulative impacts to recreational facilities is the City of Fullerton. However, existing recreational facilities within the City would not experience a significant increase in visitors as a result of the proposed project. Projects within the City could result in cumulative impacts to recreational facilities in the City through the increase in demand for recreational facilities. A list of cumulative projects is included in Table 3-3 of this EIR. Only residential projects or growth-stimulating projects that increase population create demand for recreational facilities. The City's Municipal Code Chapter 21.12 establishes a fee for any dwelling unit in the City (with exceptions) to provide for the acquisition, development, and improvement of public parks and recreational facilities in the City. All past, present, and future residential projects in the surrounding area would be required to comply with the requirements of Chapter 21.12 of the City's Municipal Code. However, as discussed in Section 4.7.4, Impacts Analysis, the proposed project would result in potentially significant and unavoidable impacts to operational noise and future traffic and circulation conditions. Since the proposed project entails the construction of recreational facilities, the proposed project would contribute to cumulatively considerable impacts.

4.7.6 Mitigation Measures

MM-NOI-1 (See Section 4.5, Noise)

MM-NOI-2 (See Section 4.5, Noise)

MM-HAZ-1 (See Section 4.4, Hazards and Hazardous Materials)

MM-TRA-1 (See Section 4.8, Transportation)

MM-TRA-2 (See Section 4.8, Transportation)

MM-TRA-3 (See Section 4.8, Transportation)

MM-TRA-4 (See Section 4.8, Transportation)

MM-TRC-1 (See Section 4.9, Tribal Cultural Resources)

MM-UTL-1 (See Section 4.10, Utilities and Service Systems)

4.7.7 Level of Significance After Mitigation

Mitigation measures listed in Section 4.7.5 would reduce potential impacts related to construction noise, hazards and hazardous materials, transportation, tribal cultural resources, and utilities to less than significant. . With implementation of MM-NOI-1, short-term construction impacts associated with exposure of persons to or generation of noise levels in excess of established standards would be less than significant. The proposed project would implement MM-NOI-2 to limit operational noise impacts. However, noise impacts associated with periodic operation of the proposed project would remain as significant unavoidable adverse impacts

With incorporation of MM-HAZ-1 impacts associated with potentially contaminated soil would be less than significant.

MM-TRA-1 is proposed to ensure impacts to the surrounding street system are kept a minimum during project construction. With implementation of MM-TRA-1, construction impacts would be less than significant.

MM-TRA-2 is proposed to mitigate impacts associated with the conflict of an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system for the following intersections: Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, Berkeley Avenue/College Driveway No. 2, and Lemon Street at Fullerton College Drive, under the Existing Plus Project Saturday, Existing Plus Project Friday, Year 2020 Plus Project Saturday, Year 2020 Plus Project Friday, and Year 2030 Buildout Plus Project Saturday traffic scenarios. The implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, Berkeley Avenue/College Driveway No. 2, and Lemon Street at Fullerton College Drive would improve the intersections' LOS operation to an acceptable level.

MM-TRA-3 is proposed to mitigate the Year 2030 Buildout plus Project Saturday field event traffic scenario at the intersection of the State College Boulevard/Chapman Avenue. Although implementation of improvements at State College Boulevard/Chapman Avenue completely offsets the impact of project traffic, the proposed project cannot guarantee that these improvements that are located in the City of Fullerton will be implemented. Therefore, impacts are significant and unavoidable.

MM-TRA-4 is proposed to mitigate Year 2030 Buildout plus Project weekly academic instruction traffic scenario under the Caltrans methodology at the state-controlled intersection SR-57 NB Ramps/Chapman Avenue. However, because the proposed project cannot guarantee that these improvements, which are located in the City of Fullerton and Caltrans jurisdiction, will be implemented, impacts would be significant and unavoidable.

Because it is always possible that intact archaeological deposits are present at subsurface levels and could be uncovered during ground-disturbing activities, MM-TCR-1 is included to reduce impacts to archaeological resources that are significant under CEQA (14 CCR 15064.5(f); California Public Resources Code, Section 21082) to a less than significant level.

MM-UTL-1 is proposed to mitigate the impacts of stormwater runoff from the project site on drainage patterns and long-term effects on water quality. Implementation of MM-UTL-1 would reduce the identified impacts to a less than significant level.

4.7.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

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4.8 TRANSPORTATION

This section describes the existing traffic/circulation setting of the project site, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Sherbeck Field Improvements Project (proposed project).

Traffic impacts associated with the proposed project were derived from the project-specific traffic impact analysis (TIA) report prepared by Linscott, Law & Greenspan and provided in Appendix F.

During the notice of preparation (NOP) comment period, a comment letter was received from the California Department of Transportation (Caltrans), which covered a number of topics. The letter states if the proposed project would impact state right-of-way, the District needs to follow Caltrans standards for preparation of traffic impact studies and the study should be sent to Caltrans for review and comment. In addition, because of an existing Class II bicycle lane on Berkeley Avenue, Caltrans urges appropriate measures to ensure the safety of bicyclists and pedestrians. Lastly, Caltrans requests that a merge/diverge analysis at on and off ramps be conducted, and queuing and impacts to off ramps be analyzed, if applicable.

The City of Fullerton also sent a comment letter addressing the potential for traffic impacts. The City asks that the traffic analysis address impacts to the surrounding residential areas so traffic intrusion can be reduced as much as possible. The City requests the traffic analysis to address bypass traffic through local neighborhoods, the offset condition of Parking Lot 6 driveway and Brookdale Place on Berkeley Avenue, and a worst-case situation where Fullerton High School and Fullerton College host games or activities simultaneously. The City also notes that any work in the public street right-of-way would require approval of the Director of Public Works, and that permits would need to be obtained from the City's Public Works Department.

Several other commenters expressed concerns in regards to the potential of the proposed project to cause increased traffic and issues related to adequate parking. These topics are discussed further in Section 4.8.4, Impacts Analysis.

4.8.1 Existing Conditions

Existing Street System

The principal local streets serving the project site are Berkeley Avenue, Lemon Street, and Chapman Avenue. The following discussion provides a brief synopsis of these key study area streets.

Berkeley Avenue

Berkeley Avenue is generally a two-lane, divided roadway, oriented both east–west and north–south. Berkeley Avenue generally borders Fullerton College to the northeast and currently provides access to the site via several unsignalized driveways. The posted speed limit on Berkeley Avenue is 35 miles per hour (mph). On-street parking is generally permitted along this roadway in the vicinity of Fullerton College. Traffic signals control the study intersections of Berkeley Avenue at Harbor Boulevard, Lemon Street, Hornet Way, and Chapman Avenue. The study intersections of Berkeley Avenue at College Driveway No. 1, Centennial Way, College Driveway No. 2, College Driveway No. 3, and Brookdale Place are stop controlled.

Lemon Street

Lemon Street is a two-lane undivided roadway north of Berkeley Avenue and a four-lane divided roadway south of Berkeley Avenue, oriented north–south. Lemon Street borders Fullerton College to the west and currently provides access via several unsignalized driveways and via Lemon Street/Fullerton College Drive (signalized intersection). The posted speed limit on Lemon Street is 25 mph north of Berkeley Avenue, 30 mph between Berkeley Avenue and Chapman Avenue, and 40 mph south of Chapman Avenue. On-street parking is generally not permitted along this roadway in the vicinity of Fullerton College. Traffic signals control the study intersections of Lemon Street at Berkeley Avenue, Fullerton College Drive, Chapman Avenue, Wilshire Avenue, Commonwealth Avenue, Valencia Drive, Orangethorpe Avenue, State Route (SR) 91 Westbound (WB) Ramps, and SR-91 Eastbound (EB) Ramps.

Chapman Avenue

Chapman Avenue is generally a four-lane divided roadway oriented east–west. Chapman Avenue borders the project site to the south and currently provides access to the site via several unsignalized driveways, and via Chapman Avenue/Lawrence Avenue (signalized intersection). The posted speed limit on Chapman Avenue is 40 mph between Euclid Street and Harbor Boulevard, 30 mph between Harbor Boulevard and Raymond Avenue, and 40 mph east of Raymond Avenue. On-street parking is generally not permitted along this roadway in the vicinity of Fullerton College, except on the south side of the street between Lawrence Avenue and Balcom Avenue. Traffic signals control the study intersections of Chapman Avenue at Euclid Street, Harbor Boulevard, Lemon Street, Berkeley Avenue, Raymond Avenue, Acacia Avenue, State College Boulevard, SR-57 Southbound (SB) Ramps, and SR-57 Northbound (NB) Ramps.

Figure 4.8-1, Existing Roadway Conditions and Intersection Controls, shows an inventory of the existing roadway conditions for the arterials and intersections in the proposed project's traffic study area. This figure identifies the number of travel lanes for key arterials, as well as intersection configurations and controls for the key study area intersections.

Existing Traffic Volumes

Thirty-one key study intersections have been identified as the locations at which to evaluate existing and future traffic operating conditions. Some portion of potential project-related traffic would pass through each of these intersections and their analysis reveals the expected relative impacts of the proposed project. Existing weekday PM peak hour traffic volumes for the locations evaluated in this analysis were obtained from the Fullerton College Master Plan Traffic Impact Analysis Report (TIA), prepared by LLG Engineers, dated May 24, 2017 (Appendix F to this EIR). It should be noted that all weekday PM peak hour traffic counts taken from the TIA were factored up by the City-approved growth factor of 0.5% to bring them up to current Year 2017 existing baseline traffic conditions. The only exception was key study intersection no. 1, as the traffic count for this location was conducted in March 2017.

Existing Saturday Event Arrival Period and Saturday Event Departure Period peak hour traffic volumes for the locations evaluated in this report were obtained from manual peak hour turning movement counts conducted in November 2017. It should be noted that the Saturday traffic counts were conducted between 12:00 p.m. and 2:00 p.m. and between 3:30 p.m. and 5:30 p.m.

Figure 4.8-2, Existing Weekday PM Peak Hour Traffic Volumes, illustrates the existing weekday PM peak hour traffic volumes at key study intersections evaluated in the TIA. Figure 4.8-3, Existing Saturday Event Arrival Period Peak Hour Traffic Volumes, and Figure 4.8-4, Existing Saturday Event Departure Period Peak Hour Traffic Volumes, show the specified peak hour traffic volumes at the key study intersections evaluated in the TIA, respectively.

Existing Friday Traffic Volumes were conducted at the 31 key study intersections on Friday October 26, 2018, during the Fullerton Union High School football game with Troy High School. According to the Fullerton Union High School athletic director, the football game had a start time of 7:00 p.m. and finished at approximately 9:45 p.m., with an attendance of 1,485 people. Specifically, manual peak hour turning movement counts were conducted between 6:00 p.m. and 8:00 p.m. (event arrival period) and between 9:00 p.m. and 11:00 p.m. (event departure period) to establish a Friday baseline traffic condition for the Event Arrival Period peak hour and the Event Departure Period peak hour.

Figure 4.8-5, Existing Friday Event Arrival Period Peak Hour Traffic Volumes, and Figure 4.8-6, Existing Friday Event Departure Period Peak Hour Traffic Volumes, illustrate the specified existing peak hour traffic volumes at the key study intersections.

Existing Daily Roadway Segment Volume Comparisons

Five days of daily (24-hour) traffic counts were collected Friday October 6, 2017, through Tuesday October 10, 2017, at six locations either bordering or near the Fullerton College campus. The six locations are as follows:

- Berkeley Avenue, east of Lemon Street
- Hornet Way, north of Berkeley Avenue
- Brookdale Place, east of Berkeley Avenue
- Lemon Street, north of Chapman Avenue
- Chapman Avenue, between Lemon Street and Berkeley Avenue
- Berkeley Avenue, north of Chapman Avenue

The traffic counts were conducted to gain insights as to the existing variation in daily weekday versus daily weekend traffic around the Fullerton College campus.

Figures 4.8-7 through 4.8-12 present the daily profile for the six locations listed above, respectively. As shown in Figures 4.8-7 through 4.8-12, the traffic around Fullerton College campus is significantly lower on a typical Saturday when compared to a typical weekday (Tuesday had the greatest daily volume). The Saturday traffic volumes are approximately 50% lower at all the locations, except for the segments on Brookdale Place (approximately 35% lower) and Chapman Avenue (approximately 25% lower).

Figures 4.8-13 through 4.8-18 present the Saturday versus Tuesday existing hourly volume profiles for the six locations listed above, respectively. As shown in Figures 4.8-13 through 4.8-18, the traffic around the Fullerton College campus is significantly lower on a Saturday when compared to a Tuesday on an hourly basis. These results would imply that there is sufficient roadway capacity in the area to add special event traffic on Saturdays.

Existing Intersection Conditions

Highway Capacity Manual 6 Method of Analysis

In conformance with City of Fullerton requirements, existing AM and PM peak hour operating conditions for the key study intersections were evaluated using the methodology outlined in Chapter 19 of the Highway Capacity Manual, Sixth Edition (HCM 6) for signalized intersections, the methodology outlined in Chapter 20 of the HCM 6 for two-way stop-controlled intersections, and the methodology outlined in Chapter 21 of the HCM 6 for all-way stop-controlled intersections (TRB 2016).

Signalized Intersections

Based on the HCM operations method of analysis, LOS for signalized intersections and approaches is defined in terms of control delay, which is a measure of the increase in travel time due to traffic signal control, driver discomfort, and fuel consumption. Control delay includes the delay associated with vehicles slowing in advance of an intersection, the time spent stopped on an intersection approach, the time spent as vehicles move up in the queue, and the time needed for vehicles to accelerate to their desired speed. LOS criteria for traffic signals are stated in terms of the control delay in seconds per vehicle. The LOS thresholds established for signalized intersections are shown in Table 4.8-1.

Table 4.8-1
LOS Criteria for Signalized Intersections (HCM 6 Methodology)

LOS	Control Delay Per Vehicle (s/v)	LOS Description
A	≤10.0	This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	> 10.0 and ≤ 20.0	This LOS generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of average delay.
C	> 20.0 and ≤ 35.0	Average traffic delays. These higher delays may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	> 35.0 and ≤ 55.0	Long traffic delays At level D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high vehicle to capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	> 55.0 and ≤ 80.0	Very long traffic delays This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent occurrences.
F	≥ 80.0	Severe congestion This level, considered to be unacceptable to most drivers, often occurs with over saturation, that is, when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be major contributing factors to such delay levels.

Source: TRB 2016, Chapter 19.
Notes: LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds/vehicle.

Unsignalized Intersections

The HCM unsignalized methodology for stop-controlled intersections was used for the analysis of the unsignalized intersections. LOS criteria for unsignalized intersections differ from LOS criteria for signalized intersections as signalized intersections are designed for heavier traffic and therefore a greater delay. Unsignalized intersections are also associated with more uncertainty for users, as delays are less predictable, which can reduce users' delay tolerance.

Two-Way Stop-Controlled Intersections

Two-way stop-controlled intersections are comprised of a major street, which is uncontrolled, and a minor street, which is controlled by stop signs. LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay. The control delay by movement, by approach, and for the intersection as a whole is estimated by the computed capacity for each movement. LOS is determined for each minor-street movement (or shared movement) as well as major-street left turns. The worst side-street approach delay is reported. LOS is not defined for the intersection as a whole or for major-street approaches, as it is assumed that major-street through vehicles experience zero delay. The HCM control delay value ranges for two-way stop-controlled intersections are shown in Table 4.8-2.

All-Way Stop-Controlled Intersections

All-way stop-controlled intersections require every vehicle to stop at the intersection before proceeding. Because each driver must stop, the decision to proceed into the intersection is a function of traffic conditions on the other approaches. The time between subsequent vehicle departures depends on the degree of conflict that results between the vehicles and vehicles on the other approaches. This methodology determines the control delay for each lane on the approach, computes a weighted average for the whole approach, and computes a weighted average for the intersection as a whole. LOS at the approach and intersection levels is based solely on control delay. The HCM control delay value range for all-way stop-controlled intersections are shown in Table 4.8-2.

Table 4.8-2
LOS Criteria for Unsignalized Intersections (HCM 6 Methodology)

LOS	HCM Delay Value (s/v)	LOS Description
A	≤10.0	Little or no delay
B	>10.0 and ≤15.0	Short traffic delays
C	>15.0 and ≤25.0	Average traffic delays
D	>25.0 and ≤35.0	Long traffic delays
E	>35.0 and ≤50.0	Very long traffic delays
F	>50.0	Severe congestion

Source: HCM 2010, Chapters 19 and 20: Unsignalized Intersections (TRB 2010).
Notes: LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle.

Existing Level of Service

Level of Service Criteria

According to the City of Fullerton, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours. It should be noted that although the City standard is LOS D, there are two intersections located in the Historic Downtown area where LOS E is deemed acceptable to the City because of the fully developed character of the downtown area, the presence of historic properties and the great expense and hardship that would be caused by attempting to secure right-of-way required to improve LOS. The two intersections where LOS E is considered acceptable are: Harbor Boulevard/Chapman Avenue (i.e., key study intersection no. 6) and Harbor Boulevard/Commonwealth Avenue (i.e., key study intersection no. 16). LOS E is also considered acceptable at the Congestion Management Plan intersection of Harbor Boulevard/Orangethorpe Avenue (i.e., key study intersection no. 20).

Level of Service Input Parameters

Per City staff, the following values were applied in the level of service (LOS) analyses, which have been conducted using the Vistro software (HCM 6 Methodology):

- **Base Saturation Flow Rate:** 1800 passenger cars per hour per lane (pc/hr/ln) [left and right turn movement], 3500 pc/hr/ln (dual left turn movement) and 1900 pc/hr/ln (through movement)
- **Cycle Length:** based on existing timings as provided by City staff
- **Loss Time:** 2 seconds per critical phase
- **Minimum Pedestrian Crossing Time:** calculated by using the minimum pedestrian crossing time equation
- **Analysis Time Period:** 0.25 hour
- **Peak Hour Factor:** based on existing counts

Existing Level of Service Results

Table 4.8-3 shows the existing peak hour LOS calculations for the 31 key study intersections based on existing traffic volumes and current street geometrics. Review of Table 4.8-3 indicates that 30 of the 31 key study intersections currently operate at an acceptable LOS during the AM and PM peak hours. The intersection of Harbor Boulevard at Bastanchury Road (key study intersection no. 1) currently operates at LOS E during the PM peak hour.

Table 4.8-3
Existing Weekday Peak Hour Intersection Capacity Analysis

Key Intersection		Minimum Acceptable LOS	Time Period	Control Type	HCM	LOS
1.	Harbor Boulevard at Bastanchury Road	D	Weekday PM	8∅ Traffic Signal	**57.0 s/v**	**E**
2.	Harbor Boulevard at Valley View Drive/Brea Boulevard	D	Weekday PM	6∅ Traffic Signal	30.0 s/v	C
3.	Harbor Boulevard at Berkeley Avenue	D	Weekday PM	5∅ Traffic Signal	30.9 s/v	C
4.	Lemon Street at Berkeley Avenue	D	Weekday PM	3∅ Traffic Signal	38.6 s/v	D
5.	Hornet Way at Berkeley Avenue	D	Weekday PM	2∅ Traffic Signal	13.4 s/v	B
6.	Euclid Street at Malvern Avenue	D	Weekday PM	8∅ Traffic Signal	34.0 s/v	C
7.	Harbor Boulevard at Chapman Avenue	E	Weekday PM	8∅ Traffic Signal	31.5 s/v	C
8.	Lemon Street at Chapman Avenue	D	Weekday PM	8∅ Traffic Signal	34.2 s/v	C
9.	Berkeley Avenue at Chapman Avenue	D	Weekday PM	4∅ Traffic Signal	18.0 s/v	B
10.	Raymond Avenue at Chapman Avenue	D	Weekday PM	8∅ Traffic Signal	26.2 s/v	C
11.	Acacia Avenue at Chapman Avenue	D	Weekday PM	5∅ Traffic Signal	18.1 s/v	B
12.	State College Boulevard at Chapman Avenue	D	Weekday PM	8∅ Traffic Signal	35.8 s/v	D
13.	SR-57 SB Ramps at Chapman Avenue	D	Weekday PM	3∅ Traffic Signal	18.2 s/v	B
14.	SR-57 NB Ramps at Chapman Avenue	D	Weekday PM	3∅ Traffic Signal	26.5 s/v	C
15.	Lemon Street at Wilshire Avenue	D	Weekday PM	2∅ Traffic Signal	10.3 s/v	B
16.	Harbor Boulevard at Commonwealth Avenue	E	Weekday PM	8∅ Traffic Signal	30.8 s/v	C
17.	Lemon Street at Commonwealth Avenue	D	Weekday PM	8∅ Traffic Signal	33.9 s/v	C
18.	Harbor Boulevard at Valencia Drive	D	Weekday PM	2∅ Traffic Signal	26.5 s/v	C
19.	Lemon Street at Valencia Drive	D	Weekday PM	2∅ Traffic Signal	10.1 s/v	B
20.	Harbor Boulevard at Orangethorpe Avenue	E	Weekday PM	8∅ Traffic Signal	38.8 s/v	D

Table 4.8-3
Existing Weekday Peak Hour Intersection Capacity Analysis

Key Intersection		Minimum Acceptable LOS	Time Period	Control Type	HCM	LOS
21.	Lemon Street at Orangethorpe Avenue	D	Weekday PM	8∅ Traffic Signal	36.6 s/v	D
22.	Harbor Boulevard at SR-91 WB Ramps	D	Weekday PM	3∅ Traffic Signal	17.2 s/v	B
23.	Lemon Street at SR-91 WB Ramps	D	Weekday PM	3∅ Traffic Signal	24.5 s/v	C
24.	Harbor Boulevard at SR-91 EB Ramps	D	Weekday PM	3∅ Traffic Signal	19.6 s/v	B
25.	Lemon Street at SR-91 EB Ramps	D	Weekday PM	3∅ Traffic Signal	23.0 s/v	C
26.	Centennial Way at Berkeley Avenue	D	Weekday PM	One-Way Stop	12.5 s/v	B
27.	Lemon Street at Fullerton College Drive	D	Weekday PM	3∅ Traffic Signal	16.0 s/v	B
28.	Berkeley Avenue at College Driveway No. 1	D	Weekday PM	One-Way Stop	12.9 s/v	B
29.	Berkeley Avenue at College Driveway No. 2	D	Weekday PM	One-Way Stop	12.3 s/v	B
30.	Berkeley Avenue at Brookdale Place	D	Weekday PM	One-Way Stop	13.9 s/v	B
31.	Lemon Street at Parking Structure	D	Weekday PM	Two-Way Stop	16.4 s/v	C

Bold HCM/LOS values indicate adverse service levels.
LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle; ∅ = phase; referring to operation phasing of a traffic signal.

Table 4.8-4 shows the existing Saturday Event Arrival Period and Saturday Event Departure Period peak hour service level calculations for they key study intersections based on existing traffic volumes and current street geometrics. Review of Table 4.8-4 indicated that all 31 key study intersections currently operate at an acceptable LOS during the Saturday Event Arrival Period and Saturday Event Departure Period peak hour.

Table 4.8-4
Existing Saturday Peak Hour Intersection Capacity Analysis

Key Intersection		Minimum Acceptable LOS	Time Period	Control Type	HCM	LOS
1.	Harbor Boulevard at Bastanchury Road	D	Sat. Arrival Sat. Departure	8∅ Traffic Signal	35.5 s/v 35.0 s/v	D C

Table 4.8-4
Existing Saturday Peak Hour Intersection Capacity Analysis

	Key Intersection	Minimum Acceptable LOS	Time Period	Control Type	HCM	LOS
2.	Harbor Boulevard at Valley View Drive/Brea Boulevard	D	Sat. Arrival Sat. Departure	6∅ Traffic Signal	26.7 s/v 26.8 s/v	C C
3.	Harbor Boulevard at Berkeley Avenue	D	Sat. Arrival Sat. Departure	5∅ Traffic Signal	19.7 s/v 16.5 s/v	B B
4.	Lemon Street at Berkeley Avenue	D	Sat. Arrival Sat. Departure	3∅ Traffic Signal	34.8 s/v 33.9 s/v	C C
5.	Hornet Way at Berkeley Avenue	D	Sat. Arrival Sat. Departure	2∅ Traffic Signal	11.5 s/v 14.0 s/v	B B
6.	Euclid Street at Malvern Avenue	D	Sat. Arrival Sat. Departure	8∅ Traffic Signal	11.0 s/v 10.9 s/v	B B
7.	Harbor Boulevard at Chapman Avenue	E	Sat. Arrival Sat. Departure	8∅ Traffic Signal	26.5 s/v 26.5 s/v	C C
8.	Lemon Street at Chapman Avenue	D	Sat. Arrival Sat. Departure	8∅ Traffic Signal	33.1 s/v 32.9 s/v	C C
9.	Berkeley Avenue at Chapman Avenue	D	Sat. Arrival Sat. Departure	4∅ Traffic Signal	10.0 s/v 9.5 s/v	A A
10.	Raymond Avenue at Chapman Avenue	D	Sat. Arrival Sat. Departure	8∅ Traffic Signal	19.5 s/v 18.5 s/v	B B
11.	Acacia Avenue at Chapman Avenue	D	Sat. Arrival Sat. Departure	5∅ Traffic Signal	8.7 s/v 10.7 s/v	A B
12.	State College Boulevard at Chapman Avenue	D	Sat. Arrival Sat. Departure	8∅ Traffic Signal	37.1 s/v 36.9 s/v	D D
13.	SR-57 SB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	3∅ Traffic Signal	17.6 s/v 18.4 s/v	B B
14.	SR-57 NB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	3∅ Traffic Signal	25.2 s/v 26.7 s/v	C C
15.	Lemon Street at Wilshire Avenue	D	Sat. Arrival Sat. Departure	2∅ Traffic Signal	6.5 s/v 5.0 s/v	A A

Table 4.8-4
Existing Saturday Peak Hour Intersection Capacity Analysis

Key Intersection		Minimum Acceptable LOS	Time Period	Control Type	HCM	LOS
16.	Harbor Boulevard at Commonwealth Avenue	E	Sat. Arrival Sat. Departure	8∅ Traffic Signal	30.8 s/v 30.4 s/v	C C
17.	Lemon Street at Commonwealth Avenue	D	Sat. Arrival Sat. Departure	8∅ Traffic Signal	32.4 s/v 32.4 s/v	C C
18.	Harbor Boulevard at Valencia Drive	D	Sat. Arrival Sat. Departure	2∅ Traffic Signal	11.5 s/v 11.6 s/v	B B
19.	Lemon Street at Valencia Drive	D	Sat. Arrival Sat. Departure	2∅ Traffic Signal	10.5 s/v 11.0 s/v	B B
20.	Harbor Boulevard at Orangethorpe Avenue	E	Sat. Arrival Sat. Departure	8∅ Traffic Signal	39.2 s/v 38.0 s/v	D D
21.	Lemon Street at Orangethorpe Avenue	D	Sat. Arrival Sat. Departure	8∅ Traffic Signal	34.1 s/v 32.9 s/v	C C
22.	Harbor Boulevard at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	3∅ Traffic Signal	17.3 s/v 20.1 s/v	B C
23.	Lemon Street at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	3∅ Traffic Signal	27.7 s/v 24.8 s/v	C C
24.	Harbor Boulevard at SR-91 EB Ramps	D	Sat. Arrival Sat. Departure	3∅ Traffic Signal	23.6 s/v 22.4 s/v	C C
25.	Lemon Street at SR-91 EB Ramps	D	Sat. Arrival Sat. Departure	3∅ Traffic Signal	27.8 s/v 27.8 s/v	C C
26.	Centennial Way at Berkeley Avenue	D	Sat. Arrival Sat. Departure	One-Way Stop	10.2 s/v 9.7 s/v	B A
27.	Lemon Street at Fullerton College Drive	D	Sat. Arrival Sat. Departure	3∅ Traffic Signal	14.4 s/v 4.9 s/v	B A
28.	Berkeley Avenue at College Driveway No. 1	D	Sat. Arrival Sat. Departure	One-Way Stop	11.2 s/v 10.4 s/v	B B
29.	Berkeley Avenue at College Driveway No. 2	D	Sat. Arrival Sat. Departure	One-Way Stop	10.7 s/v 9.8 s/v	B A

Table 4.8-4
Existing Saturday Peak Hour Intersection Capacity Analysis

Key Intersection		Minimum Acceptable LOS	Time Period	Control Type	HCM	LOS
30.	Berkeley Avenue at Brookdale Place	D	Sat. Arrival Sat. Departure	One-Way Stop	11.7 s/v 9.9 s/v	B A
31.	Lemon Street at Parking Structure	D	Sat. Arrival Sat. Departure	Two-Way Stop	10.1 s/v 9.5 s/v	B A

LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle; ∅ = phase; referring to operation phasing of a traffic signal.

Existing Alternative Transportation

Pedestrian Circulation

Pedestrian circulation is provided via the existing public sidewalks located along Berkeley Avenue within the vicinity of Sherbeck Field, which connect to the existing driveways along Berkeley Avenue and to the campus internal walkways.

Existing Bicycle Network

The City of Fullerton promotes bicycling as a means of mobility and a way in which to improve the quality of life within its community. The Bicycle Master Plan recognizes the needs of bicycle users and aims to create a complete and safe bicycle network throughout the City. Figure 4.8-19 shows the existing bikeways network. A Class II bike lane is currently provided along Berkeley Avenue in both directions between Chapman Avenue and Lemon Street.

Public Transit

Public transit bus service is provided in the project area by the Orange County Transportation Authority (OCTA). The OCTA Bus System Map is shown in Figure 4.8-20. Four OCTA bus routes operate within the vicinity of the project site either along Chapman Avenue or Lemon Street and consist of the following:

- OCTA Bus Route 24
- OCTA Express Bus Route 103B
- OCTA Bus Route 143
- OCTA Bus Route 213/A

Five bus stops are located along Lemon Street between Berkeley Avenue and Wilshire Avenue, west of the proposed project site. Four bus stops are located along Chapman Avenue between Lemon Street and Berkeley Avenue, south of the proposed project site.

4.8.2 Regulatory Framework

Federal

There are no federal regulations for traffic and circulation that would be applicable to the proposed project or the project area.

State

California Department of Transportation

As a general rule, Caltrans "endeavors to maintain a target LOS at the transition between LOS 'C' and LOS 'D' on State highway facilities" (Caltrans 2002); however, Caltrans does not require that LOS D be maintained and acknowledges that this LOS goal may not always be feasible. Instead, Caltrans recommends that the lead agency consult with them to determine the appropriate target LOS for a particular state highway facility.

Local

The proposed project is located within the City of Fullerton (City). The North Orange County Community College District (District) and Fullerton College are not subject to local plans, policies, or guidelines, so this analysis uses relevant policies from the local jurisdiction as guidance only.

The Fullerton Plan

The following goals and policies are included in the City's general plan, The Fullerton Plan (City of Fullerton 2012), and would be applicable to the proposed project:

Goal 5 A balanced system promoting transportation alternatives that enable mobility and an enhanced quality of life

P5.12: Multi-Modal Traffic Analysis: Support programs, policies, and regulations to analyze and evaluate urban streets using an integrated approach from the points of view of automobile drivers, transit passengers, bicyclists and pedestrians rather than autocentric thresholds which conflict with other policies of The Fullerton Plan-including better environments for walking and bicycling, safer streets, increased transit use, cost-effective infrastructure investments, reduced greenhouse gas emissions, and the preservation of open space

P5.14: Fair Share of Improvements: Support policies and regulations which require new development to pay a fair share of needed transportation improvements based on the project's impacts to the multi-modal transportation network.

Goal 6 A bicycle-friendly city where bicycling is safe and convenient alternative to motorized transportation and a recreational opportunity for people of all ages and abilities.

P6.7: Development Projects: Support projects, programs, policies, and regulations to develop a multi-tiered network of bicycle options that consider traffic volumes, rider experience; and which recognized that all streets should be safe for bicycling.

P6.12: Bicycle Parking and Facilities: Support projects, programs, policies, and regulations to provide convenient bicycle parking and other bicycle facilities in existing and potential high demand locations within the City, such as educational institutions, parks, business districts, transit stops, retail, commercial and employment centers.

4.8.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to traffic and circulation are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines[1], a significant impact related to traffic and circulation would occur if the project would:

1. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
2. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves, or dangerous intersections) or incompatible uses (e.g., farm equipment).
4. Result in inadequate emergency access.

Threshold 3 was eliminated from further analysis in the Initial Study/Notice of Preparation (Appendix A). The proposed project would not involve construction of any transportation-related elements, nor would operations involve incompatible uses to the transportation system. As such, impacts related to air traffic and hazardous design features were determined to have no impact.

[1] As of this writing, the City of Fullerton has not adopted new transportation thresholds relative to assessing impacts based on a vehicle miles traveled (VMT) metric; agencies are not required to do so until July 1, 2020. As such, the analysis presented in this Environmental Impact Report does not reflect the 2019 Appendix G version of question 2.

4.8.3.1 Traffic Forecasting Methodology

To estimate the traffic impact characteristics of the proposed project, a multi-step process was used during preparation of the TIA. The first step of this process is traffic generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing/expected future travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

With the forecasting process complete and project traffic assignments developed, the impact of the proposed project is isolated by comparing operational conditions at selected key intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated and the significance of the project's impacts identified.

4.8.3.2 Project Traffic Characteristics

Project Construction Traffic Trip Generation

As part of the analysis of project-related traffic, consideration was given to the vehicle trips that would be generated in connection with project construction; however, unlike the project's operational trip generation addressed below, construction related traffic and the associated impacts are of a temporary duration only.

In order to forecast the potential construction-related trips associated with the construction activities at the project site, the following inputs have been utilized for the five aforementioned construction components or phases.

Site Preparation

- A 5-day work week (Monday through Friday from 7:00 a.m. to 5:00 p.m.).
- The site preparation construction component is anticipated to last approximately 1 week.

- A total of nine workers will be on site Monday through Friday from 7:00 a.m. to 5:00 p.m.

Trenching

- A 5-day work week (Monday through Friday from 7:00 a.m. to 5:00 p.m.).
- The trenching construction component is anticipated to last approximately 1 month.
- A total of four workers will be on site Monday through Friday from 7:00 a.m. to 5:00 p.m.

Building Construction

- A 5-day work week (Monday through Friday from 7:00 a.m. to 5:00 p.m.).
- The building construction component is anticipated to last approximately 3.5 months.
- 16 vendor trucks will visit the site per day as part of this construction component.
- A total of 40 workers will be on site Monday through Friday from 7:00 a.m. to 5:00 p.m.

Paving

- A 5-day work week (Monday through Friday from 7:00 a.m. to 5:00 p.m.).
- The paving construction component is anticipated to last approximately 2 weeks.
- A total of eight workers will be on site Monday through Friday from 7:00 a.m. to 5:00 p.m.

Architectural Coating

- A 5-day work week (Monday through Friday from 7:00 a.m. to 5:00 p.m.).
- The architectural coating construction component is anticipated to last approximately 1 week.
- A total of 10 workers will be on site Monday through Friday from 7:00 a.m. to 5:00 p.m.
- In addition to the aforementioned assumptions for each construction component, the following inputs were utilized for vendor truck trips and worker trips:
- Each vendor truck requires an inbound trip and an outbound trip.
- The daily number of vendor truck trips was averaged over the 10-hour workday to obtain the number of peak hour vendor truck trips (50% entering and 50% exiting).
- All vendor truck trips were converted to passenger car equivalents (PCEs) using a PCE factor of 2.5.
- Each worker would make two trips per day (one arrival before the AM peak hour and one departure during the PM peak hour).

Table 4.8-5 summarizes the forecast construction peak hour and daily traffic volumes for each of the five phases of the construction process.

Table 4.8-5
Project Construction-Related Traffic Generation

Project Description	Daily Two-Way	AM Peak Hour			PM Peak Hour		
		Enter	*Exit*	*Total*	*Enter*	*Exit*	*Total*
Site Preparation: • Workers (9 Workers)	18	0	0	0	0	9	9
Total Site Preparation	**18**	**0**	**0**	**0**	**0**	**9**	**9**
Trenching: • Workers (4 Workers)	8	0	0	0	0	4	4
Total Trenching	**8**	**0**	**0**	**0**	**0**	**4**	**4**
Building Construction:							
• Vendor Truck Traffic (16 Trucks/Day)	32	2	2	4	2	2	4
Passenger Car Equivalent[1]	80	5	5	10	5	5	10
• Workers (40 Workers)	80	0	0	0	0	40	40
Total Building Construction	**160**	**5**	**5**	**10**	**5**	**45**	**50**
Paving: • Workers (8 Workers)	16	0	0	0	0	8	8
Total Paving	**16**	**0**	**0**	**0**	**0**	**8**	**8**
Architectural Coating: • Workers (10 Workers)	20	0	0	0	0	10	10
Total Architectural Coating	**20**	**0**	**0**	**0**	**0**	**10**	**10**

Note:
1 A passenger car equivalent factor of 2.5 was applied to the truck trips to convert them into passenger cars.

As shown in Table 4.8-5, the site preparation construction component is expected to generate 18 daily trips, with no trips produced during the AM peak hour as workers will arrive at the job site prior to the AM peak hour, and 9 trips produced during the PM peak hour. The trenching construction component is expected to generate 8 daily trips, with no trips produced during the AM peak hour and 4 trips produced during the PM peak hour. The building construction component is expected to generate 160 daily trips, with 10 trips produced during the AM peak hour and 50 trips produced during the PM peak hour. The paving construction component is expected to generate 16 daily trips, with no trips produced during the AM peak hour and 8 trips produced during the PM peak hour. The architectural coating construction component is expected to generate 20 daily trips, with no trips produced during the AM peak hour and 10 trips produced during the PM peak hour.

Project Operational Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are typically found in the tenth edition of the Trip Generation Manual, published by the Institute of Transportation Engineers (ITE 2017). Since trip generation rates for the proposed project categories are not specifically contained within the ITE Trip Generation Manual, the trip generation potential was estimated based on the following:

- Academic instruction = based on the proposed evening class schedule and size.
- Field event= based on empirical rates developed from counts/observations conducted at Yorba Linda High School during a Fullerton College football game on a Saturday afternoon. (Traffic counts were also collected on a Friday night at a Fullerton Union High School game with Troy High School).

The following describes the project trip generation details for the academic instruction component and field event component of the proposed project.

Academic Instruction

The trip generation potential for the weekday evening classes (i.e., academic instruction) is based on the Proposed Sherbeck Field Schedule and Programming table provided by Fullerton College Staff and the maximum student size of the classes. The following assumptions were utilized to develop the trip generation for academic instruction.

- Evening classes would begin at 6:00 p.m. with a maximum of two classes utilizing the field at the same time.
- The class size would range from 24 students to 32 students with 1 teacher. The traffic study assumes 32 students and 1 teacher to provide a conservative forecast.
- The traffic study assumes that all students and the teacher would arrive prior to 6:00 p.m. during the weekday PM peak hour to provide a conservative forecast.
- Based on information provided by Fullerton College Staff, the majority of students enrolling in these evening classes will already be on campus for other classes. However, in order to provide a conservative forecast, the traffic study assumes that all students and teachers would be new trips and that they would arrive prior to 6:00 p.m. during the weekday PM peak hour.

Table 4.8-6 summarizes the forecast daily and PM peak hour traffic volumes related to academic instruction. Table 4.8-6 shows that the proposed project's academic instruction component is forecast to generate 528 weekday daily trips and 66 weekday PM peak hour trips (66 inbound and 0 outbound).

Table 4.8-6
Weekday Academic Instruction Project Traffic Generation Forecast

ITE Land Use Code/Project Description	Daily Two-Way	Weekday Academic Instruction PM Peak Hour		
		Enter	*Exit*	*Total*
Generation Factors:				
• Sherbeck Field- Academic Instruction[a]				
○ Students (64 students)	512	64	0	64
○ Teachers (2 teachers)	16	2	0	2
Total Trip Generation Potential – Academic Instruction	**528**	**66**	**0**	**66**

ITE = Institute of Transportation Engineers.

[a] The following assumptions were utilized to develop the trip generation for academic instruction: (1) Evening classes would begin at 6:00 p.m. with a maximum of two classes utilizing the field at the same time (2) The class size would range from 24 students to 32 students with 1 teacher. The traffic study assumes 32 students and 1 teacher to provide a conservative forecast. (3) The traffic study assumes that all students and the teacher would arrive prior to 6:00 p.m. during the weekday PM peak hour to provide a conservative forecast.

Saturday Field Event

The trip generation potential for the field event component is based on empirical trip rates developed from counts/observations conducted at Yorba Linda High School during a Fullerton College football game and applied to the proposed project's maximum seating attendance of 4,417 seats. The following describes the details of the counts/observations conducted at Yorba Linda High School during a Fullerton College football game.

- Saturday traffic counts/observations were conducted at Yorba Linda High School on October 21, 2017 during the Fullerton College football game against Saddleback College, which had an attendance of 1,100 people and a start time of 1:00 p.m.
- Traffic counts/observations were conducted at the three driveways along Bastanchury Road between 11:30 a.m. and 1:30 p.m. during the football game's arrival period and between 3:30 p.m. and 5:30 p.m. during the football game's departure period in order to determine the trip generation for the field event, which included an adjustment to the traffic counts to eliminate any non-football game related traffic at the high school during the arrival and departure periods.
- The Saturday traffic counts indicated that the Fullerton College football game generated 1,072 daily trips, 388 trips during the arrival peak hour (306 inbound and 82 outbound) and 416 trips during the departure peak hour (35 inbound and 381 outbound).
- The aforementioned trips were then divided by the game attendance (i.e., 1,100 people) to determine the Saturday daily, Saturday Arrival peak hour and Saturday Departure peak hour trip rates per seat specific to a Fullerton College football game.

The procedures described above that were utilized to develop the empirical rates for a Fullerton College football game are generally consistent with the trip generation study procedures contained within the *ITE Trip Generation Handbook*. While the rates are based on a relatively limited sampling, the use of empirical rates developed specifically for the proposed project land use is the most accurate form for establishing the proposed project's trip generation potential. Moreover, the trip generation rates are based on trips per spectator, which would not vary significantly per game, given that the average vehicle occupancy would not vary significantly either.

Table 4.8-7 summarizes the Saturday trip generation rates and presents the proposed project's (i.e., field event) forecast Saturday daily, Saturday Event Arrival peak hour and Saturday Event Departure peak hour traffic volumes related to events. Table 4.8-7 shows that the proposed project's field event component is forecast to generate 4,307 Saturday daily trips, 1,559 Saturday Event Arrival peak hour trips (1,228 inbound and 331 outbound) and 1,669 Saturday Event Departure peak hour trips (141 inbound and 1,528 outbound).

Table 4.8-7
Saturday Field Event Project Traffic Generation Forecast

ITE Land Use Code/Project Description	Daily Two-Way	AM Peak Hour			PM Peak Hour		
		Enter	*Exit*	*Total*	*Enter*	*Exit*	*Total*
Generation Factors: • Sherbeck Field–Field Event[a] (TE/Occupied Seat)	0.975	0.278	0.075	0.353	0.032	0.346	0.378
Generation Factors: • Sherbeck Field–Field Event (4,417 Seats)	4,307	1,228	331	1,559	141	1,528	1, 669

ITE = Institute of Transportation Engineers; TE/Seat = trip ends per seat.

[a] The trip generation rates for the field event were developed based on existing Saturday traffic counts/observations conducted at Yorba Linda High School on October 21, 2017 during the Fullerton College football game against Saddleback College, which had an attendance of 1,100 people and a start time of 1:00 p.m.. Traffic counts/observations were conducted at the three driveways along Bastanchury Road between 11:30 a.m. and 1:30 p.m. during the football game's arrival period and between 3:30 p.m. and 5:30 p.m. during the football game's departure period in order to determine the trip generation for the field event, which included an adjustment to the traffic counts to eliminate any non-football game related traffic at the high school during the arrival and departure periods. The Saturday traffic counts indicated that the Fullerton College football game generated 1,072 daily trips, 388 trips during the arrival peak hour (306 inbound and 82 outbound) and 416 trips during the departure peak hour (35 inbound and 381 outbound). The aforementioned trips were then divided by the game attendance (i.e., 1,100 people) to determine the Saturday daily, Saturday Arrival peak hour and Saturday Departure peak hour trip rates per seat specific to a Fullerton College football game.

Friday Field Event

The project trip generation for the field event presented previously in Table 4.8-7 was utilized for the Friday analysis (i.e., 4,307 daily trips, 1,559 Event Arrival peak hour trips (1,228 inbound and 331 outbound), and 1,669 Event Departure peak hour trips (141 inbound and 1,528 outbound)).

Project Traffic Distribution and Assignment

Figure 4.8-21, Year 2020 Project Traffic Distribution Pattern – Academic Instruction, and Figure 4.8-22, Year 2030 Project Traffic Distribution Pattern – Academic Instruction, present the Year

2020 and 2030 general traffic distribution patterns for the proposed project (academic instruction), respectively. Figure 4.8-23, Year 2020 Project Traffic Distribution Pattern – Saturday Field Event, and Figure 4.8-24, Year 2030 Project Traffic Distribution Pattern – Saturday Field Event, present the Year 2020 and Year 2030 general traffic distribution patterns for the proposed project (field event), respectively. Project traffic volumes both entering and exiting the project site have been distributed and assigned to the adjacent street system based on the following considerations:

- The project site's proximity to major traffic carriers (e.g., Lemon Street, Chapman Avenue, Harbor Boulevard, SR-57, SR-91)
- Expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals
- Review of existing peak hour traffic volumes and the location of parking lots
- Ingress/egress availability at the project site

It should be noted that key study intersection no. 29 (Berkeley Avenue/College Driveway No. 2) was assumed to only provide egress movements from the campus in the Year 2030, consistent with the Fullerton College Master Plan Traffic Study.

The anticipated Year 2020 and 2030 weekday PM peak hour project traffic volumes associated with the proposed project (academic instruction) are presented in Figure 4.8-25, Year 2020 Weekday PM Peak Hour Project Traffic Volumes, and Figure 4.8-26, Year 2030 Weekday PM Peak Hour Project Traffic Volumes, respectively. The traffic volume assignments presented in Figures 4.8-25 and 4.8-26 reflect the traffic distribution characteristics shown on Figures 4.8-21 and 4.8-22 and the traffic generation forecast presented in Table 4.8-6.

The anticipated Year 2020 Saturday Event Arrival peak hour and Saturday Event Departure peak hour project traffic volumes associated with the proposed project (field event) are presented on Figure 4.8-27, Year 2020 Saturday Event Arrival Period Peak Hour Project Traffic Volumes, and Figure 4.8-28, Year 2020 Saturday Event Departure Period Peak Hour Project Traffic Volumes, respectively. The traffic volume assignments presented on Figures 4.8-27 and 4.8-28 reflect the traffic distribution characteristics shown on Figure 4.8-23 and the traffic generation forecast presented in Table 4.8-7.

The anticipated Year 2030 Saturday Event Arrival peak hour and Saturday Event Departure peak hour project traffic volumes associated with the proposed project (field event) are presented on Figure 4.8-29, Year 2030 Saturday Event Arrival Period Peak Hour Project Traffic Volumes, and Figure 4.8-30, Year 2030 Saturday Event Departure Period Peak Hour Project Traffic Volumes, respectively. The traffic volume assignments presented on Figures 4.8-29 and 4.8-30 reflect the traffic distribution characteristics shown on Figure 4.8-24 and the traffic generation forecast presented in Table 4.8-7.

Existing plus Project Traffic Conditions

The existing plus project traffic conditions have been generated based upon existing conditions and the estimated project traffic. These forecast traffic conditions have been prepared pursuant to the CEQA Guidelines, which require that the potential impacts of a given project be evaluated upon the circulation system as it currently exists. This traffic volume scenario and the related intersection capacity analyses will identify the roadway improvements necessary to mitigate the direct traffic impacts of the proposed project, if any.

Figure 4.8-31, Existing plus Project Weekday PM Peak Hour Traffic Volumes, presents the projected weekday PM peak hour traffic volumes at the 31 key study locations with the addition of the trips generated by the proposed project (academic instruction) to existing traffic volumes.

Figure 4.8-32, Existing plus Project Saturday Event Arrival Period Peak Hour Traffic Volumes, and Figure 4.8-33, Existing plus Project Saturday Event Departure Period, present the specified projected peak hour traffic volumes at the 31 key study locations with the addition of the trips generated by the proposed project (field event) to existing traffic volumes.

Figure 4.8-34, Existing plus Project Friday Event Arrival Period Peak Hour Traffic Volumes, and Figure 4.8-35, Existing plus Project Friday Event Departure Period Peak Hour Traffic Volumes, present the specified projected peak hour traffic volumes at the 31 key study locations with the addition of the trips generated by the proposed project (field event) to existing traffic volumes.

Future Traffic Conditions

Year 2020 Traffic Volumes

The Cumulative Base or “background” traffic projections account for existing traffic volumes, and include two growth elements over existing traffic volumes: (1) increase in the existing traffic volumes due to overall regional growth, inclusive of the development of projects outside the study area, and (2) traffic generated by specific developments expected to be constructed by the Year 2020 in the vicinity of the project study area. To develop forecasts for the Year 2020, existing (Year 2017) traffic volumes were increased by a total ambient growth factor of 1.5% (0.5% per year). The ambient growth factors were provided by City of Fullerton staff and are based on the City’s review of local/regional growth projections in the area of the proposed project. The City of Fullerton provided volumes from their in-house traffic model for all cumulative projects related to Year 2020 traffic conditions. It should be noted that a portion of the Fullerton College Master Plan student growth (i.e., 638 students out of 3,189 students) was also included as a cumulative project in the Year 2020.

The weekday PM peak hour traffic volumes associated with the cumulative projects in the Year 2020 are presented in Figure 4.8-36, Year 2020 Weekday PM Peak Hour Cumulative Project Traffic Volumes. The Saturday Event Arrival and Saturday Event Departure peak hour traffic volumes associated with the cumulative projects in the Year 2020 are presented in Figure 4.8-37, Year 2020 Saturday Event Arrival Period and Event Departure Period Peak Hour Cumulative Project Traffic Volumes. The Saturday cumulative project traffic volumes reflect 75% of the weekday PM peak hour cumulative project traffic volumes. This percentage is based on a comparison between existing PM peak hour traffic volumes and existing Saturday Midday and Afternoon peak hour traffic volumes at key study intersections around the campus (i.e., key study intersections numbers 4, 7, 8 and 9). The comparisons revealed a volume reduction between approximately 25% and 50%. Based on discussions with City of Fullerton staff, it was determined that a 25% reduction should be utilized to provide a conservative forecast (i.e., higher background volumes) for the Saturday cumulative project traffic volumes.

Figure 4.8-38, Year 2020 Weekday Cumulative PM Peak Hour Traffic Volumes, presents the weekday PM peak hour cumulative traffic volumes (existing traffic + ambient growth + cumulative projects) at the key study intersections for the Year 2020. Figure 4.8-39, Year 2020 Saturday Event Arrival Period Cumulative Peak Hour Traffic Volumes, and Figure 4.8-40, Year 2020 Saturday Event Departure Period Cumulative Peak Hour Traffic Volumes, present the specified peak hour cumulative traffic volumes (existing traffic + ambient growth + cumulative projects) at the key study intersections for the Year 2020. Figure 4.8-41, Year 2020 Friday Event Arrival Period Cumulative Peak Hour Traffic Volumes, and Figure 4.8-42, Year 2020 Friday Event Departure Period Cumulative Peak Hour Traffic Volumes, present the specified peak hour cumulative traffic volumes (existing traffic + ambient growth + cumulative projects) at the key study intersections for the Year 2020.

Figure 4.8-43, Year 2020 Weekday Cumulative plus Project PM Peak Hour Traffic Volumes, illustrates the Year 2020 forecast weekday PM peak hour traffic volumes including the trips generated by the proposed project (academic instruction). Figure 4.8-44, Year 2020 Saturday Event Arrival Period Cumulative plus Project Peak Hour Traffic Volumes, and Figure 4.8-45, Year 2020 Saturday Event Departure Period Cumulative plus Project Peak Hour Traffic Volumes, illustrate the specified Year 2020 forecast peak hour traffic volumes including the trips generated by the proposed project (field event). Figure 4.8-46, Year 2020 Friday Event Arrival Period Cumulative plus Project Peak Hour Traffic Volumes, and Figure 4.8-47, Year 2020 Friday Event Departure Period Cumulative plus Project Peak Hour Traffic Volumes, illustrate the specified Year 2020 forecast peak hour traffic volumes including the trips generated by the proposed project (field event).

Year 2030 Buildout Traffic Volumes

Similar to the approach in forecasting Year 2020 traffic volumes, Year 2030 peak hour background traffic volumes were forecast based on application of growth rates provided by the City of Fullerton to existing traffic volumes, and by further adding traffic volumes from all future cumulative projects (i.e., buildout of the City). A 10% total growth was applied to existing traffic volumes at key study intersections for all major through movements, and for any major turn movements, as identified by City of Fullerton staff. A 5% total growth was applied to existing traffic volumes for all of the remaining key intersection movements, which are considered to be minor movements. The ambient growth factors were provided by City of Fullerton staff and are based on the City's review of local/regional growth projections in the area of the proposed project. The City of Fullerton provided volumes from their in-house traffic model for all cumulative projects related to Year 2030 traffic conditions. It should be noted that the Fullerton College Master Plan student growth (i.e., 3,189 students) was also included as a cumulative project in the Year 2030.

The weekday PM peak hour traffic volumes associated with the cumulative projects in the Year 2030 are presented in Figure 4.8-48, Year 2030 Weekday PM Peak Hour Cumulative Project Traffic Volumes. The Saturday Event Arrival and Saturday Event Departure peak hour traffic volumes associated with the cumulative projects in the Year 2030 are presented in Figure 4.8-49, Year 2030 Saturday Event Arrival Period and Event Departure Period Peak Hour Cumulative Project Traffic Volumes. It should be noted that the Saturday cumulative project traffic volumes were assumed to be 75% of the weekday PM peak hour cumulative project traffic volumes, as directed by City of Fullerton staff.

Figure 4.8-50, Year 2030 Weekday Buildout PM Peak Hour Traffic Volumes, presents the Year 2030 weekday PM peak hour buildout traffic volumes at the key study intersections. Figure 4.8-51, Year 2030 Saturday Event Arrival Period Buildout Traffic Volumes, and Figure 4.8-52, Year 2030 Saturday Event Departure Period Buildout Traffic Volumes, present the specified peak hour buildout traffic volumes at the key study intersections. The Saturday cumulative project traffic volumes reflect 75% of the weekday PM peak hour cumulative project traffic volumes. This percentage is based on a comparison between existing PM peak hour traffic volumes and existing Saturday Midday and Afternoon peak hour traffic volumes at key study intersections around the campus (i.e., key study intersections numbers 4, 7, 8, and 9). The comparisons revealed a volume reduction between approximately 25% and 50%. Based on discussions with City of Fullerton staff, it was determined that a 25% reduction should be utilized to provide a conservative forecast (i.e., higher background volumes) for the Saturday cumulative project traffic volumes.

Figure 4.8-53, Year 2030 Weekday Buildout plus Project PM Peak Hour Traffic Volumes, presents the Year 2030 forecast weekday PM peak hour traffic volumes including the trips generated by the proposed project (academic instruction). Figure 4.8-54, Year 2030 Saturday Event Arrival Period Buildout plus Project Peak Hour Traffic Volumes, and Figure 4.8-55, Year 2030 Saturday

Event Departure Period Buildout plus Project Peak Hour Traffic Volumes, illustrate the specified peak hour traffic volumes including the trips generated by the proposed project (field event).

4.8.3.3 Traffic Impact Analysis Methodology

The relative impact of the proposed project during the weekday PM peak hour, Saturday Event Arrival Period peak hour and Saturday Event Departure Period peak hour was evaluated based on analysis of future operating conditions at the 31 key study intersections, without, then with, the proposed project. In addition, the Friday Event Arrival Period and Friday Event Departure was evaluated for Existing plus Project and Year 2020 Cumulative plus Project Friday evening to address City of Fullerton Staff concerns regarding a “worst case” traffic scenario if Fullerton College hosts an event at Sherbeck Field on a Friday evening while Fullerton Union High School hosts a simultaneous event at their field. The Friday Event Arrival Period and Friday Event Departure analysis was prepared for the purpose satisfying the City of Fullerton Notice of Preparation comment, and the Friday condition is not considered a recurring event. It is also important to note that the City of Fullerton does not have traffic model data for a Friday traffic condition. Thus, the information provided in Section 4.8.4, Impacts Analysis, with regard to Friday Event Field analysis is primarily for informational purposes.

The previously discussed capacity analysis procedures were utilized to investigate the future delay/volume-to-capacity relationships and service level characteristics at each study intersection using the Vistro software and HCM 6 Methodology. The significance of the potential impacts of the proposed project at each key intersection was then evaluated using the following traffic impact criteria.

Significance Impact Criteria

In order to provide a quantitative basis for determining the significance of a traffic impact at a specific location, it was necessary to establish the criteria to be used in the analysis of intersections for this study. Based on the City of Fullerton traffic study guidelines, a project is considered to have a significant impact at a signalized intersection if the following criteria are met:

- For signalized intersections, an impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F.
- For unsignalized intersections, an impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F. However, unsignalized intersection LOS is based on the control delay, but that delay is only assessed for those traffic movements that are stopped or must yield to through traffic. Some movements, including cross traffic on the minor street or left turns onto the major street, may be acceptable with relatively long delays, when through traffic and right turns from a major street do not experience any delays at stopped intersections. When delay for cross traffic is severe (LOS F), the intersection should be further evaluated for possible improvement with traffic signals. In some cases, this analysis

determines that the delay is being experienced by a very low number of vehicles, and traffic signals are not warranted. For this condition, the intersection does not need to be considered impacted, but measures to reduce delay may be considered, if appropriate. In other cases, the number of stopped vehicles is substantial and traffic signals may be justified as a mitigation measure. Therefore, the following significance criterion for unsignalized intersection is used:

- An unsignalized intersection impact is considered to be significant if the project causes an intersection at LOS D or better to degrade to LOS E or F, and the traffic signal warrant analysis determines that a signal is justified.

It should be noted that although the City standard is LOS D, there are two intersections located in the Historic Downtown area where LOS E is deemed acceptable to the City because of the fully developed character of the downtown area, the presence of historic properties, and the great expense and hardship that would be caused by attempting to secure right-of-way required to improve LOS. The two intersections where LOS E is considered acceptable are Harbor Boulevard/Chapman Avenue (key study intersection no. 6) and Harbor Boulevard/Commonwealth Avenue (key study intersection no. 16). It should be further noted that LOS E is also considered acceptable at the Congestion Management Plan intersection of Harbor Boulevard/Orangethorpe Avenue (key study intersection no. 20).

Traffic Impact Analysis Scenarios

The following scenarios are those for which LOS calculations have been performed at the 31 key study intersections for Existing plus Project traffic conditions, Year 2020 plus Project traffic conditions, and Year 2030 Buildout plus Project traffic conditions:

- Existing Traffic Conditions
- Existing plus Project Traffic Conditions
- Existing plus Project Traffic Conditions with Improvements, if necessary
- Year 2020 Cumulative Traffic Conditions
- Year 2020 Cumulative plus Project Traffic Conditions
- Year 2020 Scenario with Improvements, if necessary
- Year 2030 Buildout Traffic Conditions
- Year 2030 Buildout plus Project Traffic Conditions
- Year 2030 Scenario with Improvements, if necessary

4.8.4 Impacts Analysis

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

Would the project conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Construction Traffic Impact Analysis

Construction-related trips associated with trucks and workers traveling to and from the site in the morning and afternoon may result in some minor traffic delays; however, potential traffic interference caused by construction vehicles would create a temporary/short-term impact to vehicles using Berkeley Avenue and Chapman Avenue in the morning and afternoon hours, and the number of construction workers will vary depending on the specific construction activities.

Traffic impacts to the adjacent roadway network would be minimal and not long-term. Further, since the construction-related trip generation potential of the proposed project (i.e., all five construction components) is less than that of the proposed project's operational trips (i.e., weekday academic instruction) and the proposed project (i.e., field event) is not expected to significantly impact any of the key study intersections, no significant impacts resulting from construction traffic are anticipated aside from the nuisance traffic that will occur as a result of construction-related traffic (e.g., construction materials, construction workers). Nonetheless, to reduce the impact of construction-related traffic, the implementation of a Construction Management Plan is recommended to minimize traffic impacts upon the local circulation system in the area (MM-TRA-1). With implementation of MM-TRA-1, impacts associated with construction traffic would be less than significant.

Peak Hour Capacity Analysis

The following analysis is based on the significance criteria discussed in Section 4.8.3.3, Traffic Impact Analysis Methodology.

Existing Traffic Conditions

<u>Existing plus Project Analysis – Weekly Academic Instruction</u>

Table 4.8-8 shows the weekday PM peak hour LOS results at the 31 key study intersections for Existing plus Project (academic instruction) traffic conditions. Table 4.8-8 presents a summary of existing weekday PM peak hour traffic conditions (which were also presented in Table 4.8-8). The table indicates the anticipated operating conditions with implementation of planned improvements will mitigate project traffic and/or achieve an acceptable LOS.

Table 4.8-8
Existing plus Project Weekday Peak Hour
Intersection Capacity Analysis – Academic Instruction

Key Intersection	Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing plus Project Traffic Conditions		(3) Significant Impact		(4) Existing plus Project With Improvements	
			HCM	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
1. Harbor Boulevard at Bastanchury Road	D	Weekday PM	**57.0 s/v**	**E**	**57.0 s/v**	**E**	0.0 s/v	No	— —	— —
2. Harbor Boulevard at Valley View Drive/Brea Boulevard	D	Weekday PM	30.0 s/v	C	30.9 s/v	C	0. 1 s/v	No	— —	— —
3. Harbor Boulevard at Berkeley Avenue	D	Weekday PM	30.9 s/v	C	30.9 s/v	C	0.0 s/v	No	— —	— —
4. Lemon Street at Berkeley Avenue	D	Weekday PM	38.6 s/v	D	38.6 s/v	D	0.0 s/v	No	— —	— —
5. Horney Way at Berkley Avenue	D	Weekday PM	13.4 s/v	B	13.4 s/v	B	0.1 s/v	No	— —	— —
6. Euclid Street at Malvern Avenue	D	Weekday PM	34.0 s/v	C	34.1 s/v	C	0.1 s/v	No	— —	— —
7. Harbor Boulevard at Chapman Avenue	E	Weekday PM	31.5 s/v	C	31.7 s/v	C	0.2 s/v	No	— —	— —
8. Lemon Street at Chapman Avenue	D	Weekday PM	34.2 s/v	C	34.5 s/v	C	0.3 s/v	No	— —	— —
9. Berkeley Avenue at Chapman Avenue	D	Weekday PM	18.0 s/v	B	18.0 s/v	B	0.0 s/v	No	— —	— —
10. Raymond Avenue at Chapman Avenue	D	Weekday PM	26.2 s/v	C	26.4 s/v	C	0.2 s/v	No	— —	— —
11. Acacia Avenue at Chapman Avenue	D	Weekday PM	18.1 s/v	B	1801 s/v	B	0.0 s/v	No	— —	— —
12. State College Boulevard at Chapman Avenue	D	Weekday PM	35.8 s/v	D	35.9 s/v	D	0.1 s/v	No	— —	— —

Table 4.8-8
Existing plus Project Weekday Peak Hour
Intersection Capacity Analysis – Academic Instruction

Key Intersection		Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing plus Project Traffic Conditions		(3) Significant Impact		(4) Existing plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
13.	SR-57 SB Ramps at Chapman Avenue	D	Weekday PM	18.2 s/v	B	18.3 s/v	B	0.1 s/v	No	— —	— —
14.	SR-57 NB Ramps at Chapman Avenue	D	Weekday PM	26.5 s/v	C	26.5 s/v	C	0.0 s/v	No	— —	— —
15.	Lemon Street at Wilshire Avenue	D	Weekday PM	10.3 s/v	B	10.3 s/v	B	0.0 s/v	No	— —	— —
16.	Harbor Boulevard at Commonwealth Avenue	E	Weekday PM	30.8 s/v	C	30.9 s/v	C	0.1 s/v	No	— —	— —
17.	Lemon Street at Commonwealth Avenue	D	Weekday PM	33.9 s/v	C	33.9 s/v	C	0.0 s/v	No	— —	— —
18.	Harbor Boulevard at Valencia Drive	D	Weekday PM	26.5 s/v	C	26.6 s/v	C	0.1 s/v	No	— —	— —
19.	Lemon Street at Valencia Drive	D	Weekday PM	10.1 s/v	B	10.1 s/v	B	0.0 s/v	No	— —	— —
20.	Harbor Boulevard at Orangethorpe Avenue	D	Weekday PM	38.8 s/v	D	38.9 s/v	D	0.1 s/v	No	— —	— —
21.	Lemon Street at Orangethorpe Avenue	D	Weekday PM	36.6 s/v	D	36.6 s/v	D	0.0 s/v	No	— —	— —
22.	Harbor Boulevard at SR-91 WB Ramps	D	Weekday PM	17.2 s/v	B	17.2 s/v	B	0.0 s/v	No	— —	— —
23.	Lemon Street at SR-91 WB Ramps	D	Weekday PM	24.5 s/v	C	24.6 s/v	C	0.1 s/v	No	— —	— —
24.	Harbor Boulevard at SR-91 EB Ramps	D	Weekday PM	19.6 s/v	B	19.7 s/v	B	0.1 s/v	No	— —	— —

Table 4.8-8
Existing plus Project Weekday Peak Hour
Intersection Capacity Analysis – Academic Instruction

Key Intersection		Minimum Acceptable LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing plus Project Traffic Conditions		(3) Significant Impact		(4) Existing plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
25.	Lemon Street at SR-91 EB Ramps	D	Weekday PM	23.0 s/v	C	23.1 s/v	C	0.1 s/v	No	— —	— —
26.	Centennial Way at Berkeley Avenue	D	Weekday PM	12.5 s/v	B	12.5 s/v	B	0.0 s/v	No	— —	— —
27.	Lemon Street at Fullerton College Drive	D	Weekday PM	16.0 s/v	B	16.0 s/v	B	0.0 s/v	No	— —	— —
28.	Berkeley Avenue at College Driveway No. 1	D	Weekday PM	12.9 s/v	B	13.1 s/v	B	0.2 s/v	No	— —	— —
29.	Berkeley Avenue at College Driveway No. 2	D	Weekday PM	12.3 s/v	B	12.3 s/v	B	0.0 s/v	No	— —	— —
30.	Berkeley Avenue at Brookdale Place	D	Weekday PM	13.9 s/v	B	14.3 s/v	B	0.4 s/v	No	— —	— —
31.	Lemon Street at Parking Structure	D	Weekday PM	16.4 s/v	C	16.7 s/v	C	0.3 s/v	No	— —	— —

Bold HCM/LOS values indicate adverse levels of service.
LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle; WB = westbound; EB = eastbound.

Review of columns 2 and 3 of Table 4.8-8 indicates that traffic associated with the proposed project (i.e., academic instruction) would not significantly impact any of the 31 key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. Although the intersection of Harbor Boulevard/Bastanchury Road is forecast to operate at unacceptable LOS E during the PM peak hour without and with the addition of project traffic, the addition of project trips is not anticipated to worsen or further degrade the service level and therefore is considered less than significant based on the LOS standards and impact criteria detailed in Section 4.8.3. The remaining 30 key study intersections currently operate and are forecast to continue to operate at an acceptable service level during the weekday PM peak hour with the addition of project generated traffic to existing traffic.

Existing plus Project Analysis – Saturday Field Event

Table 4.8-9 summarizes the Saturday Event Arrival peak hour and Saturday Event Departure peak hour Level of Service results at the 31 key study intersections for Existing plus Project (field event) traffic conditions.

Table 4.8-9
Existing Plus Project Saturday Peak Hour Intersection Capacity Analysis – Field Event

	Key Intersection	Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
1.	Harbor Boulevard at Bastanchury Road	D	Sat. Arrival Sat. Departure	35.5 s/v 35.0 s/v	D C	36.3 s/v 35.3 s/v	D D	0.8 s/v 0.3 s/v	No No	— —	— —
2.	Harbor Boulevard at Valley View Drive/ Brea Boulevard	D	Sat. Arrival Sat. Departure	26.7 s/v 26.8 s/v	C C	27.1 s/v 26.8 s/v	C C	0.4 s/v 0.0 s/v	No No	— —	— —
3.	Harbor Boulevard at Berkeley Avenue	D	Sat. Arrival Sat. Departure	19.7 s/v 16.5 s/v	B B	21.2 s/v 19.0 s/v	C B	1.5 s/v 2.5 s/v	No No	— —	— —
4.	Lemon Street at Berkeley Avenue	D	Sat. Arrival Sat. Departure	34.8 s/v 33.9 s/v	C C	36.4 s/v **72.4 s/v**	D **E**	1.6 s/v **38.5 s/v**	No **Yes**	— 18.1 s/v	— B
5.	Hornet Way at Berkeley Avenue	D	Sat. Arrival Sat. Departure	11.5 s/v 14.0 s/v	B B	10.8 s/v 9.6 s/v	B A	0.0 s/v 0.0 s/v	No No	— —	— —
6.	Euclid Street at Malvern Avenue	D	Sat. Arrival Sat. Departure	11.0 s/v 10.9 s/v	B B	14.5 s/v 16.5 s/v	B B	3.5 s/v 5.6 s/v	No No	— —	— —
7.	Harbor Boulevard at Chapman Avenue	E	Sat. Arrival Sat. Departure	26.5 s/v 26.5 s/v	C C	28.6 s/v 30.0 s/v	C C	2.1 s/v 3.5 s/v	No No	— —	— —
8.	Lemon Street at Chapman Avenue	D	Sat. Arrival Sat. Departure	33.1 s/v 32.9 s/v	C C	33.4 s/v 33.3 s/v	C C	0.3 s/v 0.4 s/v	No No	— —	— —
9.	Berkeley Avenue at Chapman Avenue	D	Sat. Arrival Sat. Departure	10.0 s/v 9.5 s/v	A A	13.4 s/v 23.2 s/v	B C	3.4 s/v 13.7 s/v	No No	— —	— —
10.	Raymond Avenue at Chapman Avenue	D	Sat. Arrival Sat. Departure	19.5 s/v 18.5 s/v	B B	21.1 s/v 18.5 s/v	C B	1.6 s/v 0.0 s/v	No No	— —	— —
11.	Acacia Avenue at Chapman Avenue	D	Sat. Arrival Sat. Departure	8.7 s/v 10.7 s/v	A B	8.1 s/v 9.6 s/v	A A	0.0 s/v 0.0 s/v	No No	— —	— —
12.	State College Blvd at Chapman Avenue	D	Sat. Arrival Sat. Departure	37.1 s/v 36.9 s/v	D D	37.3 s/v 35.3 s/v	D D	0.2 s/v 0.0 s/v	No No	— —	— —

Table 4.8-9
Existing Plus Project Saturday Peak Hour Intersection Capacity Analysis – Field Event

	Key Intersection	Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
13.	SR-57 SB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	17.6 s/v 18.4 s/v	B B	20.2 s/v 19.3 s/v	C B	2.6 s/v 0.9 s/v	No No	— —	— —
14.	SR-57 NB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	25.2 s/v 26.7 s/v	C C	28.0 s/v 29.4 s/v	C C	2.8 s/v 2.7 s/v	No No	— —	— —
15.	Lemon Street at Wilshire Avenue	D	Sat. Arrival Sat. Departure	6.5 s/v 5.0 s/v	A A	5.7 s/v 4.4 s/v	A A	0.0 s/v 0.0 s/v	No No	— —	— —
16.	Harbor Boulevard at Commonwealth Ave	E	Sat. Arrival Sat. Departure	30.8 s/v 30.4 s/v	C C	30.1 s/v 30.7 s/v	C C	0.0 s/v 0.3 s/v	No No	— —	— —
17.	Lemon Street at Commonwealth Ave	D	Sat. Arrival Sat. Departure	32.4 s/v 32.4 s/v	C C	33.5 s/v 32.5 s/v	C C	1.1 s/v 0.1 s/v	No No	— —	— —
18.	Harbor Boulevard at Valencia Drive	D	Sat. Arrival Sat. Departure	11.5 s/v 11.6 s/v	B B	11.5 s/v 11.6 s/v	B B	0.0 s/v 0.0 s/v	No No	— —	— —
19.	Lemon Street at Valencia Drive	D	Sat. Arrival Sat. Departure	10.5 s/v 11.0 s/v	B B	10.0 s/v 10.4 s/v	B B	0.0 s/v 0.0 s/v	No No	— —	— —
20.	Harbor Boulevard at Orangethorpe Avenue	E	Sat. Arrival Sat. Departure	39.2 s/v 38.0 s/v	D D	41.9 s/v 38.4 s/v	D D	2.7 s/v 0.4 s/v	No No	— —	— —
21.	Lemon Street at Orangethorpe Avenue	D	Sat. Arrival Sat. Departure	34.1 s/v 32.9 s/v	C C	35.2 s/v 33.5 s/v	D C	1.1 s/v 0.6 s/v	No No	— —	— —
22.	Harbor Boulevard at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	17.3 s/v 20.1 s/v	B C	17.4 s/v 21.1 s/v	B C	0.1 s/v 1.0 s/v	No No	— —	— —
23.	Lemon Street at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	27.7 s/v 24.8 s/v	C C	29.5 s/v 26.2 s/v	C C	1.8 s/v 1.4 s/v	No No	— —	— —
24.	Harbor Boulevard at SR-91 EB Ramps	D	Sat. Arrival Sat. Departure	23.6 s/v 22.4 s/v	C C	24.4 s/v 22.5 s/v	C C	0.8 s/v 0.1 s/v	No No	— —	— —

Table 4.8-9
Existing Plus Project Saturday Peak Hour Intersection Capacity Analysis – Field Event

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project With Improvements	
				HCM	LOS	HCM	LOS	Increase	Yes/No	HCM	LOS
25.	Lemon Street at SR-91 EB Ramps	D	Sat. Arrival	27.8 s/v	C	29.1 s/v	C	1.3 s/v	No	—	—
			Sat. Departure	27.8 s/v	C	28.2 s/v	C	0.4 s/v	No	—	—
26.	Centennial Way at Berkeley Avenue	D	Sat. Arrival	10.2 s/v	B	10.7 s/v	B	0.5 s/v	No	—	—
			Sat. Departure	9.7 s/v	A	11.7 s/v	B	2.0 s/v	No	—	—
27.	Lemon Street at Fullerton College Drive	D	Sat. Arrival	14.4 s/v	B	14.5 s/v	B	0.1 s/v	No	—	—
			Sat. Departure	4.9 s/v	A	20.0 s/v	B	15.1 s/v	No	—	—
28.	Berkeley Avenue at College Dwy No. 1	D	Sat. Arrival	11.2 s/v	B	27.6 s/v	D	16.4 s/v	No	—	—
			Sat. Departure	10.4 s/v	B	72.2 s/v	F	61.8 s/v	Yes	16.1 s/v	B
29.	Berkeley Avenue at College Dwy No. 2	D	Sat. Arrival	10.7 s/v	B	14.7 s/v	B	4.0 s/v	No	—	—
			Sat. Departure	9.8 s/v	A	85.4 s/v	F	75.6 s/v	Yes	14.5 s/v	B
30.	Berkeley Avenue at Brookdale Place	D	Sat. Arrival	11.7 s/v	B	22.4 s/v	C	10.7 s/v	No	—	—
			Sat. Departure	9.9 s/v	A	13.7 s/v	B	3.8 s/v	No	—	—
31.	Lemon Street at Parking Structure	D	Sat. Arrival	10.1 s/v	B	12.2 s/v	B	2.1 s/v	No	—	—
			Sat. Departure	9.5 s/v	A	10.2 s/v	B	0.7 s/v	No	—	—

Bold HCM/LOS values indicate adverse levels of service.
LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle; WB = westbound; EB = eastbound.

Review of Columns 2 and 3 of Table 4.8-9 indicates that traffic associated with the proposed project (field event) would significantly impact 3 of the 31 key study intersections, when compared to the LOS standards and significant impact criteria. The remaining 28 key study intersections currently operate and are forecast to continue to operate at an acceptable LOS during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of project-generated traffic to existing traffic. The intersections operating at an adverse LOS under existing plus project Saturday traffic conditions are shown in Table 4.8-10.

Table 4.8-10
Intersections with Adverse LOS – Saturday Events

Key Intersection		Saturday Arrival		Saturday Departure	
		ICM/HCM	*LOS*	*ICM/HCM*	*LOS*
4.	Lemon Street at Berkeley Avenue	—	—	72.4 s/v	E
28.	Berkeley Avenue at College Driveway No. 1	—	—	72.2 s/v	F
29.	Berkeley Avenue at College Driveway No. 2	—	—	85.4 s/v	F

LOS = level of service; ICM = Integrated Corridor Management; HCM = Highway Capacity Manual; s/v = seconds per vehicle.

The implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 would improve the intersections' LOS operation to an acceptable level.

Existing plus Project Analysis – Friday Field Event

Table 4.8-11 summarizes the Friday Event Arrival peak hour and Friday Event Departure peak hour LOS results at the 31 key study intersections for Existing plus Project (field event) traffic conditions.

Table 4.8-11
Existing Plus Project Friday Peak Hour Intersection Capacity Analysis – Field Event

	Key Intersection	Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
1.	Harbor Boulevard at Bastanchury Road	D	Fri. Arrival Fri. Departure	37.4 s/v 31.2 s/v	D C	43.1 s/v 31.7 s/v	D D	5.7 s/v 0.5 s/v	No No	— —	— —
2.	Harbor Boulevard at Valley View Drive/Brea Blvd	D	Fri. Arrival Fri. Departure	27.2 s/v 23.1 s/v	C C	27.7 s/v 22.4 s/v	C C	0.5 s/v 0.0 s/v	No No	— —	— —
3.	Harbor Boulevard at Berkeley Avenue	D	Fri. Arrival Fri. Departure	22.9 s/v 17.5 s/v	C B	24.5 s/v 19.3 s/v	C B	1.6 s/v 1.8 s/v	No No	— —	— —
4.	Lemon Street at Berkeley Avenue	D	Fri. Arrival Fri. Departure	49.9 s/v 31.8 s/v	D C	50.0 s/v **93.5 s/v**	D **F**	0.1 s/v **61.7 s/v**	No **Yes**	— 15.2 s/v	— B
5.	Hornet Way at Berkeley Avenue	D	Fri. Arrival Fri. Departure	13.6 s/v 10.6 s/v	B B	12.8 s/v 7.3 s/v	B A	0.0 s/v 0.0 s/v	No No	— —	— —
6.	Euclid Street at Malvern Avenue	D	Fri. Arrival Fri. Departure	30.4 s/v 25.1 s/v	C C	40.8 s/v 26.7 s/v	D C	10.4 s/v 1.6 s/v	No No	— —	— —
7.	Harbor Boulevard at Chapman Avenue	E	Fri. Arrival Fri. Departure	29.2 s/v 25.2 s/v	C C	31.9 s/v 28.2 s/v	C C	2.7 s/v 3.0 s/v	No No	— —	— —
8.	Lemon Street at Chapman Avenue	D	Fri. Arrival Fri. Departure	31.6 s/v 29.9 s/v	C C	34.9 s/v 30.6 s/v	C C	3.3 s/v 0.7 s/v	No No	— —	— —
9.	Berkeley Avenue at Chapman Avenue	D	Fri. Arrival Fri. Departure	11.0 s/v 10.8 s/v	B B	18.0 s/v 23.6 s/v	B C	7.0 s/v 12.8 s/v	No No	— —	— —
10.	Raymond Avenue at Chapman Avenue	D	Fri. Arrival Fri. Departure	22.0 s/v 14.2 s/v	C B	25.2 s/v 14.3 s/v	C B	3.2 s/v 0.1 s/v	No No	— —	— —
11.	Acacia Avenue at Chapman Avenue	D	Fri. Arrival Fri. Departure	14.5 s/v 7.6 s/v	B A	13.9 s/v 6.9 s/v	B A	0.0 s/v 0.0 s/v	No No	— —	— —
12.	State College Blvd at Chapman Avenue	D	Fri. Arrival Fri. Departure	36.1 s/v 36.0 s/v	D D	50.3 s/v 36.0 s/v	D D	14.2 s/v 0.0 s/v	No No	— —	— —

Table 4.8-11
Existing Plus Project Friday Peak Hour Intersection Capacity Analysis – Field Event

	Key Intersection	Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
13.	SR-57 SB Ramps at Chapman Avenue	D	Fri. Arrival Fri. Departure	15.9 s/v 15.9 s/v	B B	24.0 s/v 16.8 s/v	C B	8.1 s/v 0.9 s/v	No No	— —	— —
14.	SR-57 NB Ramps at Chapman Avenue	D	Fri. Arrival Fri. Departure	26.6 s/v 25.4 s/v	C C	29.1 s/v 27.4 s/v	C C	2.5 s/v 2.0 s/v	No No	— —	— —
15.	Lemon Street at Wilshire Avenue	D	Fri. Arrival Fri. Departure	5.7 s/v 3.7 s/v	A A	5.1 s/v 3.1 s/v	A A	0.0 s/v 0.0 s/v	No No	— —	— —
16.	Harbor Boulevard at Commonwealth Ave	E	Fri. Arrival Fri. Departure	30.6 s/v 30.1 s/v	C C	30.9 s/v 30.4 s/v	C C	0.3 s/v 0.3 s/v	No No	— —	— —
17.	Lemon Street at Commonwealth Ave	D	Fri. Arrival Fri. Departure	32.7 s/v 31.9 s/v	C C	34.0 s/v 32.7 s/v	C C	1.3 s/v 0.8 s/v	No No	— —	— —
18.	Harbor Boulevard at Valencia Drive	D	Fri. Arrival Fri. Departure	11.7 s/v 7.0 s/v	B A	11.7 s/v 6.7 s/v	B A	0.0 s/v 0.0 s/v	No No	— —	— —
19.	Lemon Street at Valencia Drive	D	Fri. Arrival Fri. Departure	12.8 s/v 9.0 s/v	B A	12.4 s/v 7.9 s/v	B A	0.0 s/v 0.0 s/v	No No	— —	— —
20.	Harbor Boulevard at Orangethorpe Avenue	E	Fri. Arrival Fri. Departure	38.9 s/v 36.1 s/v	D D	50.7 s/v 37.0 s/v	D D	11.8 s/v 0.9 s/v	No No	— —	— —
21.	Lemon Street at Orangethorpe Avenue	D	Fri. Arrival Fri. Departure	36.3 s/v 30.9 s/v	D C	38.2 s/v 31.0 s/v	D C	1.9 s/v 0.1 s/v	No No	— —	— —
22.	Harbor Boulevard at SR-91 WB Ramps	D	Fri. Arrival Fri. Departure	16.3 s/v 15.2 s/v	B B	16.3 s/v 16.2 s/v	B C	0.0 s/v 1.0 s/v	No No	— —	— —
23.	Lemon Street at SR-91 WB Ramps	D	Fri. Arrival Fri. Departure	24.6 s/v 21.7 s/v	C C	25.9 s/v 21.7 s/v	C C	1.3 s/v 0.0 s/v	No No	— —	— —
24.	Harbor Boulevard at SR-91 EB Ramps	D	Fri. Arrival Fri. Departure	21.2 s/v 21.6 s/v	C C	22.2 s/v 21.8 s/v	C C	1.0 s/v 0.2 s/v	No No	— —	— —

Table 4.8-11
Existing Plus Project Friday Peak Hour Intersection Capacity Analysis – Field Event

	Key Intersection	Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Significant Impact		(4) Existing Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
25.	Lemon Street at SR-91 EB Ramps	D	Fri. Arrival Fri. Departure	24.8 s/v 26.9 s/v	C C	26.0 s/v 26.9 s/v	C C	1.2 s/v 0.0 s/v	No No	— —	— —
26.	Centennial Way at Berkeley Avenue	D	Fri. Arrival Fri. Departure	10.1 s/v 10.2 s/v	B B	10.4 s/v 12.8 s/v	B B	0.3 s/v 2.6 s/v	No No	— —	— —
27.	Lemon Street at Fullerton College Drive	D	Fri. Arrival Fri. Departure	12.7 s/v 26.6 s/v	B C	24.9 s/v 541.9 s/v	C F	12.2 s/v 515.3 s/v	No Yes	— 18.4 s/v	— B
28.	Berkeley Avenue at College Dwy No. 1	D	Fri. Arrival Fri. Departure	9.9 s/v 10.0 s/v	A B	19.1 s/v 44.5 s/v	C E	9.2 s/v 34.5 s/v	No Yes	— 15.5 s/v	— B
29.	Berkeley Avenue at College Dwy No. 2	D	Fri. Arrival Fri. Departure	10.1 s/v 9.5 s/v	B A	12.8 s/v 56.7 s/v	B F	2.7 s/v 47.2 s/v	No Yes	— 13.3 s/v	— B
30.	Berkeley Avenue at Brookdale Place	D	Fri. Arrival Fri. Departure	11.5 s/v 9.8 s/v	B A	26.1 s/v 14.0 s/v	D B	14.6 s/v 4.2 s/v	No No	— —	— —
31.	Lemon Street at Parking Structure	D	Fri. Arrival Fri. Departure	10.5 s/v 10.5 s/v	B B	12.7 s/v 11.5 s/v	B B	2.2 s/v 1.0 s/v	No No	— —	— —

Bold HCM/LOS values indicate adverse levels of service.
LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle; WB = westbound; EB = eastbound.

As shown in columns 2 and 3 in Table 4.8-11, the traffic associated with the proposed project (field event) would significantly impact 4 of the 31 key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining 27 key study intersections currently operate and are forecast to continue to operate at an acceptable LOS during the Friday Event Arrival peak hour and Friday Event Departure peak hour with the addition of project-generated traffic to existing traffic. The intersections operating at an adverse LOS under Existing plus Project Friday traffic conditions are shown in Table 4.8-12.

Table 4.8-12
Intersections with Adverse LOS – Existing plus Project – Friday (Field Event)

Key Intersection		Friday Arrival		Friday Departure	
		ICM/HCM	*LOS*	*ICM/HCM*	*LOS*
4.	Lemon Street at Berkeley Avenue	—	—	93.5 s/v	F
27.	Lemon Street at Fullerton College Drive	—	—	541.9 s/v	F
28.	Berkeley Avenue at College Driveway No. 1	—	—	44.5 s/v	E
29.	Berkeley Avenue at College Driveway No. 2	—	—	56.7 s/v	F

LOS = level of service; ICM = Integrated Corridor Management; HCM = Highway Capacity Manual; s/v = seconds per vehicle.

As shown in column 4 in Table 4.8-11, the implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Lemon Street/Fullerton College Drive, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 would improve the intersections' LOS operation to an acceptable level.

Year 2020 Traffic Conditions

Year 2020 Traffic Conditions – Weekday Academic Instruction

Table 4.8-13 summarizes the weekday PM peak hour LOS results at the 31 key study intersections for Year 2020 traffic conditions.

Table 4.8-13
Year 2020 Weekday Peak Hour Intersection Capacity Analysis – Academic Instruction

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2020 Cumulative Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
1.	Harbor Boulevard at Bastanchury Road	D	Weekday PM	**57.0 s/v**	**E**	**58.1 s/v**	**E**	**58.1 s/v**	**E**	0.0 s/v	No	—	—
2.	Harbor Boulevard at Valley View Drive/ Brea Boulevard	D	Weekday PM	30.0 s/v	C	30.5 s/v	C	30.5 s/v	C	0.0 s/v	No	—	—
3.	Harbor Boulevard at Berkeley Avenue	D	Weekday PM	30.9 s/v	C	31.9 s/v	C	32.0 s/v	C	0.1 s/v	No	—	—
4.	Lemon Street at Berkeley Avenue	D	Weekday PM	38.6 s/v	D	39.2 s/v	D	39.2 s/v	D	0.0 s/v	No	—	—
5.	Hornet Way at Berkeley Avenue	D	Weekday PM	13.4 s/v	B	13.4 s/v	B	13.4 s/v	B	0.0 s/v	No	—	—
6.	Euclid Street at Malvern Avenue	D	Weekday PM	34.0 s/v	C	35.5 s/v	D	35.6 s/v	D	0.1 s/v	No	—	—
7.	Harbor Boulevard at Chapman Avenue	E	Weekday PM	31.5 s/v	C	35.6 s/v	D	35.8 s/v	D	0.2 s/v	No	—	—
8.	Lemon Street at Chapman Avenue	D	Weekday PM	34.2 s/v	C	34.8 s/v	C	35.2 s/v	D	0.4 s/v	No	—	—
9.	Berkeley Avenue at Chapman Avenue	D	Weekday PM	18.0 s/v	B	18.3 s/v	B	18.3 s/v	B	0.0 s/v	No	—	—
10.	Raymond Avenue at Chapman Avenue	D	Weekday PM	26.2 s/v	C	26.8 s/v	C	27.0 s/v	C	0.2 s/v	No	—	—
11.	Acacia Avenue at Chapman Avenue	D	Weekday PM	18.1 s/v	B	18.3 s/v	B	18.3 s/v	B	0.0 s/v	No	—	—

Table 4.8-13
Year 2020 Weekday Peak Hour Intersection Capacity Analysis – Academic Instruction

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2020 Cumulative Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
12.	State College Boulevard at Chapman Avenue	D	Weekday PM	35.8 s/v	D	36.1 s/v	D	36.2 s/v	D	0.1 s/v	No	—	—
13.	SR-57 SB Ramps at Chapman Avenue	D	Weekday PM	18.2 s/v	B	18.5 s/v	B	18.5 s/v	B	0.0 s/v	No	—	—
14.	SR-57 NB Ramps at Chapman Avenue	D	Weekday PM	26.5 s/v	C	27.0 s/v	C	27.1 s/v	C	0.1 s/v	No	—	—
15.	Lemon Street at Wilshire Avenue	D	Weekday PM	10.3 s/v	B	10.4 s/v	B	10.4 s/v	B	0.0 s/v	No	—	—
16.	Harbor Boulevard at Commonwealth Avenue	E	Weekday PM	30.8 s/v	C	31.1 s/v	C	31.1 s/v	C	0.0 s/v	No	—	—
17.	Lemon Street at Commonwealth Avenue	D	Weekday PM	33.9 s/v	C	34.0 s/v	C	35.1 s/v	D	1.1 s/v	No	—	—
18.	Harbor Boulevard at Valencia Drive	D	Weekday PM	26.5 s/v	C	28.4 s/v	C	28.4 s/v	C	0.0 s/v	No	—	—
19.	Lemon Street at Valencia Drive	D	Weekday PM	10.1 s/v	B	10.2 s/v	B	10.2 s/v	B	0.0 s/v	No	—	—
20.	Harbor Boulevard at Orangethorpe Avenue	E	Weekday PM	38.8 s/v	D	41.2 s/v	D	41.4 s/v	D	0.2 s/v	No	—	—
21.	Lemon Street at Orangethorpe Avenue	D	Weekday PM	36.6 s/v	D	38.3 s/v	D	38.3 s/v	D	0.0 s/v	No	—	—
22.	Harbor Boulevard at SR-91 WB Ramps	D	Weekday PM	17.2 s/v	B	17.7 s/v	B	17.7 s/v	B	0.0 s/v	No	—	—
23.	Lemon Street at SR-91 WB Ramps	D	Weekday PM	24.5 s/v	C	25.0 s/v	C	25.0 s/v	C	0.0 s/v	No	—	—

Table 4.8-13
Year 2020 Weekday Peak Hour Intersection Capacity Analysis – Academic Instruction

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2020 Cumulative Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
24.	Harbor Boulevard at SR-91 EB Ramps	D	Weekday PM	19.6 s/v	B	19.9 s/v	B	20.0 s/v	C	0.1 s/v	No	—	—
25.	Lemon Street at SR-91 EB Ramps	D	Weekday PM	23.0 s/v	C	23.3 s/v	C	23.3 s/v	C	0.0 s/v	No	—	—
26.	Centennial Way at Berkeley Avenue	D	Weekday PM	12.5 s/v	B	12.6 s/v	B	12.6 s/v	B	0.0 s/v	No	—	—
27.	Lemon Street at Fullerton College Drive	D	Weekday PM	16.0 s/v	B	16.5 s/v	B	16.5 s/v	C	0.0 s/v	No	—	—
28.	Berkeley Avenue at College Driveway No. 1	D	Weekday PM	12.9 s/v	B	13.1 s/v	B	13.4 s/v	B	0.3 s/v	No	—	—
29.	Berkeley Avenue at College Driveway No. 2	D	Weekday PM	12.3 s/v	B	12.5 s/v	B	12.5 s/v	B	0.0 s/v	No	—	—
30.	Berkeley Avenue at Brookdale Place	D	Weekday PM	13.9 s/v	B	14.2 s/v	B	14.7 s/v	B	0.5 s/v	No	—	—
31.	Lemon Street at Parking Structure	D	Weekday PM	16.4 s/v	C	17.1 s/v	C	17.5 s/v	C	0.4 s/v	No	—	—

Bold HCM/LOS values indicate adverse levels of service.
LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle; WB = westbound; EB = eastbound.

Year 2020 Traffic Conditions (Without Project) – Weekly Academic Instruction

An analysis of future (Year 2020) traffic conditions indicates that the addition of ambient growth and cumulative projects traffic would cumulatively impact 1 of the 31 key study intersections. The remaining 20 key study intersections are forecast to operate at an acceptable LOS during the weekday PM peak hour with the addition of ambient traffic growth and cumulative projects traffic. The intersections forecast to operate adversely in the Year 2020 are shown in Table 4.8-14.

Table 4.8-14
Intersections with Adverse LOS – Year 2020 without Project

Key Intersection		PM Peak Hour	
		ICM/HCM	*LOS*
1.	Harbor Boulevard at Bastanchury Road	58.1 s/v	E

LOS = level of service; ICM = Integrated Corridor Management; HCM = Highway Capacity Manual; s/v = seconds per vehicle.

Year 2020 plus Project Traffic Conditions- Weekly Academic Instruction

Review of columns 3 and 4 of Table 4.8-13 indicates that traffic associated with the proposed project (i.e., academic instruction) would not significantly impact any of the 31 key study intersections, when compared to the LOS standards and significant impact criteria specified under Section 4.8.3, Thresholds of Significance. Although the intersection of Harbor Boulevard/Bastanchury Road is forecast to operate at unacceptable LOS E during the PM peak hour without and with the addition of project traffic, the addition of project trips is not anticipated to worsen or further degrade the LOS and therefore is considered less than significant. The remaining 30 key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project generated traffic under Year 2020 traffic conditions.

Year 2020 Traffic Conditions – Saturday Field Event

Table 4.8-15 summarizes the Saturday Event Arrival peak hour and Saturday Event Departure peak hour LOS results at the 31 key study intersections for Year 2020 traffic conditions.

Table 4.8-15
Year 2020 Saturday Peak Hour Intersection Capacity Analysis – Field Event

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2020 Cumulative Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
1.	Harbor Boulevard at Bastanchury Road	D	Sat. Arrival Sat. Departure	35.5 s/v 35.0 s/v	D C	35.6 s/v 35.0 s/v	D C	36.6 s/v 35.3 s/v	D D	1.0 s/v 0.3 s/v	No No	— —	— —
2.	Harbor Boulevard at Valley View Drive/ Brea Boulevard	D	Sat. Arrival Sat. Departure	26.7 s/v 26.8 s/v	C C	26.8 s/v 26.8 s/v	C C	27.1 s/v 27.3 s/v	C C	0.3 s/v 0.5 s/v	No No	— —	— —
3.	Harbor Boulevard at Berkeley Avenue	D	Sat. Arrival Sat. Departure	19.7 s/v 16.5 s/v	B B	19.9 s/v 16.6 s/v	B B	21.4 s/v 19.1 s/v	C B	1.5 s/v 2.5 s/v	No No	— —	— —
4.	Lemon Street at Berkeley Avenue	D	Sat. Arrival Sat. Departure	34.8 s/v 33.9 s/v	C C	34.9 s/v 34.0 s/v	C C	36.8 s/v **73.6 s/v**	D **E**	1.9 s/v **39.6 s/v**	No **Yes**	— 21.5 s/v	— C
5.	Hornet Way at Berkeley Avenue	D	Sat. Arrival Sat. Departure	11.5 s/v 14.0 s/v	B B	11.5 s/v 14.0 s/v	B B	10.8 s/v 9.7 s/v	B A	0.0 s/v 0.0 s/v	No No	— —	— —
6.	Euclid Street at Malvern Avenue	D	Sat. Arrival Sat. Departure	11.0 s/v 10.9 s/v	B B	11.3 s/v 11.1 s/v	B B	14.7 s/v 16.7 s/v	B B	3.4 s/v 5.6 s/v	No No	— —	— —
7.	Harbor Boulevard at Chapman Avenue	E	Sat. Arrival Sat. Departure	26.5 s/v 26.5 s/v	C C	26.7 s/v 26.7 s/v	C C	28.4 s/v 30.3 s/v	C C	1.7 s/v 3.6 s/v	No No	— —	— —
8.	Lemon Street at Chapman Avenue	D	Sat. Arrival Sat. Departure	33.1 s/v 32.9 s/v	C C	33.2 s/v 33.0 s/v	C C	33.5 s/v 33.6 s/v	C C	0.3 s/v 0.6 s/v	No No	— —	— —
9.	Berkeley Avenue at Chapman Avenue	D	Sat. Arrival Sat. Departure	10.0 s/v 9.5 s/v	A A	10.1 s/v 9.7 s/v	B A	13.6 s/v 23.2 s/v	B C	3.5 s/v 13.5 s/v	No No	— —	— —
10.	Raymond Avenue at Chapman Avenue	D	Sat. Arrival Sat. Departure	19.5 s/v 18.5 s/v	B B	19.6 s/v 18.6 s/v	B B	19.9 s/v 18.7 s/v	B B	0.3 s/v 0.1 s/v	No No	— —	— —
11.	Acacia Avenue at Chapman Avenue	D	Sat. Arrival Sat. Departure	8.7 s/v 10.7 s/v	A B	8.7 s/v 10.7 s/v	A B	8.1 s/v 9.6 s/v	A A	0.0 s/v 0.0 s/v	No No	— —	— —

Table 4.8-15
Year 2020 Saturday Peak Hour Intersection Capacity Analysis – Field Event

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2020 Cumulative Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
12.	State College Boulevard at Chapman Avenue	D	Sat. Arrival Sat. Departure	37.1 s/v 36.9 s/v	D D	37.2 s/v 36.9 s/v	D D	37.7 s/v 36.9 s/v	D D	0.5 s/v 0.0 s/v	No No	— —	— —
13.	SR-57 SB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	17.6 s/v 18.4 s/v	B B	17.7 s/v 18.5 s/v	B B	20.3 s/v 19.6 s/v	C B	2.6 s/v 1.1 s/v	No No	— —	— —
14.	SR-57 NB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	25.2 s/v 26.7 s/v	C C	25.4 s/v 26.8 s/v	C C	28.2 s/v 29.6 s/v	C C	2.8 s/v 2.8 s/v	No No	— —	— —
15.	Lemon Street at Wilshire Avenue	D	Sat. Arrival Sat. Departure	6.5 s/v 5.0 s/v	A A	6.4 s/v 4.9 s/v	A A	5.7 s/v 4.4 s/v	A A	0.0 s/v 0.0 s/v	No No	— —	— —
16.	Harbor Boulevard at Commonwealth Avenue	E	Sat. Arrival Sat. Departure	30.8 s/v 30.4 s/v	C C	30.8 s/v 30.6 s/v	C C	32.0 s/v 30.8 s/v	C C	1.2 s/v 0.2 s/v	No No	— —	— —
17.	Lemon Street at Commonwealth Avenue	D	Sat. Arrival Sat. Departure	32.4 s/v 32.4 s/v	C C	32.9 s/v 32.8 s/v	C C	33.5 s/v 37.0 s/v	C D	0.6 s/v 4.2 s/v	No No	— —	— —
18.	Harbor Boulevard at Valencia Drive	D	Sat. Arrival Sat. Departure	11.5 s/v 11.6 s/v	B B	11.6 s/v 11.7 s/v	B B	11.6 s/v 11.8 s/v	B B	0.0 s/v 0.1 s/v	No No	— —	— —
19.	Lemon Street at Valencia Drive	D	Sat. Arrival Sat. Departure	10.5 s/v 11.0 s/v	B B	10.6 s/v 11.1 s/v	B B	10.1 s/v 10.4 s/v	B B	0.0 s/v 0.0 s/v	No No	— —	— —
20.	Harbor Boulevard at Orangethorpe Avenue	E	Sat. Arrival Sat. Departure	39.2 s/v 38.0 s/v	D D	41.7 s/v 38.6 s/v	D D	46.2 s/v 39.4 s/v	D D	4.5 s/v 0.8 s/v	No No	— —	— —
21.	Lemon Street at Orangethorpe Avenue	D	Sat. Arrival Sat. Departure	34.1 s/v 32.9 s/v	C C	34.1 s/v 33.0 s/v	C C	35.5 s/v 37.4 s/v	D D	1.4 s/v 4.4 s/v	No No	— —	— —
22.	Harbor Boulevard at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	17.3 s/v 20.1 s/v	B C	17.8 s/v 20.7 s/v	B C	17.8 s/v 21.9 s/v	B C	0.0 s/v 1.2 s/v	No No	— —	— —

Table 4.8-15
Year 2020 Saturday Peak Hour Intersection Capacity Analysis – Field Event

Key Intersection	Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2020 Cumulative Plus Project With Improvements	
			HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
23. Lemon Street at SR-91 WB Ramps	D	Sat. Arrival	27.7 s/v	C	28.9 s/v	C	31.0 s/v	C	2.1 s/v	No	—	—
		Sat. Departure	24.8 s/v	C	25.1 s/v	C	26.7 s/v	C	1.6 s/v	No	—	—
24. Harbor Boulevard at SR-91 EB Ramps	D	Sat. Arrival	23.6 s/v	C	23.8 s/v	C	24.6 s/v	C	0.8 s/v	No	—	—
		Sat. Departure	22.4 s/v	C	22.5 s/v	C	22.5 s/v	C	0.0 s/v	No	—	—
25. Lemon Street at SR-91 EB Ramps	D	Sat. Arrival	27.8 s/v	C	28.1 s/v	C	29.4 s/v	C	1.3 s/v	No	—	—
		Sat. Departure	27.8 s/v	C	28.0 s/v	C	28.5 s/v	C	0.5 s/v	No	—	—
26. Centennial Way at Berkeley Avenue	D	Sat. Arrival	10.2 s/v	B	10.3 s/v	B	10.7 s/v	B	0.4 s/v	No	—	—
		Sat. Departure	9.7 s/v	A	9.7 s/v	A	11.8 s/v	B	2.1 s/v	No	—	—
27. Lemon Street at Fullerton College Drive	D	Sat. Arrival	14.4 s/v	B	14.3 s/v	B	14.7 s/v	B	0.4 s/v	No	—	—
		Sat. Departure	4.9 s/v	A	5.1 s/v	A	20.0 s/v	B	14.9 s/v	No	—	—
28. Berkeley Avenue at College Driveway No. 1	D	Sat. Arrival	11.2 s/v	B	11.3 s/v	B	28.3 s/v	D	17.0 s/v	No	—	—
		Sat. Departure	10.4 s/v	B	10.5 s/v	B	76.1 s/v	F	65.6 s/v	Yes	16.1 s/v	B
29. Berkeley Avenue at College Driveway No. 2	D	Sat. Arrival	10.7 s/v	B	10.8 s/v	B	14.9 s/v	B	4.1 s/v	No	—	—
		Sat. Departure	9.8 s/v	A	9.8 s/v	A	89.8 s/v	F	80.0 s/v	Yes	14.6 s/v	B
30. Berkeley Avenue at Brookdale Place	D	Sat. Arrival	11.7 s/v	B	11.9 s/v	B	22.7 s/v	C	10.8 s/v	No	—	—
		Sat. Departure	9.9 s/v	A	10.0 s/v	B	13.8 s/v	B	3.8 s/v	No	—	—
31. Lemon Street at Parking Structure	D	Sat. Arrival	10.1 s/v	B	10.1 s/v	B	12.3 s/v	B	2.2 s/v	No	—	—
		Sat. Departure	9.5 s/v	A	9.6 s/v	A	10.2 s/v	B	0.6 s/v	No	—	—

Bold HCM/LOS values indicate adverse levels of service.
LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle; TMP = Traffic Management Plan; WB = westbound; EB = eastbound.

Year 2020 Traffic Conditions (Without Project) – Saturday Field Event

An analysis of future (Year 2020) Saturday cumulative traffic conditions indicates that the addition of ambient traffic growth and cumulative projects traffic would not adversely impact the 31 key study intersections. The 31 key study intersections are forecast to continue to operate at acceptable LOS during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of ambient traffic growth and cumulative projects traffic.

Year 2020 plus Project Traffic Conditions- Saturday Field Event

Review of columns 3 and 4 of Table 4.8-15 indicates that traffic associated with the proposed project (field event) would significantly impact 3 of the 31 key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining 28 key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project-generated traffic under Year 2020 traffic conditions. The intersections operating at an adverse LOS under Year 2020 plus project Saturday traffic conditions are shown in Table 4.8-16.

Table 4.8-16
Intersections with Adverse LOS – Year 2020 Saturday Peak Hour (Field Event)

Key Intersection		Saturday Arrival		Saturday Departure	
		ICM/HCM	*LOS*	*ICM/HCM*	*LOS*
4.	Lemon Street at Berkeley Avenue	—	—	73.6 s/v	E
28.	Berkeley Avenue at College Driveway No. 1	—	—	76.1 s/v	F
29.	Berkeley Avenue at College Driveway No. 2	—	—	89.8 s/v	F

LOS = level of service; ICM = Integrated Corridor Management; HCM = Highway Capacity Manual; s/v = seconds per vehicle.

The implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 would improve the intersections LOS operation to an acceptable level.

Year 2020 Traffic Conditions – Friday Field Event

Table 4.8-17 summarizes the Friday Event Arrival peak hour and Friday Event Departure peak hour LOS results at the 31 key study intersections for Year 2020 traffic conditions.

Table 4.8-17
Year 2020 Cumulative Friday Peak Hour Intersection Capacity Analysis – Field Event

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2020 Cumulative Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
1.	Harbor Boulevard at Bastanchury Road	D	Fri. Arrival Fri. Departure	37.4 s/v 31.2 s/v	D C	37.8 s/v 32.3 s/v	D C	38.0 s/v 34.1 s/v	D D	0.2 s/v 1.8 s/v	No No	— —	— —
2.	Harbor Boulevard at Valley View Drive/Brea Blvd	D	Fri. Arrival Fri. Departure	27.2 s/v 23.1 s/v	C C	27.3 s/v 22.7 s/v	C C	27.8 s/v 22.1 s/v	C C	0.5 s/v 0.0 s/v	No No	— —	— —
3.	Harbor Boulevard at Berkeley Avenue	D	Fri. Arrival Fri. Departure	22.9 s/v 17.5 s/v	C B	23.2 s/v 17.6 s/v	C B	24.8 s/v 19.3 s/v	C B	1.6 s/v 1.7 s/v	No No	— —	— —
4.	Lemon Street at Berkeley Avenue	D	Fri. Arrival Fri. Departure	49.9 s/v 31.8 s/v	D C	51.1 s/v 32.1 s/v	D C	51.3 s/v **98.1 s/v**	D **F**	0.2 s/v **66.0 s/v**	No **Yes**	— 15.5 s/v	— B
5.	Hornet Way at Berkeley Avenue	D	Fri. Arrival Fri. Departure	13.6 s/v 10.6 s/v	B B	13.6 s/v 10.5 s/v	B B	12.7 s/v 7.3 s/v	B A	0.0 s/v 0.0 s/v	No No	— —	— —
6.	Euclid Street at Malvern Avenue	D	Fri. Arrival Fri. Departure	30.4 s/v 25.1 s/v	C C	30.9 s/v 25.2 s/v	C C	33.1 s/v 26.6 s/v	C C	2.2 s/v 1.4 s/v	No No	— —	— —
7.	Harbor Boulevard at Chapman Avenue	E	Fri. Arrival Fri. Departure	29.2 s/v 25.2 s/v	C C	29.5 s/v 25.5 s/v	C C	32.5 s/v 28.3 s/v	C C	3.0 s/v 2.8 s/v	No No	— —	— —
8.	Lemon Street at Chapman Avenue	D	Fri. Arrival Fri. Departure	31.6 s/v 29.9 s/v	C C	31.7 s/v 30.4 s/v	C C	35.2 s/v 30.6 s/v	D C	3.5 s/v 0.2 s/v	No No	— —	— —
9.	Berkeley Avenue at Chapman Avenue	D	Fri. Arrival Fri. Departure	11.0 s/v 10.8 s/v	B B	11.2 s/v 11.0 s/v	B B	15.0 s/v 23.5 s/v	B C	3.8 s/v 12.5 s/v	No No	— —	— —
10.	Raymond Avenue at Chapman Avenue	D	Fri. Arrival Fri. Departure	22.0 s/v 14.2 s/v	C B	22.2 s/v 14.3 s/v	C B	27.0 s/v 14.5 s/v	C B	4.8 s/v 0.2 s/v	No No	— —	— —
11.	Acacia Avenue at Chapman Avenue	D	Fri. Arrival Fri. Departure	14.5 s/v 7.6 s/v	B A	14.5 s/v 7.6 s/v	B A	13.7 s/v 6.9 s/v	B A	0.0 s/v 0.0 s/v	No No	— —	— —
12.	State College Boulevard at Chapman Avenue	D	Fri. Arrival Fri. Departure	36.1 s/v 36.0 s/v	D D	36.3 s/v 36.2 s/v	D D	45.4 s/v 37.1 s/v	D D	9.1 s/v 0.9 s/v	No No	— —	— —

Table 4.8-17
Year 2020 Cumulative Friday Peak Hour Intersection Capacity Analysis – Field Event

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2020 Cumulative Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
13.	SR-57 SB Ramps at Chapman Avenue	D	Fri. Arrival Fri. Departure	15.9 s/v 15.9 s/v	B B	16.0 s/v 15.9 s/v	B B	19.4 s/v 15.9 s/v	B B	3.4 s/v 0.0 s/v	No No	— —	— —
14.	SR-57 NB Ramps at Chapman Avenue	D	Fri. Arrival Fri. Departure	26.6 s/v 25.4 s/v	C C	26.7 s/v 26.6 s/v	C C	29.3 s/v 27.4 s/v	C C	2.6 s/v 0.8 s/v	No No	— —	— —
15.	Lemon Street at Wilshire Avenue	D	Fri. Arrival Fri. Departure	5.7 s/v 3.7 s/v	A A	5.6 s/v 3.7 s/v	A A	5.1 s/v 3.1 s/v	A A	0.0 s/v 0.0 s/v	No No	— —	— —
16.	Harbor Boulevard at Commonwealth Avenue	E	Fri. Arrival Fri. Departure	30.6 s/v 30.1 s/v	C C	30.6 s/v 30.2 s/v	C C	31.7 s/v 33.5 s/v	C C	1.1 s/v 3.3 s/v	No No	— —	— —
17.	Lemon Street at Commonwealth Avenue	D	Fri. Arrival Fri. Departure	32.7 s/v 31.9 s/v	C C	33.4 s/v 32.2 s/v	C C	34.5 s/v 36.6 s/v	C D	1.1 s/v 4.4 s/v	No No	— —	— —
18.	Harbor Boulevard at Valencia Drive	D	Fri. Arrival Fri. Departure	11.7 s/v 7.0 s/v	B A	11.8 s/v 6.9 s/v	B A	11.8 s/v 6.6 s/v	B A	0.0 s/v 0.0 s/v	No No	— —	— —
19.	Lemon Street at Valencia Drive	D	Fri. Arrival Fri. Departure	12.8 s/v 9.0 s/v	B A	12.8 s/v 8.9 s/v	B A	12.4 s/v 7.8 s/v	B A	0.0 s/v 0.0 s/v	No No	— —	— —
20.	Harbor Boulevard at Orangethorpe Avenue	E	Fri. Arrival Fri. Departure	38.9 s/v 36.1 s/v	D D	41.1 s/v 36.3 s/v	D D	47.9 s/v 36.9 s/v	D D	6.8 s/v 0.6 s/v	No No	— —	— —
21.	Lemon Street at Orangethorpe Avenue	D	Fri. Arrival Fri. Departure	36.3 s/v 30.9 s/v	D C	39.0 s/v 32.8 s/v	D C	41.4 s/v 33.1 s/v	D C	2.4 s/v 0.3 s/v	No No	— —	— —
22.	Harbor Boulevard at SR-91 WB Ramps	D	Fri. Arrival Fri. Departure	16.3 s/v 15.2 s/v	B B	16.7 s/v 15.2 s/v	B B	16.7 s/v 16.3 s/v	B B	0.0 s/v 1.1 s/v	No No	— —	— —
23.	Lemon Street at SR-91 WB Ramps	D	Fri. Arrival Fri. Departure	24.6 s/v 21.7 s/v	C C	24.9 s/v 21.8 s/v	C C	26.3 s/v 22.0 s/v	C C	1.4 s/v 0.2 s/v	No No	— —	— —
24.	Harbor Boulevard at SR-91 EB Ramps	D	Fri. Arrival Fri. Departure	21.2 s/v 21.6 s/v	C C	21.4 s/v 21.6 s/v	C C	22.4 s/v 21.8 s/v	C C	1.0 s/v 0.2 s/v	No No	— —	— —

Table 4.8-17
Year 2020 Cumulative Friday Peak Hour Intersection Capacity Analysis – Field Event

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2020 Cumulative Traffic Conditions		(3) Year 2020 Cumulative Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2020 Cumulative Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
25.	Lemon Street at SR-91 EB Ramps	D	Fri. Arrival Fri. Departure	24.8 s/v 26.9 s/v	C C	25.0 s/v 27.0 s/v	C C	26.2 s/v 27.0 s/v	C C	1.2 s/v 0.0 s/v	No No	— —	— —
26.	Centennial Way at Berkeley Avenue	D	Fri. Arrival Fri. Departure	10.1 s/v 10.2 s/v	B B	10.1 s/v 10.3 s/v	B B	10.5 s/v 12.9 s/v	B B	0.4 s/v 2.6 s/v	No No	— —	— —
27.	Lemon Street at Fullerton College Drive	D	Fri. Arrival Fri. Departure	12.7 s/v 26.6 s/v	B C	12.9 s/v 31.8 s/v	B C	29.5 s/v 554.2 s/v	C F	16.6 s/v 522.4 s/v	No Yes	— 18.5 s/v	— B
28.	Berkeley Avenue at College Driveway No. 1	D	Fri. Arrival Fri. Departure	9.9 s/v 10.0 s/v	A B	10.0 s/v 10.1 s/v	A B	19.8 s/v 46.8 s/v	C E	9.8 s/v 36.7 s/v	No Yes	— 15.5 s/v	— B
29.	Berkeley Avenue at College Driveway No. 2	D	Fri. Arrival Fri. Departure	10.1 s/v 9.5 s/v	B A	10.2 s/v 9.6 s/v	B A	12.9 s/v 60.2 s/v	B F	2.7 s/v 50.6 s/v	No Yes	— 13.4 s/v	— B
30.	Berkeley Avenue at Brookdale Place	D	Fri. Arrival Fri. Departure	11.5 s/v 9.8 s/v	B A	11.7 s/v 9.9 s/v	B A	27.0 s/v 14.2 s/v	D B	15.3 s/v 4.3 s/v	No No	— —	— —
31.	Lemon Street at Parking Structure	D	Fri. Arrival Fri. Departure	10.5 s/v 10.5 s/v	B B	10.6 s/v 10.7 s/v	B B	12.9 s/v 11.8 s/v	B B	2.3 s/v 1.1 s/v	No No	— —	— —

Bold HCM/LOS values indicate adverse levels of service.
LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle; TMP = Traffic Management Plan; WB = westbound; EB = eastbound.

Year 2020 Traffic Conditions (Without Project) – Friday Field Event

An analysis of future (Year 2020) Friday cumulative traffic conditions indicates that the addition of ambient traffic growth and cumulative projects traffic would not adversely impact the 31 key study intersections. The 31 key study intersections are forecast to continue to operate at acceptable LOS during the Friday Event Arrival peak hour and Friday Event Departure peak hour with the addition of ambient traffic growth and cumulative projects traffic.

Year 2020 plus Project Traffic Conditions – Friday Field Event

Review of columns 3 and 4 of Table 4.8-17 indicate that traffic associated with the proposed project (field event) would significantly impact 4 of the 31 key study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The remaining 27 key study intersections are forecast to continue to operate at an acceptable service level during the Friday Event Arrival peak hour and Friday Event Departure peak hour with the addition of project-generated traffic to Year 2020 cumulative traffic. The intersections operating at an adverse LOS under Year 2020 plus project Friday traffic conditions are presented in Table 4.8-18.

Table 4.8-18
Intersections with Adverse LOS – Year 2020 Cumulative Friday Peak Hour (Field Event)

Key Intersection		Friday Arrival		Friday Departure	
		ICM/HCM	*LOS*	*ICM/HCM*	*LOS*
4.	Lemon Street at Berkeley Avenue	—	—	98.2 s/v	F
27.	Lemon Street at Fullerton College Drive	—	—	554.2 s/v	F
28.	Berkeley Avenue at College Driveway No. 1	—	—	46.8 s/v	E
29.	Berkeley Avenue at College Driveway No. 2	—	—	60.2 s/v	F

LOS = level of service; ICM = Integrated Corridor Management; HCM = Highway Capacity Manual; s/v = seconds per vehicle.

As shown in column 5 of Table 4.8-17, the implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Lemon Street/Fullerton College Drive, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 will improve the intersections' LOS to an acceptable level.

Year 2030 Traffic Conditions

Year 2030 Traffic Conditions – Weekly Academic Instruction

Table 4.8-19 summarizes the weekday PM peak hour LOS results at the 31 key study intersections for the Year 2030 buildout year and is similar in setup to Table 4.8-13.

Table 4.8-19
Year 2030 Buildout Weekday Peak Hour Intersection Capacity Analysis – Academic Instruction

	Key Intersection	Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2030 Buildout Traffic Conditions		(3) Year 2030 Buildout Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2030 Buildout Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
1.	Harbor Boulevard at Bastanchury Road	D	Weekday PM	**57.0 s/v**	**E**	**89.2 s/v**	**F**	**89.3 s/v**	**F**	0.1 s/v	No	—	—
2.	Harbor Boulevard at Valley View Drive/ Brea Boulevard	D	Weekday PM	30.0 s/v	C	36.9 s/v	D	37.0 s/v	D	0.1 s/v	No	—	—
3.	Harbor Boulevard at Berkeley Avenue	D	Weekday PM	30.9 s/v	C	**67.2 s/v**	**E**	**67.9 s/v**	**E**	0.7 s/v	No	—	—
4.	Lemon Street at Berkeley Avenue	D	Weekday PM	38.6 s/v	D	41.1 s/v	D	41.2 s/v	D	0.1 s/v	No	—	—
5.	Hornet Way at Berkeley Avenue	D	Weekday PM	13.4 s/v	B	13.3 s/v	B	13.2 s/v	B	0.0 s/v	No	—	—
6.	Euclid Street at Malvern Avenue	D	Weekday PM	34.0 s/v	C	**74.0 s/v**	**E**	**74.4 s/v**	**E**	0.4 s/v	No	—	—
7.	Harbor Boulevard at Chapman Avenue	E	Weekday PM	31.5 s/v	C	**85.0 s/v**	**F**	**95.7 s/v**	**F**	10.7 s/v	No	—	—
8.	Lemon Street at Chapman Avenue	D	Weekday PM	34.2 s/v	C	**55.6 s/v**	**E**	**58.3 s/v**	**E**	2.7 s/v	No	—	—
9.	Berkeley Avenue at Chapman Avenue	D	Weekday PM	18.0 s/v	B	25.0 s/v	C	25.1 s/v	C	0.1 s/v	No	—	—
10.	Raymond Avenue at Chapman Avenue	D	Weekday PM	26.2 s/v	C	81.2 s/v	F	83.0 s/v	F	1.8 s/v	No	—	—
11.	Acacia Avenue at Chapman Avenue	D	Weekday PM	18.1 s/v	B	29.9 s/v	C	30.5 s/v	C	0.6 s/v	No	—	—

Table 4.8-19
Year 2030 Buildout Weekday Peak Hour Intersection Capacity Analysis – Academic Instruction

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2030 Buildout Traffic Conditions		(3) Year 2030 Buildout Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2030 Buildout Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
12.	State College Boulevard at Chapman Avenue	D	Weekday PM	35.8 s/v	D	128.0 s/v	F	131.4 s/v	F	3.4 s/v	No	—	—
13.	SR-57 SB Ramps at Chapman Avenue	D	Weekday PM	18.2 s/v	B	30.9 s/v	C	31.1 s/v	C	0.2 s/v	No	—	—
14.	SR-57 NB Ramps at Chapman Avenue	D	Weekday PM	26.5 s/v	C	86.2 s/v	F	87.0 s/v	F	0.8 s/v	No	—	—
15.	Lemon Street at Wilshire Avenue	D	Weekday PM	10.3 s/v	B	10.6 s/v	B	10.6 s/v	B	0.0 s/v	No	—	—
16.	Harbor Boulevard at Commonwealth Avenue	E	Weekday PM	30.8 s/v	C	61.6 s/v	E	61.6 s/v	E	0.0 s/v	No	—	—
17.	Lemon Street at Commonwealth Avenue	D	Weekday PM	33.9 s/v	C	51.6 s/v	D	51.7 s/v	D	0.1 s/v	No	—	—
18.	Harbor Boulevard at Valencia Drive	D	Weekday PM	26.5 s/v	C	78.5 s/v	E	78.5 s/v	E	0.0 s/v	No	—	—
19.	Lemon Street at Valencia Drive	D	Weekday PM	10.1 s/v	B	15.0 s/v	B	15.0 s/v	B	0.0 s/v	No	—	—
20.	Harbor Boulevard at Orangethorpe Avenue	E	Weekday PM	38.8 s/v	D	116.6 s/v	F	117.2 s/v	F	0.6 s/v	No	—	—
21.	Lemon Street at Orangethorpe Avenue	D	Weekday PM	36.6 s/v	D	91.1 s/v	F	91.9 s/v	F	0.8 s/v	No	—	—
22.	Harbor Boulevard at SR-91 WB Ramps	D	Weekday PM	17.2 s/v	B	30.4 s/v	C	30.4 s/v	C	0.0 s/v	No	—	—
23.	Lemon Street at SR-91 WB Ramps	D	Weekday PM	24.5 s/v	C	40.9 s/v	D	41.1 s/v	D	0.2 s/v	No	—	—

Table 4.8-19
Year 2030 Buildout Weekday Peak Hour Intersection Capacity Analysis – Academic Instruction

				(1) Existing Traffic Conditions		(2) Year 2030 Buildout Traffic Conditions		(3) Year 2030 Buildout Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2030 Buildout Plus Project With Improvements	
	Key Intersection	Min. Acc. LOS	Time Period	*HCM*	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
24.	Harbor Boulevard at SR-91 EB Ramps	D	Weekday PM	19.6 s/v	B	25.6 s/v	C	25.7 s/v	C	0.1 s/v	No	—	—
25.	Lemon Street at SR-91 EB Ramps	D	Weekday PM	23.0 s/v	C	29.1 s/v	C	29.2 s/v	C	0.1 s/v	No	—	—
26.	Centennial Way at Berkeley Avenue	D	Weekday PM	12.5 s/v	B	13.4 s/v	B	13.4 s/v	B	0.0 s/v	No	—	—
27.	Lemon Street at Fullerton College Drive	D	Weekday PM	16.0 s/v	B	18.0 s/v	B	18.1 s/v	B	0.1 s/v	No	—	—
28.	Berkeley Avenue at College Driveway No. 1	D	Weekday PM	12.9 s/v	B	16.3 s/v	C	17.4 s/v	C	1.1 s/v	No	—	—
29.	Berkeley Avenue at College Driveway No. 2	D	Weekday PM	12.3 s/v	B	13.5 s/v	B	13.6 s/v	B	0.1 s/v	No	—	—
30.	Berkeley Avenue at Brookdale Place	D	Weekday PM	13.9 s/v	B	16.1 s/v	C	16.6 s/v	C	0.5 s/v	No	—	—
31.	Lemon Street at Parking Structure	D	Weekday PM	16.4 s/v	C	22.2 s/v	C	22.9 s/v	C	0.7 s/v	No	—	—

Bold HCM/LOS values indicate adverse levels of service.
LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle; TMP = Traffic Management Plan; WB = westbound; EB = eastbound.

Year 2030 Buildout Traffic Conditions (Without Project) – Weekday Academic Instruction

An analysis of future (Year 2030) buildout traffic conditions indicates that the addition of ambient growth and cumulative projects traffic would cumulatively impact 11 of the 31 key study intersections. The remaining 20 key study intersections are forecast to operate at an acceptable service level during the weekday PM peak hour with the addition of ambient traffic growth and cumulative projects traffic. The intersections forecast to operate adversely in the Year 2030 are presented in Table 4.8-20.

Table 4.8-20
Intersections with Adverse LOS – Year 2030 Buildout Weekday (Academic Instruction)

Key Intersection		PM Peak Hour	
		ICM/HCM	*LOS*
1.	Harbor Boulevard at Bastanchury Road	89.2 s/v	E
3.	Harbor Boulevard at Berkeley Avenue	67.2 s/v	E
6.	Euclid Street at Malvern Avenue	74.0 s/v	E
7.	Harbor Boulevard at Chapman Avenue	85.0 s/v	F
8.	Lemon Street at Chapman Avenue	55.6 s/v	E
10.	Raymond Avenue at Chapman Avenue	81.2 s/v	F
12.	State College Boulevard at Chapman Avenue	128.0 s/v	F
14.	SR-57 NB Ramps at Chapman Avenue	86.2 s/v	F
18.	Harbor Boulevard at Valencia Drive	78.5 s/v	E
20.	Harbor Boulevard at Orangethorpe Avenue	116.6 s/v	F
21.	Lemon Street at Orangethorpe Avenue	91.1 s/v	F

LOS = level of service; ICM = Integrated Corridor Management; HCM = Highway Capacity Manual; s/v = seconds per vehicle.

Year 2030 Buildout plus Project Traffic Conditions – Weekday Academic Instruction

Review of columns 3 and 4 of Table 4.8-19 indicates that traffic associated with the proposed project (academic instruction) would not significantly impact any of the 31 key study intersections, when compared to the LOS standards and significant impact criteria specified in Section 4.8.4, Thresholds of Significance. Although the intersections of Harbor Boulevard/Bastanchury Road, Harbor Boulevard/Berkeley Avenue, Euclid Street/Malvern Avenue, Harbor Boulevard/Chapman Avenue, Lemon Street/Chapman Avenue, Raymond Avenue/Chapman Avenue, State College Boulevard/Chapman Avenue, SR-57 NB Ramps/Chapman Avenue, Harbor Boulevard/Valencia Drive, Harbor Boulevard/Orangethorpe Avenue and Lemon Street/Orangethorpe are forecast to operate at unacceptable LOS E or LOS F during the PM peak hour without and with the addition of project traffic, the addition of project trips would not worsen or further degrade the service level and, therefore, the project’s cumulative impact is considered less than significant. The remaining 20 key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project generated traffic under Year 2030 Buildout traffic conditions.

Year 2030 Traffic Conditions – Saturday Field Event

Table 4.8-21 shows the Saturday Event Arrival peak hour and Saturday Event Departure peak hour Level of Service results at the 31 key study intersections for the Year 2030 buildout year and is similar in setup to Table 4.8-15.

Table 4.8-21
Year 2030 Buildout Saturday Peak Hour Intersection Capacity Analysis – Field Event

Key Intersection	Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions HCM	(1) LOS	(2) Year 2030 Buildout Traffic Conditions HCM	(2) LOS	(3) Year 2030 Buildout Plus Project Traffic Conditions HCM	(3) LOS	(4) Significant Impact Increase	(4) Yes/No	(5) Year 2030 Buildout Plus Project With Improvements HCM	(5) LOS
1. Harbor Boulevard at Bastanchury Road	D	Sat. Arrival	35.5 s/v	D	42.5 s/v	D	42.9 s/v	D	0.4 s/v	No	—	—
		Sat. Departure	35.0 s/v	C	37.8 s/v	D	37.9 s/v	D	0.1 s/v	No	—	—
2. Harbor Boulevard at Valley View Drive/ Brea Boulevard	D	Sat. Arrival	26.7 s/v	C	26.9 s/v	C	26.9 s/v	C	0.0 s/v	No	—	—
		Sat. Departure	26.8 s/v	C	26.5 s/v	C	26.7 s/v	C	0.2 s/v	No	—	—
3. Harbor Boulevard at Berkeley Avenue	D	Sat. Arrival	19.7 s/v	B	21.0 s/v	C	22.9 s/v	C	1.9 s/v	No	—	—
		Sat. Departure	16.5 s/v	B	16.6 s/v	B	19.9 s/v	B	3.3 s/v	No	—	—
4. Lemon Street at Berkeley Avenue	D	Sat. Arrival	34.8 s/v	C	35.2 s/v	D	38.3 s/v	D	3.1 s/v	No	—	—
		Sat. Departure	33.9 s/v	C	33.9 s/v	C	**72.9 s/v**	**E**	**39.0 s/v**	**Yes**	19.7 s/v	B
5. Hornet Way at Berkeley Avenue	D	Sat. Arrival	11.5 s/v	B	11.2 s/v	B	9.6 s/v	A	0.0 s/v	No	—	—
		Sat. Departure	14.0 s/v	B	13.4 s/v	B	9.4 s/v	A	0.0 s/v	No	—	—
6. Euclid Street at Malvern Avenue	D	Sat. Arrival	11.0 s/v	B	19.6 s/v	B	21.6 s/v	C	2.0 s/v	No	—	—
		Sat. Departure	10.9 s/v	B	19.6 s/v	B	23.3 s/v	C	3.7 s/v	No	—	—
7. Harbor Boulevard at Chapman Avenue	E	Sat. Arrival	26.5 s/v	C	34.0 s/v	C	46.2 s/v	D	12.2 s/v	No	—	—
		Sat. Departure	26.5 s/v	C	34.9 s/v	C	46.3 s/v	D	11.4 s/v	No	—	—
8. Lemon Street at Chapman Avenue	D	Sat. Arrival	33.1 s/v	C	35.0 s/v	D	37.1 s/v	D	2.1 s/v	No	—	—
		Sat. Departure	32.9 s/v	C	34.8 s/v	C	37.3 s/v	D	2.5 s/v	No	—	—
9. Berkeley Avenue at Chapman Avenue	D	Sat. Arrival	10.0 s/v	A	10.3 s/v	B	14.2 s/v	B	3.9 s/v	No	—	—
		Sat. Departure	9.5 s/v	A	9.9 s/v	A	23.5 s/v	C	13.6 s/v	No	—	—
10. Raymond Avenue at Chapman Avenue	D	Sat. Arrival	19.5 s/v	B	21.0 s/v	C	23.3 s/v	C	2.3 s/v	No	—	—
		Sat. Departure	18.5 s/v	B	19.7 s/v	B	22.8 s/v	C	3.1 s/v	No	—	—
11. Acacia Avenue at Chapman Avenue	D	Sat. Arrival	8.7 s/v	A	9.3 s/v	A	9.9 s/v	A	0.6 s/v	No	—	—
		Sat. Departure	10.7 s/v	B	10.6 s/v	B	10.9 s/v	B	0.3 s/v	No	—	—

Table 4.8-21
Year 2030 Buildout Saturday Peak Hour Intersection Capacity Analysis – Field Event

	Key Intersection	Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2030 Buildout Traffic Conditions		(3) Year 2030 Buildout Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2030 Buildout Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
12.	State College Boulevard at Chapman Avenue	D	Sat. Arrival Sat. Departure	37.1 s/v 36.9 s/v	D D	50.8 s/v 47.9 s/v	D D	66.4 s/v 89.4 s/v	E F	15.6 s/v 41.5 s/v	Yes Yes	52.9 s/v 52.8 s/v	D D
13.	SR-57 SB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	17.6 s/v 18.4 s/v	B B	24.1 s/v 24.7 s/v	C C	33.9 s/v 34.6 s/v	C C	9.8 s/v 9.9 s/v	No No	— —	— —
14.	SR-57 NB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	25.2 s/v 26.7 s/v	C C	32.9 s/v 33.7 s/v	C C	44.7 s/v 47.7 s/v	D D	11.8 s/v 14.0 s/v	No No	— —	— —
15.	Lemon Street at Wilshire Avenue	D	Sat. Arrival Sat. Departure	6.5 s/v 5.0 s/v	A A	6.0 s/v 4.7 s/v	A A	5.5 s/v 4.4 s/v	A A	0.0 s/v 0.0 s/v	No No	— —	— —
16.	Harbor Boulevard at Commonwealth Avenue	E	Sat. Arrival Sat. Departure	30.8 s/v 30.4 s/v	C C	35.0 s/v 35.0 s/v	C C	36.5 s/v 42.0 s/v	D D	1.5 s/v 7.0 s/v	No No	— —	— —
17.	Lemon Street at Commonwealth Avenue	D	Sat. Arrival Sat. Departure	32.4 s/v 32.4 s/v	C C	33.7 s/v 32.7 s/v	C C	34.7 s/v 34.0 s/v	C C	1.0 s/v 1.3 s/v	No No	— —	— —
18.	Harbor Boulevard at Valencia Drive	D	Sat. Arrival Sat. Departure	11.5 s/v 11.6 s/v	B B	28.5 s/v 29.2 s/v	C C	28.5 s/v 29.4 s/v	C C	0.0 s/v 0.2 s/v	No No	— —	— —
19.	Lemon Street at Valencia Drive	D	Sat. Arrival Sat. Departure	10.5 s/v 11.0 s/v	B B	12.2 s/v 12.4 s/v	B B	12.0 s/v 12.4 s/v	B B	0.0 s/v 0.0 s/v	No No	— —	— —
20.	Harbor Boulevard at Orangethorpe Avenue	E	Sat. Arrival Sat. Departure	39.2 s/v 38.0 s/v	D D	92.1 s/v 81.7 s/v	F F	104.9 s/v 91.7 s/v	F F	12.8 s/v 10.0 s/v	No No	— —	— —
21.	Lemon Street at Orangethorpe Avenue	D	Sat. Arrival Sat. Departure	34.1 s/v 32.9 s/v	C C	44.3 s/v 38.3 s/v	D D	49.7 s/v 48.3 s/v	D D	5.4 s/v 10.0 s/v	No No	— —	— —
22.	Harbor Boulevard at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	17.3 s/v 20.1 s/v	B C	28.0 s/v 37.1 s/v	C D	28.8 s/v 41.3 s/v	C D	0.8 s/v 4.2 s/v	No No	— —	— —
23.	Lemon Street at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	27.7 s/v 24.8 s/v	C C	48.1 s/v 36.0 s/v	D D	54.7 s/v 44.0 s/v	D D	6.6 s/v 8.0 s/v	No No	— —	— —

Table 4.8-21
Year 2030 Buildout Saturday Peak Hour Intersection Capacity Analysis – Field Event

Key Intersection		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Year 2030 Buildout Traffic Conditions		(3) Year 2030 Buildout Plus Project Traffic Conditions		(4) Significant Impact		(5) Year 2030 Buildout Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*HCM*	*LOS*	*Increase*	*Yes/No*	*HCM*	*LOS*
24.	Harbor Boulevard at SR-91 EB Ramps	D	Sat. Arrival Sat. Departure	23.6 s/v 22.4 s/v	C C	27.4 s/v 25.8 s/v	C C	28.4 s/v 25.8 s/v	C C	1.0 s/v 0.0 s/v	No No	— —	— —
25.	Lemon Street at SR-91 EB Ramps	D	Sat. Arrival Sat. Departure	27.8 s/v 27.8 s/v	C C	32.6 s/v 32.0 s/v	C C	34.8 s/v 32.8 s/v	C C	2.2 s/v 0.8 s/v	No No	— —	— —
26.	Centennial Way at Berkeley Avenue	D	Sat. Arrival Sat. Departure	10.2 s/v 9.7 s/v	B A	10.5 s/v 9.9 s/v	B A	11.0 s/v 12.1 s/v	B B	0.5 s/v 2.2 s/v	No No	— —	— —
27.	Lemon Street at Fullerton College Drive	D	Sat. Arrival Sat. Departure	14.4 s/v 4.9 s/v	B A	14.0 s/v 5.9 s/v	B A	14.9 s/v 19.4 s/v	B C	0.9 s/v 13.5 s/v	No No	— —	— —
28.	Berkeley Avenue at College Driveway No. 1	D	Sat. Arrival Sat. Departure	11.2 s/v 10.4 s/v	B B	12.5 s/v 11.3 s/v	B B	124.2 s/v 114.1 s/v	F F	111.7 s/v 102.8 s/v	Yes Yes	6.1 s/v 15.9 s/v	A B
29.	Berkeley Avenue at College Driveway No. 2	D	Sat. Arrival Sat. Departure	10.7 s/v 9.8 s/v	B A	11.2 s/v 10.1 s/v	B B	14.3 s/v 113.6 s/v	B F	3.1 s/v 103.5 s/v	No Yes	— 14.5 s/v	— B
30.	Berkeley Avenue at Brookdale Place	D	Sat. Arrival Sat. Departure	11.7 s/v 9.9 s/v	B A	12.5 s/v 10.3 s/v	B B	24.7 s/v 14.5 s/v	C B	12.2 s/v 4.2 s/v	No No	— —	— —
31.	Lemon Street at Parking Structure	D	Sat. Arrival Sat. Departure	10.1 s/v 9.5 s/v	B A	10.6 s/v 9.9 s/v	B A	13.0 s/v 10.7 s/v	B B	2.4 s/v 0.8 s/v	No No	— —	— —

Bold HCM/LOS values indicate adverse levels of service.
LOS = level of service; HCM = Highway Capacity Manual; s/v = seconds per vehicle; TMP = Traffic Management Plan; WB = westbound; EB = eastbound.

Year 2030 Buildout Traffic Conditions (Without Project) –Saturday Field Event

An analysis of future (Year 2030) Saturday buildout traffic conditions indicates that the addition of ambient growth and cumulative projects' traffic would cumulatively impact 1 of the 31 key study intersections. The remaining 30 key study intersections are forecast to operate at an acceptable service level during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of ambient traffic growth and cumulative projects traffic. The intersection forecast to operate adversely in the Year 2030 is shown in Table 4.8-22.

Table 4.8-22
Intersections with Adverse LOS – Year 2030 Buildout – Saturday Peak Hour (Field Event)

Key Intersection		Saturday Arrival		Saturday Departure	
		ICM/HCM	*LOS*	*ICM/HCM*	*LOS*
20.	Harbor Boulevard at Orangethorpe Avenue	92.1 s/v	F	81.7 s/v	F

Year 2030 Buildout plus Project Traffic Conditions –Saturday Field Event

Review of columns 3 and 4 of Table 4.8-21 indicates that traffic associated with the proposed project (field event) would significantly impact 4 of the 31 key study intersections, when compared to the LOS standards and significant impact criteria specified Section 4.8.4. Although the intersection of Harbor Boulevard/Orangethorpe Avenue is forecast to operate at unacceptable LOS F during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour without and with the addition of project traffic, the addition of project trips is not anticipated to worsen or further degrade the service level and therefore is considered less than significant. The remaining 26 key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project-generated traffic under Year 2030 Buildout traffic conditions. The intersections operating at an adverse LOS under Year 2030 Buildout plus project Saturday traffic conditions are shown in Table 4.8-23.

Table 4.8-23
Intersections with Adverse LOS – Year 2030 Buildout – Saturday Peak Hour (Field Event)

Key Intersection		Saturday Arrival		Saturday Departure	
		ICM/HCM	*LOS*	*ICM/HCM*	*LOS*
4.	Lemon Street at Berkeley Avenue	—	—	72.9 s/v	E
12.	State College Boulevard at Chapman Avenue	66.4 s/v	E	89.4 s/v	F
28.	Berkeley Avenue at College Driveway No. 1	124.2 s/v	F	114.1 s/v	F
29.	Berkeley Avenue at College Driveway No. 2	—	—	113.6 s/v	F

As shown in column 5 of Table 4.8-21, the implementation of improvements at the impacted key study intersection of State College Boulevard/Chapman Avenue completely offsets the impact of project traffic. The implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 will improve the intersections LOS operation to an acceptable level.

Summary

Among the key study intersections, 30 of the 31 intersections currently operate at an acceptable LOS during AM and PM peak hours.

- **Existing plus Project Traffic Conditions (Weekly Academic Instruction):** The proposed project (i.e., academic instruction) would not significantly impact any of the 31 key study intersections. Although the intersection of Harbor Boulevard/Bastanchury Road is forecast to operate at unacceptable LOS E during the PM peak hour with the addition of the proposed project traffic, the addition of project trips is not anticipated to worsen or further degrade the service level and therefore is considered less than significant.
- **Existing plus Project Traffic Conditions (Saturday Field Event):** The proposed project (i.e., field event) would significantly impact 3 of the 31 key study intersections. The remaining 28 intersections currently operate and are forecast to continue to operate at an acceptable service level during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of Project generated traffic to existing traffic. The implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 will improve the intersections LOS operation to an acceptable level.
- **Existing plus Project Traffic Conditions (Friday Field Event):** The proposed project (i.e., field event) would significantly impact four of the 31 key study intersections. The remaining 27 intersections currently operate and are forecast to continue to operate at an acceptable LOS during the Friday Event Arrival peak hour and Friday Event Departure peak hour with the addition of Project generated traffic to existing traffic. The implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Lemon Street/Fullerton College Drive, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 will improve the intersections' LOS operation to an acceptable level.
- **Year 2020 plus Project Traffic Conditions (Weekday Academic Instruction):** The proposed project (i.e., academic instruction) would not significantly impact any of the 31 key study intersections. Although the intersection of Harbor Boulevard/Bastanchury Road

is forecast to operate at unacceptable LOS E during the PM peak hour with the addition of project traffic, the addition of project trips is not anticipated to worsen or further degrade the LOS and therefore is considered less than significant.

- **Year 2020 plus Project Traffic Conditions (Saturday Field Event):** The proposed project (i.e., field event) would significantly impact 3 of the 31 key study intersections The remaining 28 key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project-generated traffic under Year 2020 traffic conditions. The implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 will improve the intersections LOS operation to an acceptable level.
- **Year 2020 plus Project Traffic Conditions (Friday Field Event):** The proposed project (i.e., field event) would significantly impact four of the 31 key study intersections. The remaining 27 are forecast to continue to operate at an acceptable service level during the Friday Event Arrival peak hour and Friday Event Departure peak hour with the addition of Project generated traffic to Year 2020 cumulative traffic. The implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Lemon Street/Fullerton College Drive, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 will improve the intersections LOS operation to an acceptable level.
- **Year 2030 Buildout plus Project Traffic Conditions (Weekday Academic Instruction):** The proposed project (i.e., academic instruction) would not significantly impact any of the 31 key study intersections. Although the intersections of Harbor Boulevard/Bastanchury Road, Harbor Boulevard/Berkeley Avenue, Euclid Street/Malvern Avenue, Harbor Boulevard/Chapman Avenue, Lemon Street/Chapman Avenue, Raymond Avenue/Chapman Avenue, State College Boulevard/Chapman Avenue, SR-57 NB Ramps/Chapman Avenue, Harbor Boulevard/Valencia Drive, Harbor Boulevard/Orangethorpe Avenue, and Lemon Street/Orangethorpe Avenue are forecast to operate at unacceptable LOS E or LOS F during the PM peak hour with the addition of proposed project traffic, the addition of project trips is not anticipated to worsen or further degrade the LOS at any of these intersections and the project traffic increments at these intersections are concluded to be less than significant.
- **Year 2030 Buildout plus Project Traffic Conditions (Saturday Field Event):** The proposed project (i.e., field event) would significantly impact 4 of the 31 key study intersections. Although the intersection of Harbor Boulevard/Orangethorpe Avenue is forecast to operate at unacceptable LOS F during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of project traffic, the addition of Project trips is not anticipated to worsen or further degrade the service level and therefore

is considered less than significant. The implementation of improvements at the impacted key study intersection of State College Boulevard/Chapman Avenue completely offsets the impact of project traffic. The implementation of improvements (i.e., Traffic Management Plan2) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 will improve the intersections LOS operation to an acceptable level.

Caltrans Methodology

In conformance with Caltrans' current Guide for the Preparation of Traffic Impact Studies, existing and projected AM and PM peak hour operating conditions at the six state-controlled study intersections within the study area have been evaluated using the Highway Capacity Manual operations method of analysis. These state-controlled locations include the following 6 of 32 key study intersections:

12. SR-57 SB Ramps at Chapman Avenue
13. SR-57 NB Ramps at Chapman Avenue
21. Harbor Boulevard at SR-91 WB Ramps
22. Lemon Street at SR-91 WB Ramps
23. Harbor Boulevard at SR-91 EB Ramps
24. Lemon Street at SR-91 EB Ramps

As previously noted, based on historic coordination with Caltrans, LOS D is the target LOS standard, which will be utilized to assess the project impacts at the state-controlled study locations.

Existing Traffic Conditions

<u>Existing plus Project Traffic Conditions – Weekly Academic Instruction</u>

Table 4.8-24 shows the weekday PM peak hour HCM level of service results at the 6 state controlled study intersections within the study area for Existing plus Project (academic instruction) traffic conditions.

Table 4.8-24
Existing Plus Project Weekday Peak Hour Intersection Capacity Analysis (Caltrans) – Academic Instruction

Key Intersections		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Impact	(4) Existing Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Yes/No*	*HCM*	*LOS*
13.	SR-57 SB Ramps at Chapman Avenue	D	Weekday PM	18.2 s/v	B	18.3 s/v	B	No	—	—
14.	SR-57 NB Ramps at Chapman Avenue	D	Weekday PM	26.5 s/v	C	26.5 s/v	C	No	—	—
22.	Harbor Boulevard at SR-91 WB Ramps	D	Weekday PM	17.2 s/v	B	17.2 s/v	B	No	—	—
23.	Lemon Street at SR-91 WB Ramps	D	Weekday PM	24.5 s/v	C	24.6 s/v	C	No	—	—
24.	Harbor Boulevard at SR-91 EB Ramps	D	Weekday PM	19.6 s/v	B	19.7 s/v	B	No	—	—
25.	Lemon Street at SR-91 EB Ramps	D	Weekday PM	23.0 s/v	C	23.1 s/v	C	No	—	—

Bold HCM/LOS values indicate adverse service levels.
s/v = seconds per vehicle.

Existing Traffic Conditions – Weekday Academic Instruction

Review of column 1 of Table 4.8-24 indicates that all 6 state-controlled study intersections currently operate at an acceptable LOS during the weekday PM peak hour.

Existing plus Project Traffic Conditions – Weekday Academic Instruction

Review of columns 2 and of Table 4.8-24 indicates that traffic associated with the proposed project (academic instruction) will not significantly impact any of the 6 state-controlled study intersections, when compared to the LOS standards and significant impact criteria specified in Section 4.8.4. The 6 state-controlled study intersections are forecast to operate at acceptable LOS during the weekday PM peak hour with the addition of project traffic to existing traffic.

Existing plus Project Traffic Conditions – Saturday Field Event

Table 4.8-25 shows the Saturday Event Arrival peak hour and Saturday Event Departure peak hour LOS results at the six state-controlled study intersections within the study area for Existing plus Project (field event) traffic conditions.

Table 4.8-25
Existing Plus Project Saturday Peak Hour Intersection Capacity Analysis (Caltrans) – Field Event

Key Intersections		Min. Acc. LOS	Time Period	(1) Existing Traffic Conditions		(2) Existing Plus Project Traffic Conditions		(3) Impact	(4) Existing Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Yes/No*	*HCM*	*LOS*
13.	SR-57 SB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	17.6 s/v 18.4 s/v	B B	20.2 s/v 19.3 s/v	C B	No No	— —	— —
14.	SR-57 NB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	25.2 s/v 26.7 s/v	C C	28.0 s/v 29.4 s/v	C C	No No	— —	— —
22.	Harbor Boulevard at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	17.3 s/v 20.1 s/v	B C	17.4 s/v 21.1 s/v	B C	No No	— —	— —
23.	Lemon Street at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	27.7 s/v 24.8 s/v	C C	29.5 s/v 26.2 s/v	C C	No No	— —	— —
24.	Harbor Boulevard at SR-91 EB Ramps	D	Sat. Arrival Sat. Departure	23.6 s/v 22.4 s/v	C C	24.4 s/v 22.5 s/v	C C	No No	— —	— —
25.	Lemon Street at SR-91 EB Ramps	D	Sat. Arrival Sat. Departure	27.8 s/v 27.8 s/v	C C	29.1 s/v 28.2 s/v	C C	No No	— —	— —

Bold HCM/LOS values indicate adverse service levels.
s/v = seconds per vehicle.

Existing Traffic Conditions – Saturday Field Event

Review of column 1 of Table 4.8-25 indicates that all 6 state-controlled study intersections currently operate at an acceptable LOS during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour.

Existing plus Project Traffic Conditions – Saturday Field Event

Review of columns 2 and of Table 4.8-25 indicates that traffic associated with the proposed project (field event) will not significantly impact any of the 6 state-controlled study intersections, when compared to the LOS standards and significant impact criteria specified in Section 4.8.4. The 6 state-controlled study intersections are forecast to operate at acceptable service levels during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of project traffic to existing traffic.

Year 2020 Traffic Conditions

<u>Year 2020 Traffic Conditions – Weekly Academic Instruction</u>

Table 4.8-26 shows the weekday PM peak hour HCM level of service results at the six state-controlled study intersections within the study area for Year 2020 traffic conditions traffic conditions.

Table 4.8-26
Year 2020 Weekday Peak Hour Intersection Capacity Analysis (Caltrans) – Academic Instruction

Key Intersections		Min. Acc. LOS	Time Period	(1) Year 2020 Cumulative Traffic Conditions		(2) Year 2020 Cumulative Plus Project Traffic Conditions		(3) Impact	(4) Year 2020 Cumulative Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Yes/No*	*HCM*	*LOS*
13.	SR-57 SB Ramps at Chapman Avenue	D	Weekday PM	18.5 s/v	B	18.5 s/v	B	No	—	—
14.	SR-57 NB Ramps at Chapman Avenue	D	Weekday PM	27.0 s/v	C	27.1 s/v	C	No	—	—
22.	Harbor Boulevard at SR-91 WB Ramps	D	Weekday PM	17.7 s/v	B	17.7 s/v	B	No	—	—
23.	Lemon Street at SR-91 WB Ramps	D	Weekday PM	25.0 s/v	C	25.0 s/v	C	No	—	—
24.	Harbor Boulevard at SR-91 EB Ramps	D	Weekday PM	19.9 s/v	B	20.0 s/v	C	No	—	—
25.	Lemon Street at SR-91 EB Ramps	D	Weekday PM	23.3 s/v	C	23.3 s/v	C	No	—	—

Bold HCM/LOS values indicate adverse service levels.
s/v = seconds per vehicle.

Year 2020 Traffic Conditions (Without Project) – Weekday Academic Instruction

An analysis of future (Year 2020) traffic conditions indicates that the addition of ambient growth and cumulative projects traffic would not adversely impact the 6 state-controlled study intersections. The 6 state-controlled study intersections are forecast to operate at acceptable LOS C or better during the weekday PM peak hour with the addition of ambient traffic growth and cumulative projects traffic in the Year 2020.

Year 2020 plus Project Traffic Conditions – Weekday Academic Instruction

Review of columns 2 and of Table 4.8-26 indicates that traffic associated with the proposed project (i.e., academic instruction) would not significantly impact any of the 6 state-controlled study intersections, when compared to the LOS standards and significant impact criteria specified in Section 4.8.4. The 6 state-controlled study intersections are forecast to operate at acceptable service levels during the weekday PM peak hour with the addition of project traffic to existing traffic.

Year 2020 Traffic Conditions- Saturday Field Event

Table 4.8-27 shows the Saturday Event Arrival peak hour and Saturday Event Departure peak hour level of service results at the 6 state controlled study intersections within the study area for Year 2020 traffic conditions.

Table 4.8-27
Year 2020 Saturday Peak Hour Intersection Capacity Analysis (Caltrans) – Field Event

	Key Intersections	Min. Acc. LOS	Time Period	(1) Year 2020 Cumulative Traffic Conditions		(2) Year 2020 Cumulative Plus Project Traffic Conditions		(3) Impact	(4) Year 2020 Cumulative Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Yes/No*	*HCM*	*LOS*
13.	SR-57 SB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	17.7 s/v 18.5 s/v	B B	20.3 s/v 19.6 s/v	C B	No No	— —	— —
14.	SR-57 NB Ramps at Chapman Avenue	D	Sat. Arrival Sat. Departure	25.4 s/v 26.8 s/v	C C	28.2 s/v 29.6 s/v	C C	No No	— —	— —
22.	Harbor Boulevard at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	17.8 s/v 20.7 s/v	B C	17.8 s/v 21.9 s/v	B C	No No	— —	— —
23.	Lemon Street at SR-91 WB Ramps	D	Sat. Arrival Sat. Departure	28.9 s/v 25.1 s/v	C C	31.0 s/v 26.7 s/v	C C	No No	— —	— —
24.	Harbor Boulevard at SR-91 EB Ramps	D	Sat. Arrival Sat. Departure	23.8 s/v 22.5 s/v	C C	24.6 s/v 22.5 s/v	C C	No No	— —	— —
25.	Lemon Street at SR-91 EB Ramps	D	Sat. Arrival Sat. Departure	28.1 s/v 28.0 s/v	C C	29.4 s/v 28.5 s/v	C C	No No	— —	— —

Bold HCM/LOS values indicate adverse service levels.
s/v = seconds per vehicle.

Year 2020 Traffic Conditions (Without Project) –Saturday Field Event

An analysis of future (Year 2020) traffic conditions indicates that the addition of ambient growth and cumulative projects traffic would not adversely impact the 6 state-controlled study intersections. The 6 state-controlled study intersections are forecast to operate at acceptable LOS C or better during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of ambient traffic growth and cumulative projects traffic in the Year 2020.

Year 2020 plus Project Traffic Conditions – Saturday Event

Review of columns 2 and 3 of Table 4.8-27 indicates that traffic associated with the proposed project (field event) would not significantly impact any of the 6 state-controlled study intersections, when compared to the LOS standards and significant impact criteria. The 6 state-controlled study intersections are forecast to operate at acceptable service levels during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of project generated traffic under Year 2020 traffic conditions.

Year 2030 Traffic Conditions

Year 2030 Traffic Conditions – Weekday Academic Instruction

Table 4.8-28 shows the weekday PM peak hour HCM level of service results at the 6 state-controlled study intersections within the study area for the Year 2030 buildout year and is similar to the set up in Table 4.8-26.

Table 4.8-28
Year 2030 Buildout Weekday Peak Hour Intersection Capacity Analysis (Caltrans) – Academic Instruction

Key Intersections		Min. Acc. LOS	Time Period	(1) Year 2030 Buildout Traffic Conditions		(2) Year 2030 Buildout Plus Project Traffic Conditions		(3) Impact	(4) Year 2030 Buildout Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Yes/No*	*HCM*	*LOS*
13.	SR-57 SB Ramps at Chapman Avenue	D	Weekday PM	30.9 s/v	C	31.1 s/v	C	No	—	—
14.	SR-57 NB Ramps at Chapman Avenue	D	Weekday PM	**86.2 s/v**	**F**	**87.0 s/v**	**F**	**Yes**	37.7 s/v	D
22.	Harbor Boulevard at SR-91 WB Ramps	D	Weekday PM	30.4 s/v	C	30.4 s/v	C	No	—	—
23.	Lemon Street at SR-91 WB Ramps	D	Weekday PM	40.9 s/v	D	41.1 s/v	D	No	—	—
24.	Harbor Boulevard at SR-91 EB Ramps	D	Weekday PM	25.6 s/v	C	25.7 s/v	C	No	—	—
25.	Lemon Street at SR-91 EB Ramps	D	Weekday PM	29.1 s/v	C	29.2 s/v	C	No	—	—

Bold HCM/LOS values indicate adverse service levels.
s/v = seconds per vehicle.

Year 2030 Buildout Traffic Conditions (Without Project) – Weekday Academic Instruction

An analysis of future (Year 2030) buildout traffic conditions indicates that the addition of ambient traffic growth and cumulative projects traffic would adversely impact one of the 6 state controlled study intersections. The state-controlled study intersection of the SR-57 NB Ramps/Chapman Avenue is forecast to operate at unacceptable LOS F during the weekday PM peak hour. The remaining five state-controlled study intersections are forecast to operate at acceptable LOS D or better during the weekday PM peak hour with the addition of ambient traffic growth and cumulative projects traffic in the Year 2030.

Year 2030 Buildout plus Project Traffic Conditions – Weekday Academic Instruction

Review of columns 2 and 3 of Table 4.8-28 indicates that traffic associated with the proposed project (academic instruction) would cumulatively impact one of the 6 state-controlled study intersections, when compared to the LOS standards specified in this report. The remaining five state-controlled study intersections are forecast to continue to operate at acceptable LOS D or better with the addition of project generated traffic in the Year 2030.

As shown in column 4 of Table 4.8-28, the implementation of improvements at the impacted state-controlled intersection of the SR-57 NB Ramps/Chapman Avenue completely offsets the impact of the proposed project. The impacted state-controlled key study intersection of the SR-57 NB Ramps/Chapman Avenue is forecast to operate at an acceptable LOS during the weekday PM peak hour with implementation of improvements.

Year 2030 Traffic Conditions – Saturday Field Event

Table 4.8-29 summarizes the Saturday Event Arrival peak hour and Saturday Event Departure peak hour HCM level of service results at the six state-controlled study intersections within the study area for the Year 2030 buildout year and is similar in setup to Table 4.8-27.

Table 4.8-29
Year 2030 Buildout Saturday Peak Hour Intersection Capacity Analysis (Caltrans) – Field Event

	Key Intersections	Min. Acc. LOS	Time Period	(1) Year 2030 Buildout Traffic Conditions		(2) Year 2030 Buildout Plus Project Traffic Conditions		(3) Impact	(4) Year 2030 Buildout Plus Project With Improvements	
				HCM	*LOS*	*HCM*	*LOS*	*Yes/No*	*HCM*	*LOS*
13.	SR-57 SB Ramps at	D	Sat. Arrival	24.1 s/v	C	33.9 s/v	C	No	—	—
	Chapman Avenue		Sat. Departure	24.7 s/v	C	34.6 s/v	C	No	—	—
14.	SR-57 NB Ramps at	D	Sat. Arrival	32.9 s/v	C	44.7 s/v	D	No	—	—
	Chapman Avenue		Sat. Departure	33.7 s/v	C	47.7 s/v	D	No	—	—
22.	Harbor Boulevard at	D	Sat. Arrival	28.0 s/v	C	28.8 s/v	C	No	—	—
	SR-91 WB Ramps		Sat. Departure	37.1 s/v	D	41.3 s/v	D	No	—	—
23.	Lemon Street at	D	Sat. Arrival	48.1 s/v	D	54.7 s/v	D	No	—	—
	SR-91 WB Ramps		Sat. Departure	36.0 s/v	D	44.0 s/v	D	No	—	—
24.	Harbor Boulevard at	D	Sat. Arrival	27.4 s/v	C	28.4 s/v	C	No	—	—
	SR-91 EB Ramps		Sat. Departure	25.8 s/v	C	25.8 s/v	C	No	—	—
25.	Lemon Street at	D	Sat. Arrival	32.6 s/v	C	34.8 s/v	C	No	—	—
	SR-91 EB Ramps		Sat. Departure	32.0 s/v	C	32.8 s/v	C	No	—	—

Bold HCM/LOS values indicate adverse service levels.
s/v = seconds per vehicle.

Year 2030 Buildout Traffic Conditions (Without Project) – Saturday Field Event

An analysis of future (Year 2030) buildout traffic conditions indicates that the addition of ambient growth and cumulative projects traffic would not adversely impact the 6 state-controlled study intersections. The 6 state-controlled study intersections are forecast to operate at acceptable LOS D or better during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of ambient traffic growth and cumulative projects traffic in the Year 2030.

Year 2030 Buildout plus Project Traffic Conditions – Saturday Field Event

Review of columns 2 and 3 of Table 4.8-29 indicates that traffic associated with the proposed project (field event) would not significantly impact any of the six state-controlled study intersections, when compared to the LOS standards and significant impact criteria specified in this report. The 6 state-controlled study intersections are forecast to operate at acceptable service levels during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of project generated traffic under Year 2030 traffic conditions.

Summary

- **Caltrans Methodology (Weekday Academic Instruction):** The results of the Existing plus Project Weekday and Year 2020 plus Project Weekday traffic analyses using the Caltrans Methodology indicates that the proposed project would not significantly impact the six state-controlled study intersections. The six state-controlled study intersections are forecast to operate at acceptable service levels during the weekday PM peak hour with the addition of project generated traffic to existing traffic and Year 2020 traffic.

  The results of the Year 2030 plus Project Weekday traffic analysis using the Caltrans Methodology indicates that the proposed project (i.e., academic instruction) would cumulatively impact one of the six state-controlled study intersections, when compared to the LOS standards. The remaining five state-controlled study intersections are forecast to continue to operate at acceptable LOS D or better with the addition of project generated traffic in the Year 2030. The implementation of improvements at the impacted state-controlled intersection of the SR-57 NB Ramps/Chapman Avenue completely offsets the impact of the proposed project. The impacted state-controlled key study intersection of the SR-57 NB Ramps/Chapman Avenue is forecast to operate at an acceptable LOS during the weekday PM peak hour with implementation of improvements.

- **Caltrans Methodology (Saturday Field Event):** The results of the Existing plus Project Saturday, Year 2020 plus Project Saturday and Year 2030 Buildout plus Project Saturday traffic analyses using the Caltrans Methodology indicates that the proposed project would not significantly impact the six state-controlled study intersections. The six state-controlled study intersections are forecast to operate at acceptable service levels during the Saturday

Event Arrival peak hour and Saturday Event Departure peak hour with the addition of proposed project-generated traffic to existing traffic, Year 2020 traffic and Year 2030 traffic.

Off-Ramp Queuing Analysis

A queuing evaluation was conducted for the aforementioned six state-controlled study intersections (i.e., SR-57 Off-Ramps at Chapman Avenue and the SR-91 Off-Ramps at Harbor Boulevard and Lemon Street) to determine the minimum required stacking/storage lengths for all off-ramp lanes. The queuing evaluation was conducted based on projected Existing plus Project, Year 2020 Cumulative plus Project, and Year 2030 Buildout plus Project peak hour traffic volumes and was prepared for the weekday PM peak hour and Saturday Event Arrival and Event Departure peak hours.

While Caltrans does not have significant impact criteria for off-ramp queuing impacts, impact criteria based on historic coordination with Caltrans were applied. Based on the criteria, it was determined that the queue lengths with the proposed project would not impede the freeway mainline and, therefore, impacts are less than significant.

Existing plus Project Traffic Conditions

Table 4.8-30 presents the weekday PM peak hour 95th percentile queuing analysis results for the aforementioned six state-controlled study intersections under Existing plus Project traffic conditions. Table 4.8-31 presents the Saturday Event Arrival peak hour and Saturday Event Departure peak hour 95th percentile queuing analysis results for the aforementioned six state-controlled study intersections under Existing plus Project traffic conditions.

Table 4.8-30
Existing Plus Project Weekday Peak Hour Freeway Off-Ramp Queuing Analysis – Academic Instruction[1]

Key Ramp Intersection	(1) Existing Plus Project Traffic Conditions		
	Estimated Storage Provided (feet)	*Weekday PM Peak Hour*	
		Max. Queue/ Min. Storage Required (feet)	*Adequate Storage (Yes / No)*
13. SR-57 SB Ramps at Chapman Avenue			
Southbound Shared Through/Left-Turn	1,050	327	Yes
Southbound Right-Turn	1,295	226	Yes
14. SR-57 NB Ramps at Chapman Avenue			
Northbound Left-Turn	915	380	Yes
Northbound Shared Left/Right-Turn	915	380	Yes

Table 4.8-30
Existing Plus Project Weekday Peak Hour Freeway Off-Ramp Queuing Analysis – Academic Instruction[1]

Key Ramp Intersection	(1) Existing Plus Project Traffic Conditions		
	Estimated Storage Provided (feet)	*Weekday PM Peak Hour*	
		Max. Queue/ Min. Storage Required (feet)	*Adequate Storage (Yes / No)*
Northbound Right-Turn	500	380	Yes
22.	*Harbor Boulevard at SR-91 WB Ramps*		
Westbound Left-Turn	360	285	Yes
Westbound Through	1,210	176	Yes
Westbound Right-Turn	265	342	Yes[2]
23.	*Lemon Street at SR-91 WB Ramps*		
Westbound Shared Through/Left-Turn	890	279	Yes
Westbound Through	890	270'	Yes
Westbound Right-Turn	320	539	Yes[3]
24.	*Harbor Boulevard at SR-91 EB Ramps*		
Eastbound Left-Turn	245	322	Yes[4]
Eastbound Through	1,175	262	Yes
Eastbound Right-Turn	245	133	Yes
25.	*Lemon Street at SR-91 EB Ramps*		
Eastbound Shared Through/Left-Turn	1,250	351	Yes
Eastbound Through	1,250	342	Yes
Eastbound Right-Turn	1,250	50	Yes

Notes:

1 Queue is based on the *95th Percentile Queue* and is reported in total queue length (feet) per lane for signalized intersections.

2 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the No. 2 WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,475 feet is greater than those combined queues.

3 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,210 feet is greater than those combined queues.

4 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the EB through lane since the combined storage between the EB left-turn lane and EB through lane of 1,420 feet is greater than those combined queues.

Table 4.8-31
Existing Plus Project Saturday Peak Hour Freeway Off-Ramp Queuing Analysis – Field Event[1]

Key Ramp Intersection	(1) Existing Plus Project Traffic Conditions				
	Estimated Storage Provided (feet)	*Sat. Arrival Peak Hour*		*Sat. Departure Peak Hour*	
		Max. Queue/ Min. Storage Required (feet)	*Adequate Storage (Yes / No)*	*Max. Queue/ Min. Storage Required*	*Adequate Storage (Yes / No)*
13.	*SR-57 SB Ramps at Chapman Avenue*				
Southbound Shared Through/Left-Turn	1,050	118	Yes	130	Yes
Southbound Right-Turn	1,295	156	Yes	159	Yes
14.	*SR-57 NB Ramps at Chapman Avenue*				
Northbound Left-Turn	915	311	Yes	325	Yes
Northbound Shared Left/Right-Turn	915	301	Yes	318	Yes
Northbound Right-Turn	500	290	Yes	311	Yes
22.	*Harbor Boulevard at SR-91 WB Ramps*				
Westbound Left-Turn	360	204	Yes	190	Yes
Westbound Through	1,210	161	Yes	152'	Yes
Westbound Right-Turn	265	338	Yes[2]	412	Yes[2]
23.	*Lemon Street at SR-91 WB Ramps*				
Westbound Shared Through/Left-Turn	890	222	Yes	248	Yes
Westbound Through	890	215	Yes	240	Yes
Westbound Right-Turn	320	619	Yes[3]	559	Yes[3]
24.	*Harbor Boulevard at SR-91 EB Ramps*				
Eastbound Left-Turn	245	362	Yes[4]	315	Yes[4]
Eastbound Through	1,175	180	Yes	213	Yes
Eastbound Right-Turn	245	158	Yes	134	Yes
25.	*Lemon Street at SR-91 EB Ramps*				
Eastbound Shared Through/Left-Turn	1,250	428	Yes	426	Yes
Eastbound Through	1,250	400	Yes	401	Yes
Eastbound Right-Turn	1,250	49	Yes	45	Yes

Notes:

1 Queue is based on the 95th Percentile Queue and is reported in total queue length (feet) per lane for signalized intersections.

2 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the No. 2 WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,475 feet is greater than those combined queues.

3 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,210 feet is greater than those combined queues.

4 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the EB through lane since the combined storage between the EB left-turn lane and EB through lane of 1,420 feet is greater than those combined queues.

As shown in Tables 4.8-30 and 4.8-31, adequate storage is provided at the off-ramps for all six state-controlled study intersections under Existing plus Project traffic conditions during the weekday PM peak hour, Saturday Event Arrival peak hour, and Saturday Event Departure peak hour.

Year 2020 Cumulative plus Project Traffic Conditions

Table 4.8-32 presents the weekday PM peak hour 95th percentile queuing analysis results for the aforementioned six state-controlled study intersections under Year 2020 Cumulative plus Project traffic conditions. Table 4.8-33 presents the Saturday Event Arrival peak hour and Saturday Event Departure peak hour 95th percentile queuing analysis results for the aforementioned six state-controlled study intersections under Year 2020 Cumulative plus Project traffic conditions.

Table 4.8-32
Year 2020 Cumulative Weekday Peak Hour Freeway Off-Ramp Queuing Analysis – Academic Instruction[1]

Key Ramp Intersection	(1) Year 2020 Cumulative Plus Project Traffic Conditions		
	Estimated Storage Provided (feet)	*Weekday PM Peak Hour*	
		Max. Queue/ Min. Storage Required (feet)	*Adequate Storage (Yes / No)*
13.	*SR-57 SB Ramps at Chapman Avenue*		
Southbound Shared Through/Left-Turn	1,050	332	Yes
Southbound Right-Turn	1,295	236	Yes
14.	*SR-57 NB Ramps at Chapman Avenue*		
Northbound Left-Turn	915	385	Yes
Northbound Shared Left/Right-Turn	915	385	Yes
Northbound Right-Turn	500	385	Yes
22.	*Harbor Boulevard at SR-91 WB Ramps*		
Westbound Left-Turn	360	285	Yes
Westbound Through	1,210	177	Yes
Westbound Right-Turn	265	354	Yes[2]
23.	*Lemon Street at SR-91 WB Ramps*		
Westbound Shared Through/Left-Turn	890	285	Yes
Westbound Through	890	275	Yes
Westbound Right-Turn	320	550	Yes[3]

Table 4.8-32
Year 2020 Cumulative Weekday Peak Hour Freeway Off-Ramp Queuing Analysis – Academic Instruction[1]

Key Ramp Intersection	(1) Year 2020 Cumulative Plus Project Traffic Conditions		
	Estimated Storage Provided (feet)	Weekday PM Peak Hour	
		Max. Queue/ Min. Storage Required (feet)	Adequate Storage (Yes / No)
24.	*Harbor Boulevard at SR-91 EB Ramps*		
Eastbound Left-Turn	245	331	Yes[4]
Eastbound Through	1,175	269	Yes
Eastbound Right-Turn	245	133	Yes
25.	*Lemon Street at SR-91 EB Ramps*		
Eastbound Shared Through/Left-Turn	1,250	359	Yes
Eastbound Through	1,250	350	Yes
Eastbound Right-Turn	1,250	50	Yes

Notes:
1 Queue is based on the 95th Percentile Queue and is reported in total queue length (feet) per lane for signalized intersections.
2 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the No. 2 WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,475 feet is greater than those combined queues.
3 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,210 feet is greater than those combined queues.
4 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the EB through lane since the combined storage between the EB left-turn lane and EB through lane of 1,420 feet is greater than those combined queues.

Table 4.8-33
Year 2020 Cumulative Saturday Peak Hour Freeway Off-Ramp Queuing Analysis – Field Event[1]

Key Ramp Intersection	(1) Year 2020 Cumulative Plus Project Traffic Conditions				
	Estimated Storage Provided (feet)	Sat. Arrival Peak Hour		Sat. Departure Peak Hour	
		Max. Queue/ Min. Storage Required (feet)	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes / No)
13.	*SR-57 SB Ramps at Chapman Avenue*				
Southbound Shared Through/Left-Turn	1,050	105	Yes	131	Yes
Southbound Right-Turn	1,295	288	Yes	186	Yes
14.	*SR-57 NB Ramps at Chapman Avenue*				
Northbound Left-Turn	915	357	Yes	333	Yes
Northbound Shared Left/Right-Turn	915	357	Yes	329	Yes

Table 4.8-33
Year 2020 Cumulative Saturday Peak Hour Freeway Off-Ramp Queuing Analysis – Field Event[1]

Key Ramp Intersection	(1) Year 2020 Cumulative Plus Project Traffic Conditions				
	Estimated Storage Provided (feet)	*Sat. Arrival Peak Hour*		*Sat. Departure Peak Hour*	
		Max. Queue/ Min. Storage Required (feet)	*Adequate Storage (Yes / No)*	*Max. Queue/ Min. Storage Required*	*Adequate Storage (Yes / No)*
Northbound Right-Turn	500’	357	Yes	323	Yes
22.	*Harbor Boulevard at SR-91 WB Ramps*				
Westbound Left-Turn	360	205	Yes	189	Yes
Westbound Through	1,210	177	Yes	211	Yes
Westbound Right-Turn	265	348	Yes[2]	420	Yes[2]
23.	*Lemon Street at SR-91 WB Ramps*				
Westbound Shared Through/Left-Turn	890	215	Yes	251	Yes
Westbound Through	890	207	Yes	243	Yes
Westbound Right-Turn	320	663	Yes[3]	571	Yes[3]
24.	*Harbor Boulevard at SR-91 EB Ramps*				
Eastbound Left-Turn	245	392	Yes[4]	324	Yes[4]**Error! Bookmark not defined.**
Eastbound Through	1,175	265	Yes	225	Yes
Eastbound Right-Turn	245	153	Yes	135	Yes
25.	*Lemon Street at SR-91 EB Ramps*				
Eastbound Shared Through/Left-Turn	1,250	482	Yes	445	Yes
Eastbound Through	1,250	449	Yes	414	Yes
Eastbound Right-Turn	1,250	47	Yes	46	Yes

Notes:

1 Queue is based on the 95th Percentile Queue and is reported in total queue length (feet) per lane for signalized intersections.

2 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the No. 2 WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,475 feet is greater than those combined queues.

3 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,210 feet is greater than those combined queues.

4 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the EB through lane since the combined storage between the EB left-turn lane and EB through lane of 1,420 feet is greater than those combined queues.

As shown in Tables 4.8-32 and 4.8-33, adequate storage is provided at the off-ramps for all six state-controlled study intersections under Year 2020 Cumulative plus Project traffic conditions during the weekday PM peak hour, Saturday Event Arrival peak hour, and Saturday Event Departure peak hour.

Year 2030 Buildout plus Project Traffic Conditions

Table 4.8-34 presents the weekday PM peak hour 95th percentile queuing analysis results for the aforementioned six state-controlled study intersections under Year 2030 Buildout plus Project traffic conditions. Table 4.8-35 presents the Saturday Event Arrival peak hour and Saturday Event Departure peak hour 95th percentile queuing analysis results for the aforementioned six state-controlled study intersections under Year 2030 Buildout plus Project traffic conditions.

Table 4.8-34
Year 2030 Buildout Weekday Peak Hour Freeway Off-Ramp Queuing Analysis – Academic Instruction[1]

Key Ramp Intersection	(1) Year 2030 Buildout Plus Project Traffic Conditions		
	Estimated Storage Provided (feet)	*Weekday PM Peak Hour*	
		Max. Queue/ Min. Storage Required (feet)	*Adequate Storage (Yes / No)*
13. SR-57 SB Ramps at Chapman Avenue			
Southbound Shared Through/Left-Turn	1,050	391	Yes
Southbound Right-Turn	1,295	489	Yes
14. SR-57 NB Ramps at Chapman Avenue			
Northbound Left-Turn	915	792	Yes
Northbound Shared Left/Right-Turn	915	792	Yes
Northbound Right-Turn	500	792	Yes[2]
22. Harbor Boulevard at SR-91 WB Ramps			
Westbound Left-Turn	360	280	Yes
Westbound Through	1,210	194	Yes
Westbound Right-Turn	265	596	Yes[3]
23. Lemon Street at SR-91 WB Ramps			
Westbound Shared Through/Left-Turn	890	330	Yes
Westbound Through	890	310	Yes
Westbound Right-Turn	320’	920’	Yes[4]
24. Harbor Boulevard at SR-91 EB Ramps			
Eastbound Left-Turn	245	425	Yes[5]
Eastbound Through	1,175	293	Yes
Eastbound Right-Turn	245	126	Yes

Table 4.8-34
Year 2030 Buildout Weekday Peak Hour Freeway Off-Ramp Queuing Analysis – Academic Instruction[1]

Key Ramp Intersection	(1) Year 2030 Buildout Plus Project Traffic Conditions		
	Estimated Storage Provided (feet)	Weekday PM Peak Hour	
		Max. Queue/ Min. Storage Required (feet)	Adequate Storage (Yes / No)
25. Lemon Street at SR-91 EB Ramps			
Eastbound Shared Through/Left-Turn	1,250	458	Yes
Eastbound Through	1,250	436	Yes
Eastbound Right-Turn	1,250	49	Yes

Notes:

1 Queue is based on the *95th Percentile Queue* and is reported in total queue length (feet) per lane for signalized intersections.

2 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the NB shared left/right lane since the combined storage between the NB right-turn lane and NB shared left/right lane of 1,835 feet is greater than those combined queues (420 feet of the 1,835 feet is contained within the portion of the auxiliary lane marked by a solid white line).

3 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the No. 2 WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,475 feet is greater than those combined queues.

4 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,690 feet is greater than those combined queues (480 feet of the 1,690 feet is contained within the portion of the auxiliary lane marked by a solid white line).

5 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the EB through lane since the combined storage between the EB left-turn lane and EB through lane of 1,420 feet is greater than those combined queues.

Table 4.8-35
Year 2030 Buildout Saturday Peak Hour Freeway Off-Ramp Queuing Analysis – Field Event[1]

Key Ramp Intersection	(1) Year 2030 Buildout Plus Project Traffic Conditions				
	Estimated Storage Provided (feet)	Sat. Arrival Peak Hour		Sat. Departure Peak Hour	
		Max. Queue/ Min. Storage Required (feet)	Adequate Storage (Yes / No)	Max. Queue/ Min. Storage Required	Adequate Storage (Yes / No)
13. SR-57 SB Ramps at Chapman Avenue					
Southbound Shared Through/Left-Turn	1,050	139	Yes	169	Yes
Southbound Right-Turn	1,295	459	Yes	366	Yes
14. SR-57 NB Ramps at Chapman Avenue					
Northbound Left-Turn	915	487	Yes	478	Yes
Northbound Shared Left/Right-Turn	915	487	Yes	478	Yes
Northbound Right-Turn	500	487	Yes	478	Yes

Table 4.8-35
Year 2030 Buildout Saturday Peak Hour Freeway Off-Ramp Queuing Analysis – Field Event[1]

Key Ramp Intersection	(1) Year 2030 Buildout Plus Project Traffic Conditions				
	Estimated Storage Provided (feet)	*Sat. Arrival Peak Hour*		*Sat. Departure Peak Hour*	
		Max. Queue/ Min. Storage Required (feet)	*Adequate Storage (Yes / No)*	*Max. Queue/ Min. Storage Required*	*Adequate Storage (Yes / No)*
22.	*Harbor Boulevard at SR-91 WB Ramps*				
Westbound Left-Turn	360	206	Yes	199	Yes
Westbound Through	1,210	194	Yes	231	Yes
Westbound Right-Turn	265	562	Yes[2]	814	Yes[2]
23.	*Lemon Street at SR-91 WB Ramps*				
Westbound Shared Through/Left-Turn	890	257	Yes	283	Yes
Westbound Through	890	244	Yes	270	Yes
Westbound Right-Turn	320	1,187	Yes[3]	895	Yes[4]
24.	*Harbor Boulevard at SR-91 EB Ramps*				
Eastbound Left-Turn	245	474	Yes[5]	403	Yes[5]
Eastbound Through	1,175	277	Yes	246	Yes
Eastbound Right-Turn	245	150	Yes	133	Yes
25.	*Lemon Street at SR-91 EB Ramps*				
Eastbound Shared Through/Left-Turn	1,250	601	Yes	558	Yes
Eastbound Through	1,250	538	Yes	502	Yes
Eastbound Right-Turn	1,250	46	Yes	45	Yes

Notes:

1 Queue is based on the *95th Percentile Queue* and is reported in total queue length (feet) per lane for signalized intersections.

2 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the No. 2 WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,475 feet is greater than those combined queues.

3 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,690 feet is greater than those combined queues (480 feet of the 1,690 feet is contained within the portion of the auxiliary lane marked by a solid white line).

4 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the WB through lane since the combined storage between the WB right-turn lane and WB through lane of 1,210 feet is greater than those combined queues.

5 Although the queue exceeds the specific lane movement storage, the excess queue can be accommodated within the EB through lane since the combined storage between the EB left-turn lane and EB through lane of 1,420 feet is greater than those combined queues.

As shown in Tables 4.8-34 and 4.8-35, adequate storage is provided at the off-ramps for all six state-controlled study intersections under Year 2030 Buildout plus Project traffic conditions during the weekday PM peak hour, Saturday Event Arrival peak hour, and Saturday Event Departure peak hour.

Summary

Adequate storage is provided at the off-ramps for all six state-controlled study intersections under Existing plus Project, Year 2020 plus Project, and Year 2030 Buildout plus Project traffic conditions during the weekday PM peak hour, Saturday Event Arrival peak hour, and Saturday Event Departure peak hour.

Basic Freeway Segment Capacity Analysis

Caltrans Facilities Analysis

As previously noted, based on historic coordination with Caltrans, LOS D is the target level of service standard that will be utilized to assess the project impacts at the state-controlled study locations.

Based on application of Caltrans criteria and the resultant peak hour level of service results for existing conditions, a Basic Freeway Segment Analysis for freeway mainlines was conducted for the following eight Caltrans freeway segments:

1. SR-57 NB south of Chapman Avenue
2. SR-57 NB north of Nutwood Avenue
3. SR-57 SB north of Nutwood Avenue
4. SR-57 SB south of Chapman Avenue
5. SR-91 WB east of Lemon Street
6. SR-91 WB west of Harbor Boulevard
7. SR-91 EB west of Harbor Boulevard
8. SR-91 EB east of Lemon Street

Existing Traffic Conditions

Table 4.8-36 summarizes the peak hour Level of Service results at the eight basic freeway segments located along the SR-57 and SR-91 Freeways for Existing traffic conditions under Weekday PM peak hour traffic conditions. Table 4.8-37 summarizes the peak hour Level of Service results at the eight basic freeway segments located along the SR-57 and SR-91 Freeways for the Existing traffic conditions under Saturday Event Arrival peak hour and Saturday Event Departure peak hour traffic conditions.

Table 4.8-36
Existing Weekday Peak Hour Freeway Mainline Capacity Analysis Summary – Academic Instruction

	Key Basic Freeway Segment	Time Period	Lanes	Total Project Trips	(1) Existing Traffic Conditions		
					Peak Hour Volume (pc/h/ln)	*Density (pc/mi/ln)*	*LOS*
1.	SR-57 Northbound *south of* Chapman Avenue	Weekday PM	6	3	1,588	24.6	C
2.	SR-57 Northbound *north of* Nutwood Avenue	Weekday PM	6	0	1,371	21.1	C
3.	SR-57 Southbound *north of* Nutwood Avenue	Weekday PM	5	5	1,389	21.4	C
4.	SR-57 Southbound *south of* Chapman Avenue	Weekday PM	4	0	1,932	31.7	D
5.	SR-91 Westbound *east of* Lemon Street	Weekday PM	5	3	1,721	27.1	D
6.	SR-91 Westbound *west of* Harbor Boulevard	Weekday PM	4	0	2,040	34.5	D
7.	SR-91 Eastbound *west of* Harbor Boulevard	Weekday PM	4	7	1,896	30.8	D
8.	SR-91 Eastbound *east of* Lemon Street	Weekday PM	5	0	1,490	23.0	C

Bold Volume/Density/LOS values indicate adverse service levels based on the Caltrans LOS Criteria.
pc/mi/ln = passenger cars per mile per lane (density); LOS = level of service.

Table 4.8-37
Existing Saturday Peak Hour Freeway Mainline Capacity Analysis Summary – Field Event

	Key Basic Freeway Segment	Time Period	Lanes	Total Project Trips	(1) Existing Traffic Conditions		
					Peak Hour Volume (pc/h/ln)	*Density (pc/mi/ln)*	*LOS*
1.	SR-57 Northbound *south of* Chapman Avenue	Sat. Arrival	6	184	1,408	21.7	C
		Sat. Departure		21	1,448	22.3	C

Table 4.8-37
Existing Saturday Peak Hour Freeway Mainline Capacity Analysis Summary – Field Event

	Key Basic Freeway Segment	Time Period	Lanes	Total Project Trips	(1) Existing Traffic Conditions		
					Peak Hour Volume (pc/h/ln)	*Density (pc/mi/ln)*	*LOS*
2.	SR-57 Northbound *north of* Nutwood Avenue	Sat. Arrival	6	33	1,312	20.2	C
		Sat. Departure		153	1,352	20.8	C
3.	SR-57 Southbound *north of* Nutwood Avenue	Sat. Arrival	5	123	1,489	22.9	C
		Sat. Departure		14	1,474	22.7	C
4.	SR-57 Southbound *south of* Chapman Avenue	Sat. Arrival	4	50	2,048	34.7	D
		Sat. Departure		229	2,019	33.9	D
5.	SR-91 Westbound *east of* Lemon Street	Sat. Arrival	5	49	1,659	25.9	C
		Sat. Departure		6	1,617	25.1	C
6.	SR-91 Westbound *west of* Harbor Boulevard	Sat. Arrival	4	50	2,008	33.6	D
		Sat. Departure		230	1,950	32.1	D
7.	SR-91 Eastbound *west of* Harbor Boulevard	Sat. Arrival	4	185	1,878	30.4	D
		Sat. Departure		21	1,850	29.8	D
8.	SR-91 Eastbound *east of* Lemon Street	Sat. Arrival	5	13	1,566	24.2	C
		Sat. Departure		61	1,560	24.1	C

Bold Volume/Density/LOS values indicate adverse service levels based on the Caltrans LOS Criteria.
pc/mi/ln = passenger cars per mile per lane (density); LOS = level of service.

Tables 4.8-36 and 4.8-37 indicate that the eight key freeway segments currently operate at LOS D or better during the Weekday PM peak hour and during the Saturday Arrival and Departure peak hours.

Per Caltrans guidelines, the following is stated in the Caltrans Guide for the Preparation of Traffic Impact Studies, December 2002:

> The following criterion is a starting point in determining when a TIS is needed. When a project:
>
> 1. Generates over 100 peak hour trips assigned to a State highway facility.
> 2. Generates 50 to 100 peak hour trips assigned to a State highway facility and noticeable delay approaching LOS C or D.

3. Generates 1 to 49 peak hour trips assigned to a State highway facility and noticeable delay approaching LOS E or F.

Based on the Caltrans criteria above and the results of the basic freeway segment analysis for Existing Weekday PM peak hour traffic conditions as presented in Table 4.8-36 it was determined that no additional analysis is needed for the eight key freeway segments located along SR-57 and SR-91 since the proposed project (academic instruction) does not generate 50 to 100 peak hour trips assigned to a state highway facility and the eight freeway segments are forecast to operate at an acceptable LOS D or better during the Weekday PM peak hour under Existing traffic conditions. It should be noted that a merge/diverge analysis is also not required for the Weekday PM peak hour (academic instruction) since the Caltrans criteria required for further analysis is not met.

Based on the Caltrans criteria above and the results of the basic freeway segment analysis for Existing Saturday Event Arrival peak hour and Saturday Event Departure peak hour traffic conditions as presented in Table 4.8-37, it was determined that no additional analysis is needed for key freeway segment no. 5 located along SR-91 since the proposed project (field event) does not generate 50 to 100 peak hour trips assigned to the state highway facility and the freeway segment is forecast to operate at an acceptable LOS C during the Saturday Event Arrival peak hour and during the Saturday Event Departure peak hour under Existing traffic conditions. Further review of Table 4.8-37 indicates that additional traffic analysis will be required for the remaining eight key freeway segments located along SR-57 and SR-91 since the proposed project would generate more than 50 peak hour trips assigned to a state highway facility during the Saturday Event Arrival peak hour or during the Saturday Event Departure peak hour.

Existing Traffic Conditions

Existing plus Project Traffic Conditions- Saturday Field Event

Table 4.8-38 summarizes the peak hour level of service results at the eight key freeway segments located along SR-57 and SR-91 for Existing plus Project traffic conditions during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour.

Table 4.8-38
Existing Plus Project Saturday Peak Hour Freeway Mainline Capacity Analysis Summary – Field Event

	Key Basic Freeway Segment	Time Period	(1) Existing Traffic Conditions			(2) Existing Plus Project Traffic Conditions			(3) Significant Impact
			Peak Hour Volume (pc/h/ln)	*Density (pc/mi/ln)*	*LOS*	*Peak Hour Volume (pc/h/ln)*	*Density (pc/mi/ln)*	*LOS*	*Yes/No*
1.	SR-57 Northbound *south of* Chapman Avenue	Sat. Arrival	1,408	21.7	C	1,441	22.2	C	No
		Sat. Departure	1,448	22.3	C	1,451	22.3	C	No
2.	SR-57 Northbound *north of* Nutwood Avenue	Sat. Arrival	1,312	20.2	C	1,318	20.3	C	No
		Sat. Departure	1,352	20.8	C	1,380	21.2	C	No
3.	SR-57 Southbound *north of* Nutwood Avenue	Sat. Arrival	1,489	22.9	C	1,515	23.4	C	No
		Sat. Departure	1,474	22.7	C	1,477	22.8	C	No
4.	SR-57 Southbound *south of* Chapman Avenue	Sat. Arrival	2,048	34.7	D	**2,061**	**35.1**	**E**	**Yes**
		Sat. Departure	2,019	33.9	D	**2,080**	**35.6**	**E**	**Yes**
6.	SR-91 Westbound *west of* Harbor Boulevard	Sat. Arrival	2,008	33.6	D	2,022	34.0	D	No
		Sat. Departure	1,950	32.1	D	2,012	33.7	D	No
7.	SR-91 Eastbound *west of* Harbor Boulevard	Sat. Arrival	1,878	30.4	D	1,928	31.6	D	No
		Sat. Departure	1,850	29.8	D	1,856	29.9	D	No
8.	SR-91 Eastbound *east of* Lemon Street	Sat. Arrival	1,566	24.2	C	1,569	24.3	C	No
		Sat. Departure	1,560	24.1	C	1,573	24.3	C	No

Bold Volume/Density/LOS values indicate adverse service levels based on the Caltrans LOS Criteria.
pc/mi/ln = passenger cars per mile per lane (density); LOS = level of service.

As shown in Table 4.8-38, with the addition of proposed project traffic, one of the eight evaluated freeway segments is forecast to operate at an unacceptable level of service during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour when compared to the LOS standards (i.e., key freeway segment no. 4, SR-57). The proposed project's contribution to the freeway system can be considered significantly impacted at this one (freeway mainline location under this traffic scenario. The remaining six freeway segments located along SR-57 and SR-91 are forecast to continue to operate at an acceptable level of service during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour under existing plus project traffic conditions.

Year 2020 Traffic Conditions

Year 2020 Cumulative plus Project Basic Freeway Segment Capacity Analysis – Saturday Field Event

Table 4.8-39 summarizes the peak hour level of service results at the eight key freeway segments located along SR-57 and SR-91 for Year 2020 Cumulative traffic conditions during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour.

Table 4.8-39
Year 2020 Cumulative Saturday Peak Hour Freeway Mainline Capacity Analysis Summary – Field Event

Key Basic Freeway Segment		Time Period	(1) Existing Traffic Conditions			(2) Year 2020 Cumulative Traffic Conditions			(3) Year 2020 Cumulative Plus Project Traffic Conditions			(4) Significant Impact
			Peak Hour Volume (pc/h/ln)	*Density (pc/mi/ln)*	*LOS*	*Peak Hour Volume (pc/h/ln)*	*Density (pc/mi/ln)*	*LOS*	*Peak Hour Volume (pc/h/ln)*	*Density (pc/mi/ln)*	*LOS*	*Yes/No*
1.	SR-57 Northbound *south of* Chapman Avenue	Sat. Arrival	1,408	21.7	C	1,436	22.1	C	1,469	22.6	C	No
		Sat. Departure	1,448	22.3	C	1,476	22.7	C	1,480	22.8	C	No
2.	SR-57 Northbound *north of* Nutwood Avenue	Sat. Arrival	1,312	20.2	C	1,339	20.6	C	1,345	20.7	C	No
		Sat. Departure	1,352	20.8	C	1,381	21.2	C	1,408	21.7	C	No
3.	SR-57 Southbound *north of* Nutwood Avenue	Sat. Arrival	1,489	22.9	C	1,521	23.5	C	1,547	23.9	C	No
		Sat. Departure	1,474	22.7	C	1,506	23.2	C	1,509	23.3	C	No
4.	SR-57 Southbound *south of* Chapman Avenue	Sat. Arrival	2,048	34.7	D	**2,088**	**35.8**	**E**	**2,102**	**36.2**	**E**	**Yes**
		Sat. Departure	2,019	33.9	D	2,059	35.0	D	**2,120**	**36.7**	**E**	**Yes**
6.	SR-91 Westbound *west of* Harbor Boulevard	Sat. Arrival	2,008	33.6	D	2,048	34.7	D	**2,061**	**35.1**	**E**	**Yes**
		Sat. Departure	1,950	32.1	D	1,988	33.1	D	2,050	34.7	D	No
7.	SR-91 Eastbound *west of* Harbor Boulevard	Sat. Arrival	1,878	30.4	D	1,918	31.3	D	1,967	32.6	D	No
		Sat. Departure	1,850	29.8	D	1,889	30.7	D	1,895	30.8	D	No
8.	SR-91 Eastbound *east of* Lemon Street	Sat. Arrival	1,566	24.2	C	1,598	24.8	C	1,601	24.9	C	No
		Sat. Departure	1,560	24.1	C	1,592	24.7	C	1,605	24.9	C	No

Bold Volume/Density/LOS values indicate adverse service levels based on the Caltrans LOS Criteria.
pc/mi/ln = passenger cars per mile per lane (density); LOS = level of service.

Year 2020 Cumulative Traffic Conditions – Saturday Field Event

Review of column 2 of Table 4.8-39 indicates that one of the eight evaluated freeway segments is forecast to operate at an unacceptable level of service during the Saturday Event Arrival peak hour under Year 2020 Cumulative traffic conditions when compared to the LOS standards (i.e., key freeway segment no. 4, SR-57). The remaining six freeway segments located along SR-57 and SR-91 are forecast to continue to operate at an acceptable level of service during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour under Year 2020 Cumulative traffic conditions.

Year 2020 Cumulative plus Project Traffic Conditions – Saturday Field Event

Review of columns 3 and 4 of Table 4.8-39 indicated that with the addition of project traffic, two of the eight evaluated freeway segments are forecast to operate at an unacceptable level of service during the Saturday Event Arrival peak hour and/or Saturday Event Departure peak hour under Year 2020 Cumulative plus Project traffic conditions when compared to the LOS standards (i.e., key freeway segment no. 4, SR-57; and key freeway segment no. 6, SR-91). The proposed project's contribution to the freeway system can be considered significantly impacted at these two freeway mainline locations under this traffic scenario. The remaining five freeway segments located along SR-57 and SR-91 are forecast to continue to operate at an acceptable level of service during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour under Year 2020 Cumulative plus Project traffic conditions.

Year 2030 Traffic Conditions

Year 2030 Buildout plus Project Basic Freeway Segment Capacity Analysis – Saturday Field Event

Table 4.8-40 summarizes the peak hour level of service results at eight key freeway segments located along SR-57 and SR-91 for Year 2030 Buildout traffic conditions during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour.

Table 4.8-40
Year 2030 Buildout Saturday Peak Hour Freeway Mainline Capacity Analysis Summary – Field Event

Key Basic Freeway Segment		Time Period	(1) Existing Traffic Conditions			(2) Year 2030 Buildout Traffic Conditions			(3) Year 2030 Buildout Plus Project Traffic Conditions			(4) Significant Impact
			Peak Hour Volume (pc/h/ln)	*Density (pc/mi/ln)*	*LOS*	*Peak Hour Volume (pc/h/ln)*	*Density (pc/mi/ln)*	*LOS*	*Peak Hour Volume (pc/h/ln)*	*Density (pc/mi/ln)*	*LOS*	*Yes/No*
1.	SR-57 Northbound *south of* Chapman Avenue	Sat. Arrival	1,408	21.7	C	1,672	26.1	D	1,703	26.7	D	No
		Sat. Departure	1,448	22.3	C	1,719	27.0	D	1,723	27.1	D	No
2.	SR-57 Northbound *north of* Nutwood Avenue	Sat. Arrival	1,312	20.2	C	1,586	24.6	C	1,591	24.7	C	No
		Sat. Departure	1,352	20.8	C	1,634	25.5	C	1,660	25.9	C	No
3.	SR-57 Southbound *north of* Nutwood Avenue	Sat. Arrival	1,489	22.9	C	1,764	28.0	D	1,789	28.4	D	No
		Sat. Departure	1,474	22.7	C	1,746	27.6	D	1,748	27.6	D	No
4.	SR-57 Southbound *south of* Chapman Avenue	Sat. Arrival	2,048	34.7	D	**2,432**	**[a]**	**F**	**2,445**	**[a]**	**F**	**Yes**
		Sat. Departure	2,019	33.9	D	**2,398**	**[a]**	**F**	**2,456**	**[a]**	**F**	**Yes**
6.	SR-91 Westbound *west of* Harbor Boulevard	Sat. Arrival	2,008	33.6	D	**2,394**	**[a]**	**F**	**2,407**	**[a]**	**F**	**Yes**
		Sat. Departure	1,950	32.1	D	**2,325**	**44.0**	**E**	**2,384**	**[a]**	**F**	**Yes**
7.	SR-91 Eastbound *west of* Harbor Boulevard	Sat. Arrival	1,878	30.4	D	**2,239**	**40.7**	**E**	**2,286**	**42.4**	**E**	**Yes**
		Sat. Departure	1,850	29.8	D	**2,209**	**39.7**	**E**	**2,214**	**39.8**	**E**	**Yes**
8.	SR-91 Eastbound *east of* Lemon Street	Sat. Arrival	1,566	24.2	C	1,860	30.0	D	1,863	30.0	D	No
		Sat. Departure	1,560	24.1	C	1,853	29.8	D	1,865	30.1	D	No

Bold Volume/Density/LOS values indicate adverse service levels based on the Caltrans LOS Criteria.
Pc/mi/ln = passenger cars per mile per lane (density); LOS = level of service; [a] = *HCS 7* software does not report a density value for mainline segments operating at LOS F.

Year 2030 Buildout Traffic Conditions – Saturday Field Event

Review of column 2 of Table 4.8-40 indicates that three of the eight evaluated freeway segments are forecast to operate at unacceptable levels of service during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour under Year 2030 Buildout traffic conditions when compared to the LOS standards (i.e., key freeway segment no. 4, SR-57; key freeway segment no. 6, SR-91; and key freeway segment no. 7, SR-91). The remaining four freeway segments located along SR-57 and SR-91 are forecast to continue to operate at an acceptable level of service during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour under Year 2030 Buildout traffic conditions.

Year 2030 Buildout plus Project Traffic Conditions – Saturday Field Event

Review of columns 3 and 4 of Table 4.8-40 indicates that with the addition of project traffic, three of the eight evaluated freeway segments are forecast to operate at an unacceptable level of service during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour under Year 2030 Buildout plus Project traffic conditions when compared to the LOS standards (i.e., key freeway segment no. 4, SR-57, key freeway segment no. 6, SR-91; and key freeway segment no. 7, SR-91). The proposed project's contribution to the freeway system can be considered significantly impacted at these three freeway mainline locations under this traffic scenario. The remaining four freeway segments located along SR-57 and SR-91 are forecast to continue to operate at an acceptable LOS during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour under Year 2030 Buildout plus Project traffic conditions.

Summary

Freeway Segment Traffic Improvements

A review of the level of service calculations summarized in Tables 4.8-34 through 4.8-40 indicates that the development of the proposed project in combination with cumulative development and ambient traffic growth is anticipated to significantly impact one of the eight freeway segments under Existing plus Project Saturday traffic conditions, two of the eight freeway segments under Year 2020 Cumulative plus Project Saturday traffic conditions and three of the eight freeway segments under Year 2030 Buildout plus Project Saturday traffic conditions. However, SR-57 and SR-91 are controlled exclusively by the State of California and there is no mechanism by which the lead agency can construct or guarantee the construction of any improvements to these freeway segments. Therefore, the proposed project's incremental impacts on these key freeway study segments are considered unmitigatable as there are no feasible mitigation measures that will reduce cumulative mainline impacts to below significance thresholds or achieve acceptable service level goals.

Freeway Merge/Diverge Ramp Junction Analysis – Saturday Field Event

A Saturday Freeway Ramp (Merge/Diverge) Analysis for the SR-57 Interchanges at Chapman Avenue and Nutwood Avenue and the SR-91 Interchanges at Harbor Boulevard and Lemon Street was conducted; a merge/diverge analysis is not required for the Weekday PM peak hour (academic instruction) since the Caltrans criteria required for further analysis is not satisfied. As discussed previously under "Caltrans Methodology," LOS D is the target level of service standard that will be utilized to assess the proposed project impacts at the state-controlled facilities.

A Freeway Merge and Diverge Segment Analysis for ramp junctions was conducted for the following eight Caltrans freeway merge and diverge segments. The eight freeway merge and diverge segments were selected for evaluation based on application of Caltrans criteria and the resultant peak hour level of service results for existing conditions.

1. SR-57 NB Off-Ramp to Chapman Avenue
2. SR-57 NB On-Ramp from Nutwood Avenue
3. SR-57 SB Off-Ramp to Nutwood Avenue
4. SR-57 SB On-Ramp from Chapman Avenue
5. SR-91 WB Off-Ramp to Lemon Street
6. SR-91 WB On-Ramp from Harbor Boulevard
7. SR-91 EB Off-Ramp to Harbor Boulevard
8. SR-91 EB On-Ramp from Lemon Street

Existing Traffic Conditions

<u>Existing plus Project Ramp Junction Analysis – Saturday Field Event</u>

Table 4.8-41 summarizes the peak hour LOS results at the eight freeway ramp junctions for Existing plus Project Saturday traffic conditions.

Table 4.8-41
Existing Plus Project Saturday Peak Hour Merge and Diverge Capacity Analysis Summary – Field Event

Key Freeway Merge or Diverge Segment		Analysis Type	Time Period	(1) Existing Traffic Conditions				(2) Existing Plus Project Traffic Conditions				(3) Significant Impact
				Freeway Pk Hr Volume	*Ramp Pk Hr Volume*	*Density (pc/mi/ln)*	*LOS*	*Freeway Pk Hr Volume*	*Ramp Pk Hr Volume*	*Density (pc/mi/ln)*	*LOS*	*Yes/No*
1.	SR-57 Northbound Off-Ramp *to* Chapman Avenue	Diverge Analysis	Sat. Arrival	7,865	789	18.6	B	8,049	973	20.1	C	No
			Sat. Departure	8,086	811	19.4	B	8,107	832	19.6	B	No
2.	SR-57 Northbound On-Ramp *from* Nutwood Avenue	Merge Analysis	Sat. Arrival	6,629	698	20.5	C	6,629	731	20.7	C	No
			Sat. Departure	6,866	689	21.0	C	6,866	842	22.2	C	No
3.	SR-57 Southbound Off-Ramp *to* Nutwood Avenue	Diverge Analysis	Sat. Arrival	6,931	626	16.3	B	7,054	749	17.4	B	No
			Sat. Departure	6,862	609	16.0	B	6,876	623	16.2	B	No
4.	SR-57 Southbound On-Ramp *from* Chapman Avenue	Merge Analysis	Sat. Arrival	6,859	767	30.7	D	6,859	817	31.1	D	No
			Sat. Departure	6,734	784	30.4	D	6,734	1,013	32.2	D	No
6.	SR-91 Westbound On-Ramp *from* Harbor Boulevard	Merge Analysis	Sat. Arrival	6,385	1,093	31.0	D	6,385	1,143	31.4	D	No
			Sat. Departure	6,226	1,035	30.0	D	6,226	1,265	31.8	D	No
7.	SR-91 Eastbound Off-Ramp *to* Harbor Boulevard	Diverge Analysis	Sat. Arrival	**6,994**	**1,082**	**35.4**	**E**	**7,179**	**1,267**	**37.2**	**E**	No
			Sat. Departure	6,891	970	34.5	D	6,912	991	34.6	D	No
8.	SR-91 Eastbound On-Ramp *from* Lemon Street	Merge Analysis	Sat. Arrival	5,912	1,380	22.1	C	5,912	1,393	22.2	C	No
			Sat. Departure	5,921	1,342	21.8	C	5,921	1,403	22.3	C	No

Bold Volume/Density/LOS values indicate adverse service levels based on the Caltrans LOS Criteria.
pc/mi/ln = passenger cars per mile per lane (density); LOS = level of service.

Existing Traffic Conditions – Saturday Field Event

Review of column 1 of Table 4.8-41 indicates that one of the eight freeway ramps currently operates at an unacceptable level of service during the Saturday Event Arrival peak hour when compared to the LOS standards (i.e., no. 7 – diverge segment). The remaining six freeway ramps currently operate at an acceptable level of service during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour.

Existing plus Project Traffic Conditions – Saturday Field Event

Review of columns 2 and 3 of Table 4.8-41 indicates that traffic associated with the proposed project will not significantly impact any of the eight freeway ramps when compared to the LOS standards and significant impact criteria specified under the Caltrans methodology. Although location no. 7 is forecast to operate at an unacceptable LOS during the Saturday Event Arrival peak hour, this location is not impacted per the significant impact criteria specified in this report, as the existing level of service is maintained. The remaining six freeway ramps are forecast to continue to operate at an acceptable level of service during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour under existing plus project traffic conditions.

Year 2020 Traffic Conditions

Year 2020 Cumulative Ramp Junction Analysis – Saturday Field Event

Table 4.8-42 summarizes the peak hour LOS results at the eight freeway ramp junctions for Year 2020 Cumulative Saturday traffic conditions.

Table 4.8-42
Year 2020 Cumulative Saturday Peak Hour Merge and Diverge Capacity Analysis Summary– Field Event

Key Freeway Merge or Diverge Segment		Analysis Type	Time Period	(1) Year 2020 Cumulative Traffic Conditions				(2) Year 2020 Cumulative Plus Project Traffic Conditions				(3) Significant Impact
				Freeway Pk Hr Volume	*Ramp Pk Hr Volume*	*Density (pc/mi/ln)*	*LOS*	*Freeway Pk Hr Volume*	*Ramp Pk Hr Volume*	*Density (pc/mi/ln)*	*LOS*	*Yes/No*
1.	SR-57 Northbound Off-Ramp *to* Chapman Avenue	Diverge Analysis	Sat. Arrival	8,023	798	19.1	B	8,207	982	20.7	C	No
			Sat. Departure	8,248	820	19.9	B	8,269	841	20.1	C	No
2.	SR-57 Northbound On-Ramp *from* Nutwood Avenue	Merge Analysis	Sat. Arrival	6,774	707	20.9	C	6,774	740	21.2	C	No
			Sat. Departure	7,015	698	21.4	C	7,015	851	22.6	C	No
3.	SR-57 Southbound Off-Ramp *to* Nutwood Avenue	Diverge Analysis	Sat. Arrival	7,079	637	16.9	B	7,202	760	17.9	B	No
			Sat. Departure	7,010	620	16.6	B	7,024	634	16.7	B	No
4.	SR-57 Southbound On-Ramp *from* Chapman Avenue	Merge Analysis	Sat. Arrival	7,002	776	31.3	D	7,002	826	31.7	D	No
			Sat. Departure	6,876	792	31.0	D	6,876	1,021	32.8	D	No
6.	SR-91 Westbound On-Ramp *from* Harbor Boulevard	Merge Analysis	Sat. Arrival	6,515	1,111	31.6	D	6,515	1,161	32.0	D	No
			Sat. Departure	6,353	1,052	30.6	D	6,353	1,282	32.4	D	No
7.	SR-91 Eastbound Off-Ramp *to* Harbor Boulevard	Diverge Analysis	Sat. Arrival	**7,141**	**1,102**	**36.1**	**E**	**7,326**	**1,287**	**37.8**	**E**	No
			Sat. Departure	**7,036**	**988**	**35.1**	**E**	**7,057**	**1,009**	**35.3**	**E**	**Yes**
8.	SR-91 Eastbound On-Ramp *from* Lemon Street	Merge Analysis	Sat. Arrival	6,039	1,399	22.6	C	6,039	1,412	22.7	C	No
			Sat. Departure	6,048	1,361	22.3	C	6,048	1,422	22.8	C	No

Bold Volume/Density/LOS values indicate adverse service levels based on the Caltrans LOS Criteria.
pc/mi/ln = passenger cars per mile per lane (density); LOS = level of service.

Year 2020 Cumulative Traffic Conditions – Saturday Field Event

Review of column 1 of Table 4.8-42 indicates that one of the eight freeway ramps is forecast to operate at an unacceptable level of service in the Year 2020 during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour (i.e., no. 7 – diverge segment). The remaining six freeway ramps are forecast to operate at an acceptable level of service under Year 2020 Cumulative traffic conditions during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour.

Year 2020 Cumulative plus Project Traffic Conditions – Saturday Field Event

Review of columns 2 and 3 of Table 4.8-42 indicates that one of the eight freeway ramps is forecast to continue to operate at an unacceptable level of service under Year 2020 Cumulative plus Project traffic conditions during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour, when compared to the LOS standards defined under the Caltrans methodology (i.e., no. 7 – diverge segment). The proposed project's contribution to the freeway system can be considered significantly impacted at this one freeway ramp under this traffic scenario. The remaining six freeway ramps are forecast to operate at an acceptable level of service during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour under Year 2020 Cumulative plus Project traffic conditions.

Year 2030 Traffic Conditions

Year 2030 Buildout Ramp Junction Analysis – Saturday Field Event

Table 4.8-43 summarizes the peak hour LOS results at the eight freeway ramp junctions for Year 2030 Buildout Saturday traffic conditions.

Table 4.8-43
Year 2030 Buildout Saturday Peak Hour Merge and Diverge Capacity Analysis Summary – Field Event

	Key Freeway Merge or Diverge Segment	Analysis Type	Time Period	(1) Year 2030 Buildout Traffic Conditions				(2) Year 2030 Buildout Plus Project Traffic Conditions				(3) Significant Impact
				Freeway Pk Hr Volume	*Ramp Pk Hr Volume*	*Density (pc/mi/ln)*	*LOS*	*Freeway Pk Hr Volume*	*Ramp Pk Hr Volume*	*Density (pc/mi/ln)*	*LOS*	*Yes/No*
1.	SR-57 Northbound Off-Ramp *to* Chapman Avenue	Diverge Analysis	Sat. Arrival	9,832	984	23.8	C	10,016	1,168	25.3	C	No
			Sat. Departure	10,108	1,008	24.7	C	10,129	1,029	24.9	C	No
2.	SR-57 Northbound On-Ramp *from* Nutwood Avenue	Merge Analysis	Sat. Arrival	8,289	1,035	25.8	C	8,289	1,068	26.1	C	No
			Sat. Departure	8,583	1,025	26.5	C	8,583	1,178	27.6	C	No
3.	SR-57 Southbound Off-Ramp *to* Nutwood Avenue	Diverge Analysis	Sat. Arrival	8,645	849	21.4	C	8,768	972	22.4	C	No
			Sat. Departure	8,553	830	21.0	C	8,567	844	21.2	C	No
4.	SR-57 Southbound On-Ramp *from* Chapman Avenue	Merge Analysis	Sat. Arrival	**8,460**	**1,073**	**36.7**	**F**	**8,460**	**1,123**	**37.0**	**F**	**Yes**
			Sat. Departure	**8,307**	**1,091**	**36.3**	**F**	**8,307**	**1,320**	**38.0**	**F**	**Yes**
6.	SR-91 Westbound On-Ramp *from* Harbor Boulevard	Merge Analysis	Sat. Arrival	**7,948**	**1,437**	**37.1**	**F**	**7,948**	**1,487**	**37.4**	**F**	**Yes**
			Sat. Departure	**7,742**	**1,372**	**35.9**	**E**	**7,742**	**1,602**	**37.7**	**F**	**Yes**
7.	SR-91 Eastbound Off-Ramp *to* Harbor Boulevard	Diverge Analysis	Sat. Arrival	**8,778**	**1,393**	**42.1**	**E**	**8,963**	**1,578**	**43.7**	**E**	No
			Sat. Departure	**8,659**	**1,270**	**41.1**	**E**	**8,680**	**1,291**	**41.2**	**E**	**Yes**
8.	SR-91 Eastbound On-Ramp *from* Lemon Street	Merge Analysis	Sat. Arrival	7,385	1,730	25.9	C	7,385	1,743	26.0	C	No
			Sat. Departure	7,389	1,689	25.6	C	7,389	1,750	26.1	C	No

Bold Volume/Density/LOS values indicate adverse service levels based on the Caltrans LOS Criteria.
Pc/mi/ln = passenger cars per mile per lane (density); LOS = level of service.

Year 2030 Buildout Traffic Conditions – Saturday Field Event

Review of column 1 of Table 4.8-43 indicates that three of the eight freeway ramps are forecast to operate at an unacceptable level of service in the Year 2030 during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour (i.e., no. 4 – merge segment; no. 6 – merge segment; and no. 7 – diverge segment). The remaining four freeway ramps are forecast to operate at an acceptable level of service under Year 2030 Buildout traffic conditions during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour.

Year 2030 Buildout plus Project Traffic Conditions – Saturday Field Event

Review of columns 2 and 3 of Table 4.8-43 indicates that three of the eight freeway ramps are forecast to continue to operate at an unacceptable level of service under Year 2030 Buildout plus Project traffic conditions during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour, when compared to the LOS standards defined under the Caltrans methodology (i.e., no. 4 – merge segment; no. 6 – merge segment; and no. 7 – diverge segment). The proposed project's contribution to the freeway system can be considered significantly impacted at these three freeway ramps under this traffic scenario. The remaining four freeway ramps are forecast to operate at an acceptable LOS during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour under Year 2030 Buildout plus Project traffic conditions.

Summary

A review of the LOS calculations summarized in Tables 4.8-41 through 4.8-43 indicates that the development of the proposed project in combination with cumulative development and ambient traffic growth would not significantly impact any of the eight freeway ramp junctions under Existing plus Project Saturday traffic conditions, one of the eight freeway ramp junctions under Year 2020 Cumulative plus Project Saturday traffic conditions, and three of the eight freeway ramp junctions under Year 2030 Buildout plus Project Saturday traffic conditions. However, SR-57 and SR-91 are controlled exclusively by the state and there is no mechanism by which the lead agency can construct or guarantee the construction of any improvements to these ramp junctions. Therefore, the proposed project's incremental impacts on these freeway ramp junctions are considered unmitigatable as there are no feasible mitigation measures that will reduce cumulative impacts to below significance thresholds or achieve acceptable LOS goals.

Area-Wide Traffic Improvements

For those intersections where, based on City criteria, projected traffic volumes are expected to result in significant impacts, the following analysis identifies roadway improvements that change the intersection geometry to increase capacity. These capacity improvements involve roadway widening and/or restriping to reconfigure (add lanes) to specific approaches of an intersection. The identified improvements are expected to achieve the following:

- Mitigate the impact of existing traffic, proposed project traffic, and future non-project (ambient traffic growth and cumulative project) traffic
- Improve LOS to an acceptable range and/or to pre-project conditions

Existing plus Project Recommended Improvements

Existing plus Project Recommended Improvements – Weekly Academic Instruction

The results of the intersection capacity analysis presented previously in Table 4.8-8 shows that the proposed project (academic instruction) would not significantly impact any of the 31 key study intersections under the "Existing plus Project Weekday" traffic scenario. Given that there are no significant project impacts, no improvements are required to address this traffic scenario.

Existing plus Project Recommended Improvements – Saturday Field Event

The results of the intersection capacity analysis presented previously in Table 4.8-9 shows that the proposed project (field event) would significantly impact 3 of the 31 key study intersections under the "Existing plus Project Saturday" traffic scenario. The following mitigation is recommended to reduce the significant impacts that would result under the existing plus project Saturday traffic scenario to less than significant:

- **No. 4 – Lemon Street at Berkeley Avenue:** Implement a Traffic Management Plan (TMP) during the event departure period to minimize traffic impacts at the intersection. The TMP, which would be subject to approval by the City of Fullerton, will include the positioning of police department staff at the impacted location to manage traffic flow. Additionally, dependent upon traffic conditions on any given day, other components of the TMP available to assist police department staff that could be deployed include intersection signal timing adjustments to improve traffic flow, routing of traffic via traffic cones/delineators, and/or the placement of programmable changeable message signs, or PCMS. Additional details regarding the TMP are provided below.
- **No. 28 – Berkeley Avenue at College Driveway No. 1:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.
- **No. 29 – Berkeley Avenue at College Driveway No. 2:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.

Figure 4.8-56 illustrates the staffing component of the TMP and related traffic movements under the Existing plus Project Saturday scenario.

Existing plus Project Recommended Improvements – Friday Field Event

The results of the intersection capacity analysis presented previously in Table 4.8-11 shows that the proposed project (field event) would significantly impact 4 of the 31 key study intersections under the "Existing plus Project Friday" traffic scenario. The following mitigation is recommended to reduce the significant impacts identified under the Existing plus Project Friday traffic scenario to less than significant:

- **No. 4 – Lemon Street at Berkeley Avenue:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.
- **No. 27 – Lemon Street at Fullerton College Drive:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.
- **No. 28 – Berkeley Avenue at College Driveway No. 1:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.
- **No. 29 – Berkeley Avenue at College Driveway No. 2:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.

Figure 4.8-57 illustrates the staffing component of the TMP and related traffic movements under the Existing plus Project Friday scenario.

Year 2020 plus Project Recommended Improvements

Year 2020 plus Project Recommended Improvements – Weekday Academic Instruction

The results of the intersection capacity analysis presented previously in Table 4.8-13 shows that the proposed project (academic instruction) would not significantly impact any of the 31 key study intersections under the "Year 2020 plus Project Weekday" traffic scenario. Given that there are no significant project impacts, no improvements are required to address this traffic scenario.

Year 2020 plus Project Recommended Improvements – Saturday Field Event

The results of the intersection capacity analysis presented previously in Table 4.8-15 shows that the proposed project (field event) would significantly impact three of the 31 key study intersections under the "Year 2020 plus Project Saturday" traffic scenario. The following mitigation is recommended to reduce the significant impacts identified under the Year 2020 plus project Saturday traffic scenario to less than significant:

- **No. 4 – Lemon Street at Berkeley Avenue:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.

- **No. 28 – Berkeley Avenue at College Driveway No. 1:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.
- **No. 29 – Berkeley Avenue at College Driveway No. 2:** Implement a TMP as during the event departure period to minimize traffic impacts at the intersection.

Figure 4.8-58 illustrates the staffing component of the TMP and related traffic movements under the Year 2020 plus Project Saturday scenario.

<u>Year 2020 plus Project Recommended Improvements – Friday Field Event</u>

The results of the intersection capacity analysis presented previously in Table 4.8-17 shows that the proposed project (field event) would significantly impact 4 of the 31 key study intersections under the "Year 2020 plus Project Friday" traffic scenario. The following mitigation is recommended to reduce the significant impacts identified under the Year 2020 plus Project Friday scenario to less than significant:

- **No. 4 – Lemon Street at Berkeley Avenue:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.
- **No. 27 – Lemon Street at Fullerton College Drive:** Implement a TMP as described above during the event arrival period and event departure period to minimize traffic impacts at the intersection.
- **No. 28 – Berkeley Avenue at College Driveway No. 1**: Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.
- **No. 29 – Berkeley Avenue at College Driveway No. 2:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.

Figure 4.8-59 illustrates the staffing component of the TMP and related traffic movements under the Year 2020 plus Project Friday scenario.

Year 2030 Buildout plus Project Recommended Improvements

<u>Year 2030 Buildout plus Project Recommended Improvements – Weekday Academic Instruction</u>

The results of the intersection capacity analysis presented previously in Table 4.8-19 shows that the proposed project (i.e., academic instruction) would not significantly impact any of the 31 key study intersections under the "Year 2030 Buildout plus Project Weekday" traffic scenario. Given that there are no significant project impacts, no improvements are required to address this traffic scenario.

Year 2030 Buildout plus Project Recommended Improvements – Saturday Field Event

The results of the intersection capacity analysis presented previously in Table 4.8-21 shows that the proposed project (field event) would significantly impact 4 of the 31 key study intersections under the "Year 2030 Buildout plus Project Saturday" traffic scenario. The following mitigation is recommended to reduce the significant impacts identified under the Year 2030 buildout plus project Saturday traffic scenario to less than significant:

- **No. 4 – Lemon Street at Berkeley Avenue:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.
- **No. 12 – State College Boulevard at Chapman Avenue:** Widen and restripe the westbound approach of Chapman Avenue to provide a second westbound left-turn lane. Modify the existing traffic signal as necessary. Right-of-way acquisition will be required. The installation of these improvements is subject to the approval of the City of Fullerton.
- **No. 28 – Berkeley Avenue at College Driveway No. 1:** Implement a TMP as described above during the event arrival period and event departure period to minimize traffic impacts at the intersection.
- **No. 29 – Berkeley Avenue at College Driveway No. 2:** Implement a TMP as described above during the event departure period to minimize traffic impacts at the intersection.

Figure 4.8-60 illustrates the staffing component of the TMP and related traffic movements, as well as recommended road improvements under the Year 2030 Buildout plus Project Saturday scenario.

Existing plus Project Recommended Improvements-Caltrans Methodology

Existing plus Project Recommended Improvements – Weekly Academic Instruction

The results of the intersection capacity analysis presented previously in Table 4.8-24 shows that the proposed project (academic instruction) would not significantly impact any of the six state-controlled study intersections under the "Existing plus Project Weekday" traffic scenario (Caltrans Methodology). Given that there are no significant project impacts, no improvements are required to address this traffic scenario.

Existing plus Project Recommended Improvements – Saturday Field Event

The results of the intersection capacity analysis presented previously in Table 4.8-25 shows that the proposed project (field event) would not significantly impact any of the six state-controlled study intersections under the "Existing plus Project Saturday" traffic scenario (Caltrans Methodology). Given that there are no significant project impacts, no improvements are required to address this traffic scenario.

Year 2020 plus Project Recommended Improvements – Caltrans Methodology

Year 2020 plus Project Recommended Improvements – Weekday Academic Instruction

The results of the intersection capacity analysis presented previously in Table 4.8-26 shows that the proposed project (academic instruction) would not significantly impact any of the six state-controlled study intersections under the "Year 2020 plus Project Weekday" traffic scenario (Caltrans Methodology). Given that there are no significant project impacts, no improvements are required to address this traffic scenario.

Year 2020 plus Project Recommended Improvements – Saturday Field Event

The results of the intersection capacity analysis presented previously in Table 4.8-27 shows that the proposed project (field event) would not significantly impact any of the six state-controlled study intersections under the "Year 2020 plus Project Saturday" traffic scenario (Caltrans Methodology). Given that there are no significant project impacts, no improvements are required to address this traffic scenario.

Year 2030 Buildout plus Project Recommended Improvements – Caltrans Methodology

Year 2030 Buildout plus Project Recommended Improvements – Weekday Academic Instruction

The results of the intersection capacity analysis presented previously in Table 4.8-28 shows that the proposed project (i.e., academic instruction) would significantly impact one of the six state-controlled study intersections under the "Year 2030 Buildout plus Project Weekday" traffic scenario. The following are improvements recommended to mitigate the Year 2030 Buildout plus Project Weekday significant traffic impacts to less than significant:

- **No. 14 – SR-57 NB Ramps at Chapman Avenue:** Widen and/or restripe the westbound approach of Chapman Avenue to provide a third westbound through lane. Modify the existing traffic signal as necessary. Right-of-way acquisition would be required (Mitigation Measure (MM)-TRA-4). The installation of these improvements is subject to the approval of Caltrans and the City of Fullerton.

Year 2030 Buildout plus Project Recommended Improvements – Saturday Field Event

The results of the intersection capacity analysis presented previously in Table 4.8-29 shows that the proposed project (field event) would not significantly impact any of the six state-controlled study intersections under the "Year 2030 Buildout plus Project Saturday" traffic scenario (Caltrans Methodology). Given that there are no significant project impacts, no improvements are required to address this traffic scenario.

Figure 4.8-61 illustrates the Year 2030 Buildout plus Project Weekday (Caltrans methodology) recommended improvements.

Traffic Management Plan

As described above and further set forth below, MM-TRA-2 requires implementation of a TMP during the Friday and Saturday events to reduce the identified significant intersection impacts to less than significant.

As to Saturday events, Figure 4.8-62 presents the staffing component of the TMP recommended during the Saturday field event arrival period for key study intersection no. 28. The figure identifies the potential location of police department staff that will be stationed at this location to direct traffic flows. The project traffic movements are also shown for reference. As part of the TMP, police department staff will monitor traffic congestion at this location to help minimize any traffic queues along Berkeley Avenue. Should any traffic congestion or queues occur on Berkeley Avenue during the event arrival period, police department staff controlling the intersection will direct traffic flows in a manner to reduce or minimize the traffic congestion and queues. Depending on traffic conditions on any given day, other components of the event TMP available to assist police department staff that could be deployed include routing of traffic via traffic cones/delineators as necessary, and/or placement of programmable changeable message signs, or PCMS.

Figure 4.8-63 presents the TMP staffing component recommended during the Saturday field event departure period for key study intersections no 4, 28 and 29. The figure identifies the potential location of police department staff that will be stationed at these locations to direct traffic flows. The project traffic movements are also shown for reference. As part of the TMP, police department staff will monitor traffic congestion at these three locations to minimize any traffic queues along Berkeley Avenue and Lemon Street. Should any traffic congestion or queues occur on Berkeley Avenue and Lemon Street during the event departure period, police department staff controlling the intersections will direct traffic flows in a manner to reduce or minimize the traffic congestion and queues. For the intersection of Lemon Street/Berkeley Avenue (i.e., key study intersection no. 4), other components of the event TMP available to assist police department staff that could be deployed dependent upon traffic conditions on a specific day include intersection signal timing adjustments to improve traffic flow, routing of traffic via traffic cones/delineators and/or programmable changeable message signs (PCMS). For the intersections of Berkeley Avenue/College Driveway No. 1 and Berkeley Avenue/College Driveway No. 2 (i.e., key study intersections no. 28 and 29, respectively), other components of the event TMP available to assist police department staff dependent upon conditions include routing of traffic via traffic cones/delineators and/or PCMS.

As shown on Tables 4.8-9, 4.8-15, and 4.8-21, with implementation of the TMP, which includes those strategies available to traffic control personnel as described above, the impacts at the key study intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1 and Berkeley Avenue/College Driveway No. 2 (i.e., key study intersections nos. 4, 28 and 29, respectively) during Saturday events will be reduced to less than significant and these three (3) intersections will operate at an acceptable level of service under existing plus project, Year 2020 plus project, and Year 2030 buildout plus project traffic conditions. Please see the "with improvements" columns of Tables 4.8-9, 4.8-15, and 4.8-21, which illustrate the resulting levels of service with implementation of the TMP.

With respect to the Friday field events, Figure 4.8-64 presents the staffing component of the TMP recommended during the Friday field event departure to key study intersections no. 4, 27, 28, and 29. The figure identifies the potential location of police department staff that will be stationed at these locations to direct traffic flows. The project traffic movements are also shown for reference. As part of the TMP, police department staff will monitor traffic congestion at these four locations to help minimize any traffic queues along Berkeley Avenue and Lemon Street. Should any traffic congestion or queues occur on Berkeley Avenue and Lemon Street during the event departure period, police department staff controlling the intersections will direct traffic flows in a manner to reduce or minimize the traffic congestion and queues. For the intersections of Lemon Street/Berkeley Avenue and Lemon Street/Fullerton College Drive (i.e., key study intersections no. 4 and no. 27, respectively), and depending upon traffic conditions on a given day, other components of the event TMP available to assist police department staff that could be deployed include intersection signal timing adjustments to improve traffic flow, routing of traffic via traffic cones/delineators, and/or placement of programmable changeable message signs (PCMS). For the intersections of Berkeley Avenue/College Driveway No. 1 and Berkeley Avenue/College Driveway No. 2 (i.e., key study intersections no. 28 and 29, respectively), other TMP components to assist police department staff include routing of traffic via traffic cones/delineators and/or PCMS.

As shown on Tables 4.8-11 and 4.8-17, with implementation of the TMP, the impacts during Friday field events at the key study intersections of Lemon Street/Berkeley Avenue, Lemon Street/Fullerton College Drive, Berkeley Avenue/College Driveway No. 1 and Berkeley Avenue/College Driveway No. 2 (i.e., key study intersections nos. 4, 27, 28, and 29, respectively) will be reduced to less than significant and these four (4) intersections will operate at an acceptable level of service under existing plus project and Year 2020 plus project traffic conditions. Please see the "with improvements" columns of Tables 4.8-11 and 4.8-17, which illustrate the resulting levels of service with implementation of the TMP.

Project-Related Fair Share Contribution

The transportation impacts associated with the development of the proposed project were analyzed based on the Existing plus Project, Year 2020, and Year 2030 scenarios. As summarized above, the development of the proposed project is anticipated to result in significant impacts at four key study intersections under the Existing plus Project scenario, three key study intersections under the Year 2020 scenario, and at five key study intersections under the Year 2030 scenario; the intersection of SR-57 NB Ramps/Chapman Avenue (i.e., key study intersection no. 14) is only impacted under the Caltrans methodology.

The proposed project is fully responsible for implementation of the mitigation necessary to reduce the identified significant impacts under the existing plus project scenario, and would be expected to pay a proportional "fair-share" of the improvement costs of the impacted intersections under the Year 2020 and Year 2030 scenarios in order to mitigate the project's significant cumulative impacts. The City of Fullerton has a Citywide Traffic Impact Fee, pursuant to Chapter 21.30 of the City's Municipal Code – Fees for Traffic Impact Mitigation.

Year 2020 Project-Related Fair Share Contribution

Given that the Year 2020 Saturday recommended mitigation measures for the three impacted key study intersections consist of the implementation of a TMP, the proposed project's contribution will be 100.0% for all three locations to offset the Year 2020 Saturday project impacts.

Year 2030 Project-Related Fair Share Contribution

Table 4.8-44 presents the percentage of net project traffic that would be added at the study intersections impacted under the Year 2030 buildout scenario (weekday and Saturday).

Table 4.8-44
Year 2030 Buildout Project Fair Share Contribution

Key Intersection		Impacted Time Period	(1) Existing Traffic	(2) Year 2030 Buildout Traffic	(3) Year 2030 Buildout Plus Project Traffic	(4) Project Percentage Share
4.	Lemon Street at Berkeley Avenue	Sat. Departure	Traffic Management Plan		100.0%	
12.	State College Boulevard at Chapman Avenue	Sat. Arrival Sat. Departure	2,665 2,768	4,470 4,583	5,033 5,185	23.8% 24.9%
14.	SR-57 NB Ramps at Chapman Avenue	Weekday PM	3,477	4,708	4,716	0.6%
28.	Berkeley Avenue at College Driveway No. 1	Sat. Arrival Sat. Departure	Traffic Management Plan		100.0%	
29.	Berkeley Avenue at College Driveway No. 2	Sat. Departure	Traffic Management Plan		100.0%	

Project Percentage Share (4) = (Column (3) – Column (2)) / (Column (3) – Column (1)).

As shown in Table 4.8-44, the proposed project's fair-share contribution to the Year 2030 weekday and Saturday project impacts ranges between 0.6% and 100.0%.

As previously discussed under Area-Wide Traffic Improvements above, implementation of improvements at State College Boulevard at Chapman Avenue would reduce Year 2030 Buildout plus Project Saturday traffic conditions; the project's fair share contribution totals 24.9% (MM-TRA-3). This fair share contribution would be applied to the Citywide Traffic Impact Fee, pursuant to Chapter 21.30 of the City's Municipal Code – Fees for Traffic Impact Mitigation. However, the installation of these improvements is subject to the approval of the City of Fullerton as the intersection is within the City's jurisdiction. Accordingly, since the proposed project cannot guarantee that these improvements will be implemented, for purposes of this EIR the impact is considered significant and unavoidable.

Additionally, implementation of improvements at SR-57 NB Ramps at Chapman Avenue would reduce Year 2030 Buildout plus Project Weekday (Caltrans) traffic conditions; the project's fair share contribution would be 0.6% (see MM-TRA-4). The installation of these improvements is subject to the approval of Caltrans and the City of Fullerton as the improvements are within the jurisdiction of these agencies. Accordingly, since the proposed project cannot guarantee that these improvements ill be implemented, for purposes of this EIR, the impact is considered significant and unavoidable.

Transit, Roadway, Bicycle, and Pedestrian

Pedestrian circulation would continue to be provided via the existing public sidewalks located along Berkeley Avenue within the vicinity of Sherbeck Field, which connect to the existing driveways along Berkeley Avenue and to the campus internal walkways.

Existing bikeways provide access along Berkeley Avenue in both directions between Chapman Avenue and Lemon Street. In addition, public transit bus service is provided by OCTA in the proposed project area. Five bus stops are located along Lemon Street between Berkeley Avenue and Wilshire Avenue, west of the college campus. Four bus stops are located along Chapman Avenue between Lemon Street and Berkeley Avenue, south of the college campus.

The proposed project would not physically preclude implementation of any regional or local policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities. Therefore, impacts associated with alternative transportation policies, plans, programs, and facilities would be less than significant, and no mitigation is required.

Would the project result in inadequate emergency access?

Vehicular access to the parking lots adjacent to Sherbeck Field (i.e., student parking lots 4, 5, and 6) would continue to be provided from the existing unsignalized driveways located along Berkeley Avenue (i.e., Centennial Way/Berkeley Avenue (key study intersection no. 26), Berkeley Avenue/College Driveway No. 1 (key study intersection no. 28), and Berkeley Avenue/College Driveway No. 2 (key study intersection no. 29)); key study intersection no. 29 (i.e., Berkeley Avenue/College Driveway No. 2) was assumed to only provide egress movements from the campus in the Year 2030, consistent with the Fullerton College Master Plan Traffic Study. As such, the proposed project would not adversely affect emergency access. In addition, consistent with state and local fire codes, adequate turning radius and vertical clearance would be maintained on internal driveways, roads, drive aisles, and parking lots. Therefore, impacts associated with emergency access would be less than significant.

4.8.5 Cumulative Analysis

The geographic scope of the cumulative transportation impacts is the study area shown in Figure 4.8-1.

The analysis of future conditions (Year 2020 and Year 2030) presented above takes into account existing traffic, ambient growth, and cumulative projects traffic. The cumulative traffic projections for Year 2020 account for existing traffic volumes, increases in the existing traffic volumes due to overall regional growth, and traffic generated by specific development projects expected to be constructed by the Year 2020 in the vicinity of the project study area. Similar to the approach in forecasting Year 2020 traffic volumes, Year 2030 peak hour background traffic volumes were forecast based on application of growth rates provided by the City of Fullerton to existing traffic volumes, and by further adding traffic volumes from all future cumulative projects (i.e., buildout of the City).

Under the Year 2020 plus Project traffic conditions, as presented above, the proposed project would result in significant cumulative impacts at four of the 31 key study intersections. The remaining 27 key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project-generated traffic under Year 2020 traffic conditions. With implementation of MM-TRA-2, cumulative impacts to the four key study intersections would be reduced to less than significant.

Under the Year 2030 Buildout plus Project traffic conditions, the proposed project would result in significant cumulative impact at four of the 31 key study intersections. Although the intersection of Harbor Boulevard/Orangethorpe Avenue is forecast to operate at unacceptable LOS F during the Saturday Event Arrival peak hour and Saturday Event Departure peak hour with the addition of project traffic, the addition of project trips is not anticipated to worsen or further degrade the LOS. The remaining 26 key study intersections are forecast to continue to operate at an acceptable

LOS with the addition of project-generated traffic under Year 2030 Buildout traffic conditions. As shown in Table 4.8-21, implementation of the TMP at the intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 would improve the intersections' LOS operation to an acceptable level (MM-TRA-2). Additionally, Table 4.8-21 indicates implementation of improvements at the impacted key study intersection of State College Boulevard/Chapman Avenue would completely offset the impact of project traffic. However, because the implementation of improvements proposed cannot be guaranteed within the jurisdiction of the City of Fullerton, this cumulative impact would be significant and unavoidable (MM-TRA-3).

Under the Caltrans methodology, Year 2030 Buildout plus Project traffic conditions would result in significant cumulative impacts at one of the six state-controlled Caltrans intersections. The remaining five state-controlled study intersections are forecast to continue to operate at acceptable LOS D or better with the addition of project generated traffic in the Year 2030. As shown in Table 4.8-28, the implementation of improvements at the impacted state-controlled intersection of the SR-57 NB Ramps/Chapman Avenue would completely offset the impact of the proposed project. However, because the implementation of improvements at a Caltrans intersection is not guaranteed and are not within the jurisdiction of the District, this cumulative impact is significant and unavoidable (MM-TRA-4).

Adequate storage is provided at the off-ramps for all six state-controlled study intersections under Existing plus Project, Year 2020 plus Project, and Year 2030 Buildout plus Project traffic conditions during the weekday PM peak hour, Saturday Event Arrival peak hour, and Saturday Event Departure peak hour. Therefore, the proposed project's contribution to impacts at the off-ramps would not be cumulatively considerable.

The development of the proposed project in combination with cumulative development and ambient traffic growth is anticipated to significantly impact one of the eight freeway segments under Existing plus Project Saturday traffic conditions, two of the eight freeway segments under Year 2020 Cumulative plus Project Saturday traffic conditions, and three of the eight freeway segments under Year 2030 Buildout plus Project Saturday traffic conditions. The three segments forecast to operate at an unacceptable level of service during a Saturday Field Event in Year 2030 are key freeway segment no. 4, SR-57 at Chapman, key freeway segment no. 6, westbound SR-91 west of Harbor Boulevard; and key freeway segment no. 7, eastbound SR-91 west of Harbor Boulevard. The proposed project's incremental impacts to these key freeway study segments are considered significant and unavoidable as there are no feasible mitigation measures available that will reduce cumulative mainline impacts to below significance thresholds or achieve acceptable service level goals.

Additionally, the development of the proposed project in combination with cumulative development and ambient traffic growth would significantly impact one of the eight freeway ramps forecast to operate at an unacceptable level of service in the Year 2020 during the Saturday Event peak hours (i.e., no. 7 –diverge segment). Three of the eight freeway ramps are forecast to operate at an unacceptable level of service in the Year 2030 during the Saturday Event peak hours (i.e., no. 4 – merge segment; no. 6 – merge segment; and no. 7 – diverge segment). The proposed project's contribution to the freeway system can be considered significantly impacted at these three freeway ramps. In sum, the proposed project would have cumulatively considerable transportation impacts.

4.8.6 Mitigation Measures

MM-TRA-1 Construction Management Plan Criteria: To ensure impacts to the surrounding street system are less than significant, the North Orange County Community College District, in coordination with the City of Fullerton, shall, prior to the commencement of construction activities, develop a Construction Management Plan to be implemented during project construction. The Construction Management Plan shall include the following components:

- Implement traffic control for any street closure, detour, or other disruption to traffic circulation.
- Identify the routes that construction vehicles will utilize to access the site for the delivery of construction materials to minimize to the extent feasible traffic-related impacts, traffic controls and detours, and proposed construction phasing plan for the project.
- Specify the hours during which transport activities can occur and methods to minimize construction-related impacts to adjacent streets.
- Require that the hauling or transport of oversize loads be limited to the non-peak hours of 9:00 a.m. to 4:00 p.m. only, Monday through Friday, unless approved otherwise by the City Engineer.
- Use of local collector street (as defined by Exhibit 6 of The Fullerton Built Environment) by construction vehicles shall be prohibited.
- Haul trucks entering or exiting public streets shall at all times yield to public traffic.
- All construction-related parking and staging of vehicles shall be kept out of the adjacent public roadways and occur on site.
- The Construction Management Plan shall meet standards established in the current *California Manual on Uniform Traffic Control Devices* as well as City of Fullerton requirements.

MM-TRA-2 The North Orange County Community College District shall implement a Traffic Management Plan (TMP) during the Friday and Saturday field event arrival and departure periods, as applicable, at the intersections of Lemon Street/Berkeley Avenue, Lemon Street/Fullerton College Drive, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2. The TMP shall be implemented in coordination with the City of Fullerton and shall include, as necessary: the placement of police department staff at the affected intersections to manage traffic flow; intersection signal timing adjustments to further improve traffic flow; routing of traffic via traffic cones/delineators; and/or the implementation of programmable changeable message signs.

MM-TRA-3 Prior to 2030, the North Orange County Community College District shall pay its proportional "fair share" (24.9%) of the costs to implement the following improvements at the intersection of State College Boulevard/Chapman Avenue: Widen and/or restripe the westbound approach of Chapman Avenue to provide a second westbound left-turn lane; And modify the existing traffic signal as necessary.

This fair share contribution would be applied to the Citywide Traffic Impact Fee, pursuant to Chapter 21.30 of the City's Municipal Code – Fees for Traffic Impact Mitigation. However, in order to implement the necessary improvements, right-of-way acquisition will be required. Because such property acquisition may not be feasible, and because the intersection is outside the jurisdiction and control of the District, for purposes of this EIR, the impacts at this intersection are considered significant and unavoidable.

MM-TRA-4 Prior to 2030, the North Orange County Community College District shall pay its proportional "fair share" (0.6%) of the costs to implement the following improvements at the intersection of the State Route (SR) 57 Northbound (NB) Ramps and Chapman Avenue: widen and/or restripe the westbound approach of Chapman Avenue to provide a third westbound through lane; and, modify the existing traffic signal as necessary.

In order to implement the necessary improvements, right-of-way acquisition will be required. In regards to the improvements at the Caltrans intersection, it is unknown at this time whether fair-share funds would be provided to the City or if the fair share would be paid directly to Caltrans, For this reason, and because such property acquisition may not be feasible, and because the intersection is outside the jurisdiction and control of the District, for purposes of this EIR, the impacts at this intersection are considered significant and unavoidable.

4.8.7 Level of Significance After Mitigation

MM-TRA-1 is proposed to ensure impacts to the surrounding street system are kept a minimum during project construction. With implementation of MM-TRA-1, construction impacts would be less than significant.

MM-TRA-2 is proposed to mitigate impacts associated with the conflict of an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance or the circulation system for the following intersections: Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, Berkeley Avenue/College Driveway No. 2, and Lemon Street at Fullerton College Drive, under the Existing plus Project Saturday, Existing plus Project Friday, Year 2020 plus Project Saturday, Year 2020 plus Project Friday, and Year 2030 Buildout plus Project Saturday traffic scenarios. The implementation of improvements (i.e., Traffic Management Plan) at the impacted key study intersections of Lemon Street/Berkeley Avenue, Berkeley Avenue/College Driveway No. 1, Berkeley Avenue/College Driveway No. 2, and Lemon Street at Fullerton College Drive will improve the intersections level of service operation to an acceptable level. Although implementation of improvements at these intersections would sufficiently mitigate the impact of project traffic, the proposed project cannot guarantee that these improvements would be implemented by the City of Fullerton. Therefore, impacts are significant and unavoidable.

MM-TRA-3 is proposed to mitigate the Year 2030 Buildout plus Project Saturday traffic scenario at the intersection of the State College Boulevard/Chapman Avenue. This fair share contribution would be applied to the Citywide Traffic Impact Fee, pursuant to Chapter 21.30 of the City's Municipal Code – Fees for Traffic Impact Mitigation. Although implementation of improvements at State College Boulevard/Chapman Avenue would sufficiently mitigate the impact of project traffic, the proposed project cannot guarantee that these improvements, which are located in the City of Fullerton will be implemented. Therefore, impacts are significant and unavoidable.

MM-TRA-4 is proposed to mitigate Year 2030 Buildout plus Project Weekday traffic scenario under the Caltrans methodology at the state-controlled intersection SR-57 NB Ramps at Chapman Avenue. Although implementation of improvements at the impacted state-controlled intersection of the SR-57 NB Ramps/Chapman Avenue would sufficiently mitigate the impact of project traffic, the proposed project cannot guarantee that these improvements, which are located in the City of Fullerton and/or also under the jurisdiction of Caltrans, will be implemented. Therefore, impacts are significant and unavoidable.

4.8.8 References

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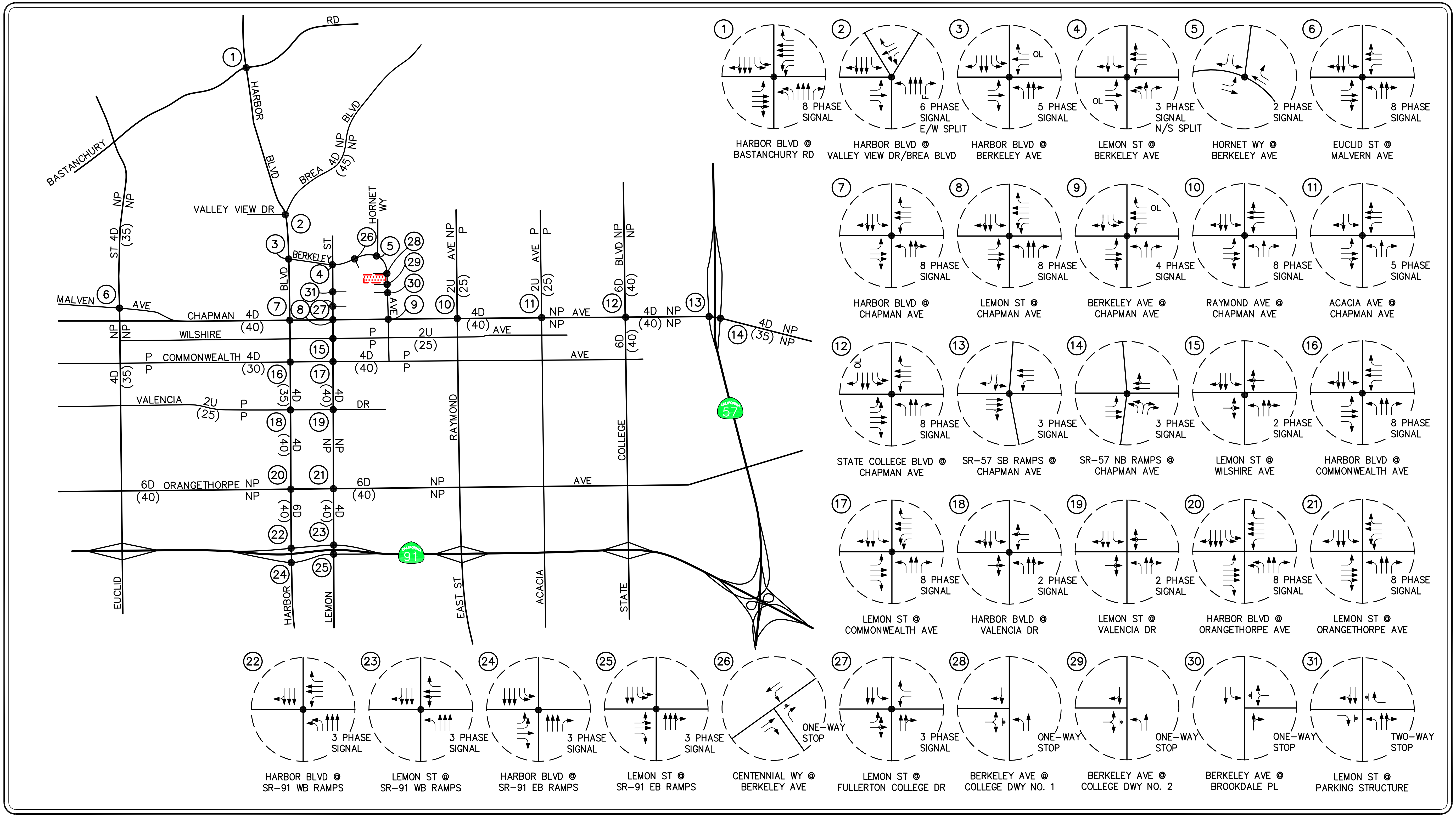

KEY

= APPROACH LANE ASSIGNMENT
= TRAFFIC SIGNAL, = STOP SIGN
P = PARKING, NP = NO PARKING
U = UNDIVIDED, D = DIVIDED
OL = OVERLAP, F = FREE RIGHT
2 = NUMBER OF TRAVEL LANES
(XX)= POSTED SPEED LIMIT (MPH)
= PROJECT SITE

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-1

Existing Roadway Conditions and Intersection Controls

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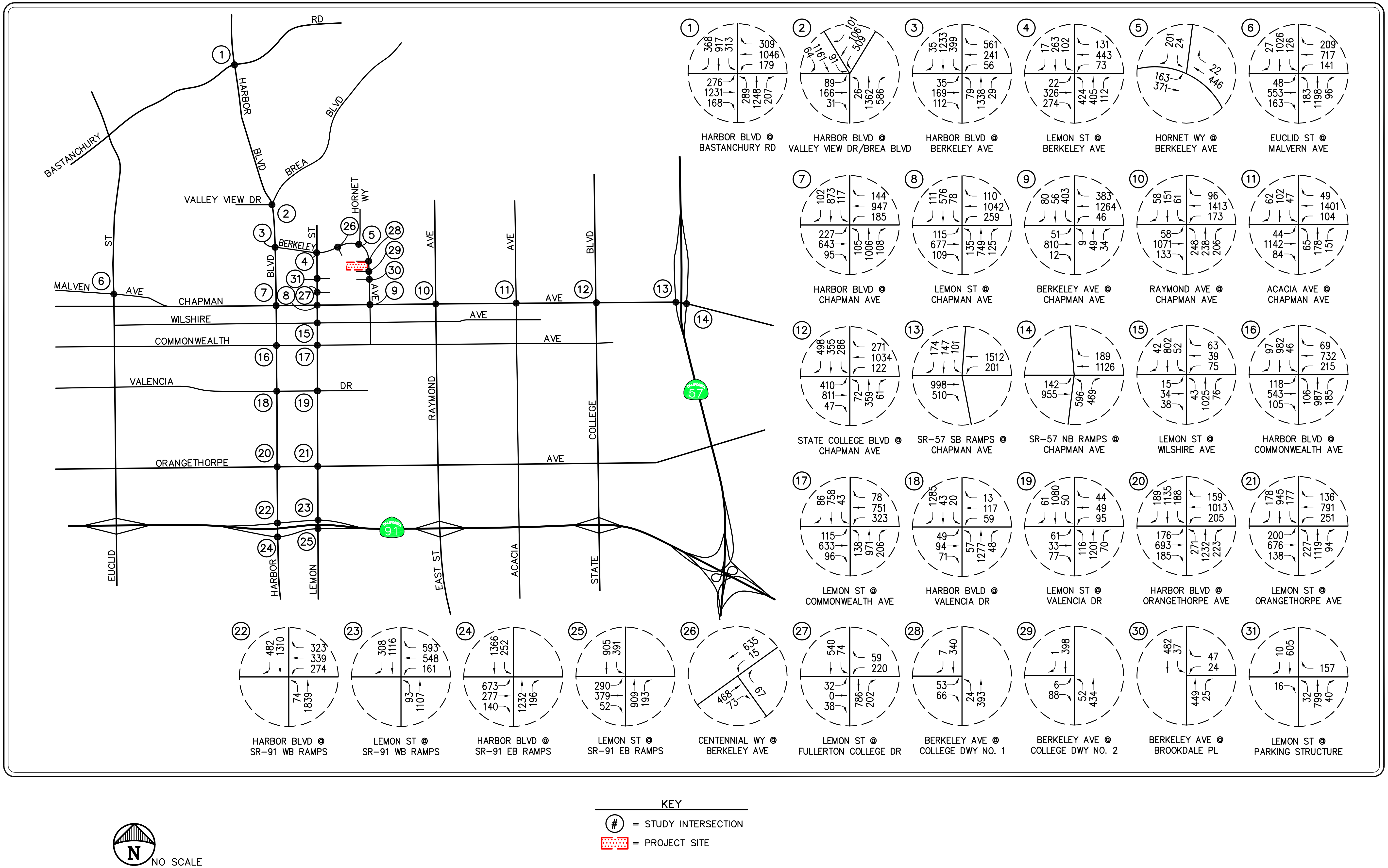

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-2

Existing Weekday PM Peak Hour Traffic Volumes

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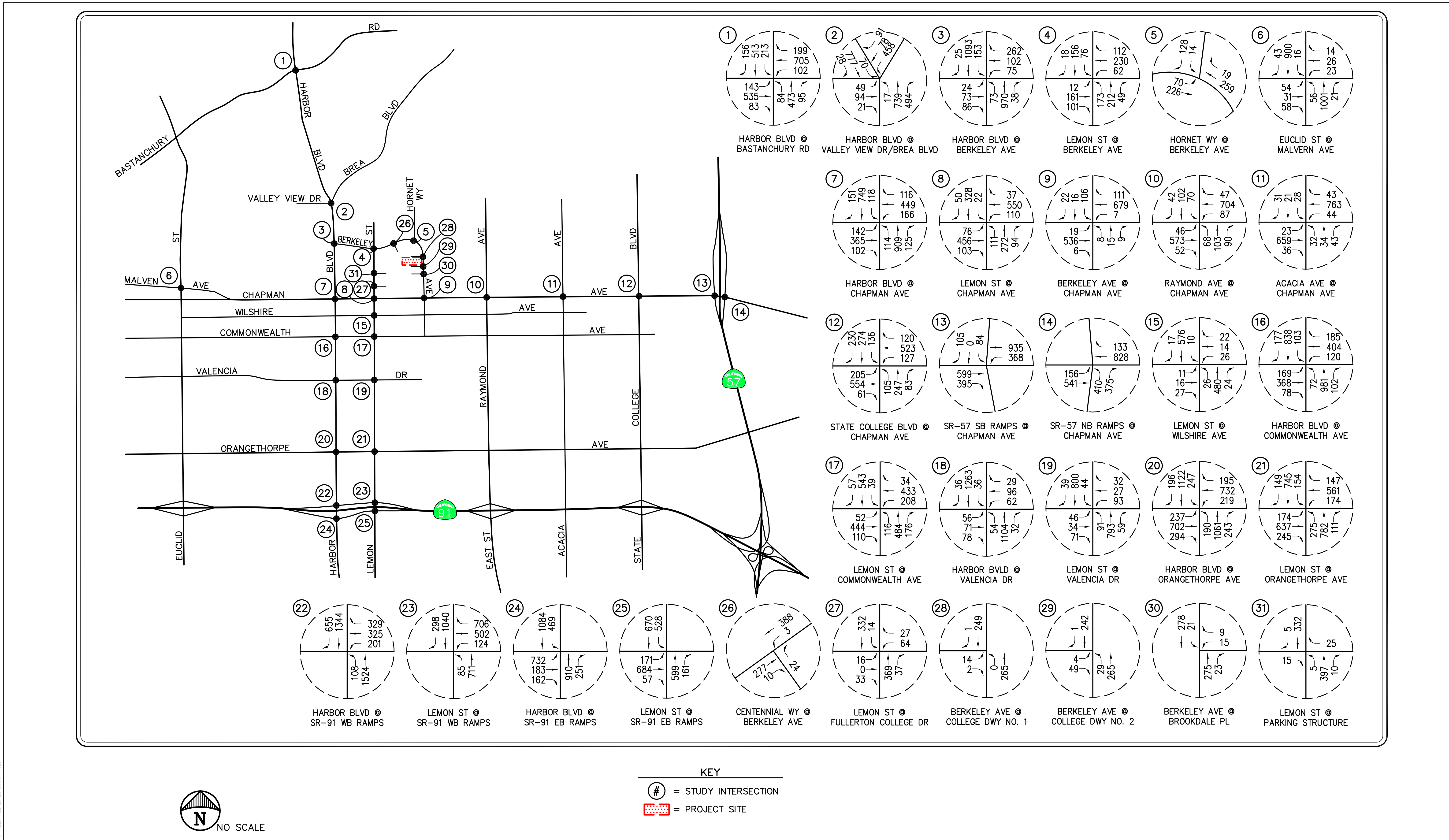

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-3

Existing Saturday Event Arrival Period Peak Hour Traffic Volumes

Sherbeck Field Improvements Project Draft Environmental Impact Report

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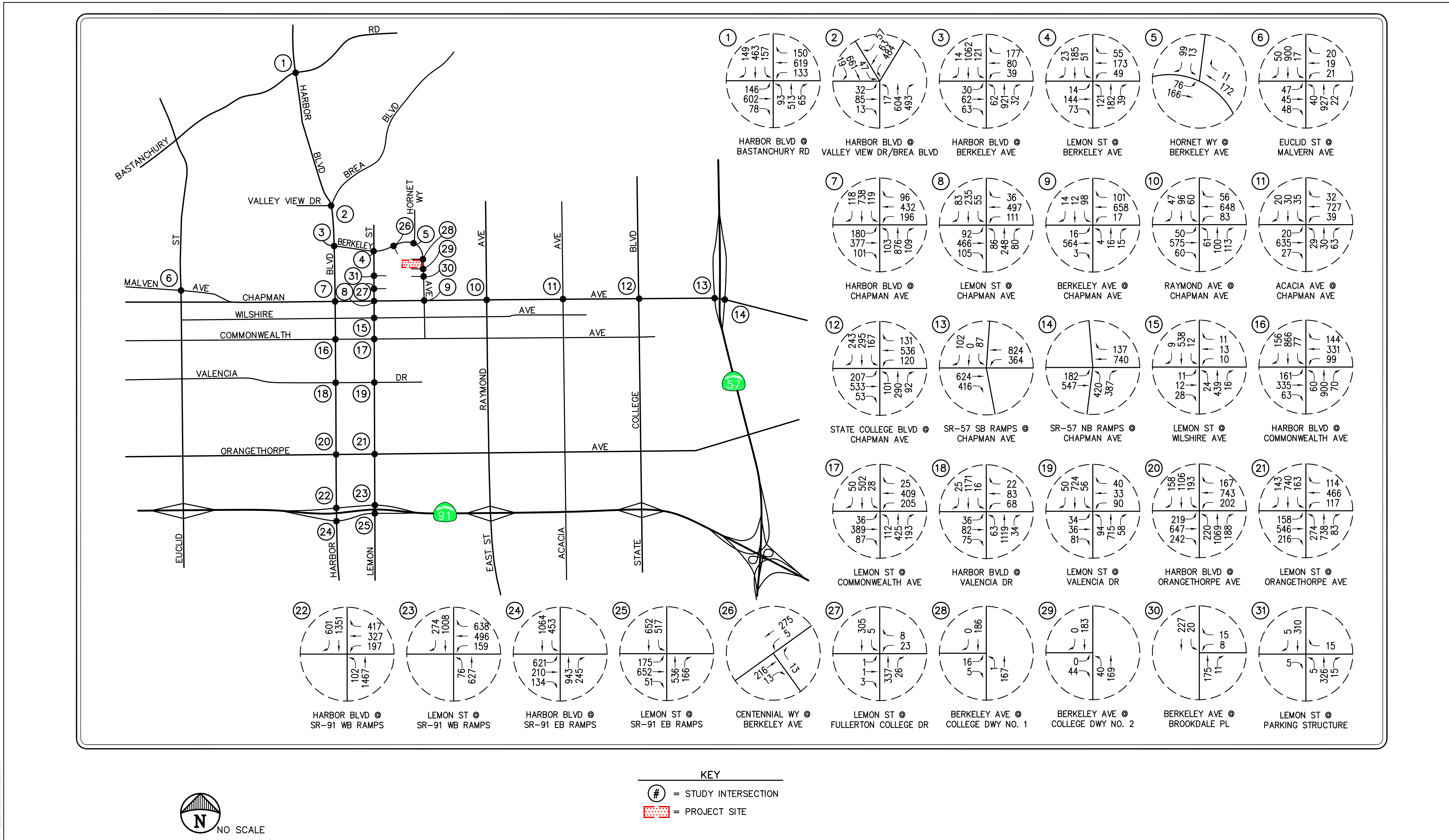

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-4

Existing Saturday Event Departure Period Peak Hour Traffic Volumes

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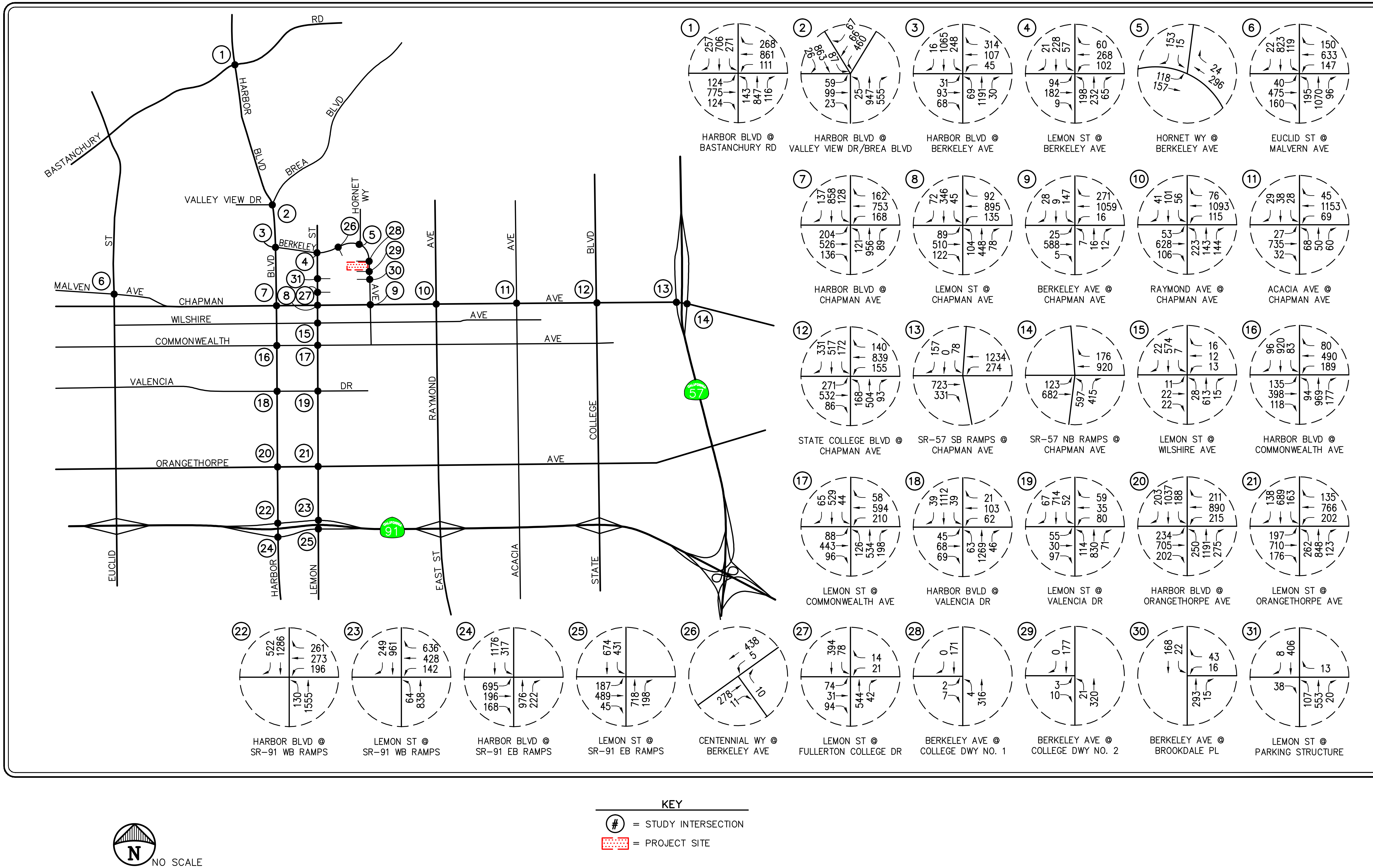

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-5

Existing Friday Event Arrival Period Peak Hour Traffic Volumes

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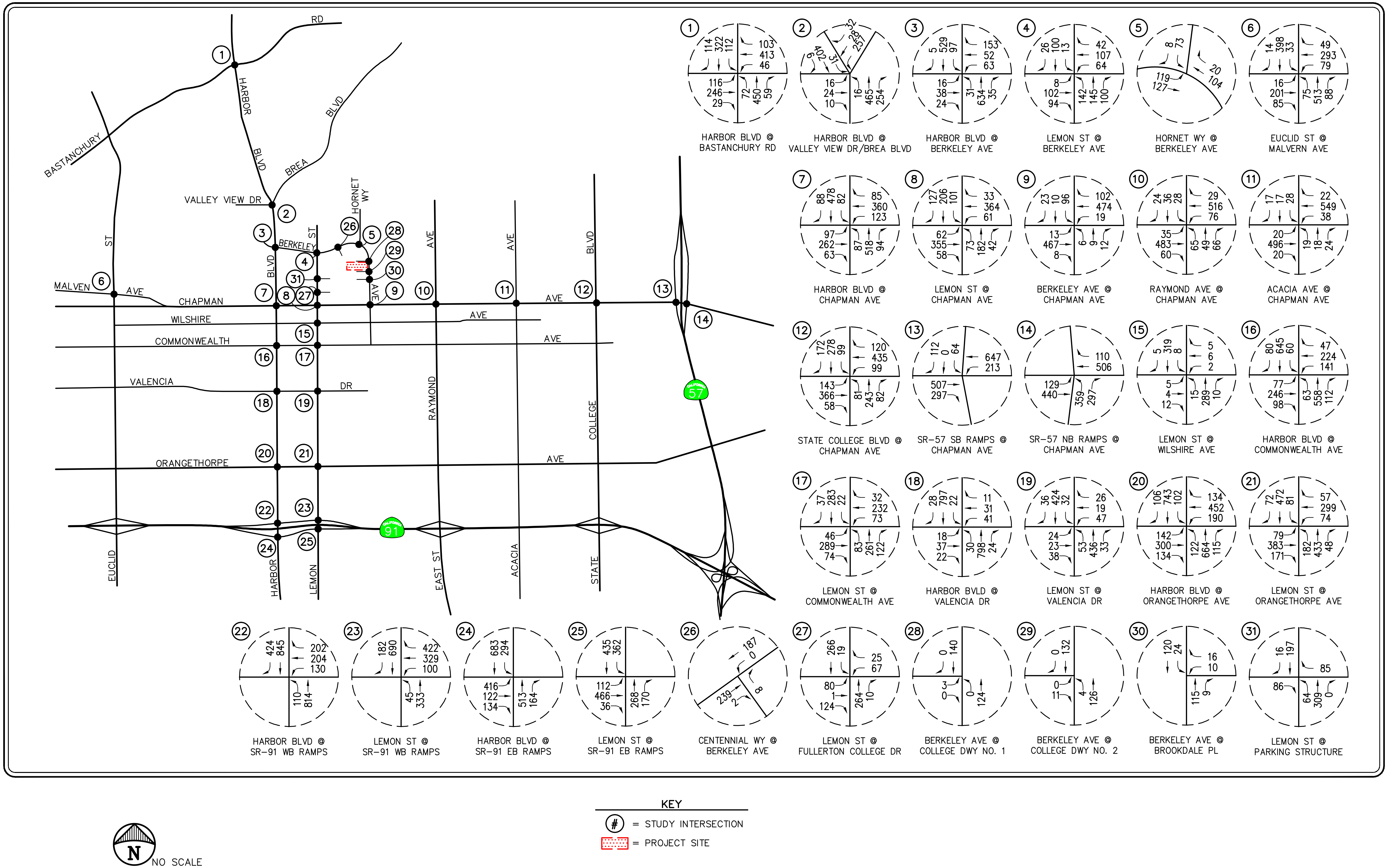

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-6

Existing Friday Event Departure Period Peak Hour Traffic Volumes

Sherbeck Field Improvements Project Draft Environmental Impact Report

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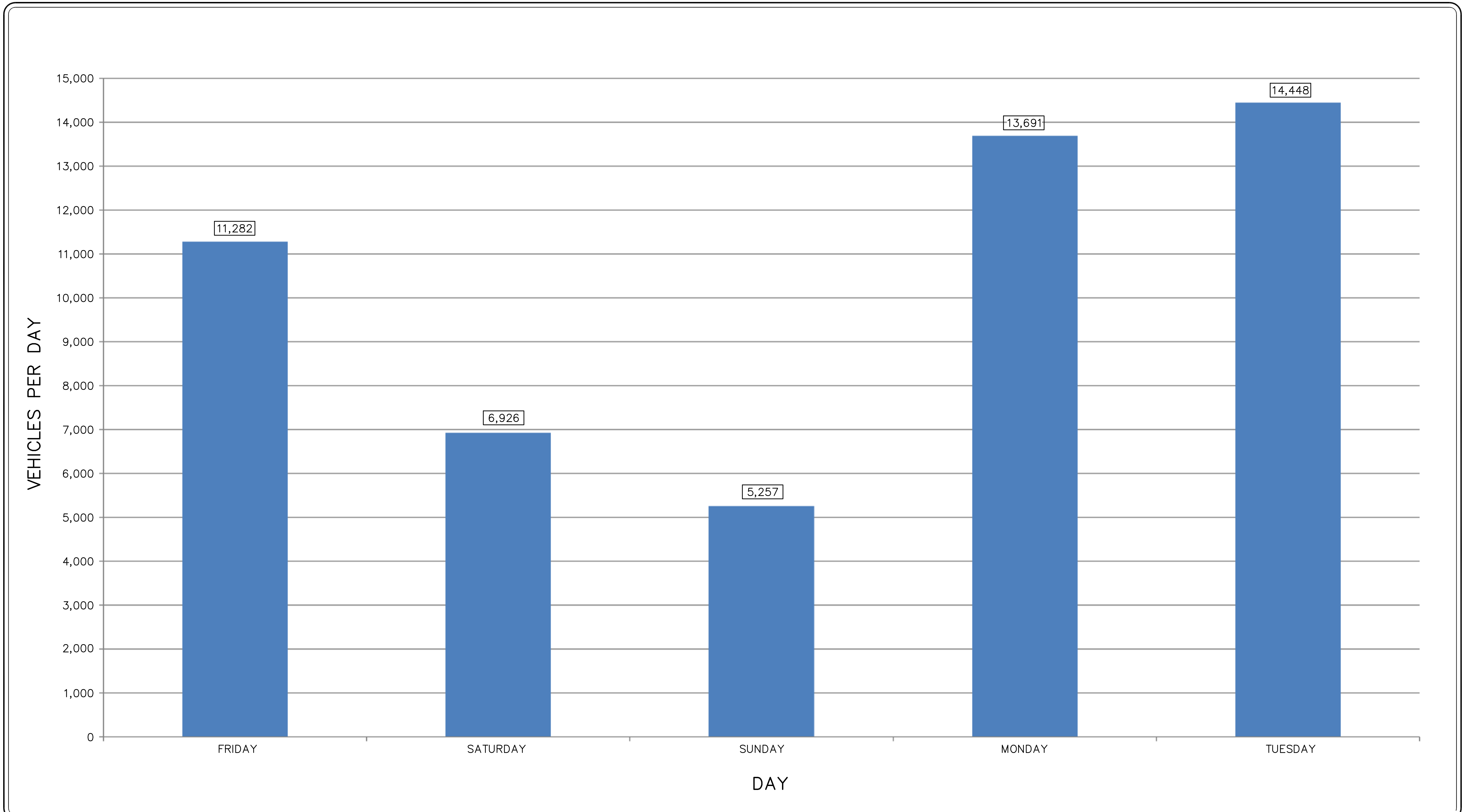

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-7

Existing Daily Profile for Berkeley Avenue East of Lemon Street

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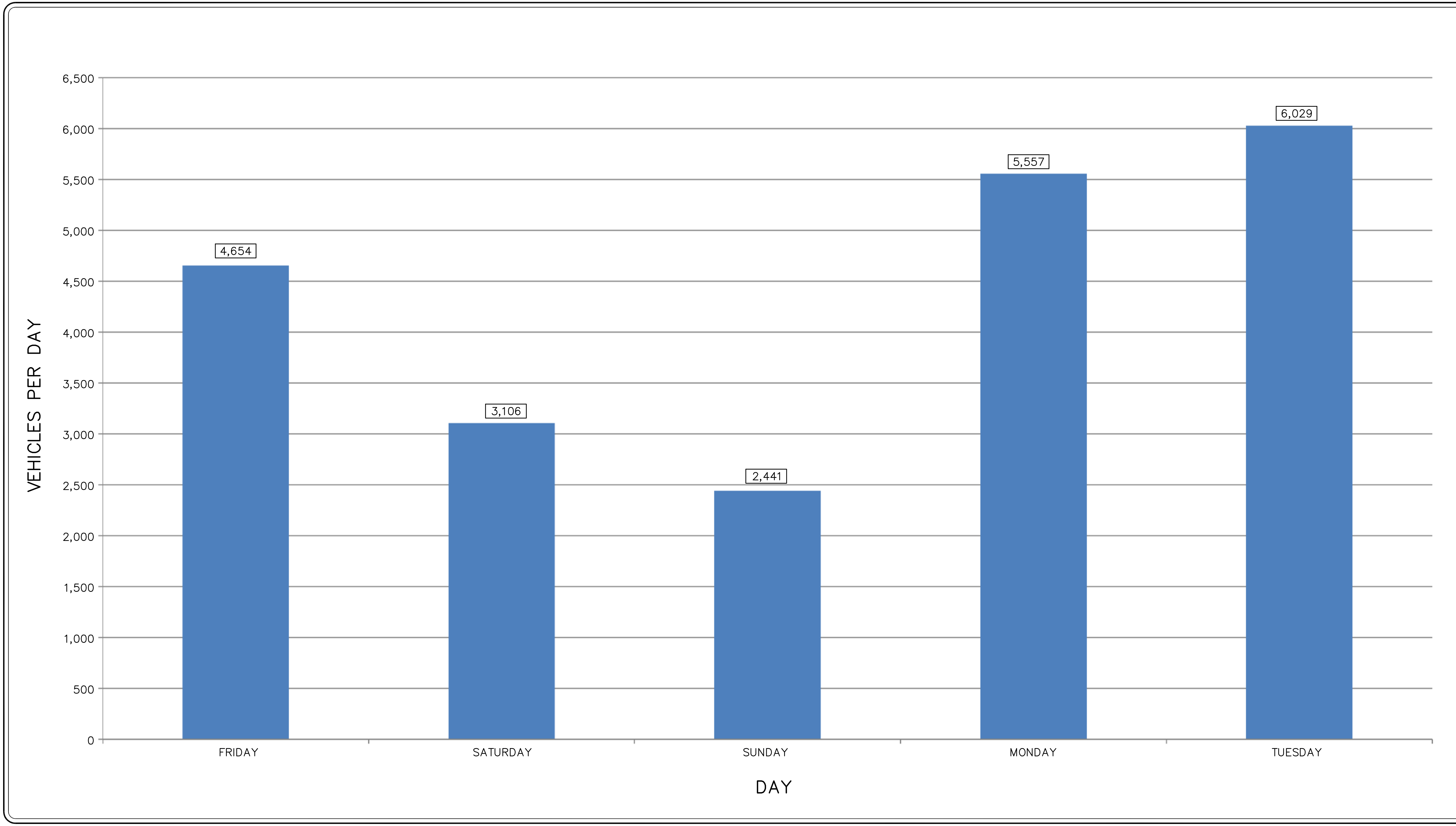

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-8

Existing Daily Profile for Hornet Way North of Berkeley Avenue

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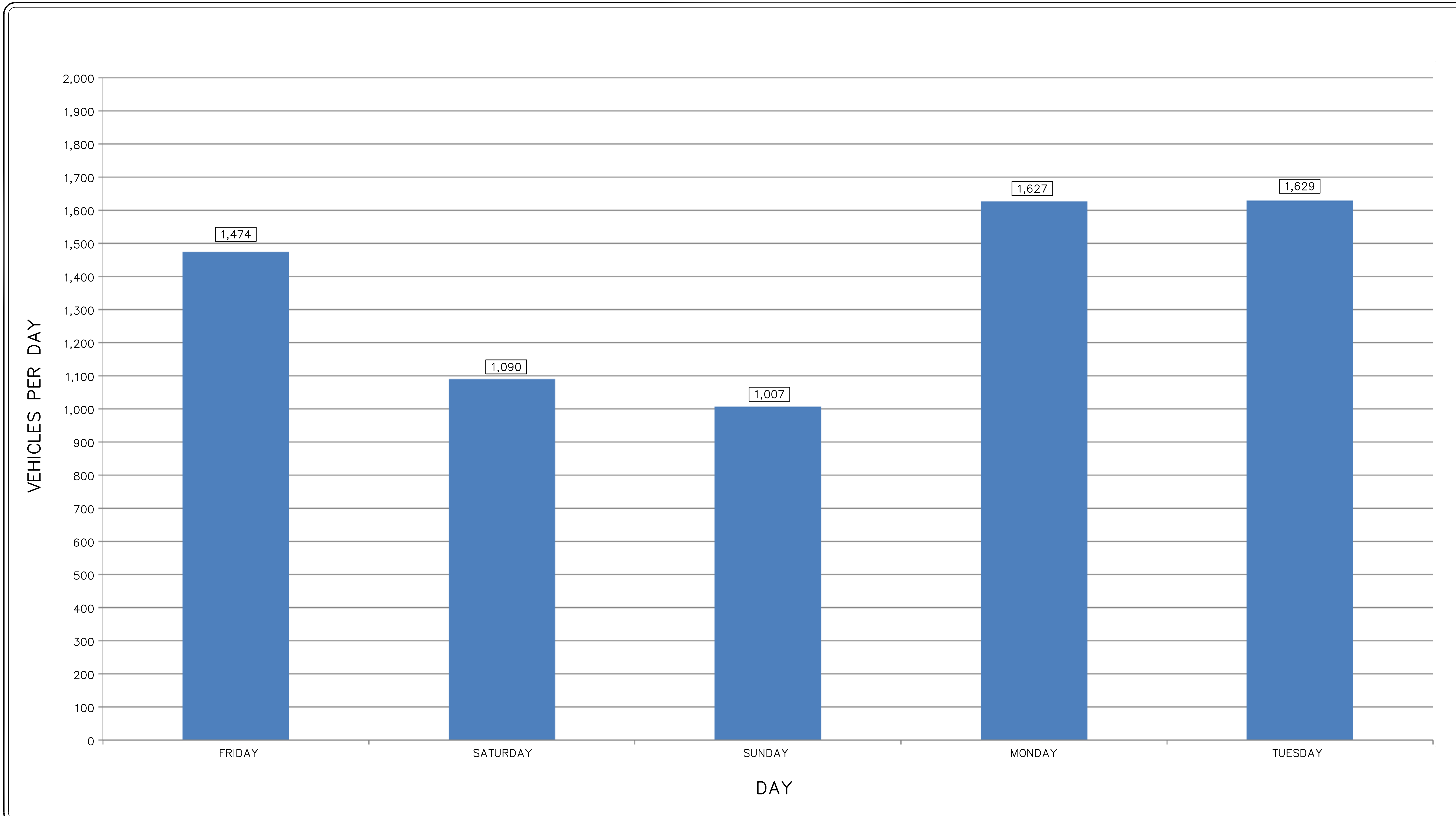

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-9

Existing Daily Profile for Brookdale Place East of Berkeley Avenue

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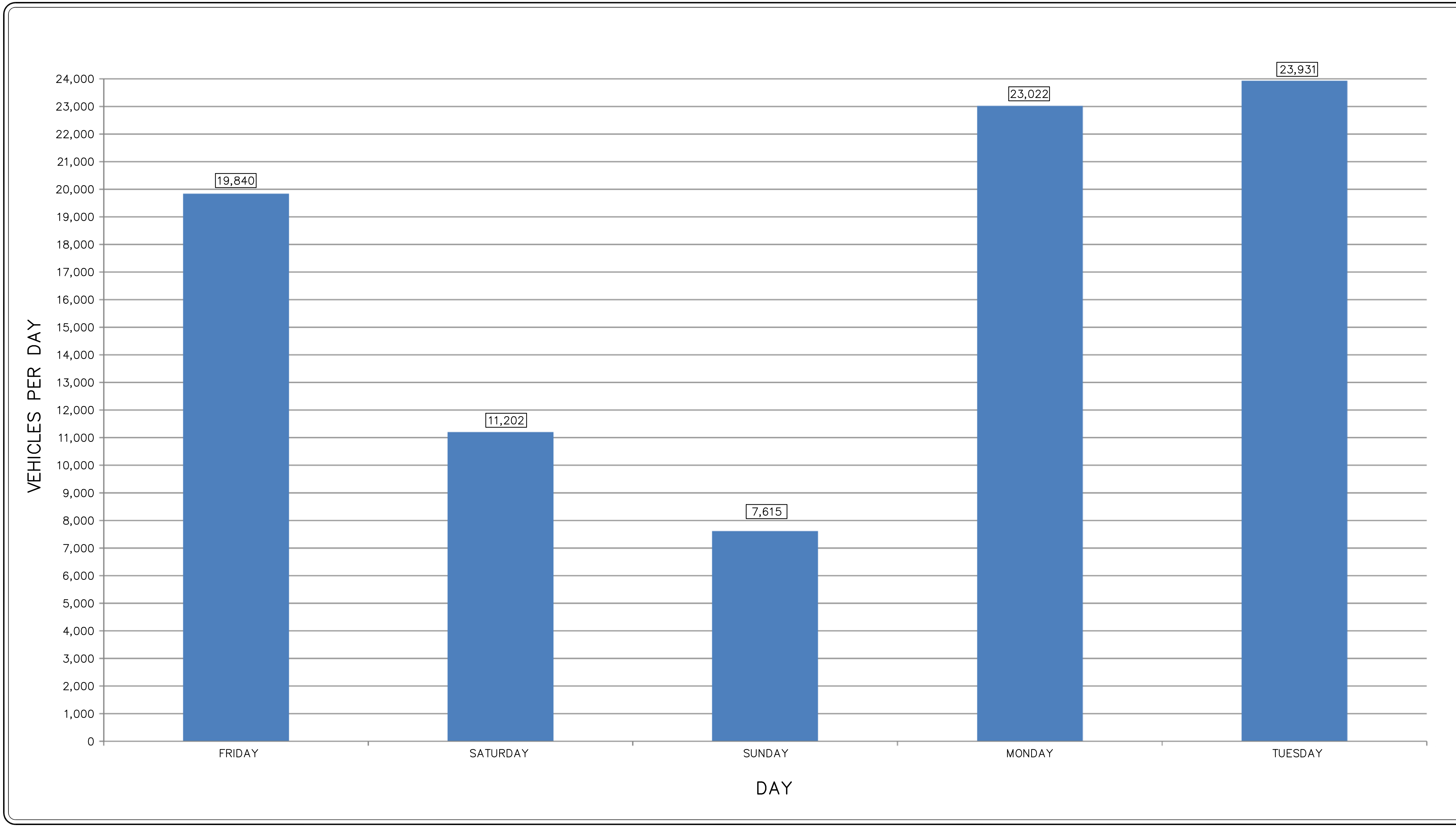

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-10

Existing Daily Profile for Lemon Street North of Chapman Avenue

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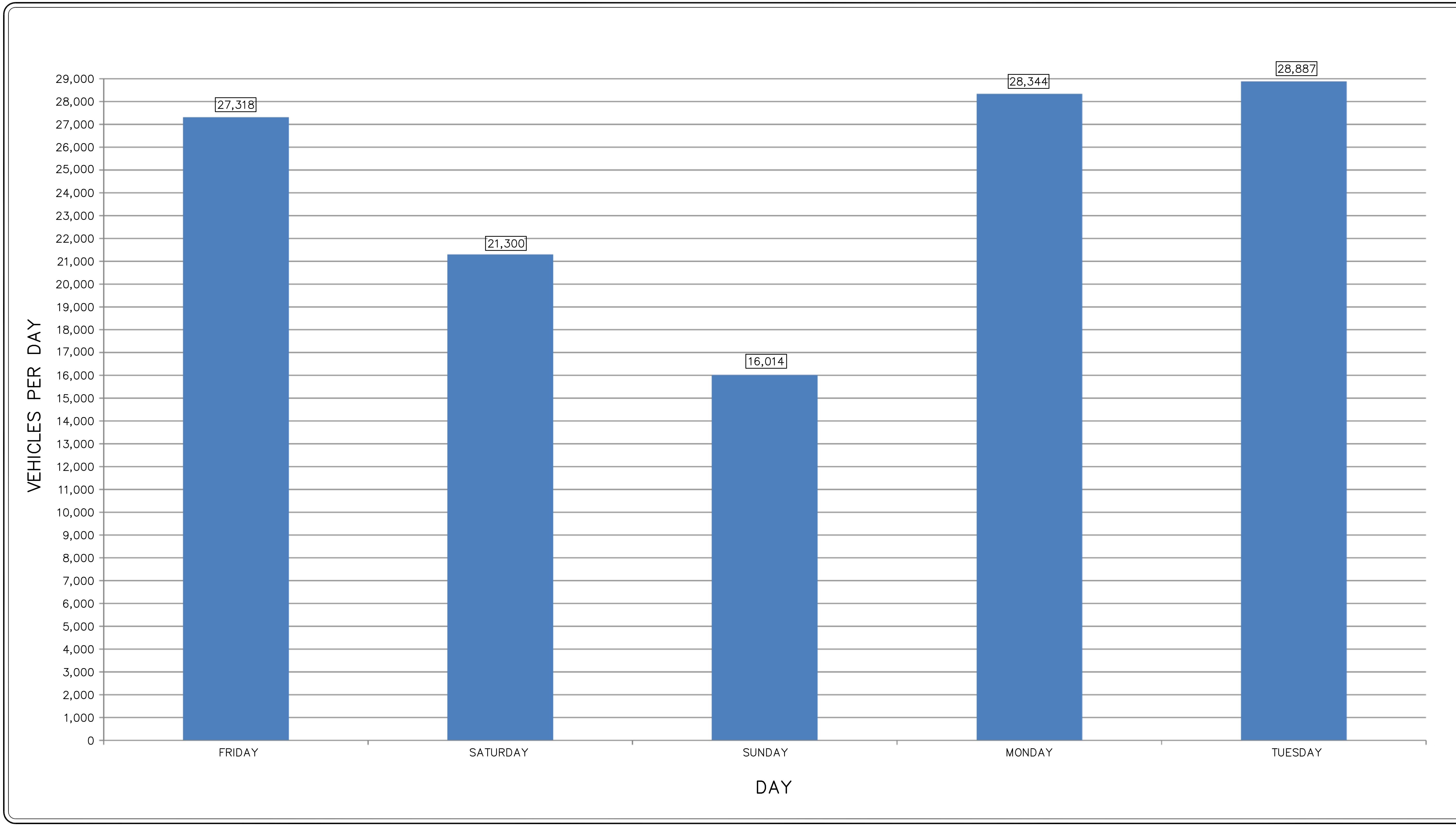

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-11

Existing Daily Profile for Chapman Avenue between Lemon Street and Berkeley Avenue

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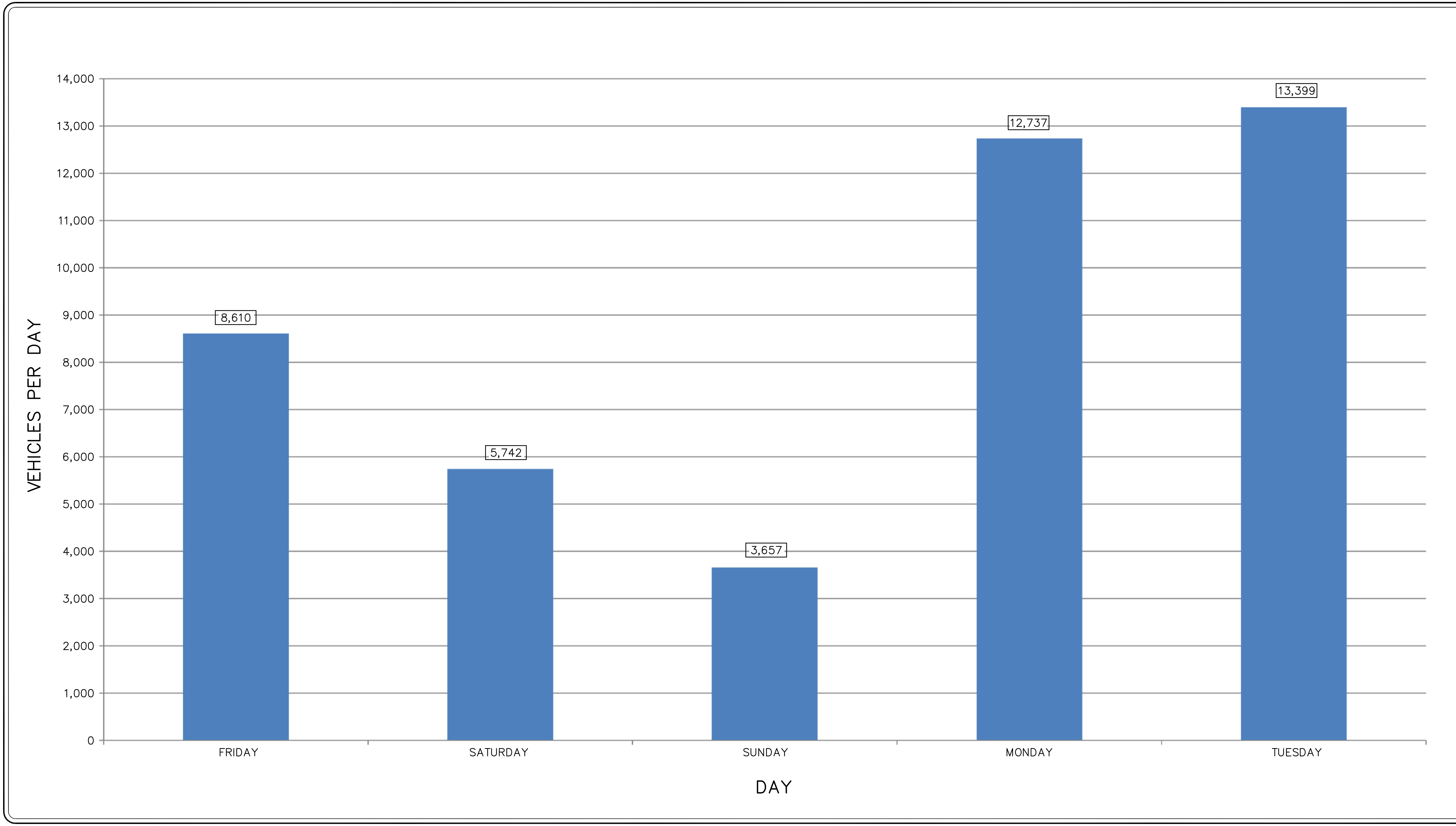

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-12

Existing Daily Profile for Berkeley Avenue North of Chapman Avenue

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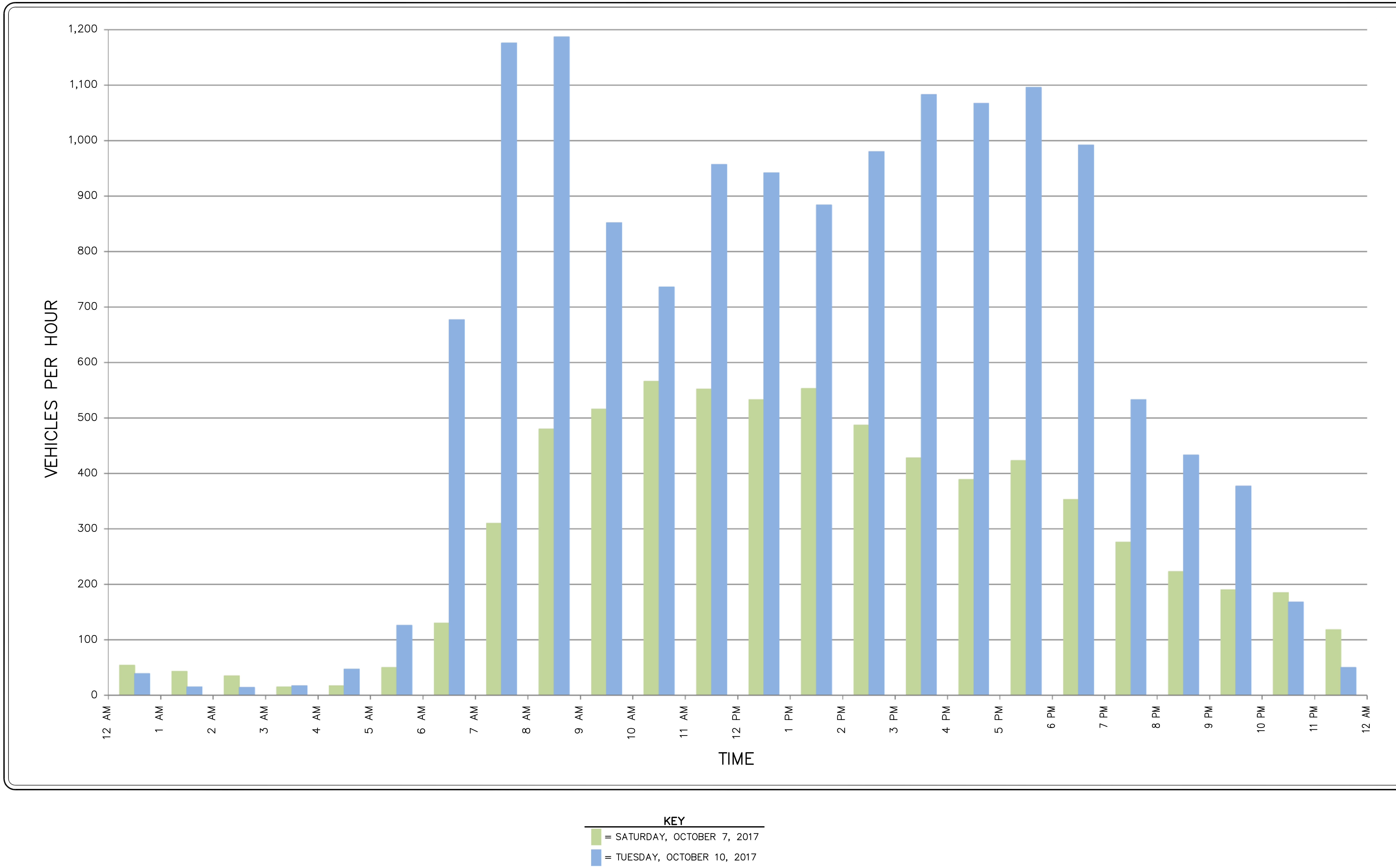

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-13

Existing Hourly Profile for Berkeley Avenue East of Lemon Street

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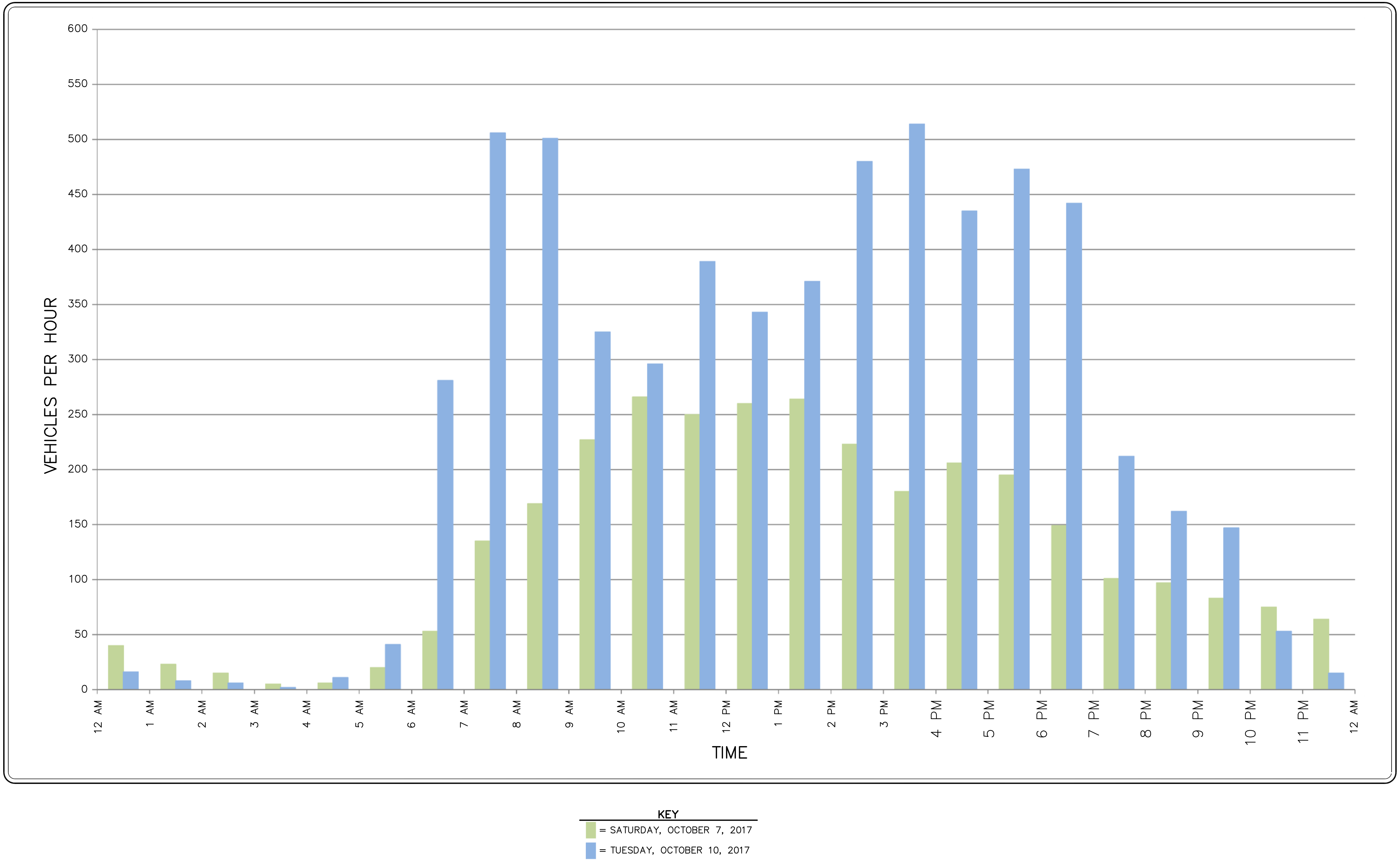

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-14

Existing Hourly Profile for Hornet Way North of Berkeley Avenue

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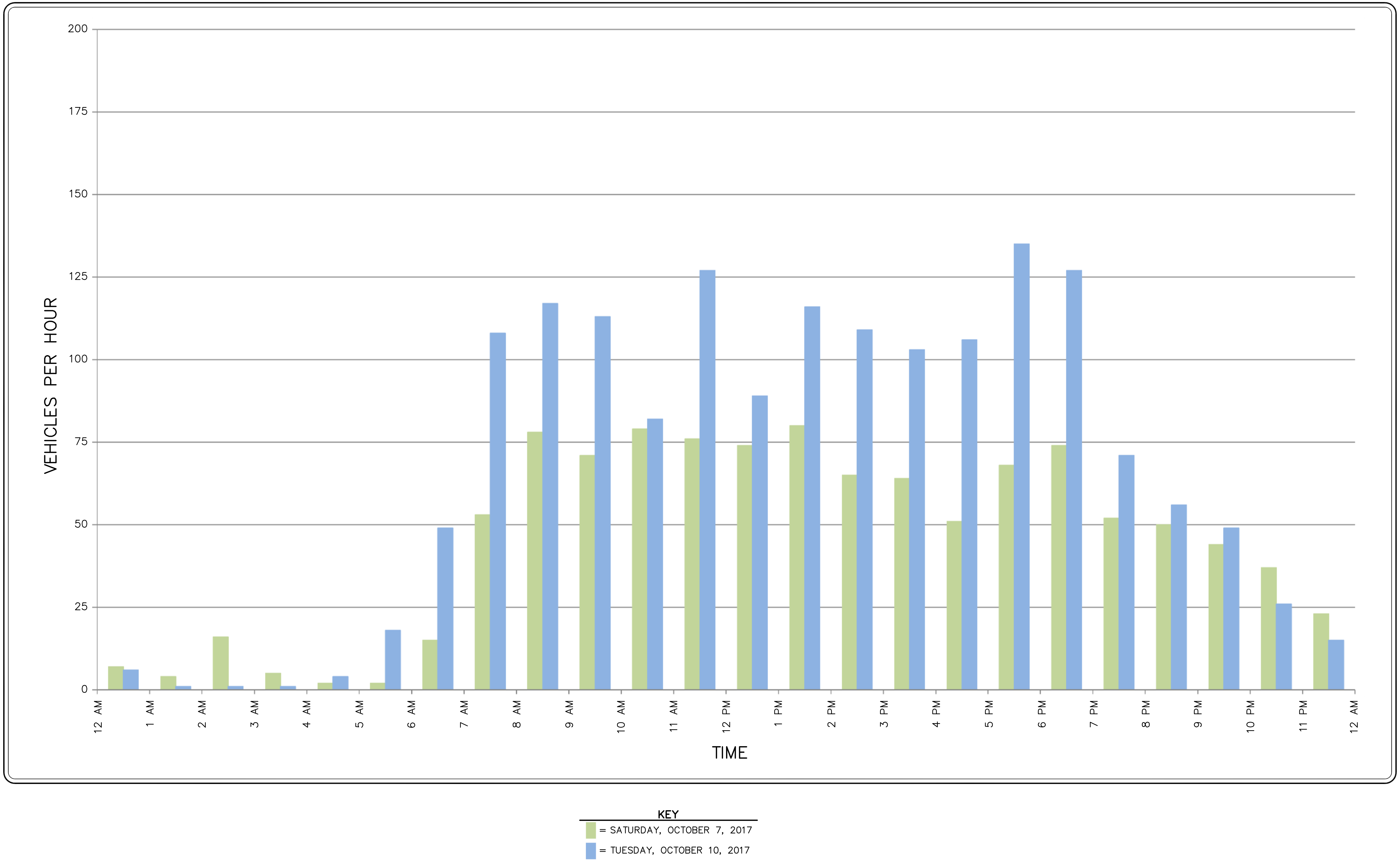

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-15

Existing Hourly Profile for Brookdale Place East of Berkeley Avenue

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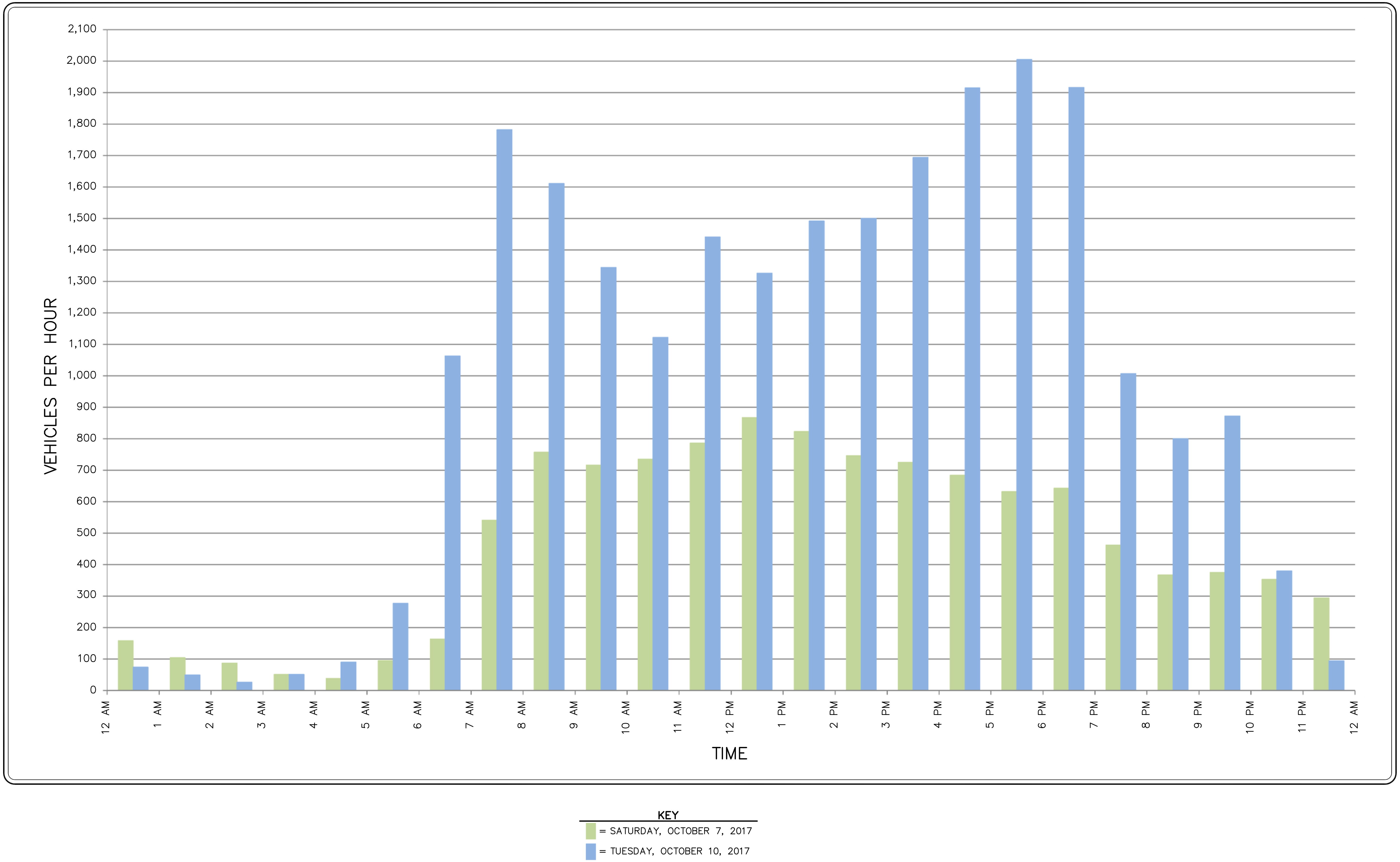

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-16

Existing Hourly Profile for Lemon Street North of Chapman Avenue

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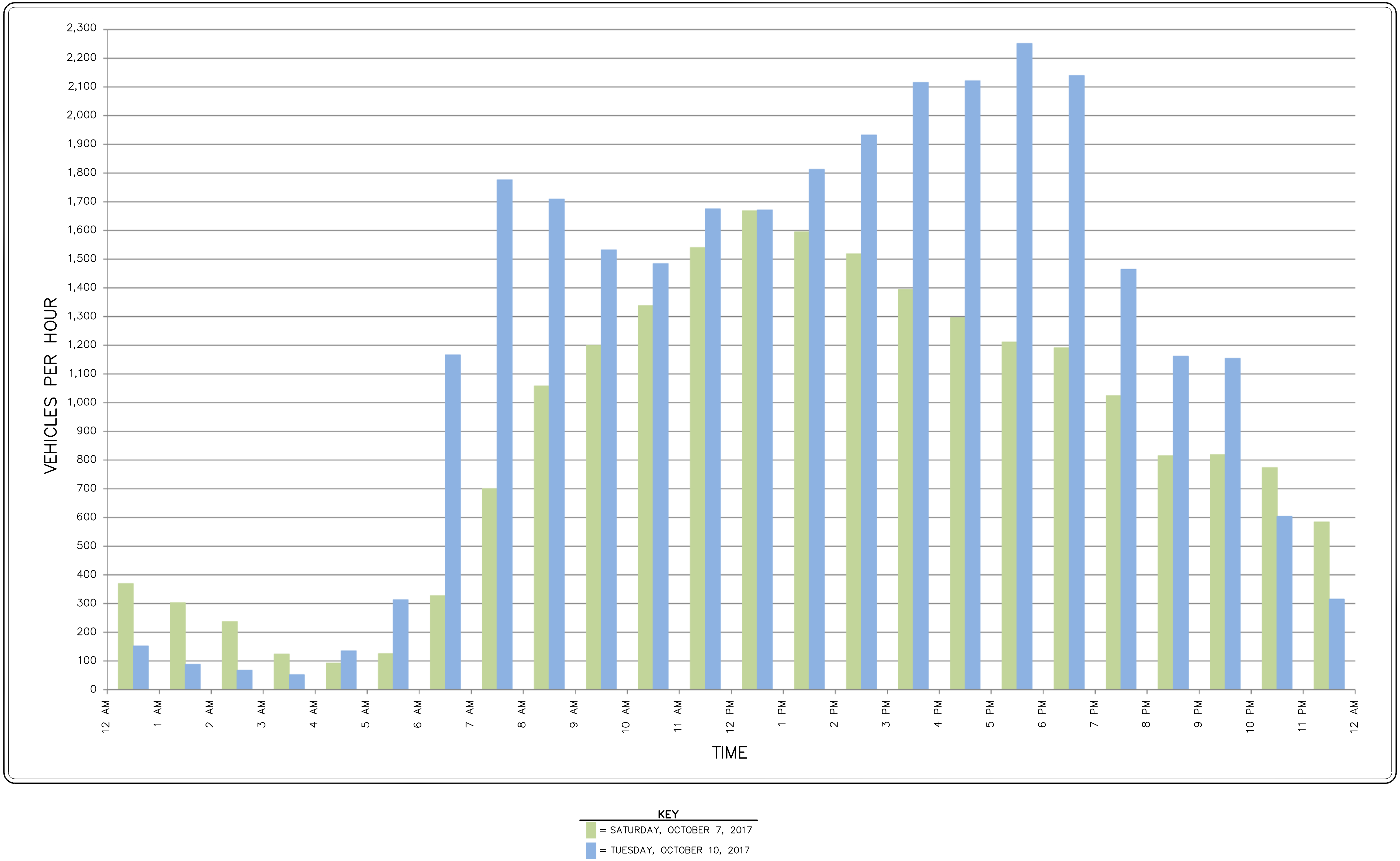

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-17

Existing Hourly Profile for Chapman Avenue between Lemon Street and Berkeley Avenue

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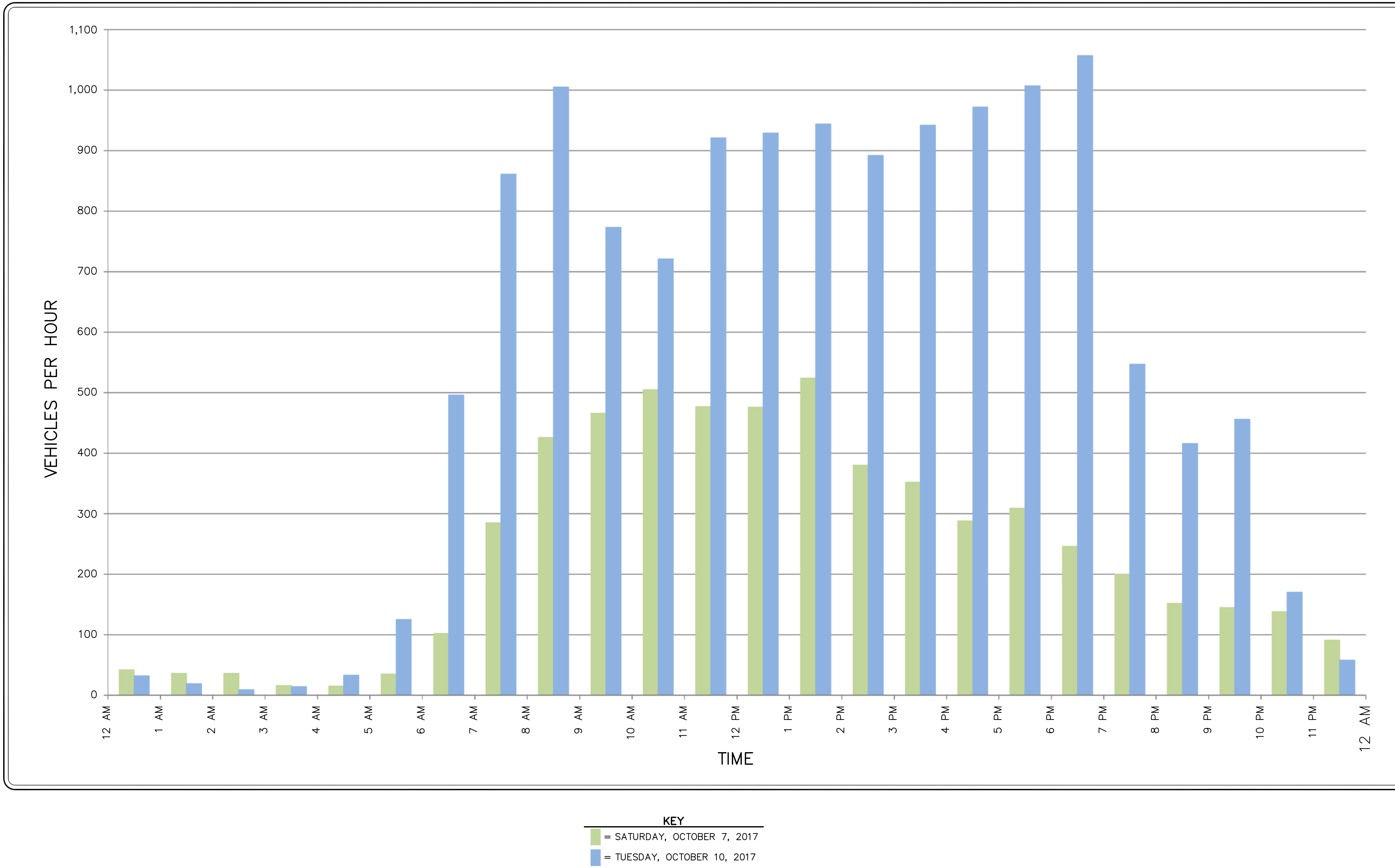

SOURCE: Linscott, Law & Greenspan 2018

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FIGURE 4.8-18

Existing Hourly Profile for Berkeley Avenue North of Chapman Avenue

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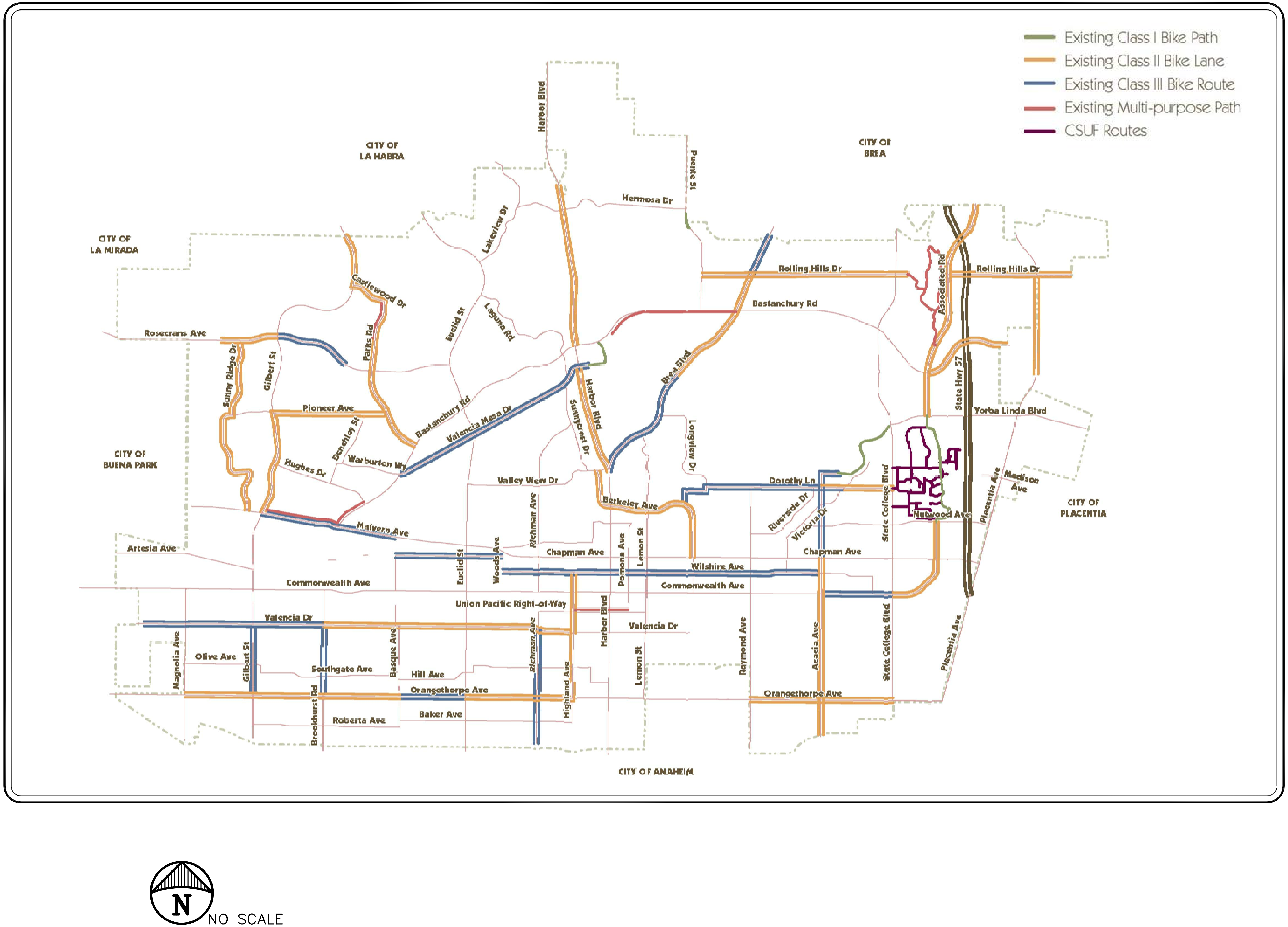

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-19

Bikeways Network

Sherbeck Field Improvements Project Draft Environmental Impact Report

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SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-20

OCTA Bus System Map

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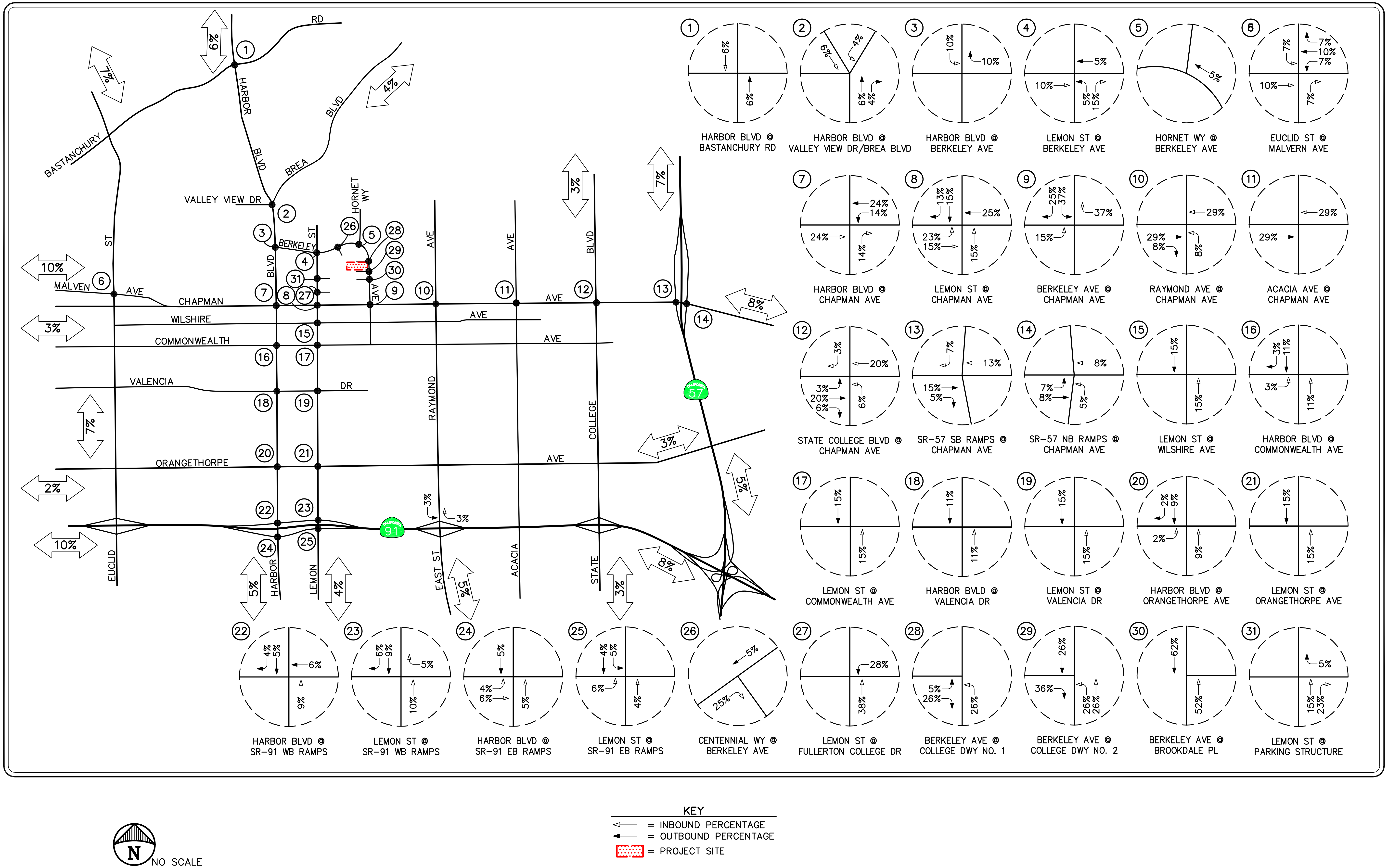

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-21

Year 2020 Project Traffic Distribution Pattern – Academic Instruction

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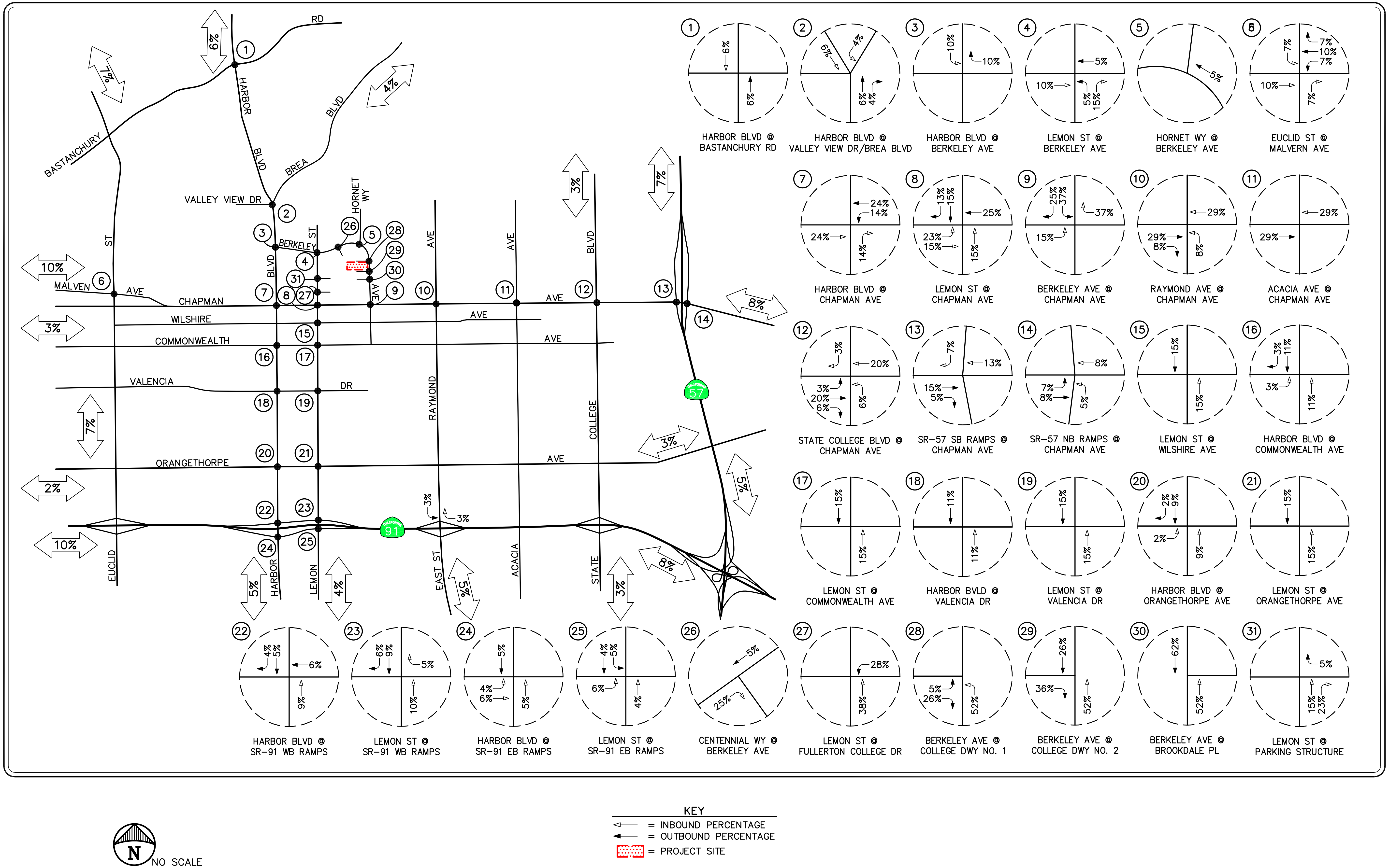

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-22

Year 2030 Project Traffic Distribution Pattern – Academic Instruction

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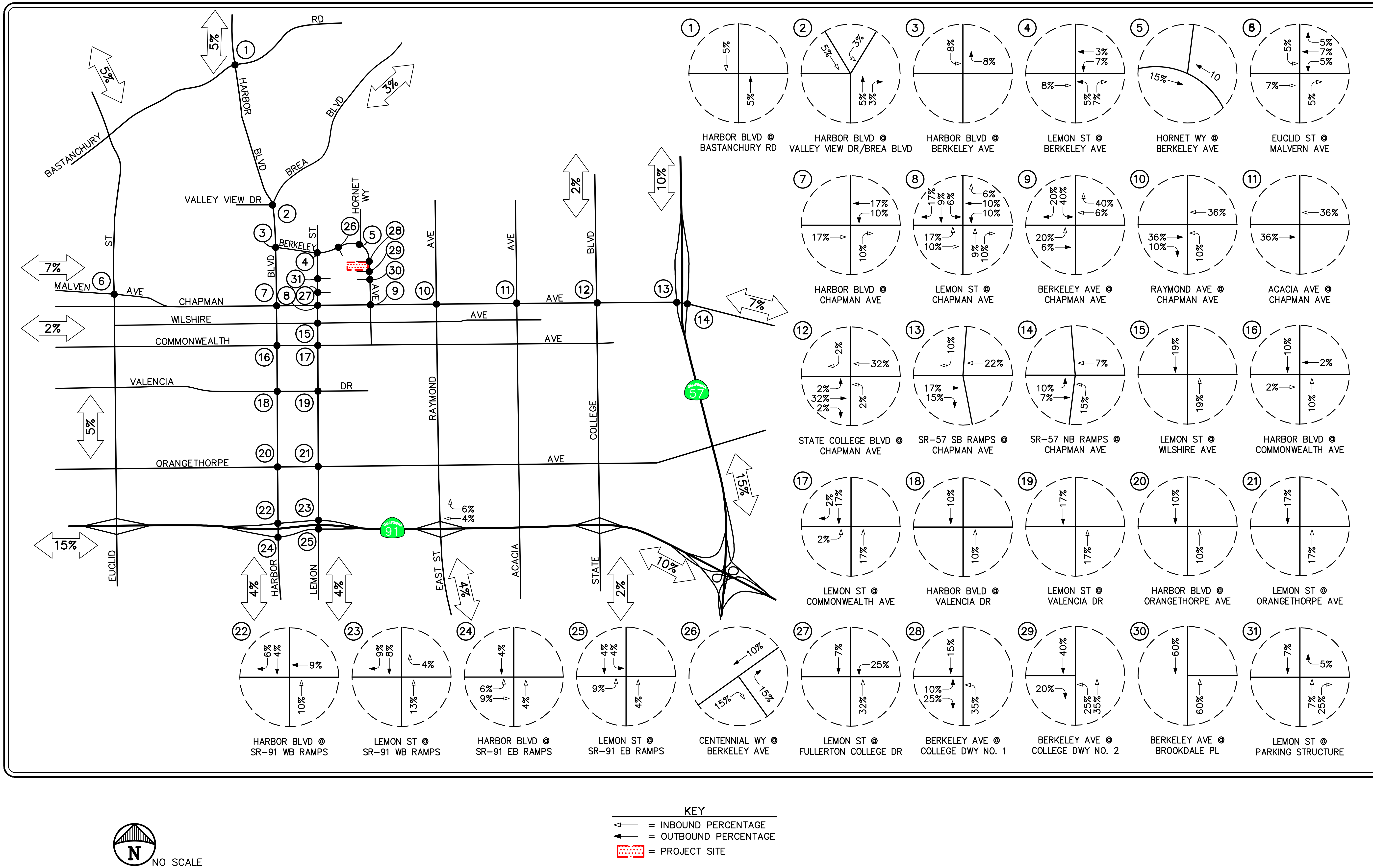

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-23

Year 2020 Project Traffic Distribution Pattern – Saturday Field Event

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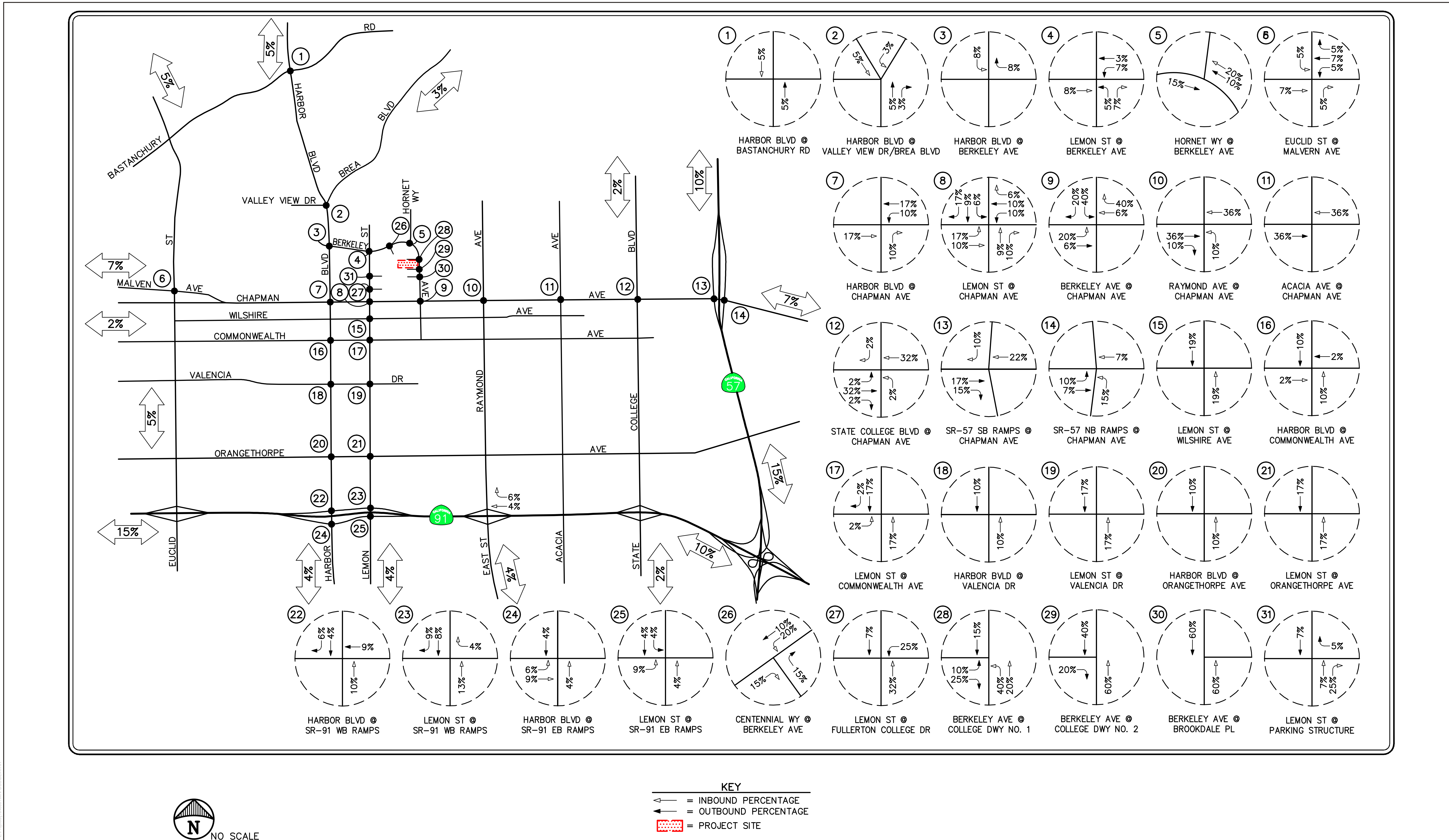

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-24

Year 2030 Project Traffic Distribution Pattern – Saturday Field Event

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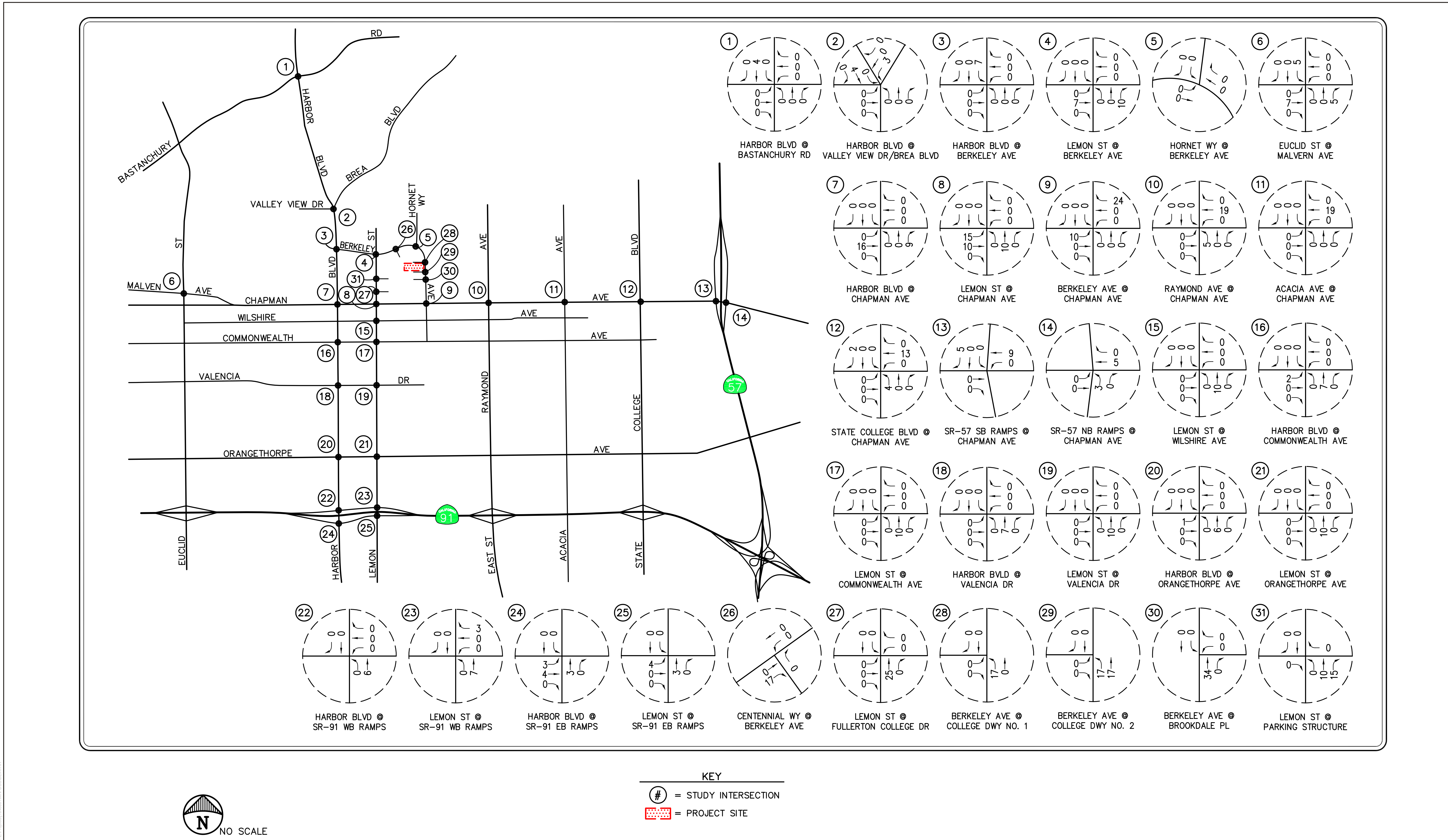

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-25

Year 2020 Weekday PM Peak Hour Project Traffic Volumes

DUDEK

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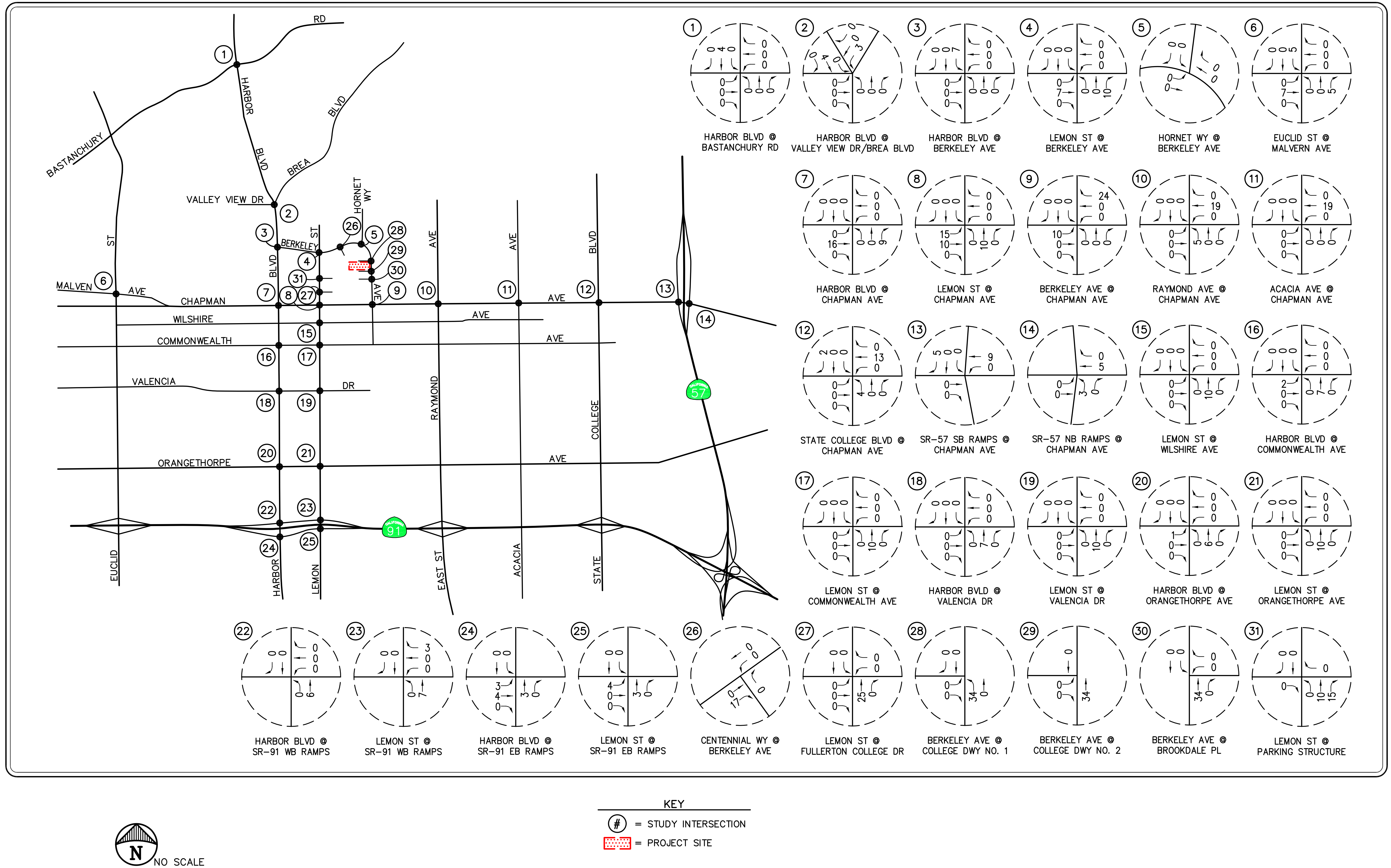

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-26

Year 2030 Weekday PM Peak Hour Project Traffic Volumes

Sherbeck Field Improvements Project Draft Environmental Impact Report

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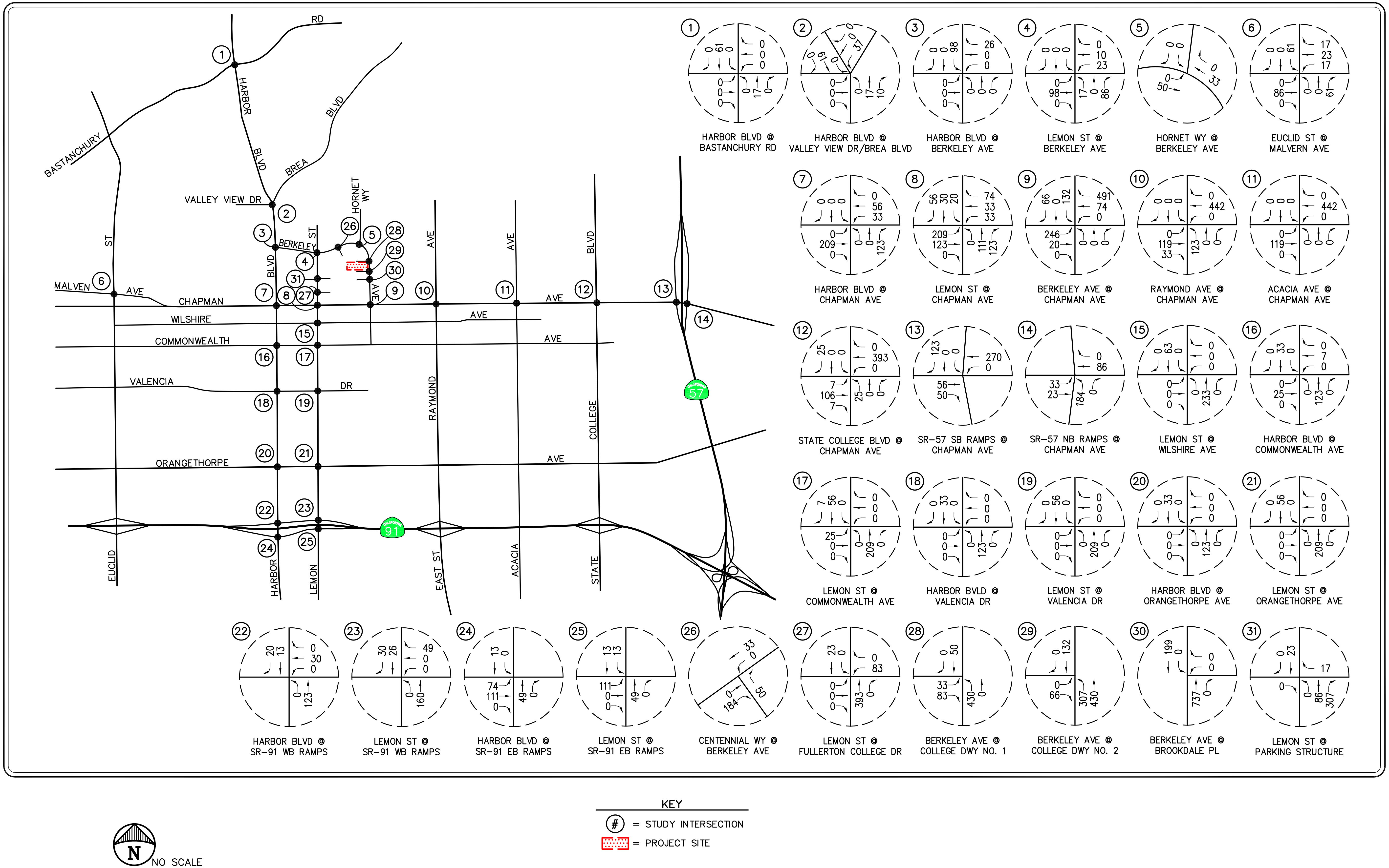

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-27

Year 2020 Saturday Event Arrival Period Peak Hour Project Traffic Volumes

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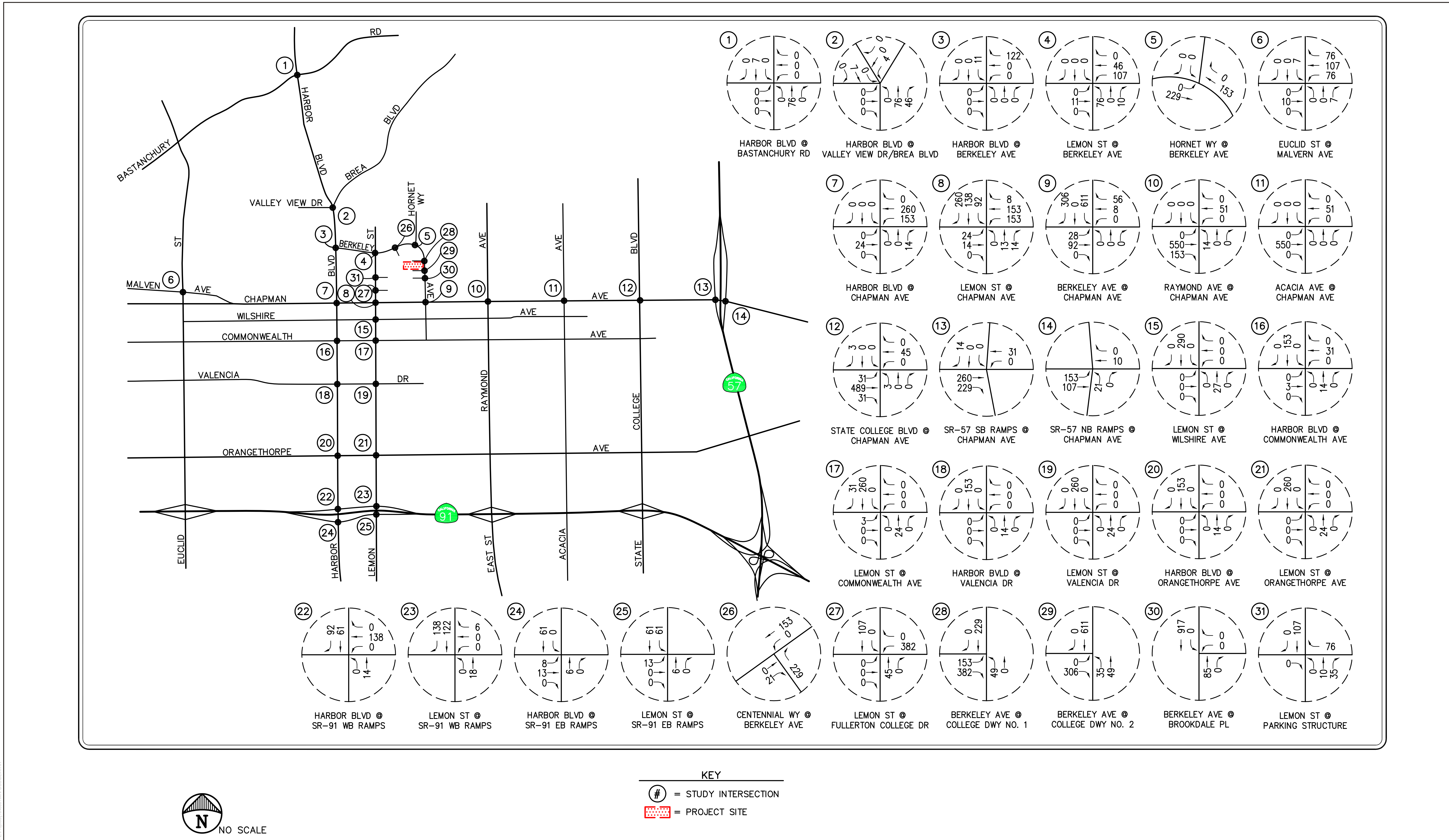

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-28

Year 2020 Saturday Event Departure Period Peak Hour Project Traffic Volumes

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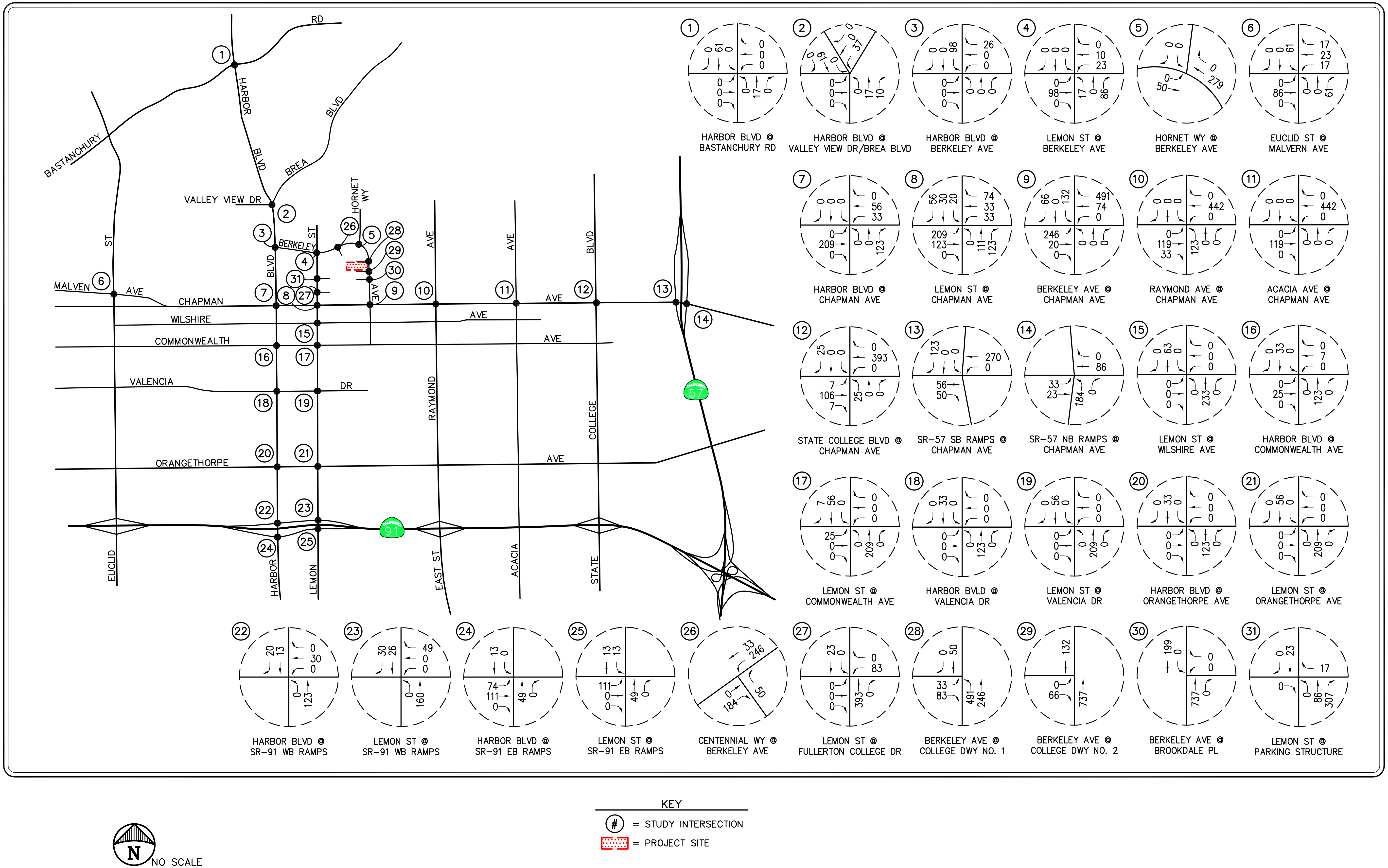

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-29

Year 2030 Saturday Event Arrival Period Peak Hour Project Traffic Volumes

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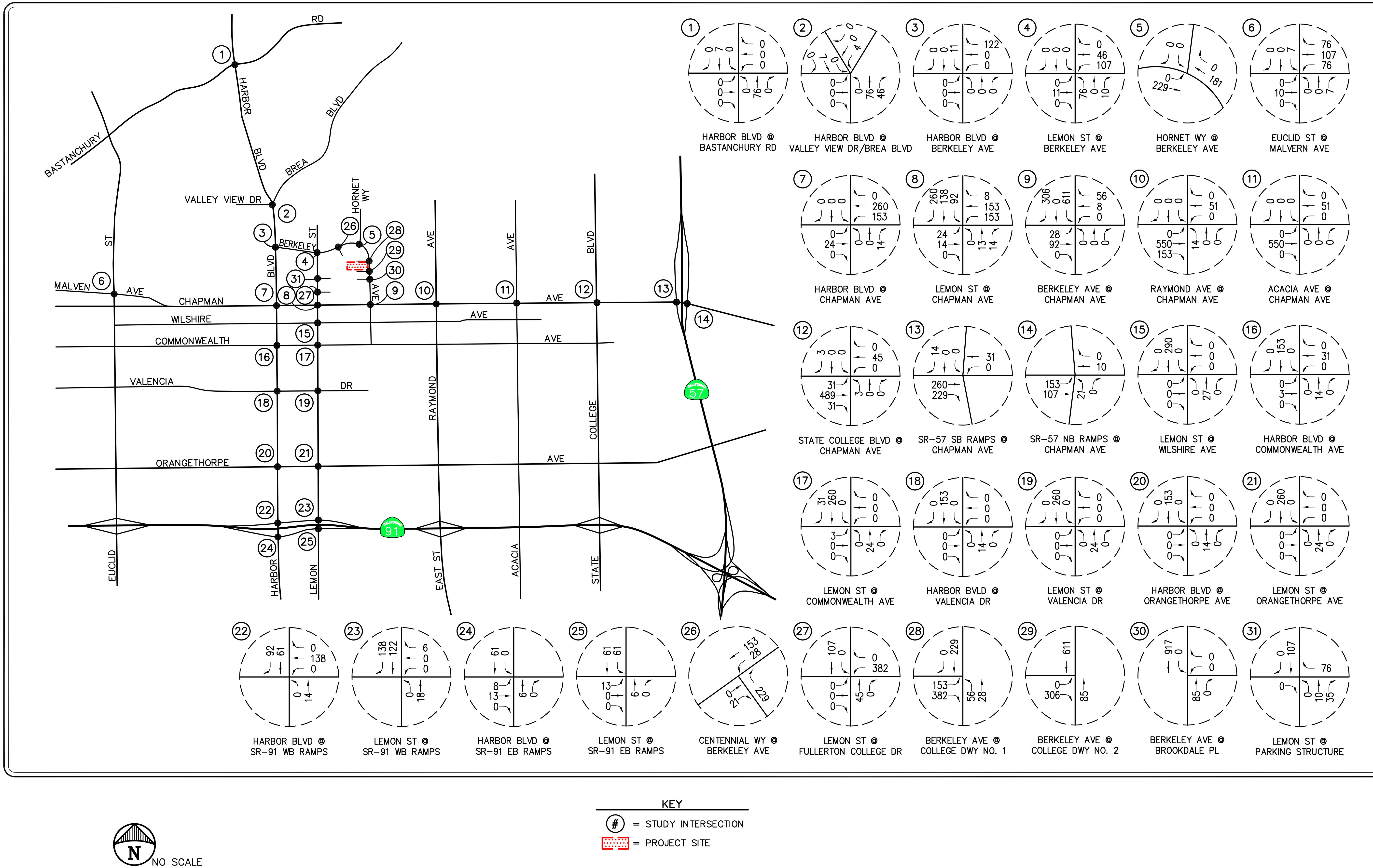

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-30

Year 2030 Saturday Event Departure Period Peak Hour Project Traffic Volumes

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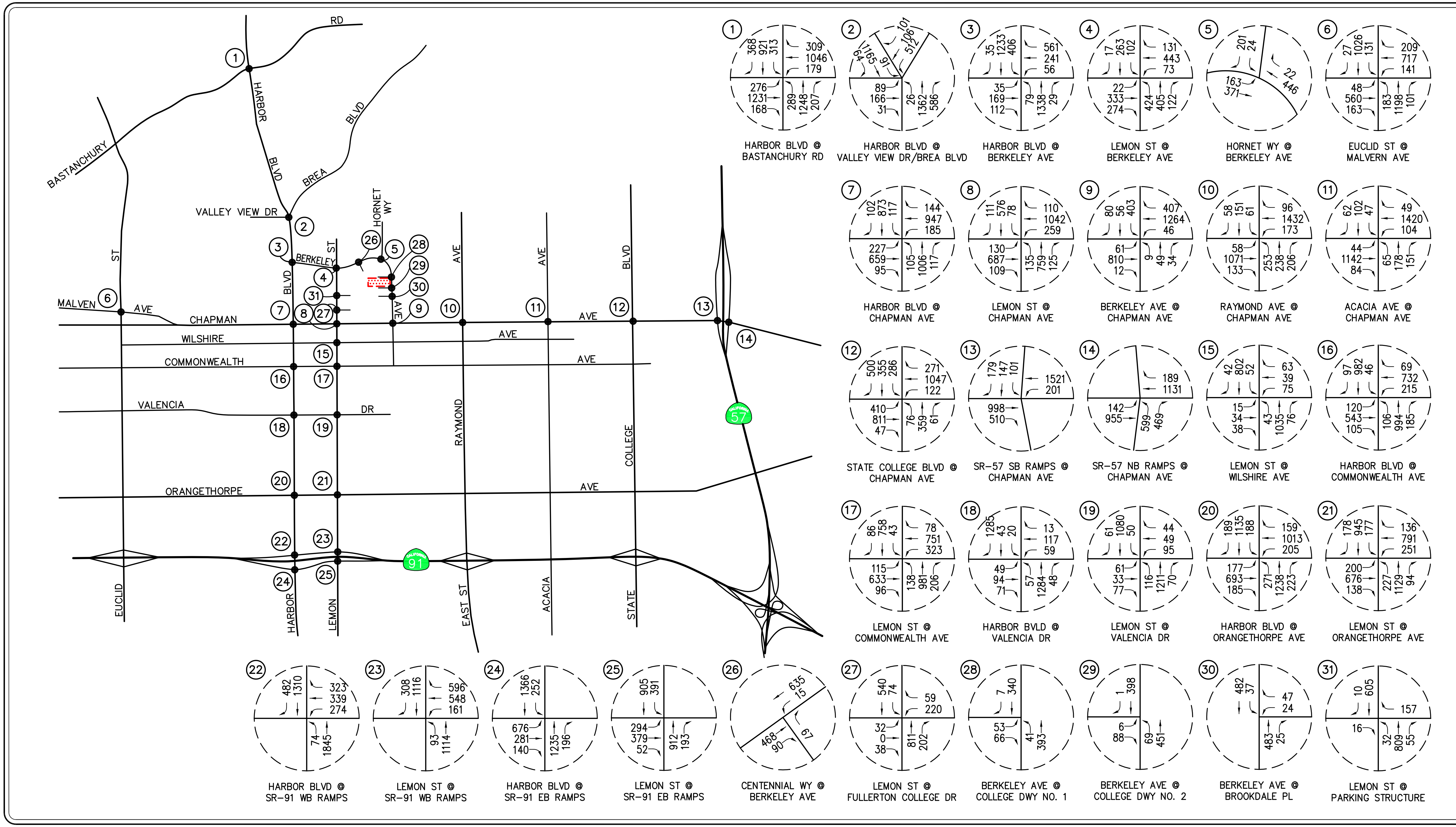

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

N NO SCALE

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-31

Existing Plus Project Weekday PM Peak Hour Traffic Volumes

Sherbeck Field Improvements Project Draft Environmental Impact Report

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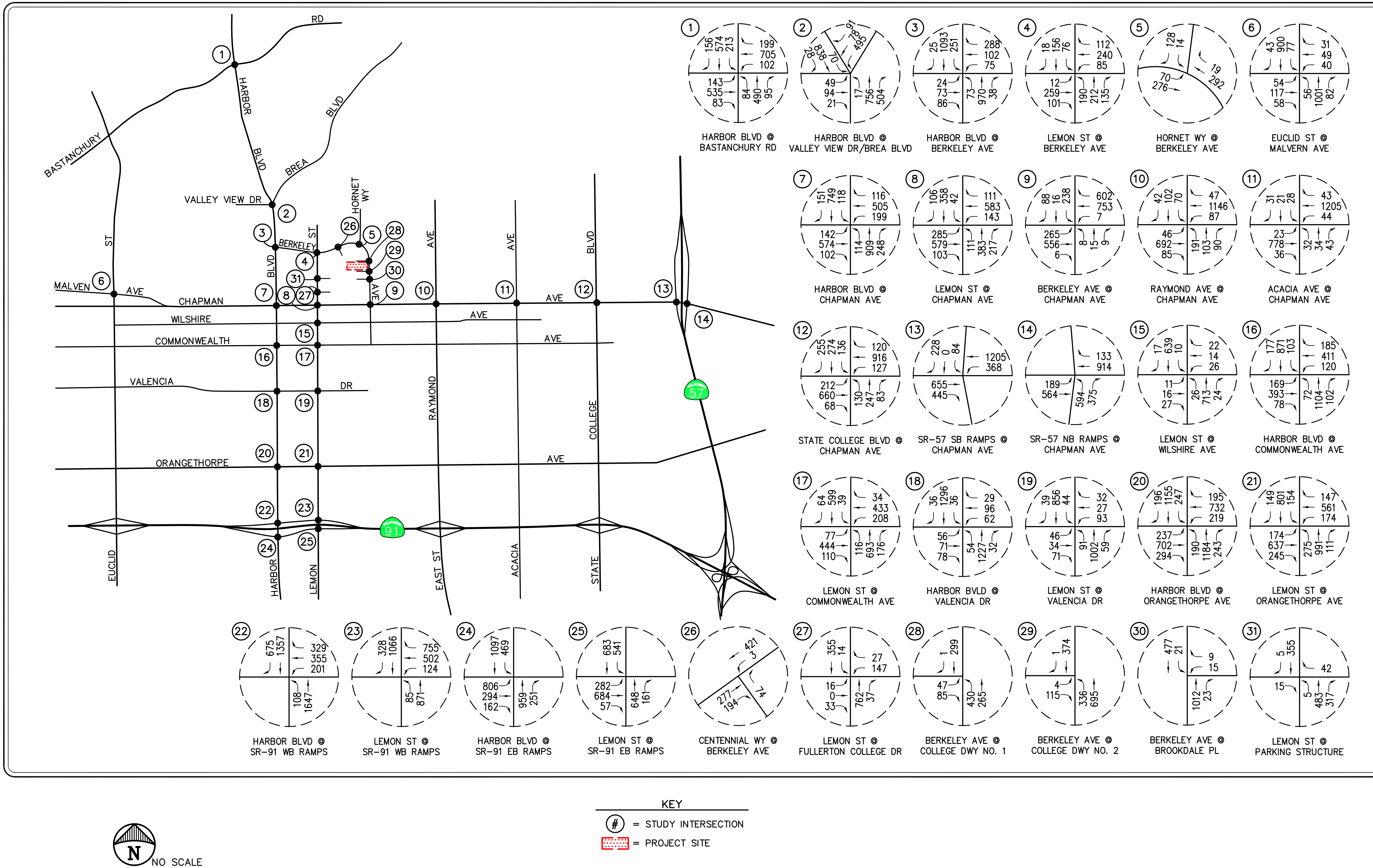

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-32

Existing Plus Project Saturday Event Arrival Period Peak Hour Traffic Volumes

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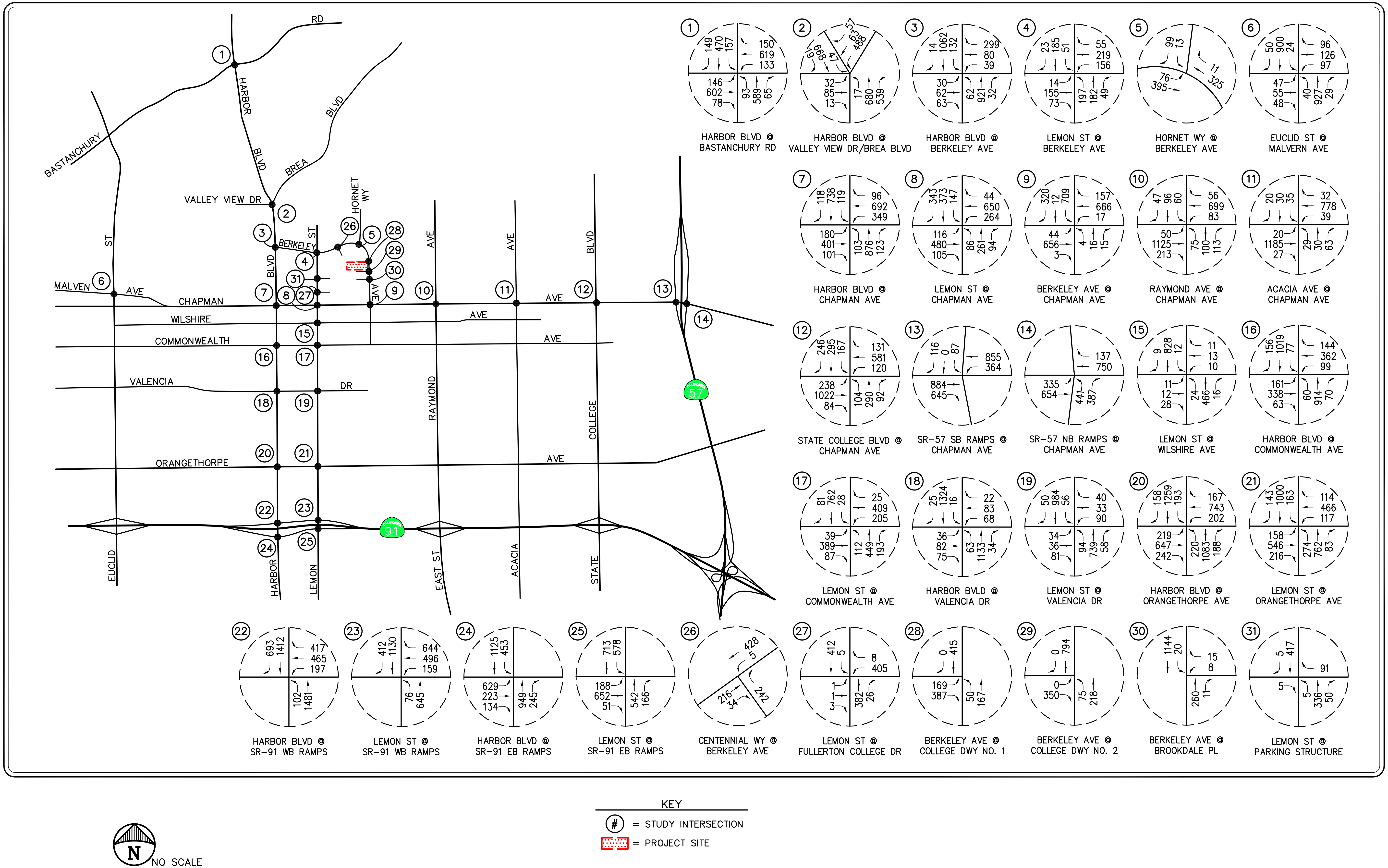

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-33

Existing Plus Project Saturday Event Departure Period Peak Hour Traffic Volumes

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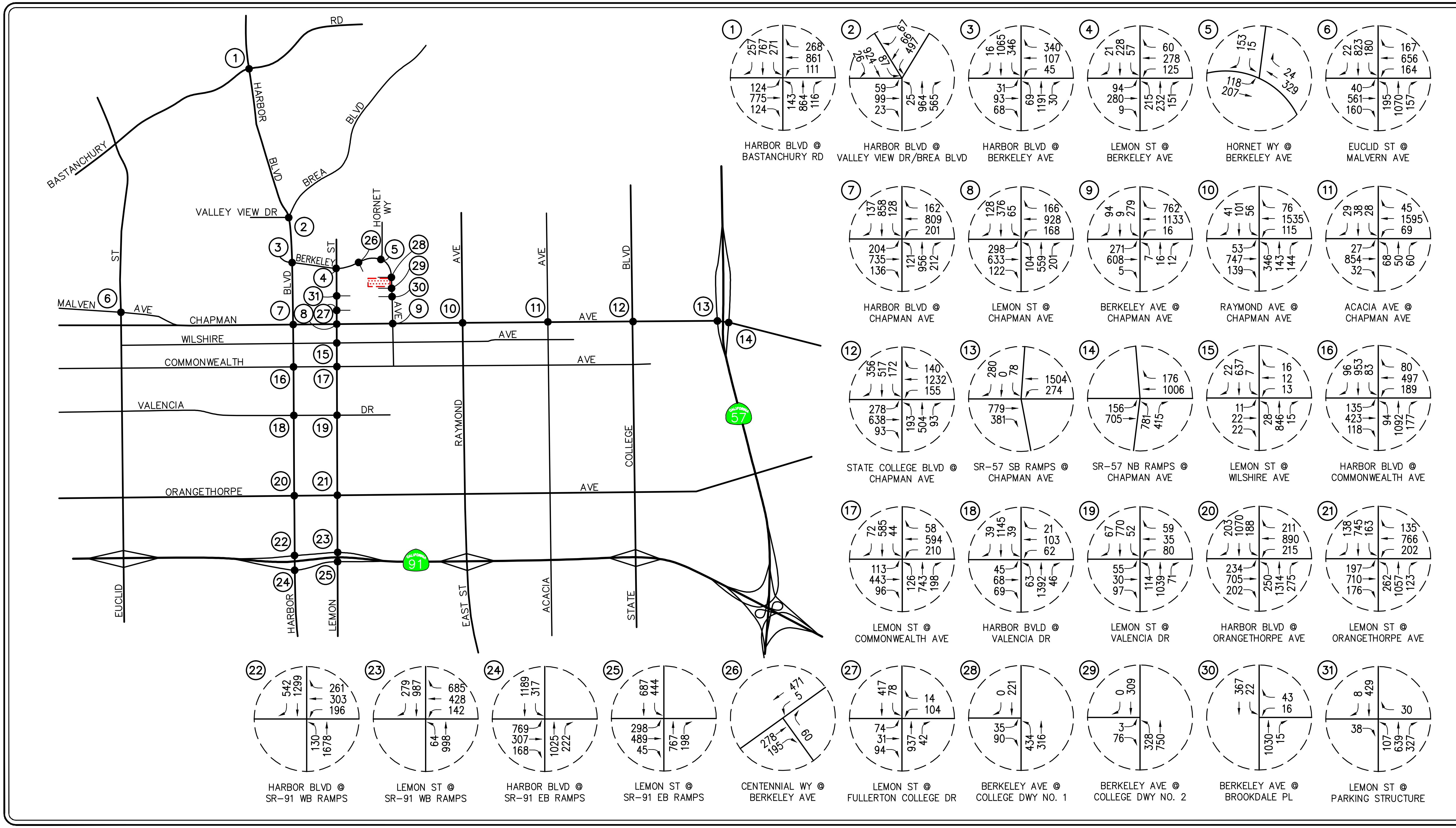

KEY
\# = STUDY INTERSECTION
= PROJECT SITE

N NO SCALE

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-34

Existing Plus Project Friday Event Arrival Period Peak Hour Traffic Volumes

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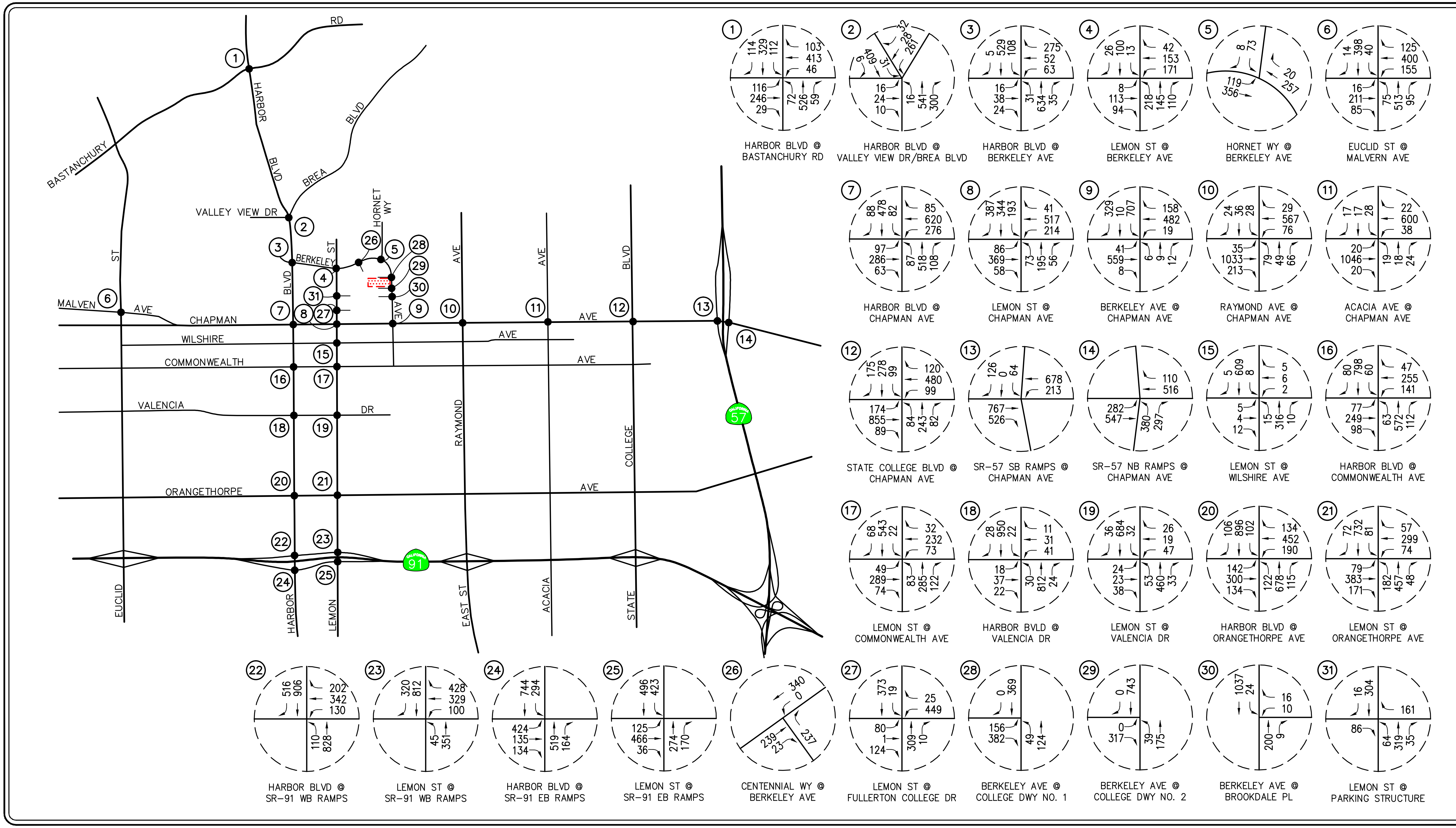

KEY

(#) = STUDY INTERSECTION

= PROJECT SITE

N NO SCALE

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-35

Existing Plus Project Friday Event Departure Period Peak Hour Traffic Volumes

Sherbeck Field Improvements Project Draft Environmental Impact Report

DUDEK

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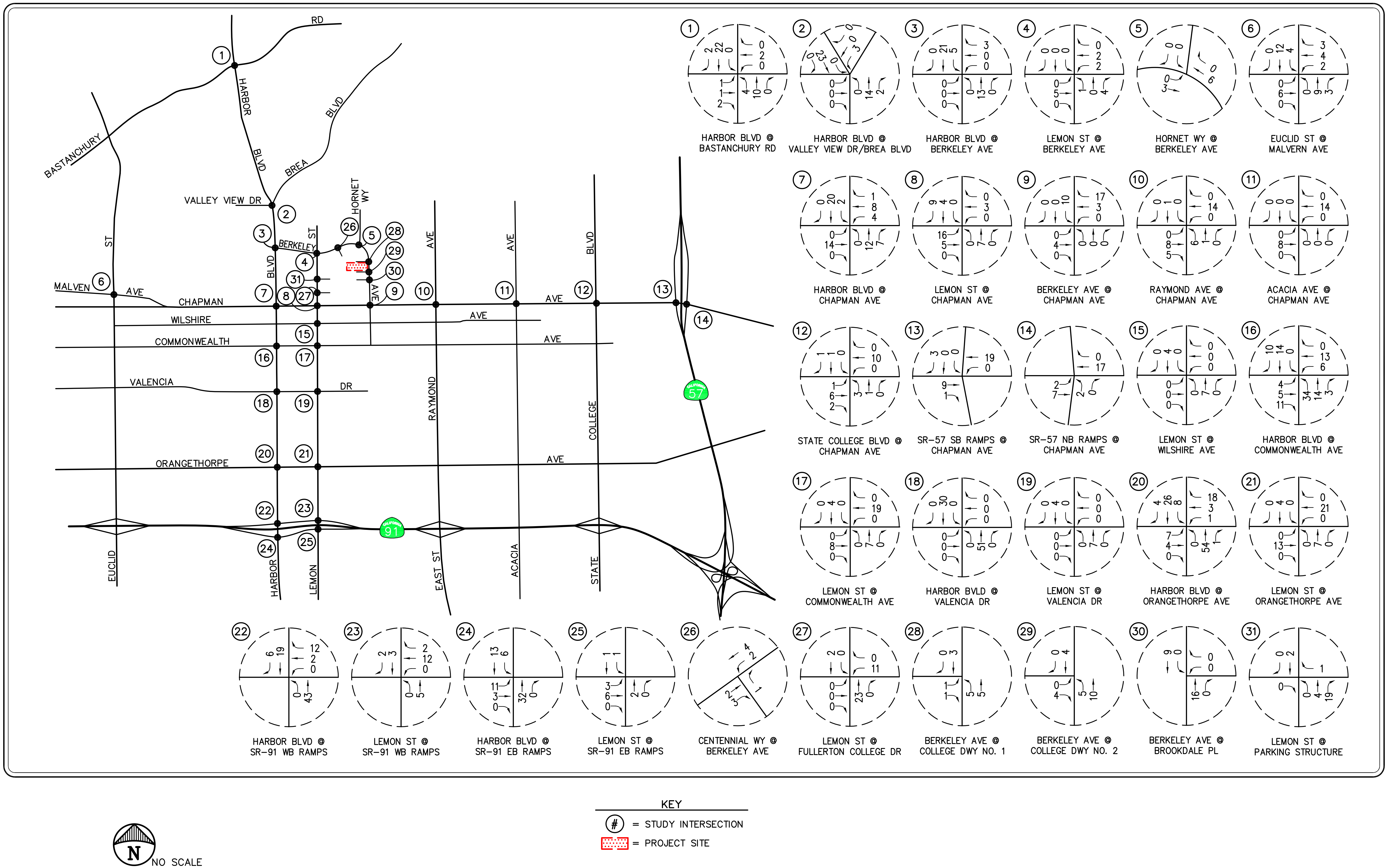

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-36

Year 2020 Weekday PM Peak Hour Cumulative Project Traffic Volumes

Sherbeck Field Improvements Project Draft Environmental Impact Report

DUDEK

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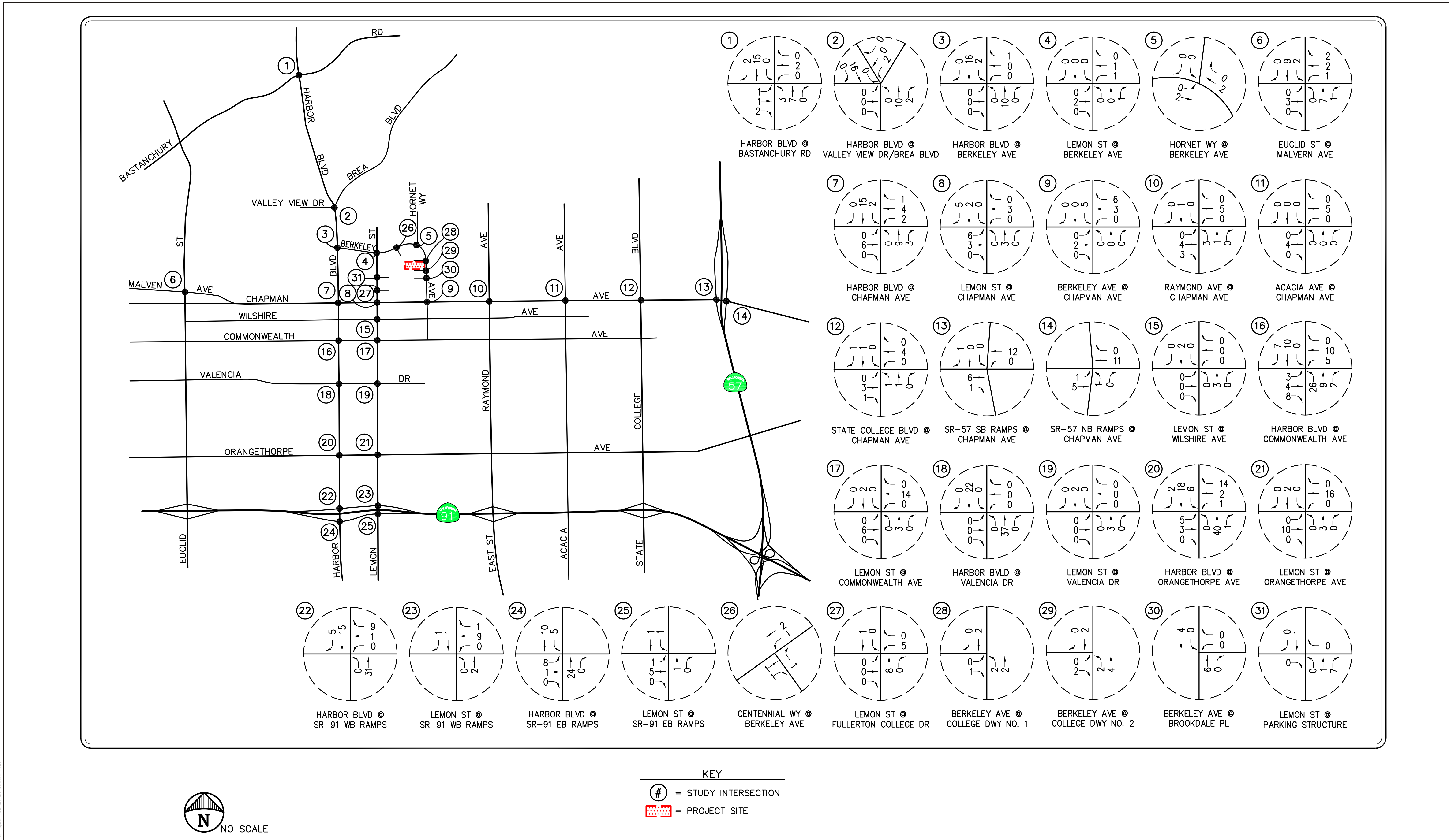

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-37

Year 2020 Saturday Event Arrival Period and Event Departure Period Peak Hour Cumulative Project Traffic Volumes

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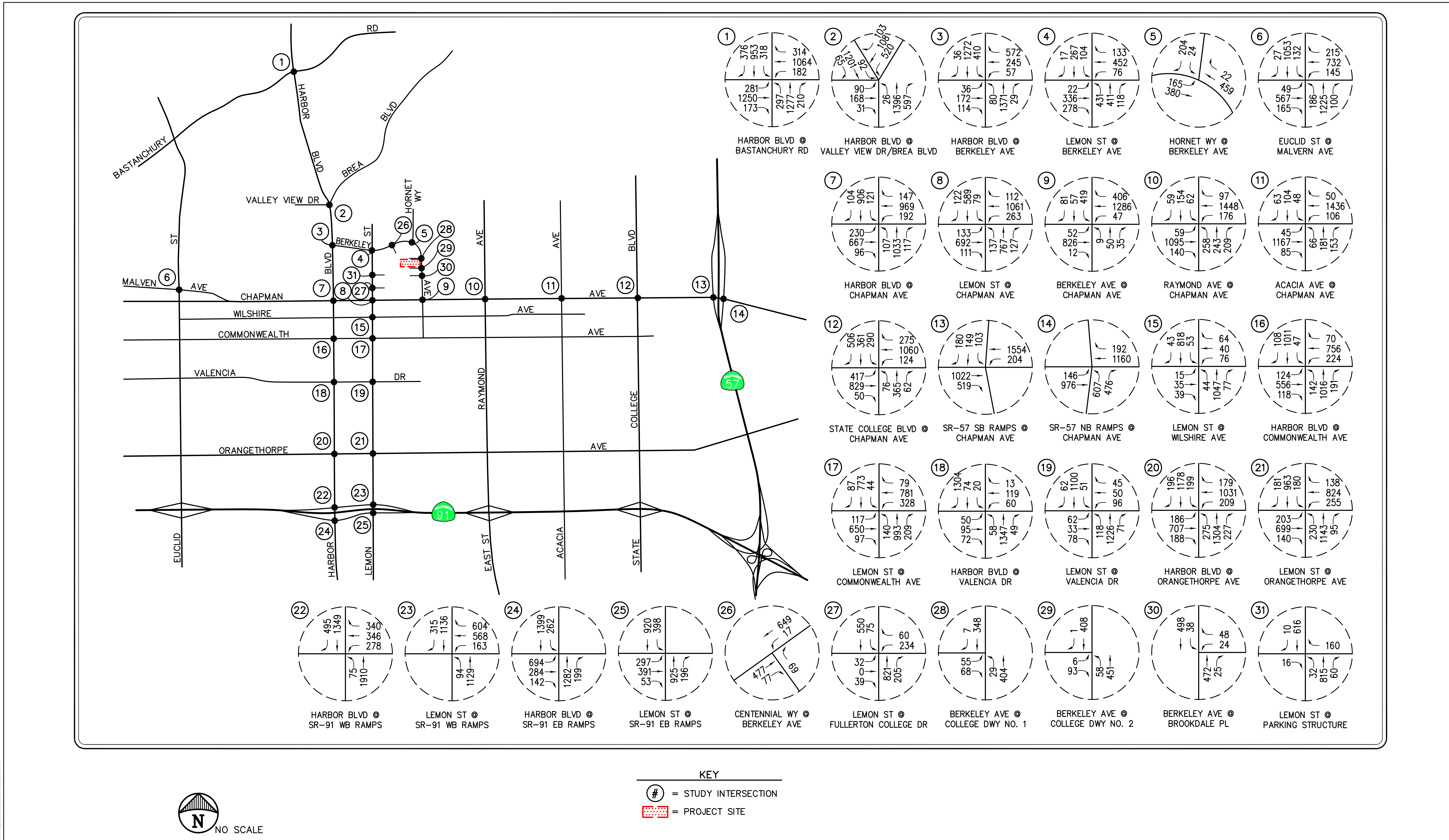

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-38

Year 2020 Weekday Cumulative PM Peak Hour Traffic Volumes

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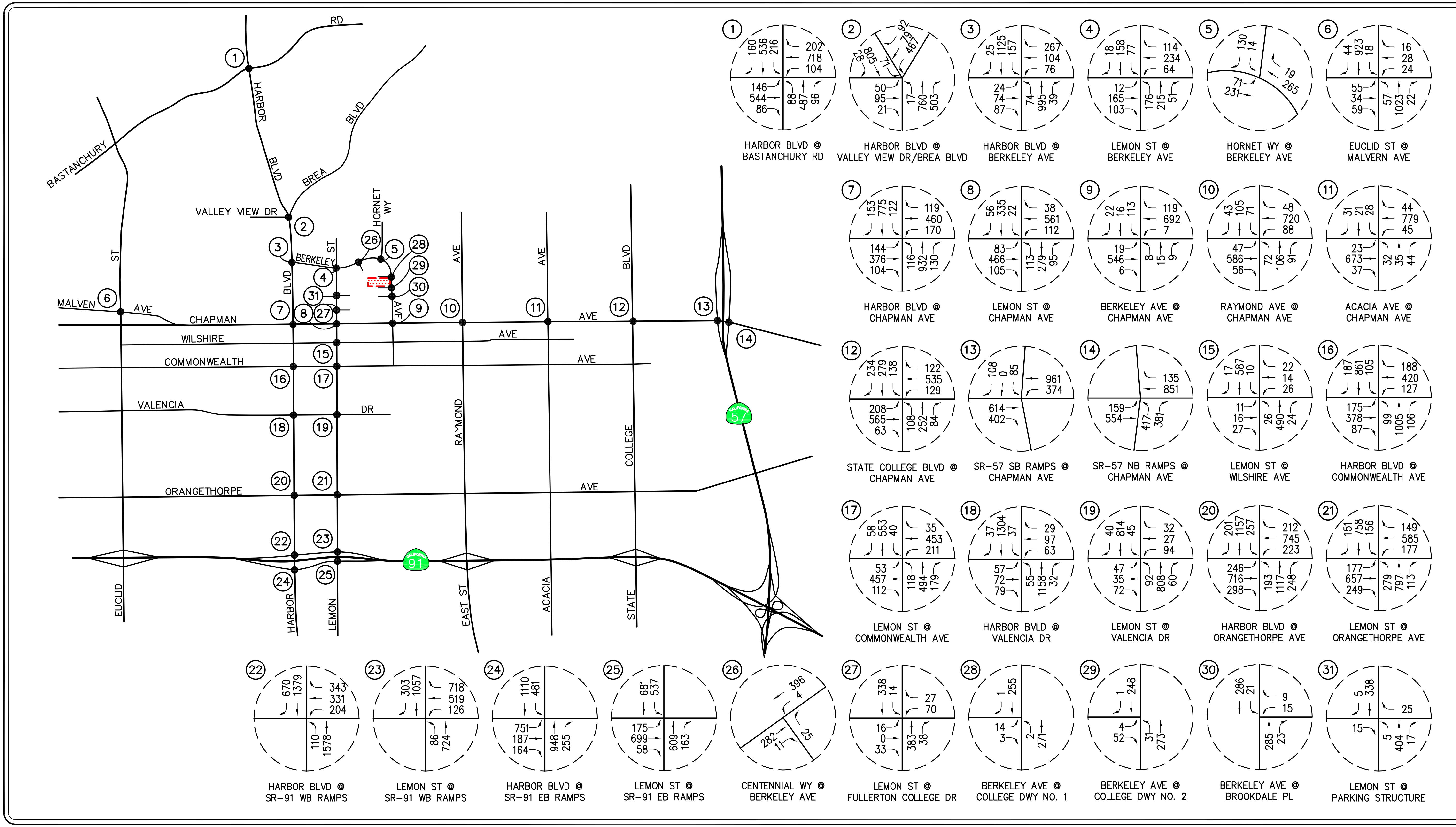

KEY

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-39

Year 2020 Saturday Event Arrival Period Cumulative Peak Hour Traffic Volumes

Sherbeck Field Improvements Project Draft Environmental Impact Report

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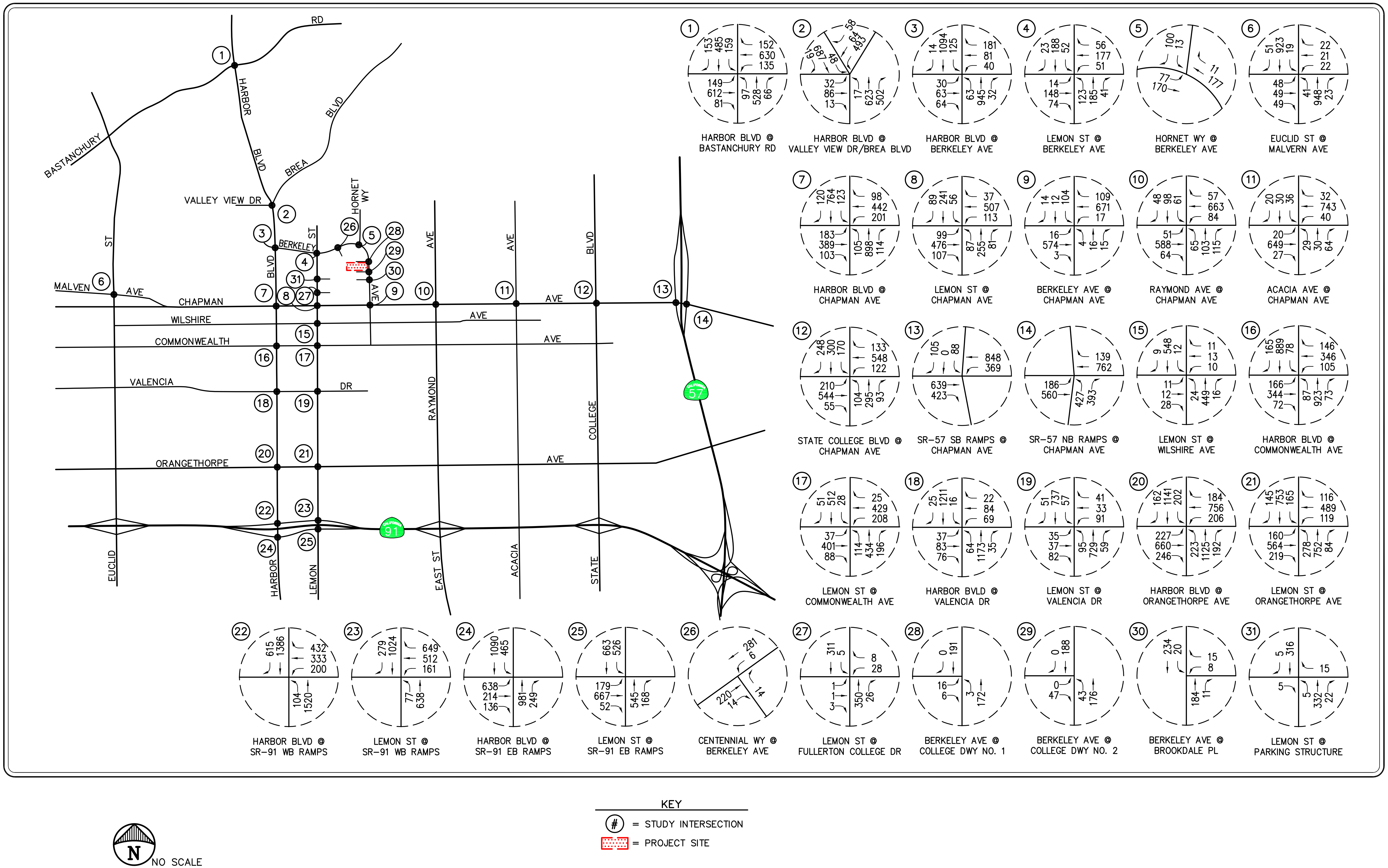

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-40

Year 2020 Saturday Event Departure Period Cumulative Peak Hour Traffic Volumes

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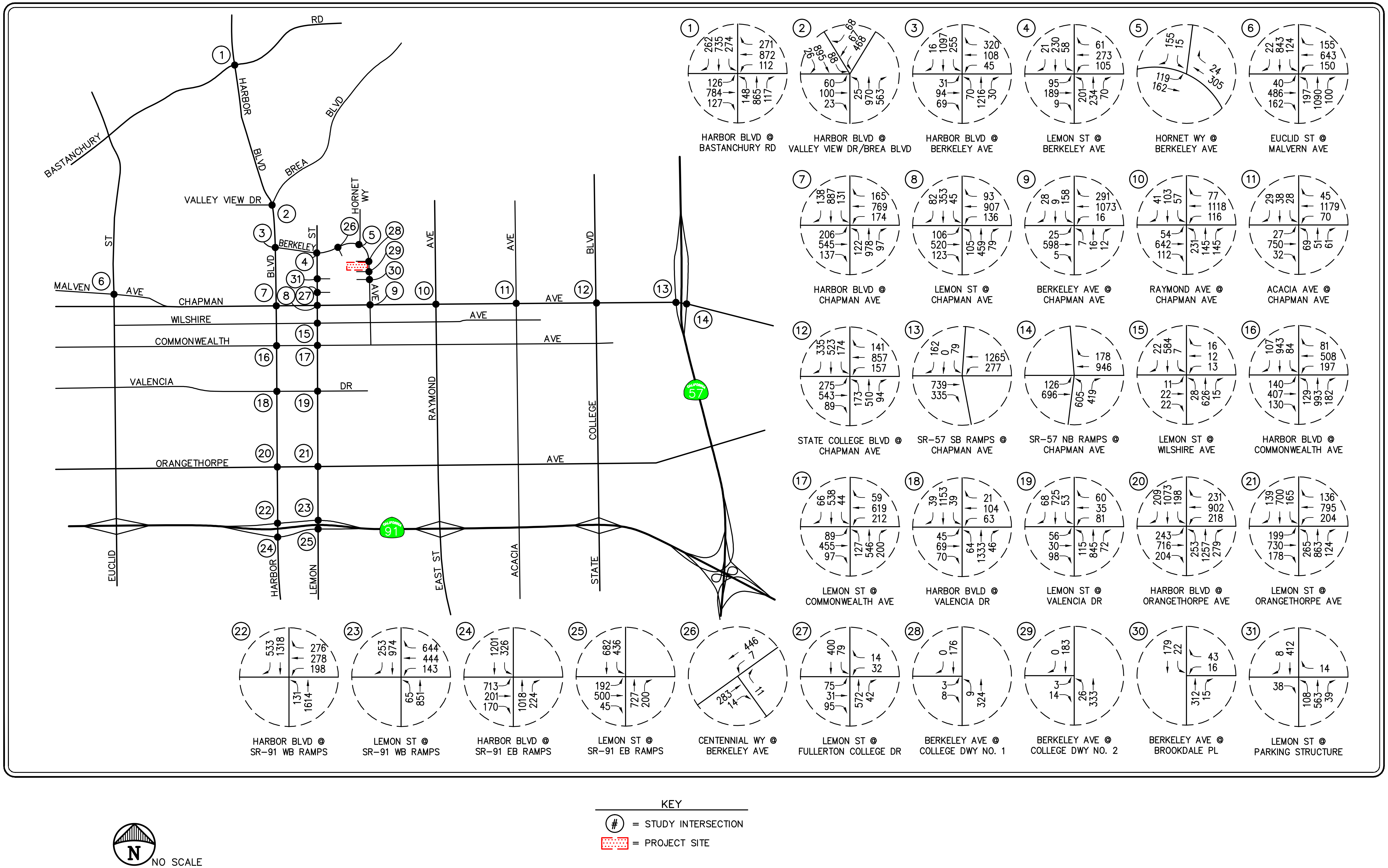

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-41

Year 2020 Friday Event Arrival Period Cumulative Peak Hour Traffic Volumes

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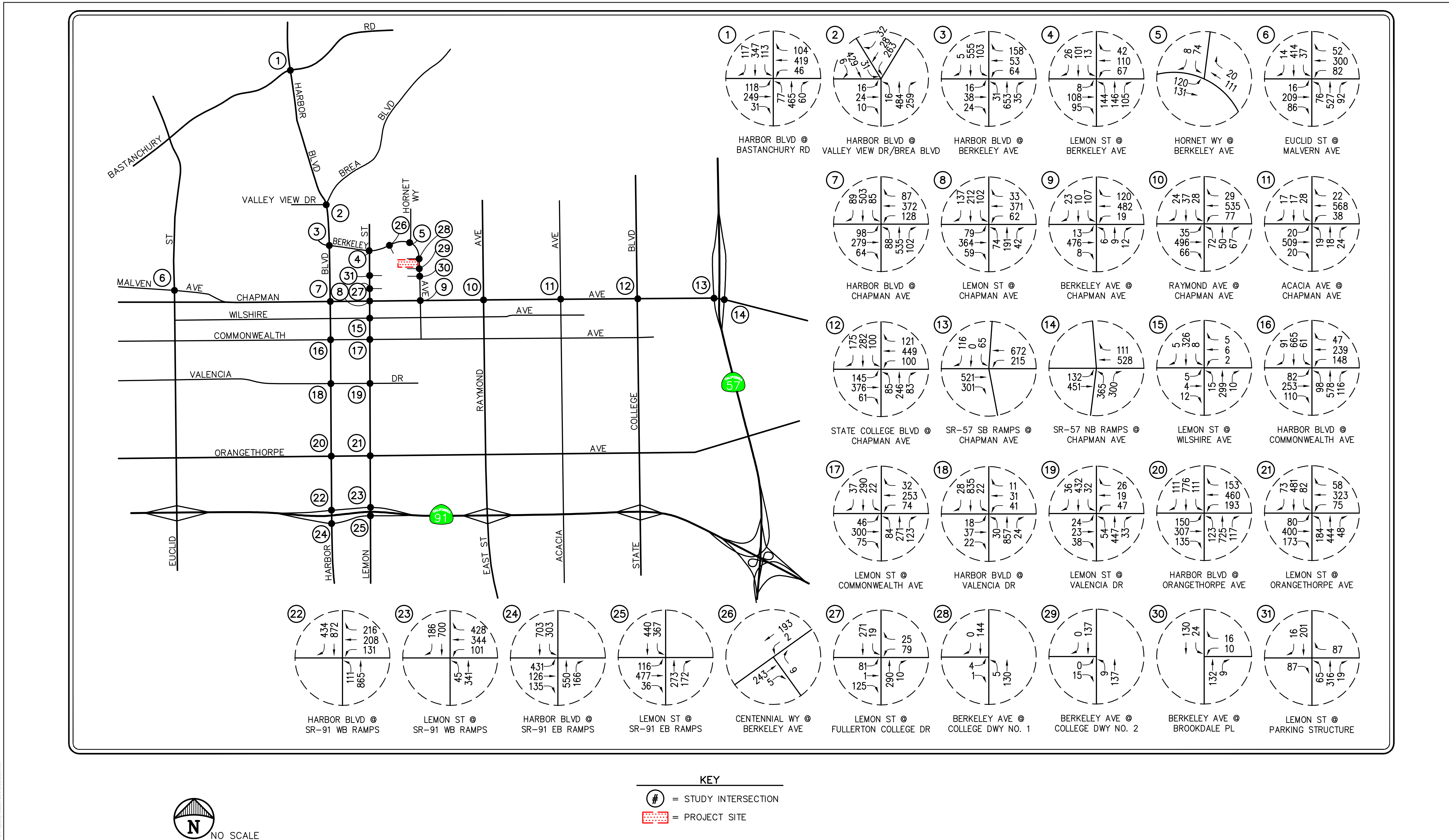

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-42

Year 2020 Friday Event Departure Period Cumulative Peak Hour Traffic Volumes

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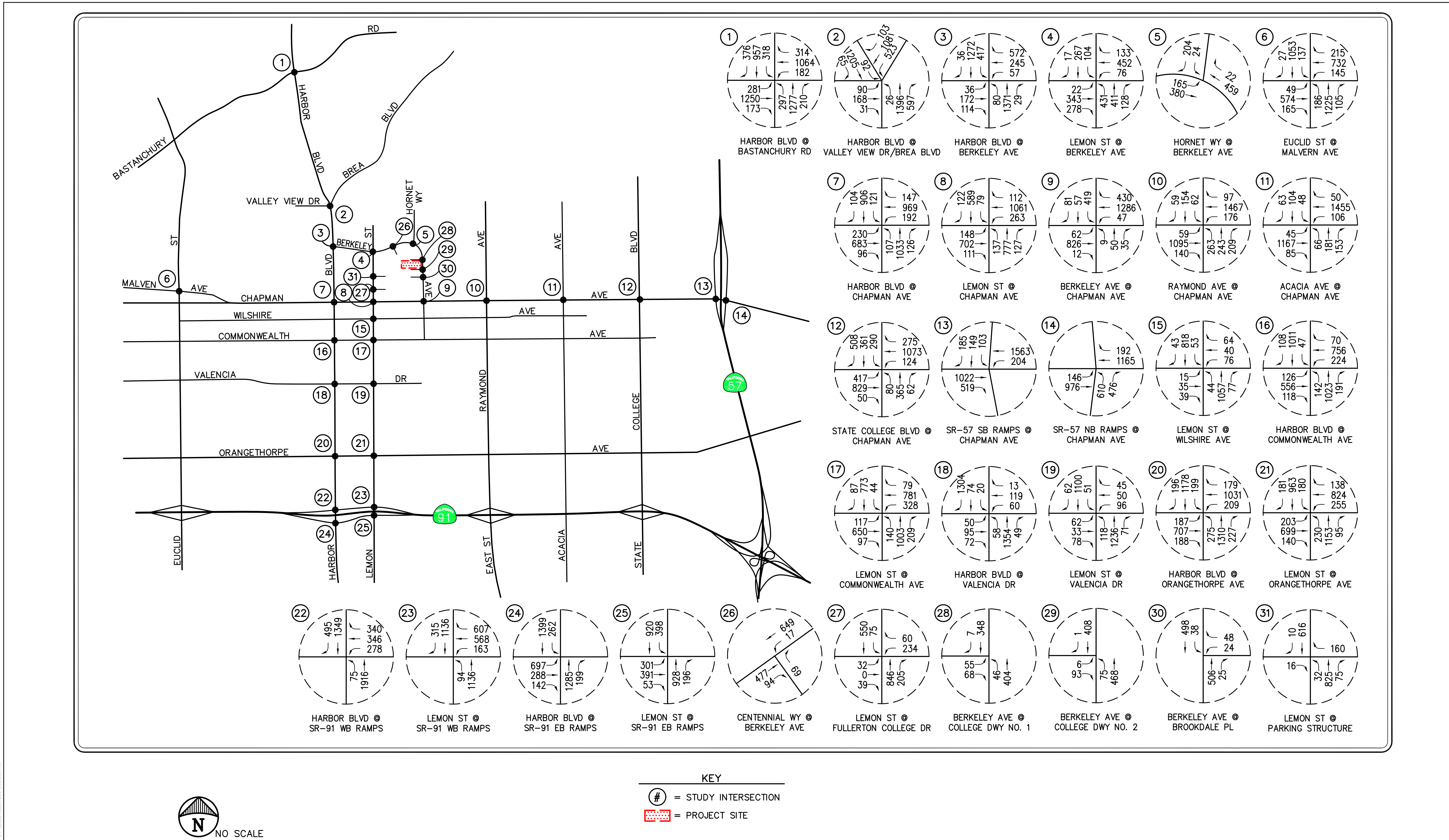

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-43

Year 2020 Weekday Cumulative Plus Project PM Peak Hour Traffic Volumes

Sherbeck Field Improvements Project Draft Environmental Impact Report

DUDEK

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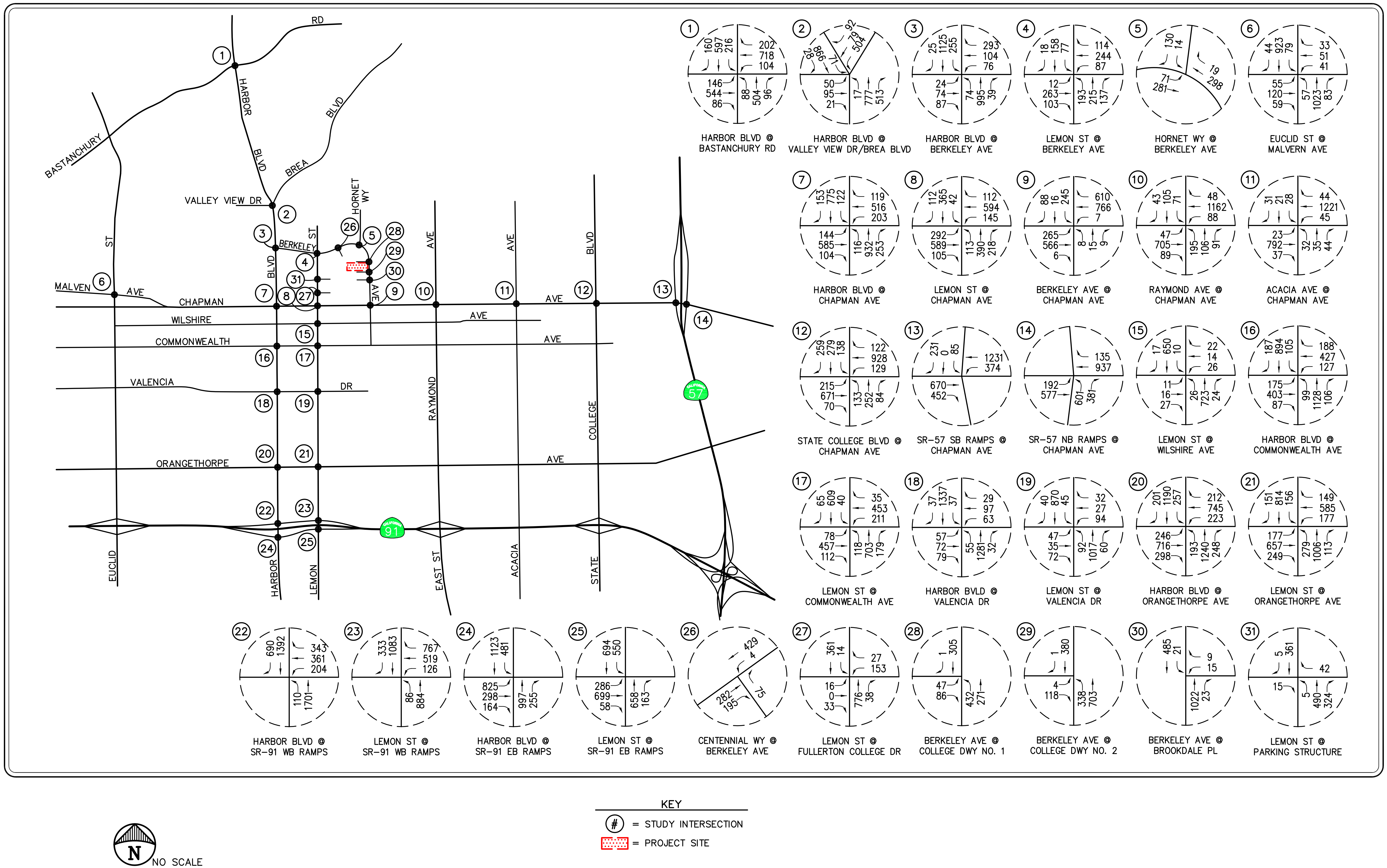

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-44

Year 2020 Saturday Event Arrival Period Cumulative Plus Project Peak Hour Traffic Volumes

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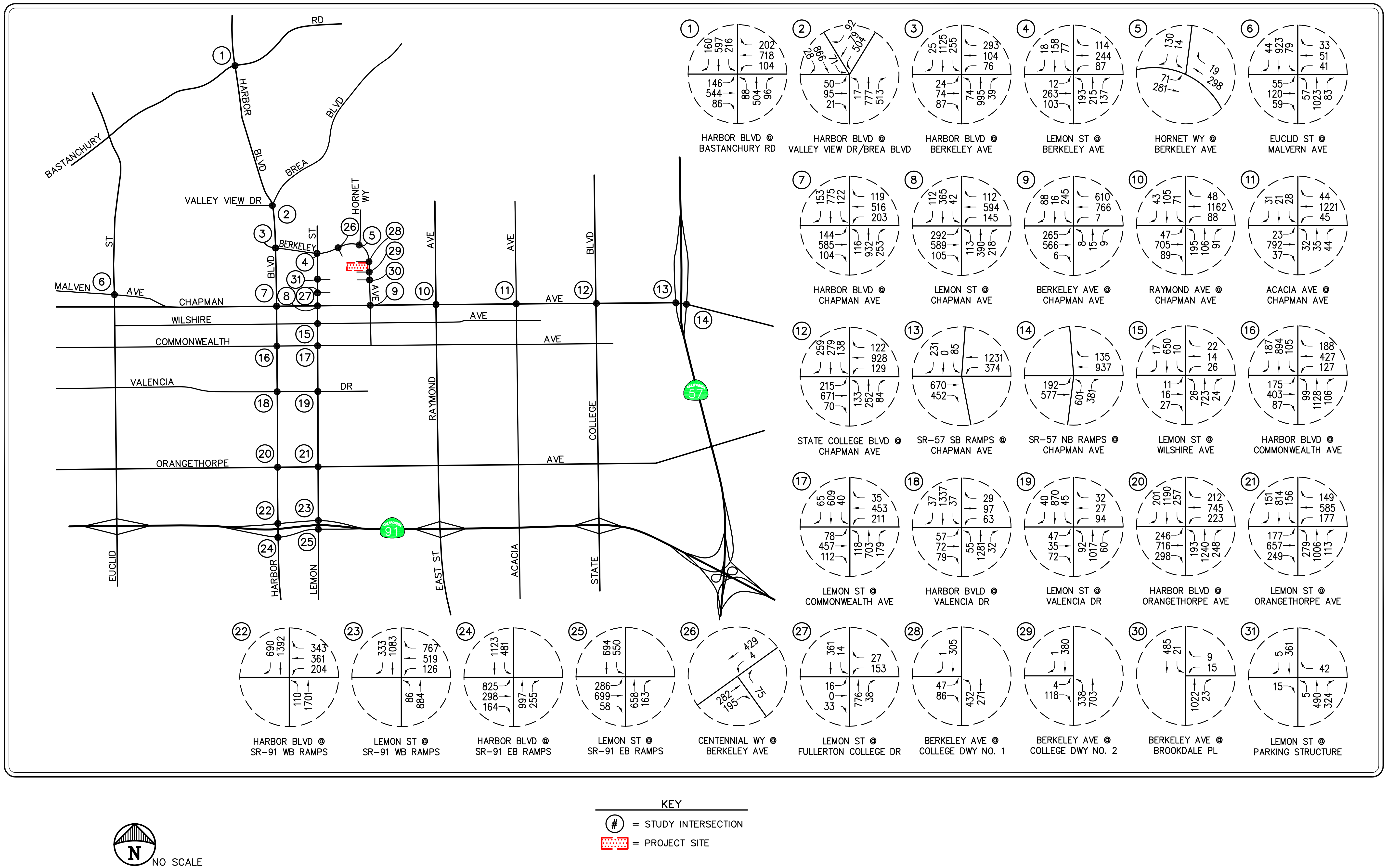

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-45

Year 2020 Saturday Event Departure Period Cumulative Plus Project Peak Hour Traffic Volumes

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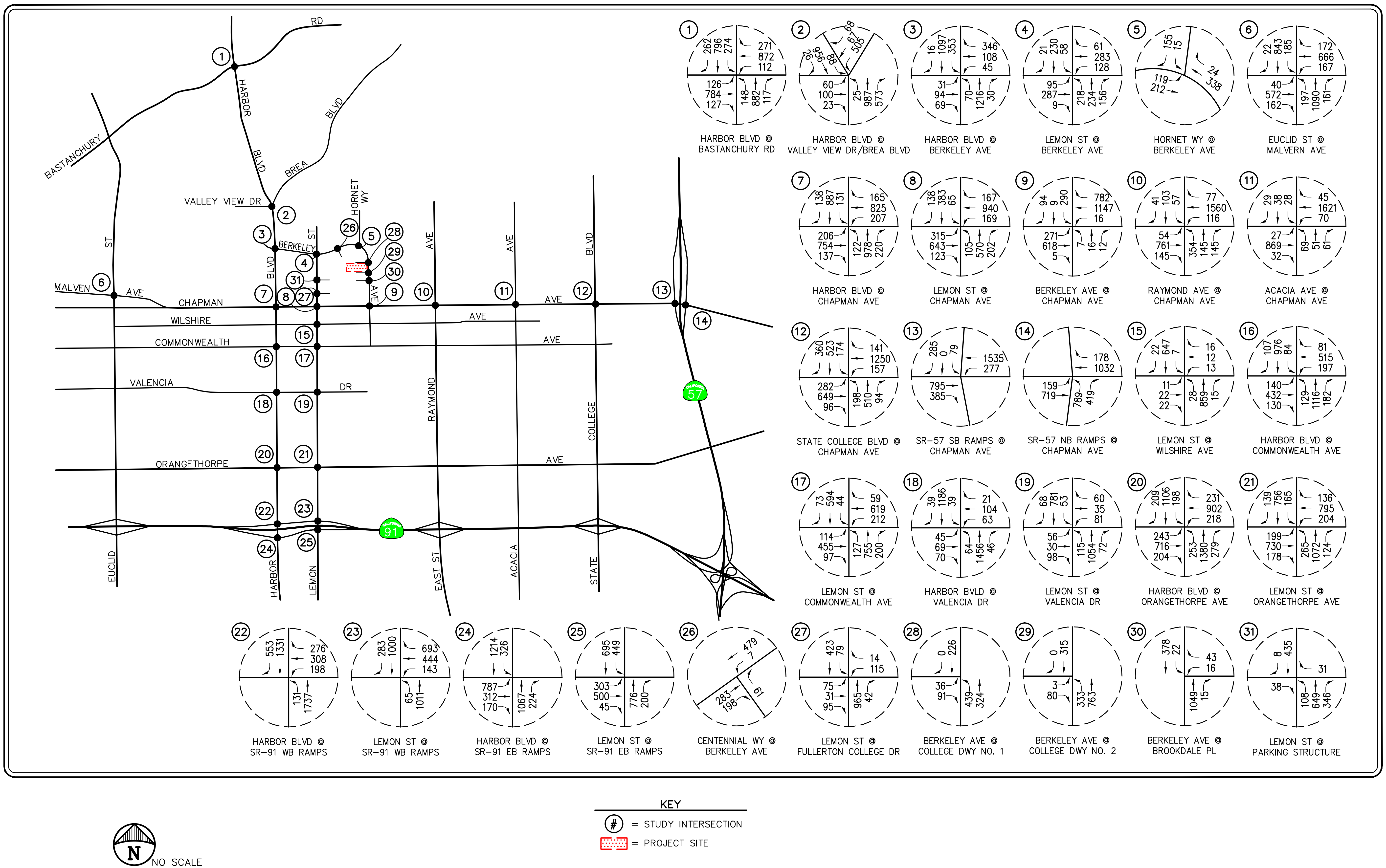

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-46

Year 2020 Friday Event Arrival Period Cumulative Plus Project Peak Hour Traffic Volumes

DUDEK

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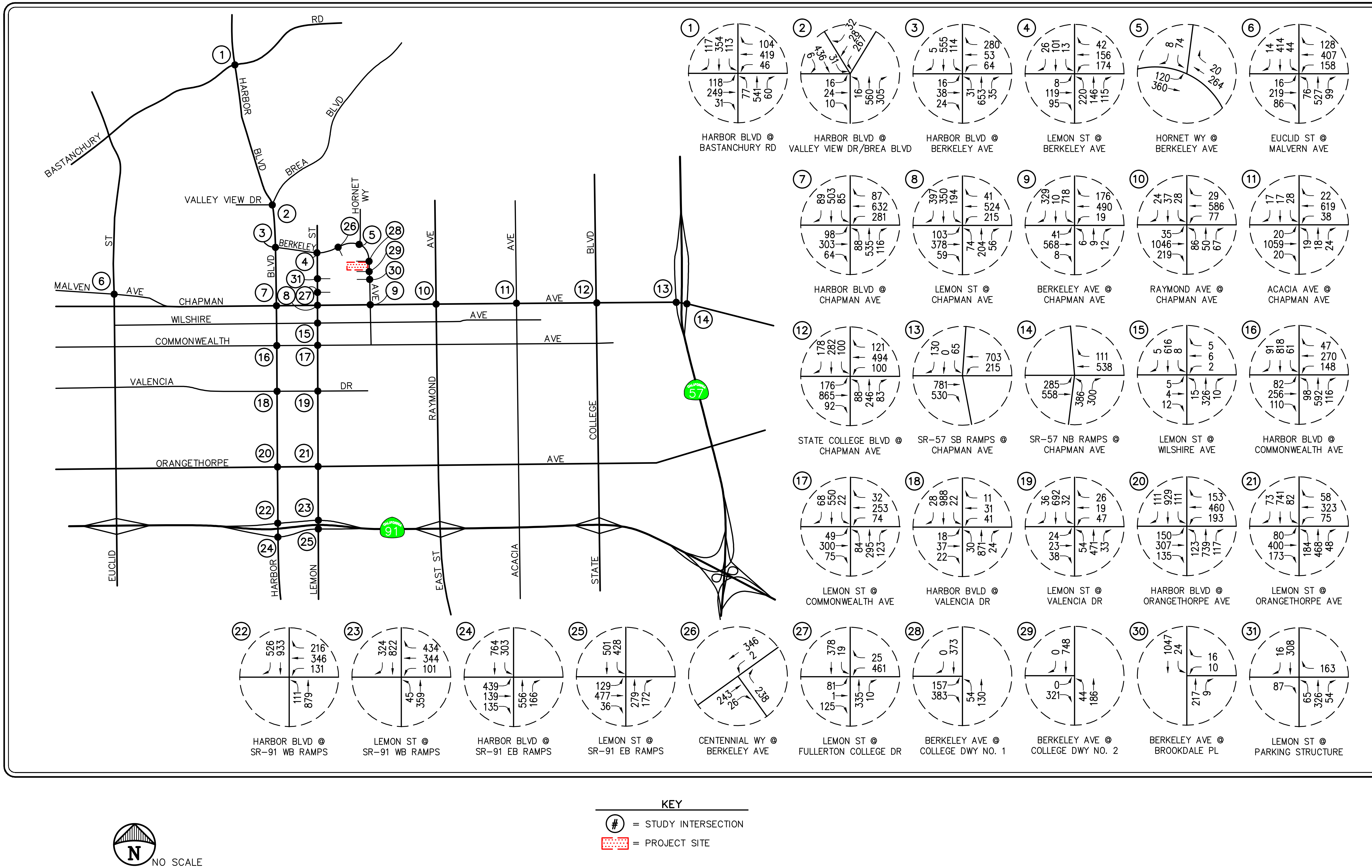

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-47

Year 2020 Friday Event Departure Period Cumulative Plus Project Peak Hour Traffic Volumes

Sherbeck Field Improvements Project Draft Environmental Impact Report

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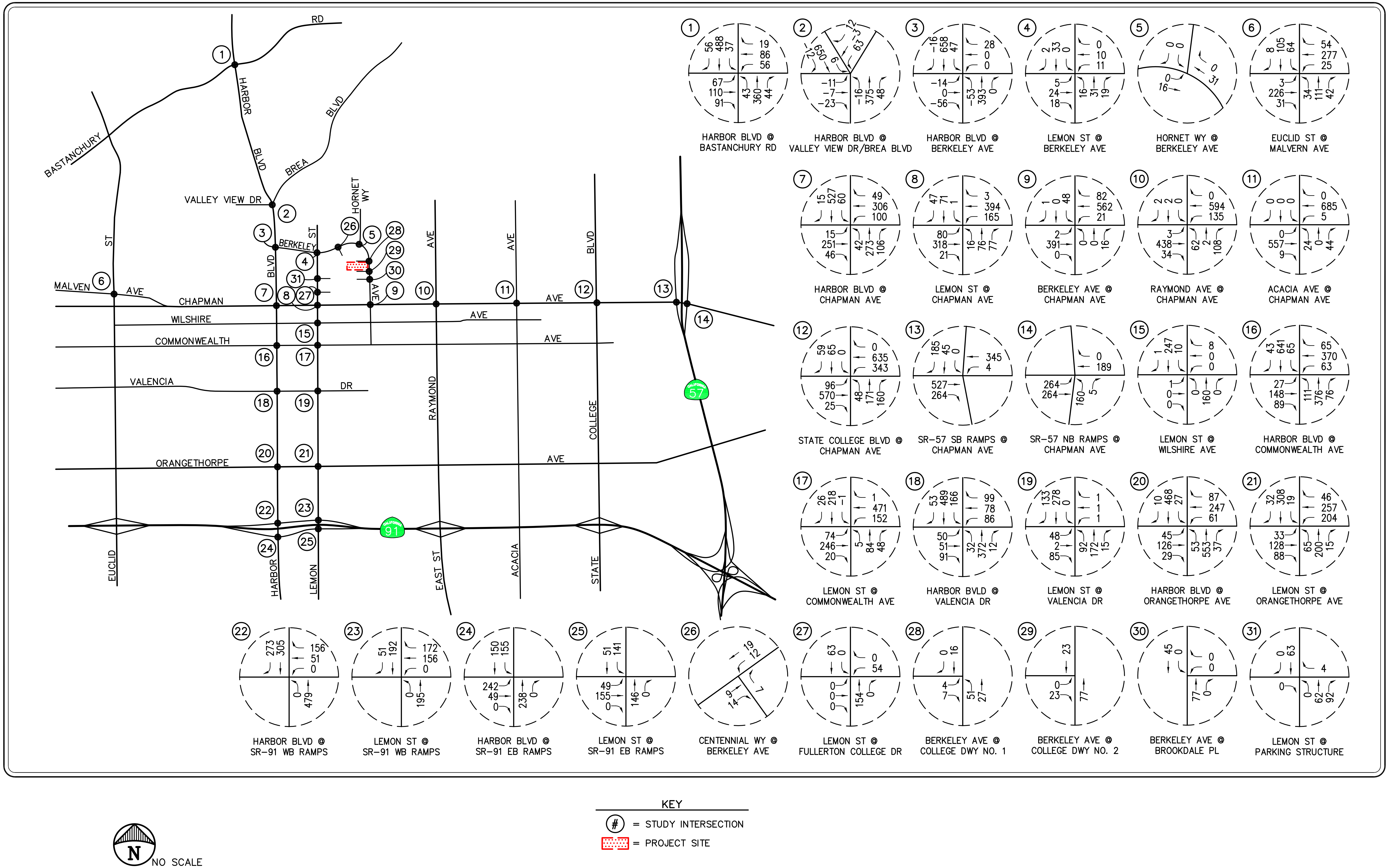

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-48

Year 2030 Weekday PM Peak Hour Cumulative Project Traffic Volumes

Sherbeck Field Improvements Project Draft Environmental Impact Report

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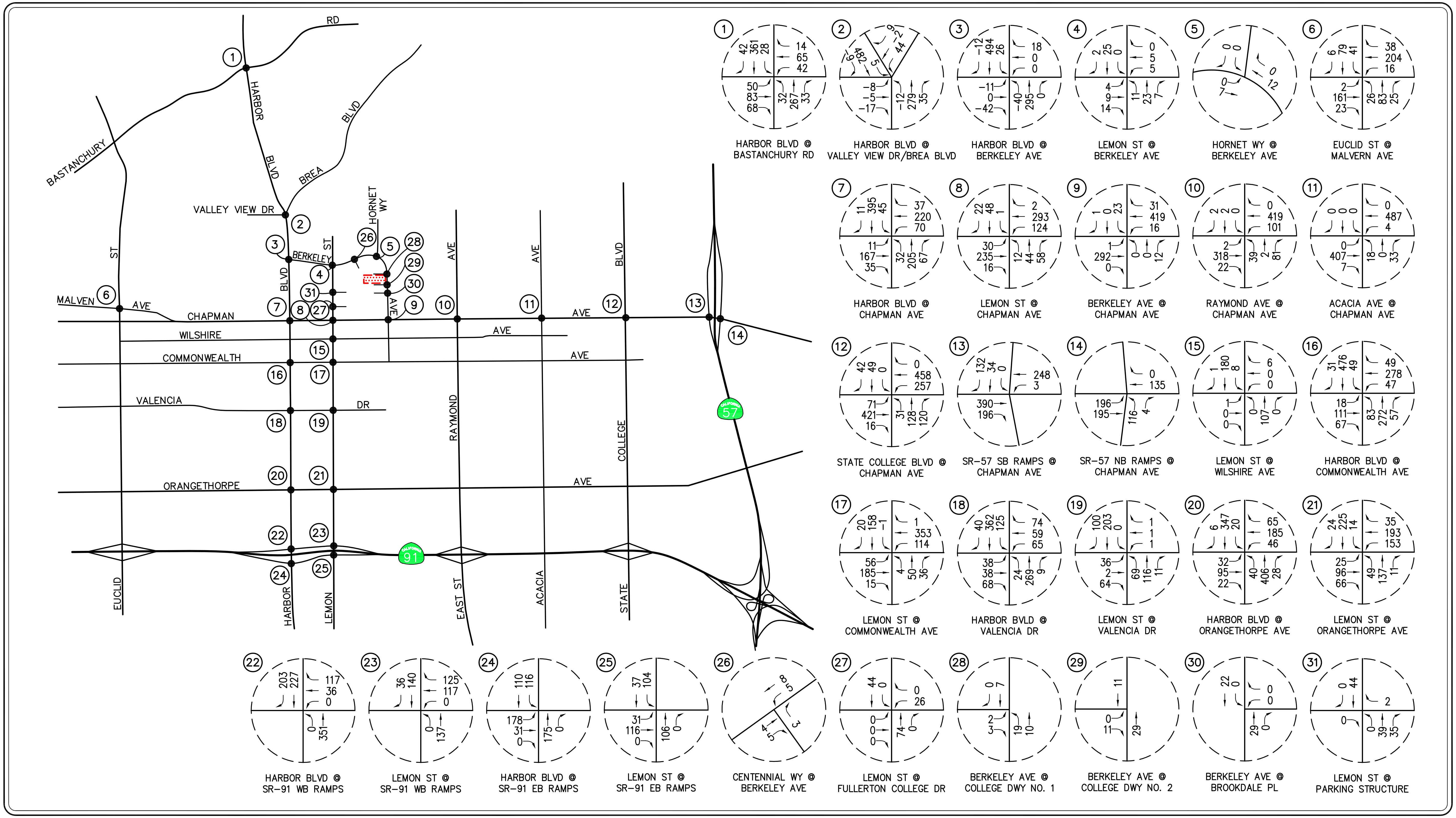

KEY
= STUDY INTERSECTION
= PROJECT SITE

N NO SCALE

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-49

Year 2030 Saturday Event Arrival Period and Event Departure Period Peak Hour Cumulative Project Traffic Volumes

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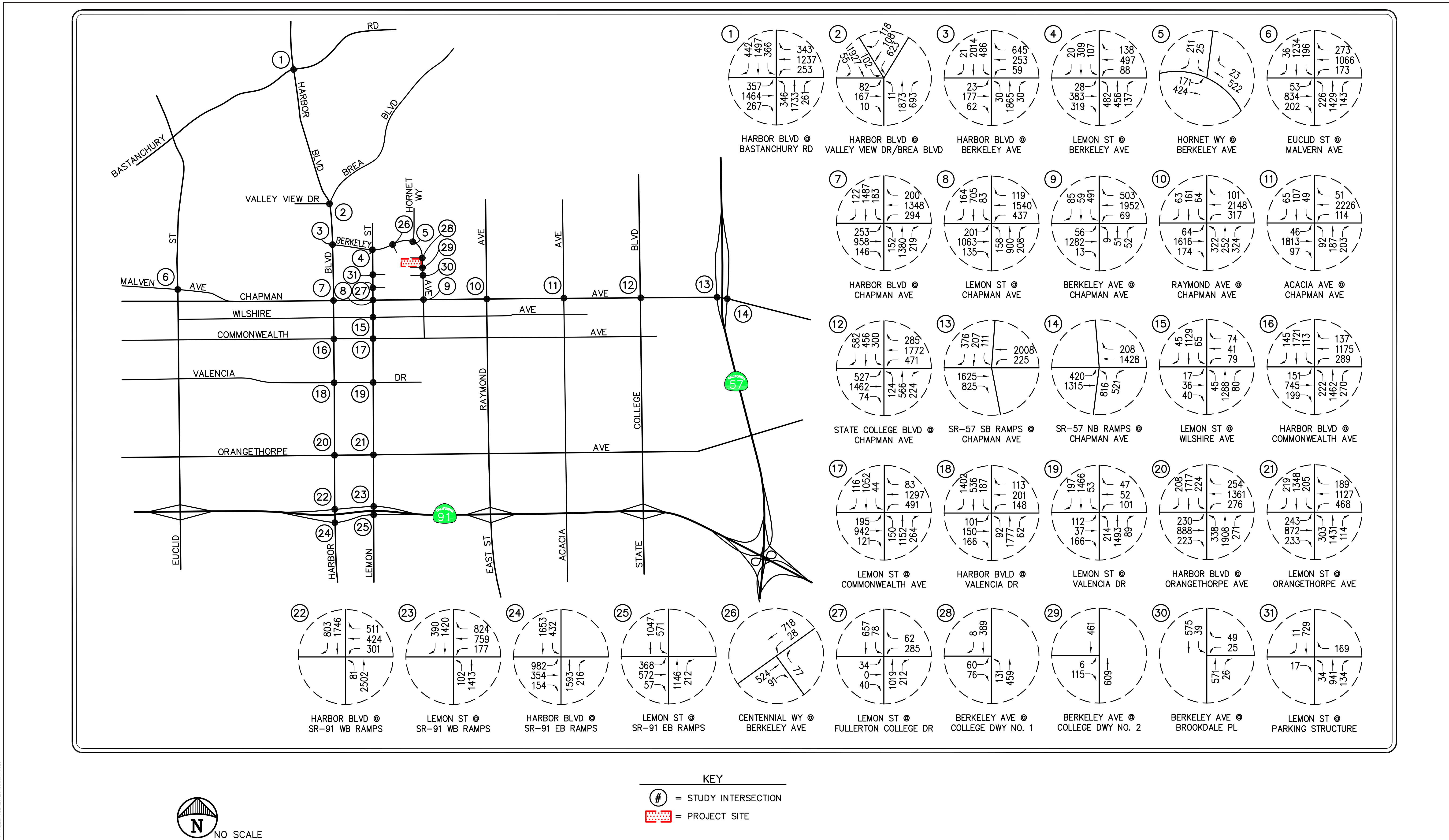

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-50

Year 2030 Weekday Buildout PM Peak Hour Traffic Volumes

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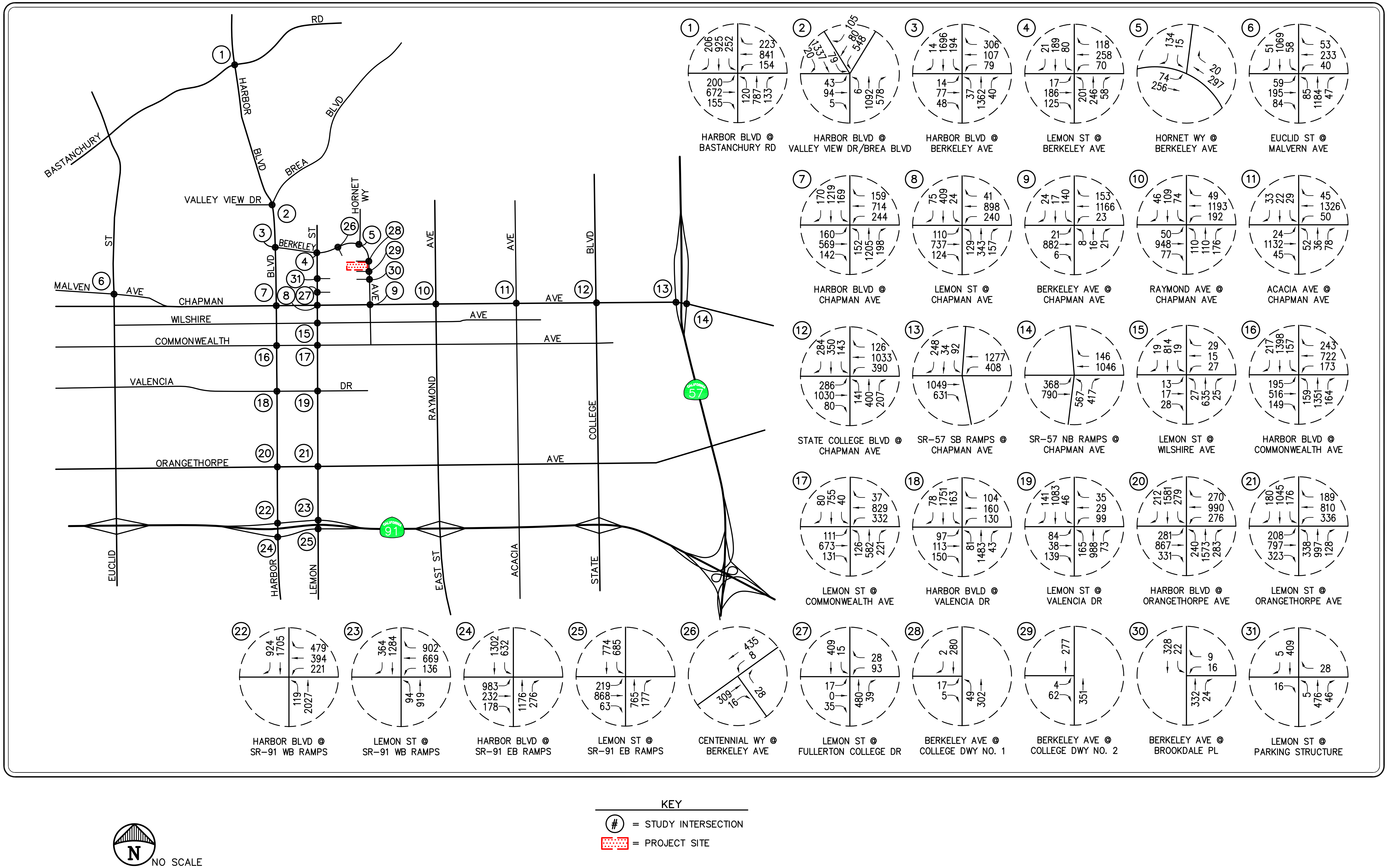

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-51

Year 2030 Saturday Event Arrival Period Buildout Traffic Volumes

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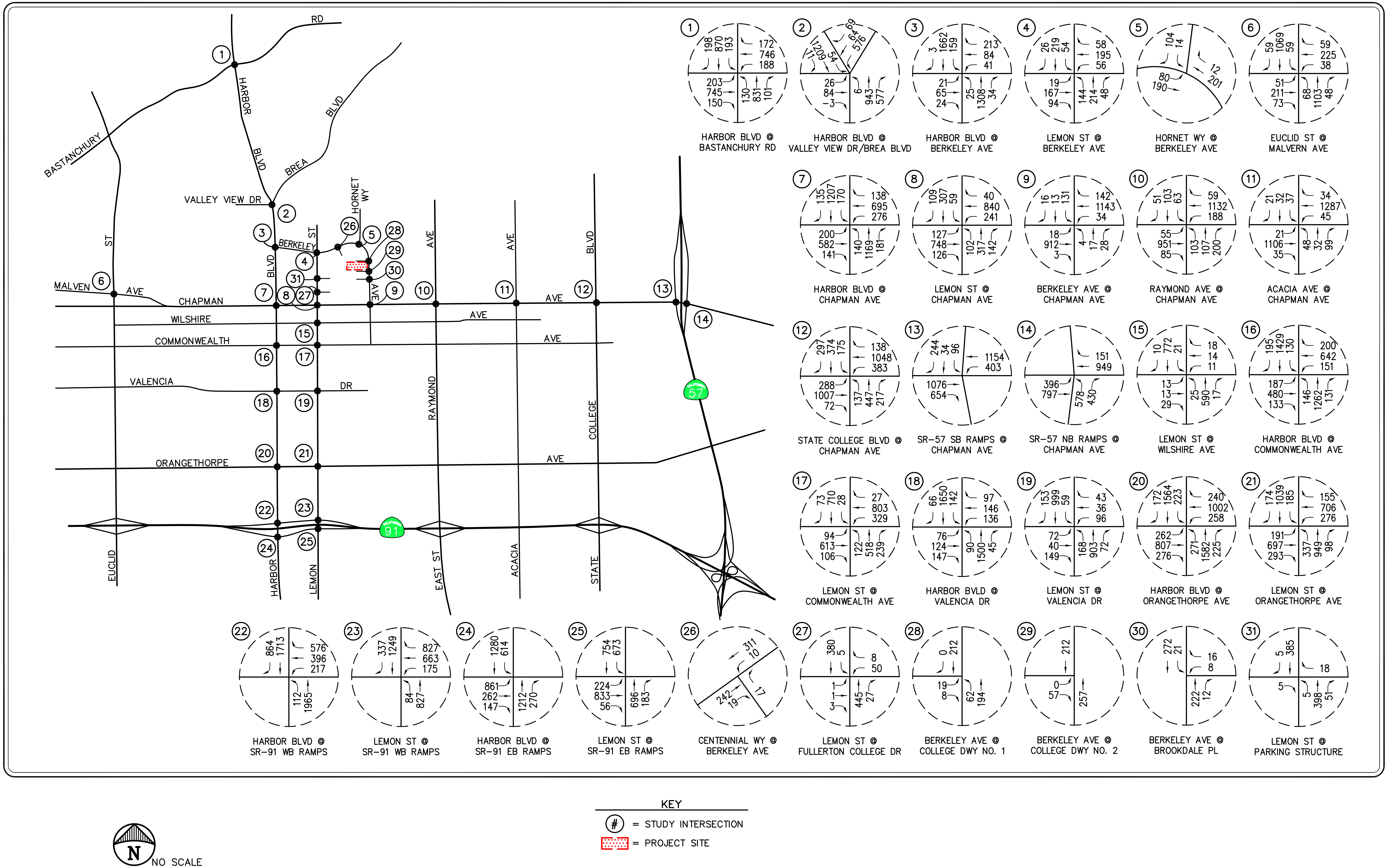

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-52

Year 2030 Saturday Event Departure Period Buildout Traffic Volumes

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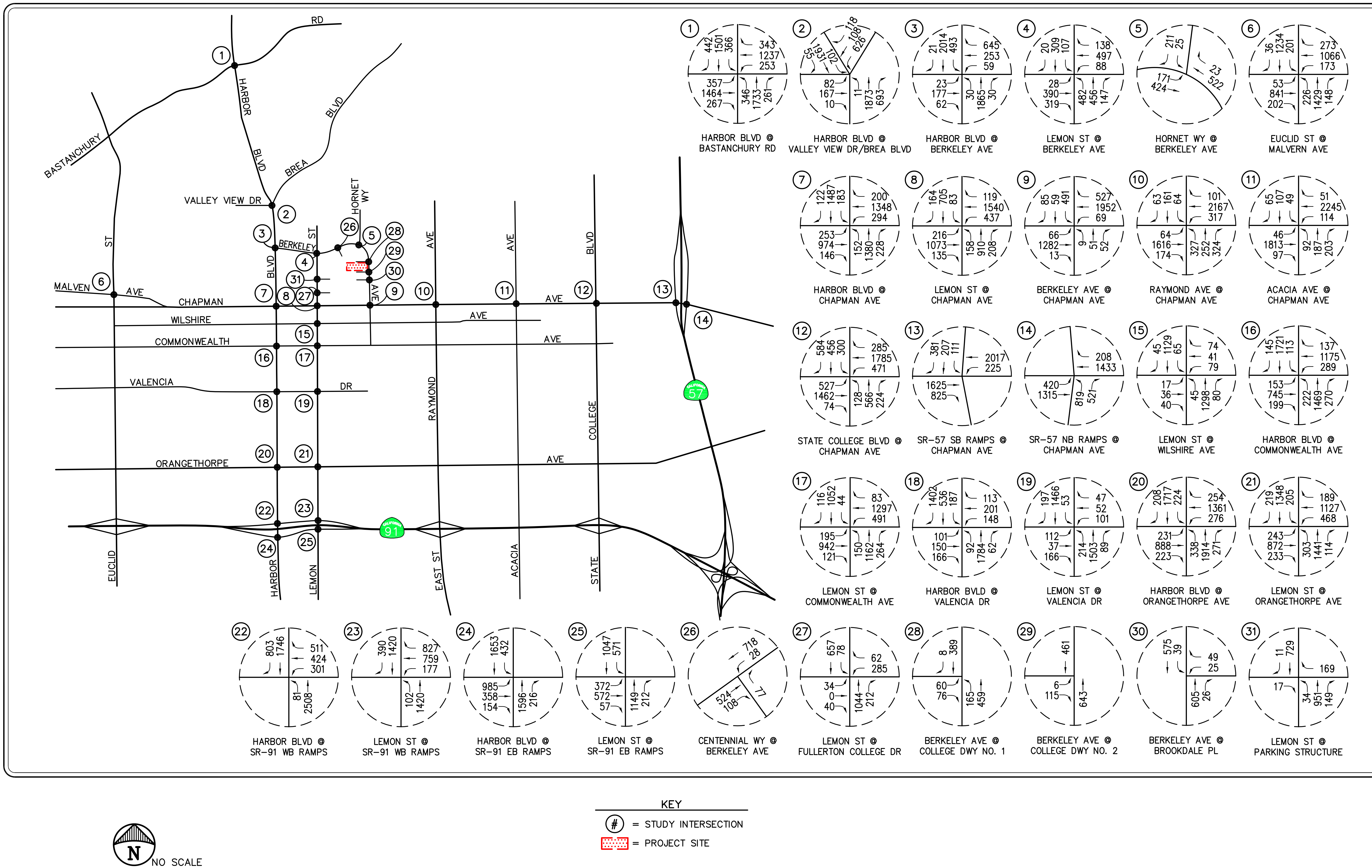

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-53

Year 2030 Weekday Buildout Plus Project PM Peak Hour Traffic Volumes

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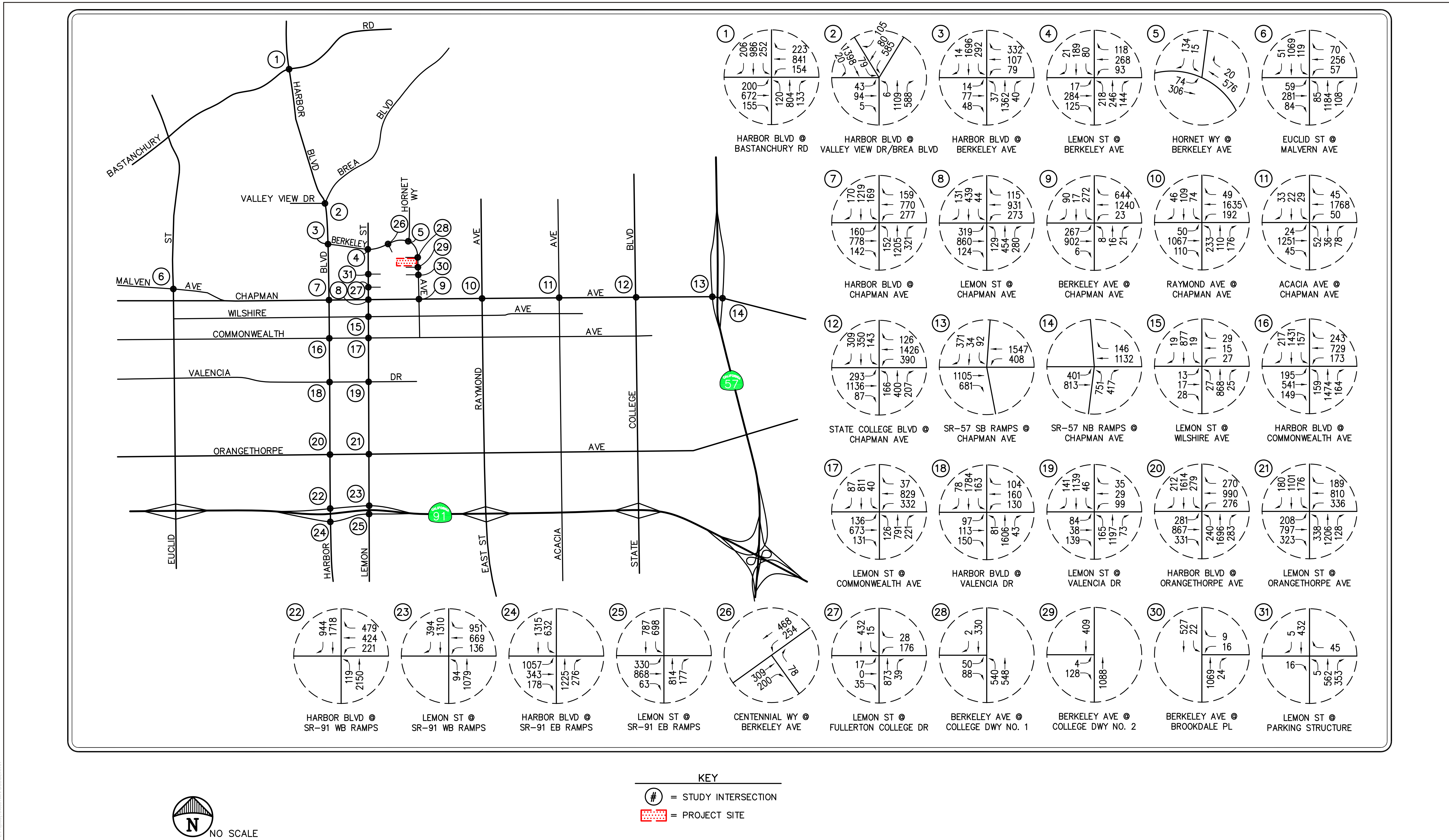

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-54

Year 2030 Saturday Event Arrival Period Buildout Plus Project Peak Hour Traffic Volumes

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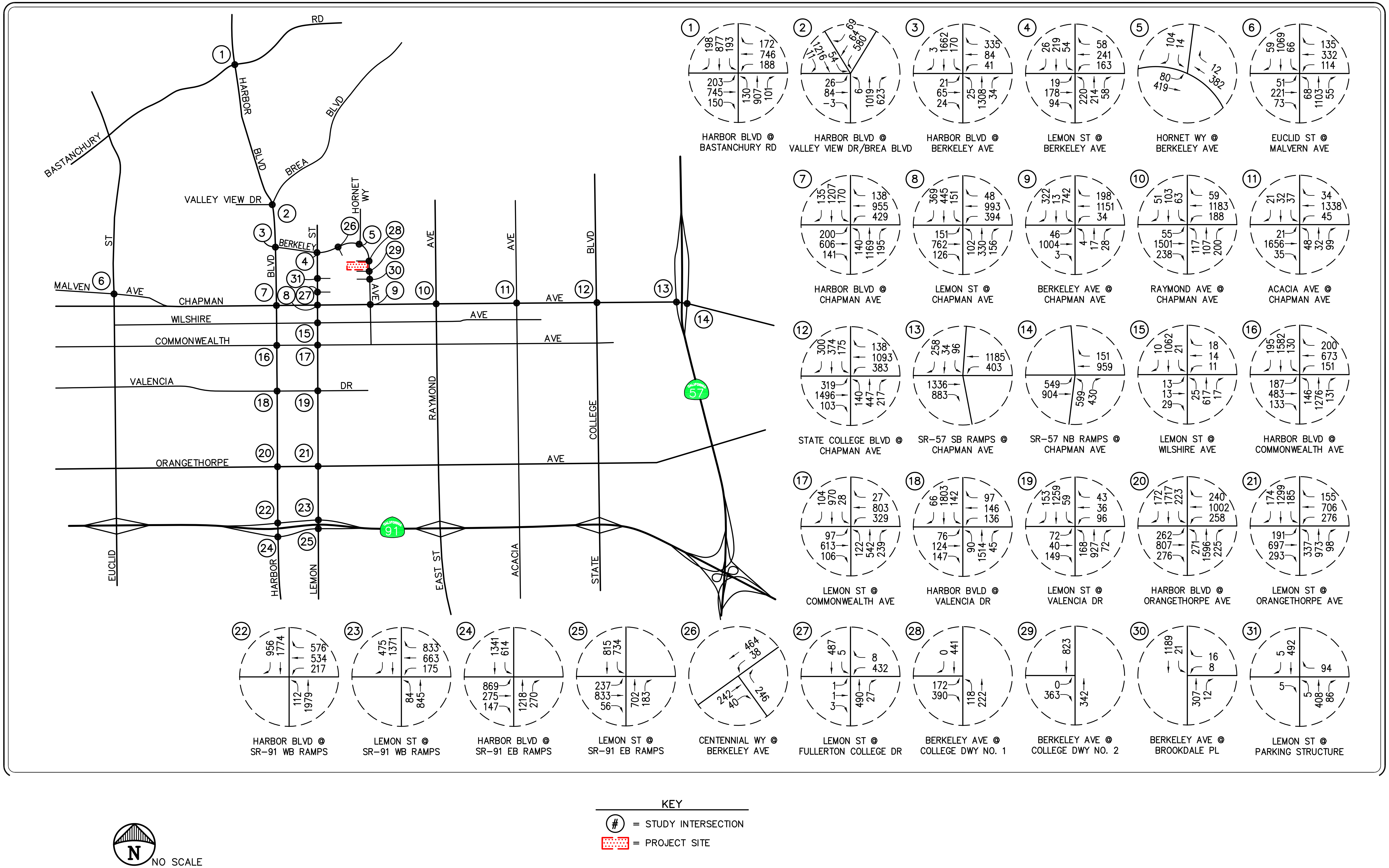

SOURCE: Linscott, Law & Greenspan 2018

FIGURE 4.8-55

Year 2030 Saturday Event Departure Period Buildout Plus Project Peak Hour Traffic Volumes

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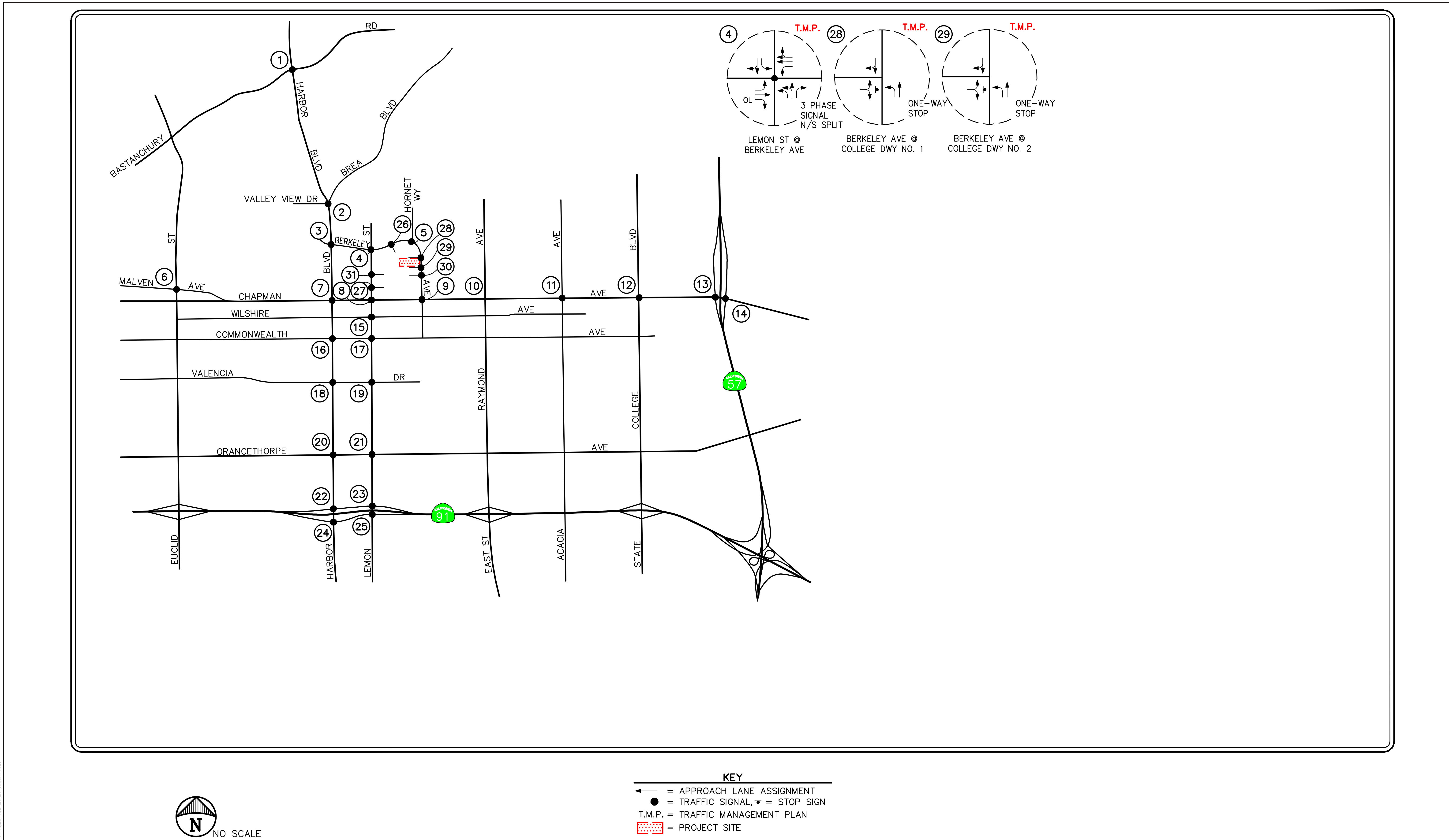

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-56

Existing Plus Project Saturday Recommended Improvements

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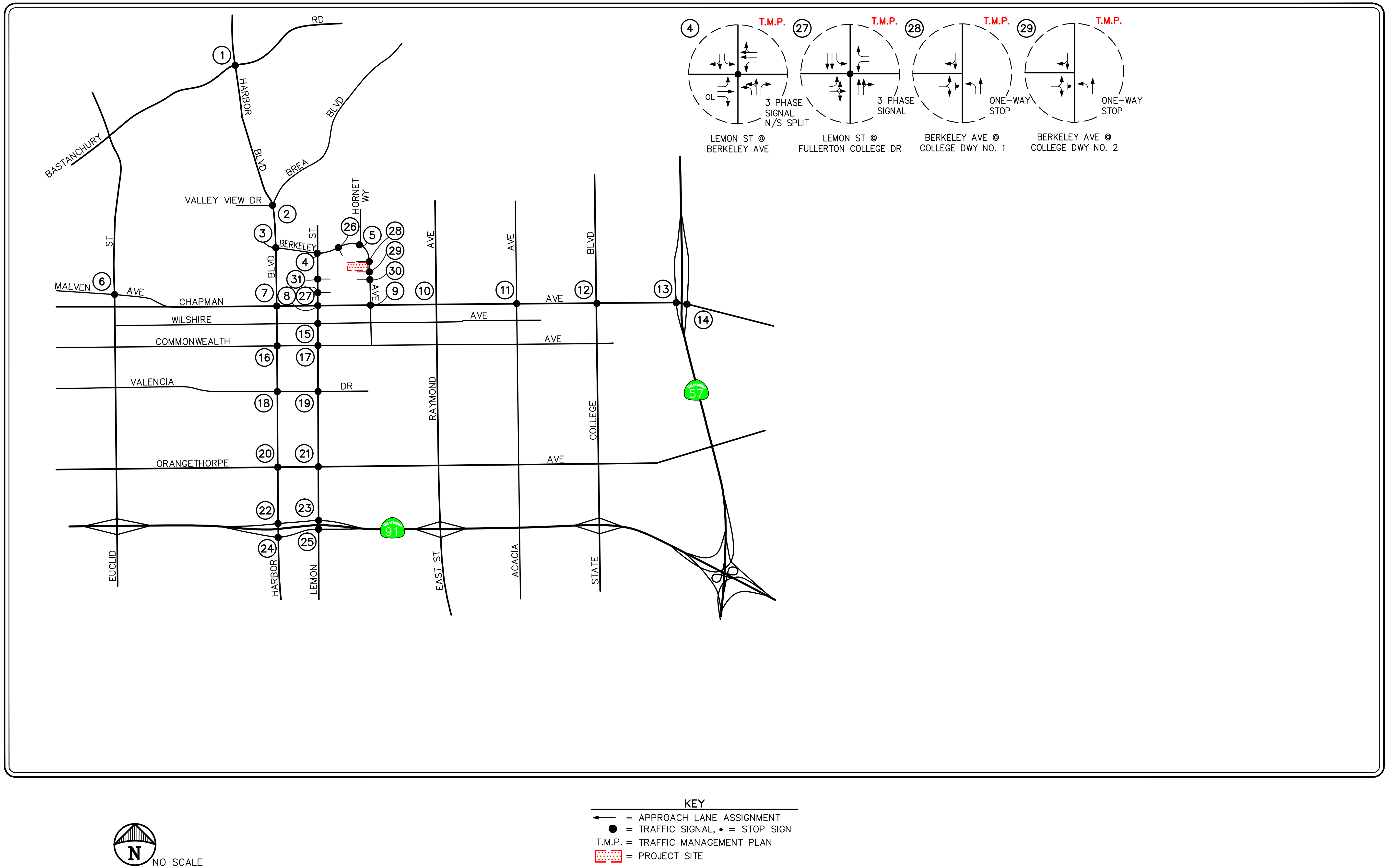

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-57

Existing Plus Project Friday Recommended Improvements

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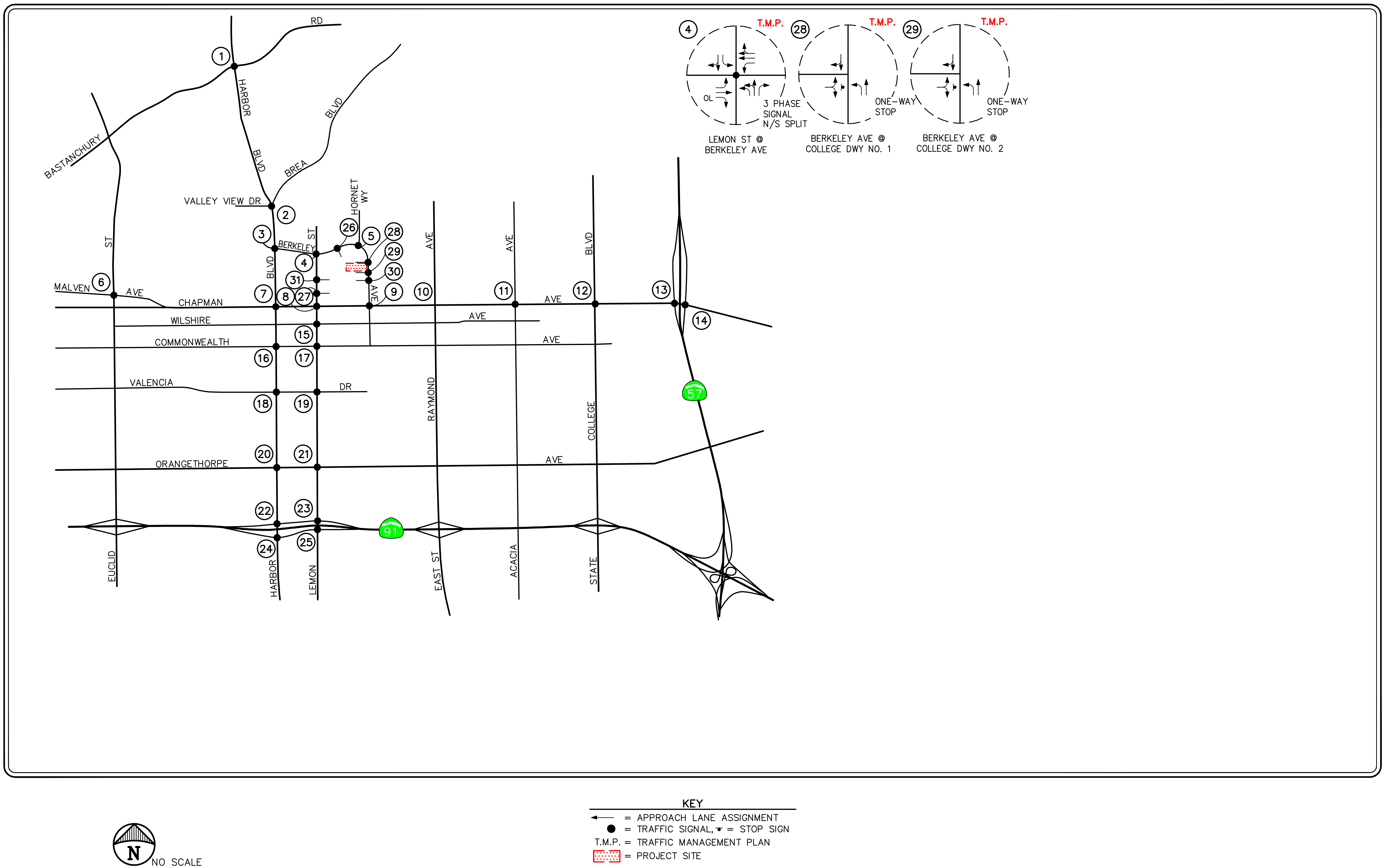

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-58

Year 2020 Saturday Recommended Improvements

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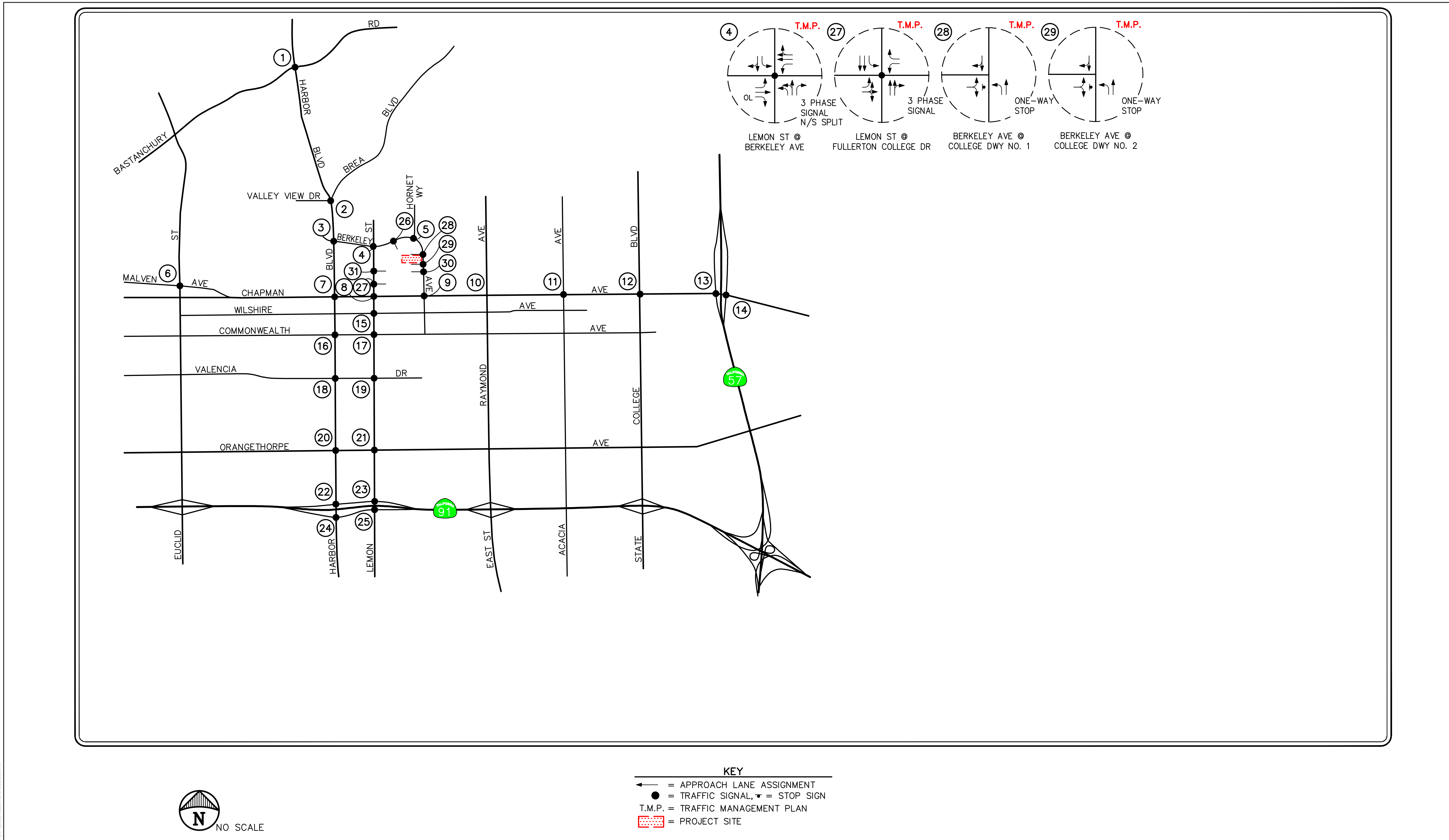

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-59

Year 2020 Friday Recommended Improvements

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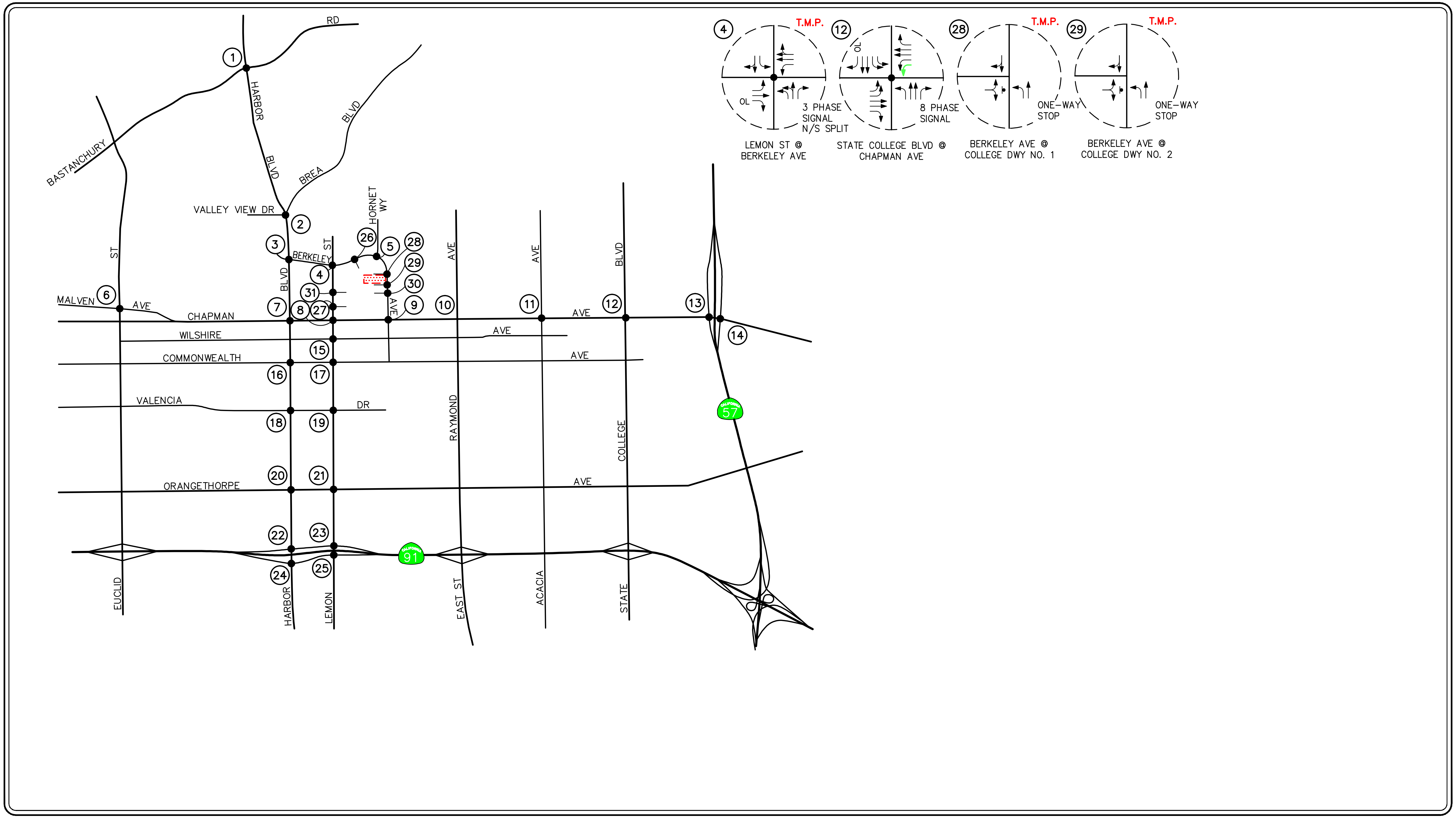

KEY
- = APPROACH LANE ASSIGNMENT
- = YEAR 2030 RECOMMENDED IMPROVEMENTS
- = TRAFFIC SIGNAL, = STOP SIGN
- T.M.P. = TRAFFIC MANAGEMENT PLAN
- = PROJECT SITE

NO SCALE

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-60

Year 2030 Saturday Recommended Improvements

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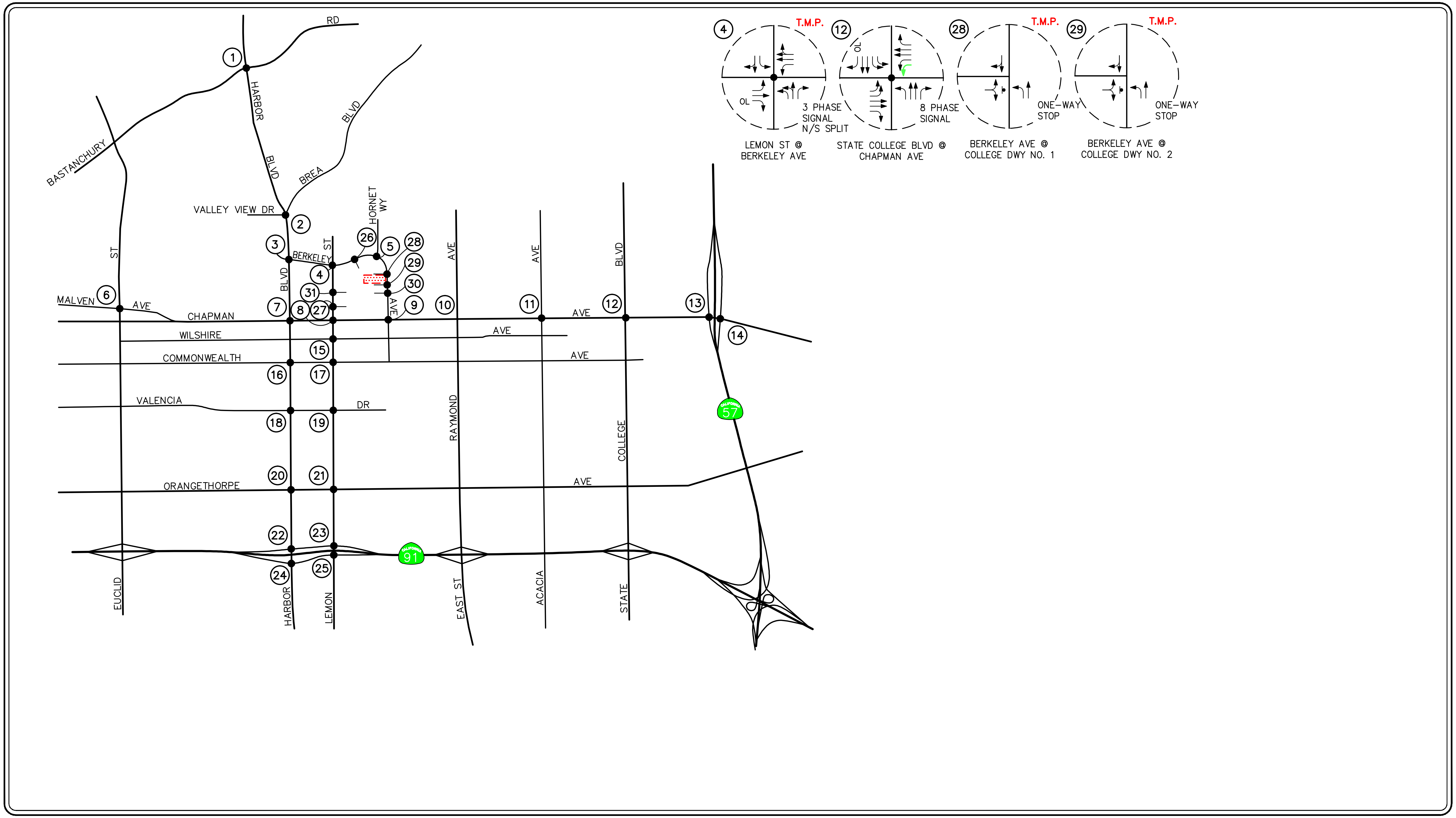

KEY
= APPROACH LANE ASSIGNMENT
= YEAR 2030 RECOMMENDED IMPROVEMENTS
= TRAFFIC SIGNAL, = STOP SIGN
T.M.P. = TRAFFIC MANAGEMENT PLAN
= PROJECT SITE

N
NO SCALE

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-61

Year 2030 Caltrans Recommended Improvements

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SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-62

Traffic Management Plan Details Saturday Field Event Arrival Period

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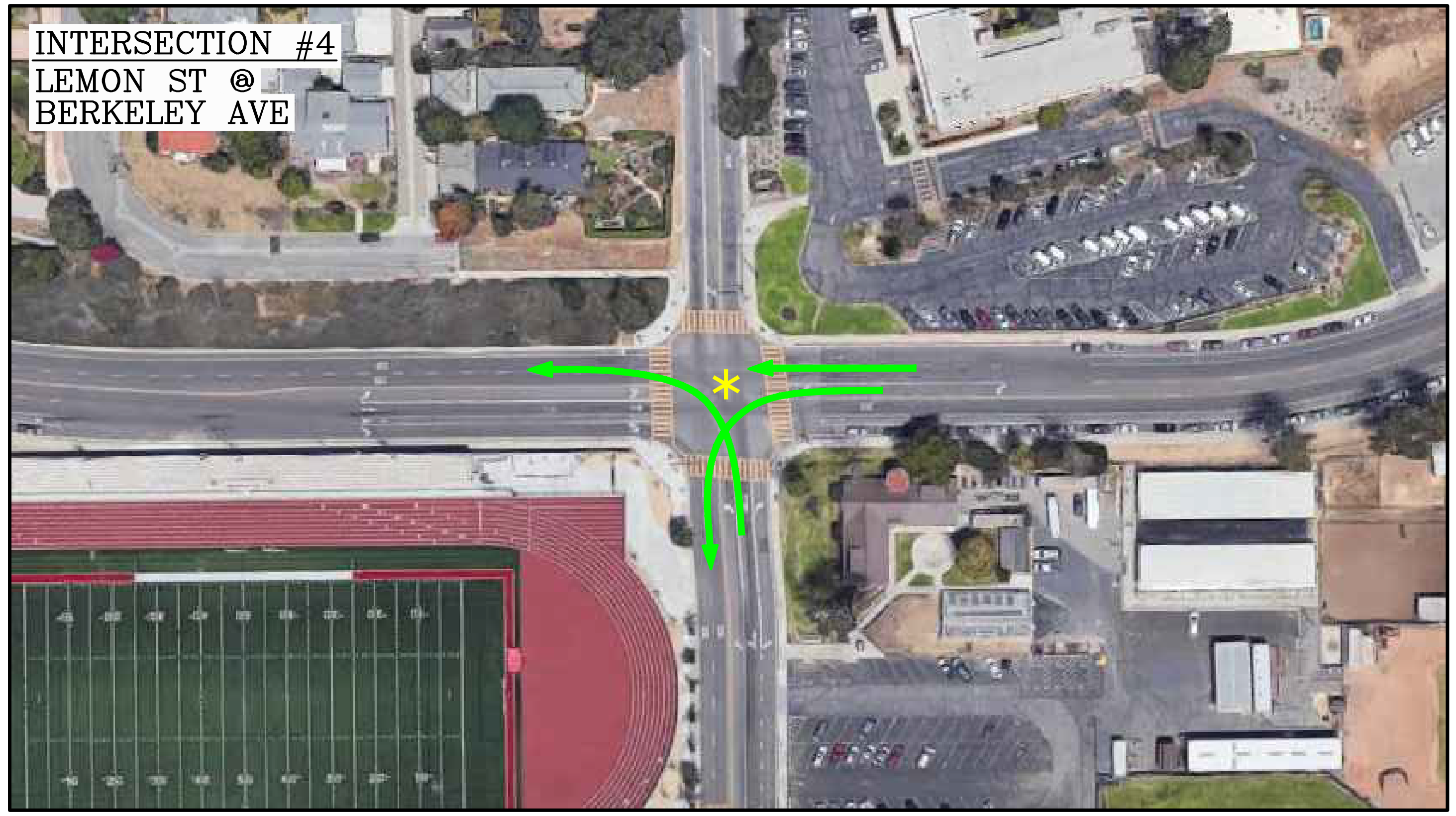

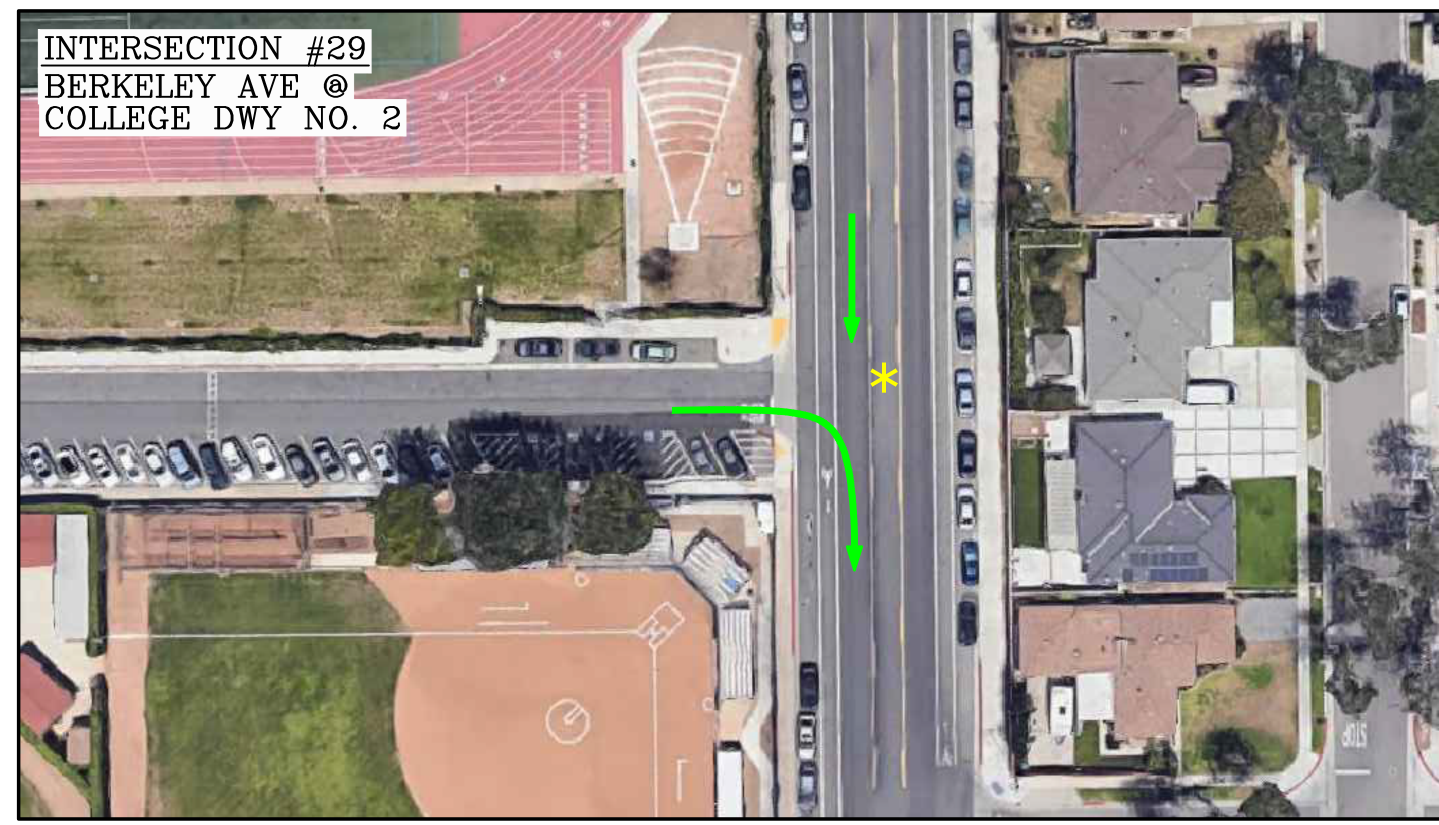

NO SCALE

KEY
* = POLICE DEPARTMENT STAFF
← = PROJECT TRAFFIC MOVEMENT

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-63

Traffic Management Plan Details Saturday Field Event Departure Period

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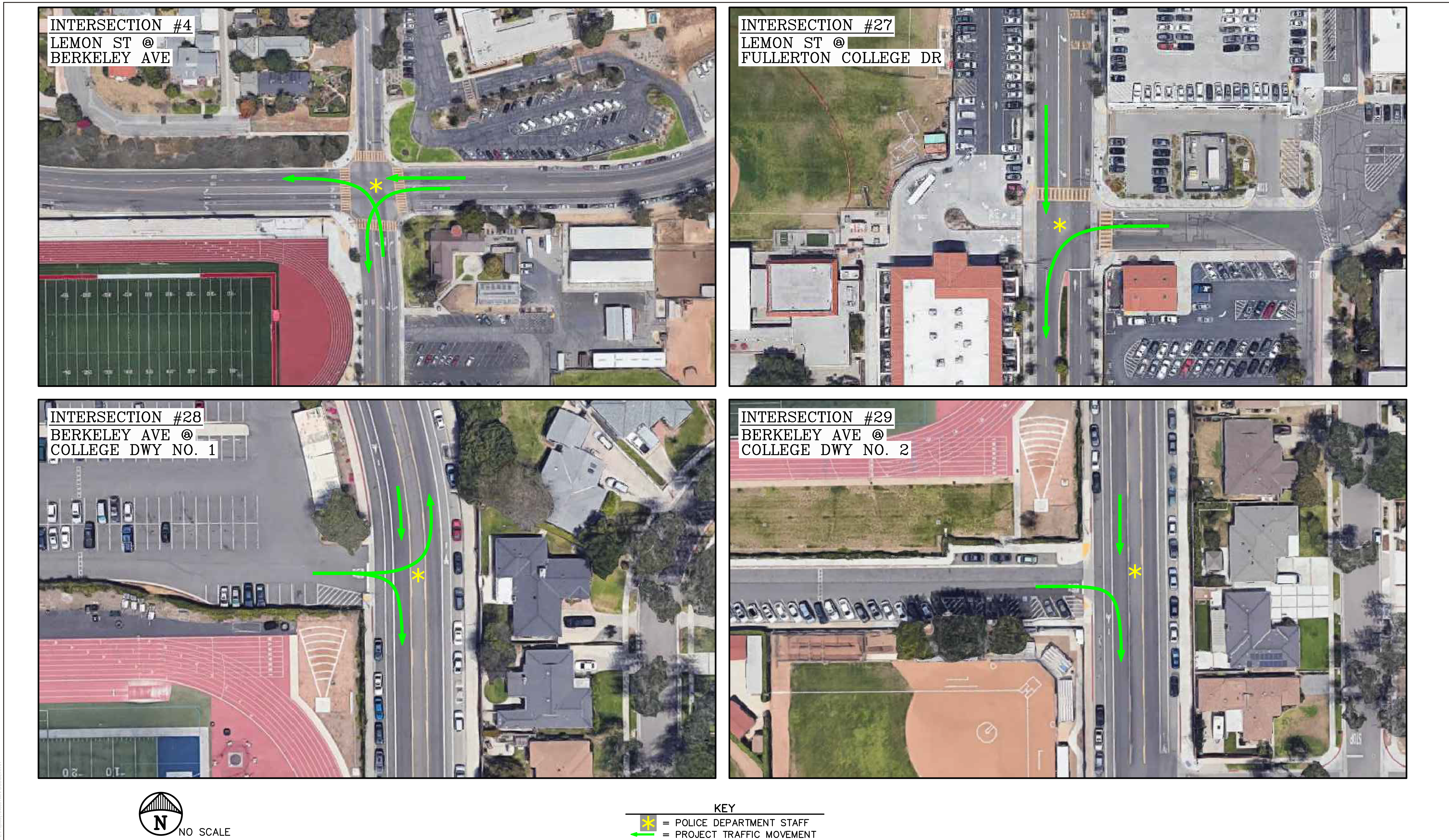

SOURCE: Linscott, Law & Greenspan 2018

DUDEK

FIGURE 4.8-64

Traffic Management Plan Details Friday Field Event Departure Period

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4.9 TRIBAL CULTURAL RESOURCES

This section describes any existing tribal cultural resources within the vicinity of the project site, identifies associated regulatory requirements, evaluates potential impacts (including cumulative impacts), and identifies any necessary mitigation measures related to implementation of the proposed Sherbeck Field Improvements Project (proposed project).

4.9.1 Existing Conditions

Prior to the founding of the City of Fullerton (City) in 1887, the area was largely an agricultural community with pioneer settlements. Fullerton College was formed in 1913 and held its first classes at the adjoining Fullerton Union High School to the west (Richey et al. 2012). Historical aerial photographs (1938 to 2016) and topographic maps (1896 to 2012) of the Fullerton College campus indicate that prior to the construction of the existing Sherbeck Field in 1956 to 1957, the site was occupied by orchards (Black Rock Geosciences 2018). The field house, turf, and rubberized track presently located on Sherbeck Field were constructed in 2010 (California Community Colleges 2016).

Records Search

A Cultural Resources Report prepared for the Fullerton College Facilities Master Plan (Appendix G) included a review of documents and photos available online through the Fullerton College library, available reports and historic documents on file with Fullerton College or the North Orange County Community College District (District), local newspapers, historic aerials, and other sources of information regarding the history and development of the campus. A pedestrian survey of the entire Fullerton College campus was conducted on February 20, 2017. In addition, a California Historical Resources Information System (CHRIS) records search of the Fullerton College campus and the areas within a 0.5-mile radius of the campus occurred at the South Central Coastal Information Center on December 14, 2016. The CHRIS search included a review of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California Points of Historical Interest list, the California Historical Landmarks list, the Archaeological Determinations of Eligibility list, and the California State Historic Resources Inventory list.

The CHRIS records search indicated that 41 cultural resources were previously recorded, and 22 cultural resources studies have been conducted within a 0.5-mile search radius of the Fullerton College campus. Two of the 41 recorded cultural resources overlap the Fullerton College campus: Fullerton Junior College, at 321 East Chapman Avenue, and Wilshire Junior High School, at 315 East Wilshire Avenue. Both of these built-environment resources are City of Fullerton Local Landmarks, and thus, are considered historic resources. The other 39 recorded cultural resources are located off site, but within 0.5 miles of the campus. There is one archaeological resource recorded off of the campus but within 0.5 miles of the project site: the Fullerton Transit Historical Reuse deposit (Appendix G). For further details about these resources, see Appendix G.

Native American Coordination

Sacred Lands File Search

As part of the process of identifying cultural resources within or near the Fullerton College campus, Dudek contacted the Native American Heritage Commission (NAHC) to request a review of the Sacred Lands File for the Fullerton College Facilities Master Plan Project, which included the entire Fullerton College campus. NAHC emailed a response on January 19, 2017, which stated that the Sacred Lands File search was completed with negative results. In other words, the NAHC did not identify the Fullerton College campus as Sacred Lands, which are likely to contain tribal cultural resources. Nonetheless, the NAHC provided a contact list of tribes with traditional lands or cultural places located within the boundaries of Orange County.

Because the Sacred Lands File search does not include an exhaustive list of Native American cultural resources, NAHC suggested contacting Native American individuals and/or tribal organizations who may have direct knowledge of cultural resources in or near the campus. NAHC provided the contact list along with the Sacred Lands File search results. Documents related to the NAHC Sacred Lands File search are included in Appendix B of the Cultural Resources Report (Appendix G).

Assembly Bill 52 Efforts

The proposed project is subject to compliance with Assembly Bill (AB) 52, which requires consideration of impacts to tribal cultural resources as part of the CEQA process, and requires the CEQA lead agency to notify any groups (who have requested notification) of the proposed project who are traditionally or culturally affiliated with the geographic area of the project. For the definition of "tribal cultural resources," please see California Public Resources Code, Section 21074; for a description of the consultation process, please see California Public Resources Code, Sections 21080.3.1 and 21080.3.2.

The District received one request from California Native American tribes for AB 52 project notification. The request came from Andrew Salas, Chairman of the Gabrieleño Band of Mission Indians–Kizh Nation, whom the District has previously been in consultation with in accordance with AB 52 regarding the identification of Tribal Cultural Resources within or adjacent to the proposed project site. No known geographically defined tribal cultural resources were identified within, or in the immediate vicinity of, the campus during prior consultation with Mr. Salas and the Gabrieleño Band of Mission Indians–Kizh Nation. (See Section 4.9.4, below, for additional information.)

4.9.2 Regulatory Framework

Federal

National Register of Historic Places

The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service, under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act, as amended. Its listings encompass all National Historic Landmarks, as well as historic areas administered by the National Park Service.

NRHP guidelines for the evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a resource to be listed in or determined eligible for listing, it must meet at least one of the following criteria:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 1990). Integrity is defined in NRHP guidance, "How to Apply the National Register Criteria," as "the ability of a property to convey its significance." Districts, sites, buildings, structures, and objects must possess integrity of location, design, setting, materials, workmanship, feeling, and association. To retain historic integrity a property will always possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance.

NRHP guidance further asserts that properties be completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing.

State

California Register of Historical Resources

In California, the term "historical resource" includes, but is not limited to, "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code, Section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (California Public Resources Code, Section 5024.1(a)). The criteria for listing resources on the CRHR, enumerated below, were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP. According to California Public Resources Code, Section 5024.1(c)(1)–(4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

In order to understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 CCR 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

Assembly Bill 52

As discussed above, the proposed project is subject to compliance with AB 52, which requires consideration of impacts to "tribal cultural resources" as part of the CEQA process. California

Public Resources Code, Section 21074(a)(1)(A) and (B) defines tribal cultural resources as "[s]ites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe" that meet either of the following criteria:

- Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in California Public Resources Code, Section 5020.1(k), or
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in California Public Resources Code, Section 5024.1(c).

California Public Resources Code, Section 21074(b) provides that a cultural landscape meeting specified criteria also is a tribal cultural resource. California Public Resources Code, Section 21074(c) provides for historical, unique archaeological and non-unique archaeological resources to qualify as tribal cultural resources provided certain requirements are met.

As part of the AB 52 tribal consultation process, the CEQA lead agency must notify any groups who have requested notification of the proposed project who are traditionally or culturally affiliated with the geographic area of the project (California Public Resources Code, Section 21080.3.1).

AB 52 establishes that "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (California Public Resources Code, Section 21084.2). It further states that the lead agency shall identify and use measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (California Public Resources Code, Section 21084.3).

Local

Although the District and Fullerton College are not subject to local plans, policies, or ordinances related to historic or tribal cultural resources, this analysis presents relevant policies from the local jurisdiction as guidance only.

City of Fullerton Municipal Code

In the City of Fullerton Municipal Code (City of Fullerton 2001), a "Significant Property" is defined as an individual building, structure, or feature that is considered a historical or cultural resource in the City and that is eligible for "Historical Landmark" designation. A list of Significant Properties is contained in the Resource Management Element of The Fullerton Plan.

15.48.060. Criteria for Designation

A. In considering a request for a "Historical Landmark" designation, the following criteria shall be used in determining eligibility:

1. Character, interest or value as part of the heritage of the city.
2. Location as a site of a historic event.
3. Identification with a person or persons or groups who significantly contributed to the culture and development of the city.
4. Exemplification of a particular architectural style or way of life important to the city.
5. Exemplification of the best remaining architectural types in an area.
6. Identification as the work of a person or persons whose work has influenced the heritage of the city, the state of California or the United States.
7. Embodiment of elements of outstanding attention to architectural design, detail, materials, or craftsmanship.
8. Relationship to other landmarks, where the preservation of one has a bearing on the preservation of another.
9. A unique location or singular physical characteristic representing an established and familiar visual feature of a neighborhood.
10. Integrity as a natural environment that strongly contributes to the well being of the people of the city.

B. In considering a request for a "Landmark District" designation, support of the designation should be demonstrated by a substantial majority of the property owners within the boundary of the proposed district.

4.9.3 Thresholds of Significance

Based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), a project could have a significant impact on tribal cultural resources if the project would:

a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

   i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

4.9.4 Impacts Analysis

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

As part of the Cultural Resources Report (Appendix G) prepared for the Fullerton College Facilities Master Plan, all buildings and structures were photographed, researched, and evaluated for historical significance in consideration of CRHR and City designation criteria. No listed, or eligible for listing, tribal cultural resources were identified on the project site as a result of the CHRIS records search, NAHC Sacred Lands File search, or Native American consultation. Therefore, no impacts associated with historical resources listed or eligible for listing in the CRHR or a local register would occur pertaining to the Sherbeck Field site.

ii A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

As previously discussed, the District has received one request for AB 52 project notification. Specifically, the request came from Andrew Salas, Chairman of the Gabrieleño Band of Mission Indians–Kizh Nation, with whom the District consulted previously on the Fullerton College Facilities Master Plan. Mr. Salas sent a letter to the District, as the lead agency, dated April 1, 2018, to request formal notification of proposed projects within the Gabrieleño Band of Mission Indians–Kihz Nation's geographic area of traditional and cultural affiliation.

Pursuant to Section 15082 of the CEQA Guidelines, a notice of preparation (NOP) dated April 9, 2018, was circulated for a 30-day public comment period. During the public review period, the District contacted Mr. Salas on April 12, 2018, via email, to provide formal notification of the proposed Sherbeck Field Improvements Project. The District provided Mr. Salas an attachment of the Initial Study and NOP. In accordance with CEQA Section 21080.3.1, the District had provided formal notification prior to the release of the EIR. However, the California Native American tribe did not respond within 30 days of receipt of the formal notification. The District followed up with an email to Mr. Salas on June 14, 2018, but as of the publication date of the Draft EIR (May 2019), the District has received no response from Mr. Salas or the Gabrieleño Band of Mission Indians–Kizh Nation. Because the District did not receive any response, there was no requirement for consultation, and thus no consultation occurred.

No archaeological resources were identified within the project site as a result of the CHRIS records search or Native American consultation. In addition, grading activities associated with the proposed project would consist of excavation to an average depth of 3 feet. Since the existing project site has already been graded to a depth of greater than 3 feet for the existing utilities and other developments located on site, it is unlikely tribal cultural resources would be exposed during construction. Therefore, the District also has determined that no significant resources pursuant to the criteria set forth in Public Resources Code Section 5024.1(c) exist on Sherbeck Field or would be impacted by the proposed project. In summary, no known geographically defined tribal cultural resources were identified within, or in the immediate vicinity of, the Fullerton College campus.

Nonetheless, because it is always possible that intact archaeological deposits are present at subsurface levels and could be uncovered during ground-disturbing activities, mitigation measure (MM) TCR-1 is included to reduce impacts to archaeological resources that are significant under CEQA (14 CCR 15064.5(f); California Public Resources Code, Section 21082) to a less than significant level. Therefore, given compliance with all applicable rules, ordinances, and regulations and implementation of MM-TRC-1, significant impacts to tribal cultural resources would be reduced to less than significant levels.

4.9.5 Cumulative Analysis

An evaluation of the potential for cumulative impacts on tribal cultural resources considers whether impacts of the proposed project and related projects, when taken as a whole, substantially diminish the tribal cultural resources within the same or similar context or property type. The project site is located in a predominantly developed part of the City of Fullerton, consisting of residential, commercial, and educational uses. Ongoing development and growth in the broader project area may result in a cumulatively significant impact to cultural resources due to the continuing disturbance of undeveloped areas, which could contain significant buried archaeological, paleontological, or tribal cultural resources. However, the proposed project would be constructed on a developed campus on a developed site, and that campus has been subject to previous ground-disturbing activities, which greatly limits the potential for buried, unrecorded cultural resources to underlie the project site. It is anticipated that any tribal cultural resources potentially affected by related projects would also be subject to the same requirements of CEQA as the proposed project, and that the proponents of such projects would mitigate for impacts resulting from their projects, if applicable. The determinations of significance would be made on a case-by-case basis, and the effects of cumulative development on tribal cultural resources would be mitigated to the extent feasible in accordance with CEQA and other applicable legal requirements. In this instance, the proposed project would not contribute to a cumulatively considerable impact associated with tribal cultural resources, and impacts would be less than significant.

4.9.6 Mitigation Measures

MM-TRC-1 In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether additional study is warranted. Depending on the significance of the find under the California Environmental Quality Act (CEQA), the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work, such as preparation of an archaeological treatment plan, testing, or data recovery, may be warranted.

4.9.7 Level of Significance After Mitigation

Impacts were determined to be less than significant with incorporation of mitigation.

4.9.8 References

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

Black Rock Geosciences. 2018. "Hazardous Materials Contingency Plan for Fullerton College, 321 East Chapman Avenue, Fullerton, California 92832." Prepared by Q. Kinnebrew (Black Rock Geosciences) for North Orange County Community College District. February 2018.

California Community Colleges. 2016. FUSION Assessment Report, FCI Report, North Orange County Community College District. September 16, 2016.

City of Fullerton. 2001. Fullerton Municipal Code, Chapter 15.48: Landmarks, Landmark Districts, Residential Preservation Zones and Significant Properties. http://library.amlegal.com/nxt/gateway.dll/California/fullertn/fullertoncaliforniamunicipalcode?f=templates$fn=default.htm$3.0$vid=amlegal:fullerton_ca.

Richey, D., J. Ishibashi, and C. Varesi. 2012. *Fullerton College: A Pictorial History*. Fullerton College Library. Accessed February 7, 2017. http://libraryfchistory.fullcoll.edu/.

4.10 UTILITIES AND SERVICE SYSTEMS

This section describes the existing sewer infrastructure, water supply and service systems, and storm drains setting of the proposed Sherbeck Field Improvements Project (proposed project) area; identifies associated regulatory requirements; evaluates the project's potential impacts, including cumulative impacts; and identifies any mitigation measures recommended to address the proposed project's significant impacts, if any.

This resource area was originally eliminated from further consideration in the Initial Study (Appendix A); however, a comment related to utilities and services systems was received in response to the notice of preparation (NOP) from the City of Fullerton (City). The City requested that the environmental impact report (EIR) evaluate the impact to public infrastructure, using anticipated quantities of discharge into storm drains and sewers and anticipated water use. These topics are discussed further in Section 4.10.4, Impacts Analysis.

4.10.1 Existing Conditions

Wastewater

The Orange County Sanitation District (OCSD) is a public agency that provides wastewater collection, treatment, and disposal services to approximately 2.6 million people in central and northwest Orange County. OCSD has two operating facilities that treat wastewater from residential, commercial, and industrial sources (OCSD 2018a). OCSD maintains and operates Reclamation Plants No. 1 and No. 2, which are located in Fountain Valley and Huntington Beach, respectively, as well as 15 pump stations located in the OCSD service area (479 square miles) (OCSD 2017). On average, OCSD collects, treats, and recycles 184 million gallons per day (MGD) of wastewater, with approximately 117 MGD at Plant No. 1 and 67 MGD going to Plant No. 2 for the 2016–2017 fiscal period (OCSD 2018b). OCSD maintains two trunk sewers that serve the City of Fullerton, the Knott Interceptor and the Miller-Holder Trunk Sewer. Wastewater collected from the City's local conveyance system is discharged into one of the OCSD trunk sewers and treated at OCSD Plant No. 2, located in Huntington Beach (City of Fullerton 2012a).

The City's sewer system (operated and maintained by the Sewer Division of the Orange County Public Works Department) operates entirely by gravity and discharges to OCSD trunk sewer lines. The estimated total length of the City's sewer system is 330 miles, including 2.7 miles of privately owned sewers. The system also includes 36 inverted siphons. The City's sewers range in diameter from 6 inches to 48 inches, with approximately 81% of the City's sewers being 6 or 8 inches in diameter. Siphons range from 6 to 36 inches in diameter. Approximately 99% of the sewers are constructed of vitrified clay pipe. The oldest sewers in the City's system were constructed in 1921, with the current average age of all sewers being 44 years. A large portion of the sewers, approximately 41%, were constructed before 1958 and are more than 50 years old (City of Fullerton 2012a).

The 2017 OCSD Wastewater Collection and Treatment Facilities Master Plan (Wastewater Master Plan) identifies system deficiencies and develops a 20-year CIP program to address the deficiencies. The Wastewater Master Plan assesses the capacity of the City's major sewers under the existing and future flow conditions and identifies improvement projects needed to provide capacity through the 20-year planning period (OCSD 2017).

There are no OCSD trunk sewer lines on the project site. The campus sewer system collects sewage from campus facilities and discharges to the City at several locations. At Sherbeck Field there is a 6-inch sewer line located just east of the existing field house, which gravity flows into an 8-inch pipe that runs along North Berkeley Avenue (Psomas 2017).

The average sewer flow from the Fullerton College campus is 65 gallons per day (gpd) per thousand square feet. The existing field house is approximately 20,940 gross square feet (GSF) and thus is estimated to generate 1,361 gpd of sewer flow (Psomas 2017).

Water Supply

Potable Water

The City's water utility provides water service within its 22.3-square-mile service area, which is contiguous with the City boundary. The City receives its water from two main sources: (1) local well water from the Lower Santa Ana River Groundwater Basin, which is managed by the Orange County Water District, and (2) imported water from the Metropolitan Water District of Southern California (City of Fullerton 2017).

The City is a member agency of Metropolitan Water District of Southern California, which delivers surface water from the State Water Project and the Colorado River. The City has over 420 miles of transmission and distribution mains, 15 reservoirs with a capacity of 69.6 million gallons, 12 booster pumping stations, and 11 active wells. The City has 6 imported water connections to the Metropolitan Water District of Southern California and 6 emergency interconnections with other utilities. The City has 11 wells, located in the southern sector of the City. Six of these wells are located at the main plant in the City of Anaheim, just south of the City boundary. Five of these six wells pump into a forebay before pumping the water into the distribution system. Water pumped from these wells has been naturally filtered as it passes through underlying aquifers of sand, gravel, and soil (City of Fullerton 2017).

The City relies on a combination of imported water and local groundwater to meet its water needs. The City has 32,000 connections, serves a population of 140,827 people, and supplied about 27,200 acre-feet of water from 2014 to 2015, approximately 18,900 acre-feet (or 70%) of which was groundwater. Of the 27,200 acre-feet supplied, 605 acre-feet (197,140,114 gallons per year) was the demand from institutional/governmental uses. The projected 2020, 2025, 2030, 2035, and

2040 water demand by institutional/government uses is estimated to be 593 acre-feet, 636 acre-feet, 641 acre-feet, 641 acre-feet, and 642 acre-feet, respectively (City of Fullerton 2017).

Recycled Water

The City does not have the recycled water infrastructure to support the use of recycled water (City of Fullerton 2012a). However, Sherbeck Field has artificial turf, thus reducing the need for recycled water.

On-Site Water-Using Devices

The project site consists of an artificial turf football field that is surrounded by a 400-meter-long track, a two-story field house located on the western edge of the field, a scoreboard at the eastern end of the field, and associated pavement and lawn areas. The field house is currently the only water-using feature on the project site. The water-using devices at the field house include 29 toilets (1.6 gallons per flush), 4 urinals (1.5 gallons per flush), 25 sinks, and 6 water fountains (Moscol, pers. comm. 2018). The average annual water use for the Fullerton College campus, based on monthly water meter bills provided by Fullerton College for January 2009 through January 2016, is approximately 102,000 gpd (Psomas 2017). The existing average indoor use for the field house is 1,361 gpd and approximately 2.2 gpm (Psomas 2017).

Stormwater Drainage

Regional Drainage

Several major watercourses and dam facilities provide protection against major flood flows from runoff generated in watersheds north and east of the City. The most significant of these facilities are Imperial Channel (south of and parallel to Imperial Highway on the north boundary of the City) and Brea Creek Reservoir and Brea Creek Channel (which extend along the base of the foothills), which are maintained by the U.S. Army Corps of Engineers and the Orange County Flood Control District (OCFCD), respectively. The Fullerton Reservoir and Fullerton Creek extend from east to west through the center of the City. The Houston Storm Channel extends along the southern boundary of the City. The Placentia Storm Channel extends along the eastern boundary of the City. The Carbon Creek Channel is located along the southeastern corner of the City (City of Fullerton 2012a).

Local Drainage

The construction, operation, and maintenance of smaller drainage facilities that drain into the major channels and reservoirs is the responsibility of the City. For the most part, the existing local drainage facilities within the City have the capacity to carry flood flows from storms of less than a 10-year recurrence interval. Facilities constructed in the late 1950s and later generally have capacity for approximately a 10-year frequency storm. Existing drainage deficiencies occur within the City particularly in the flatter areas, from the foothills to the south. The majority of the current drainage deficiencies are addressed in the 25-year Capital Improvement Program for design and construction. The construction of the Commonwealth/State College Storm Drain Project removed the threat of flooding from major portions of the eastern section of the City (City of Fullerton 2012a).

On-Site Drainage

Surface water runoff from the project site consists primarily of surface water runoff generated within the boundaries of Sherbeck Field. The project site consists of a combination of pervious and impervious surfaces that influence where and how quickly stormwater collects and drains. The impervious areas of the project site consist of the field house, paved walkways and aisles, and the track. The pervious area on the project site consists of approximately 0.11 acres on the northern portion and 0.57 acres on the southern portion. There are several storm drain inlets located throughout the project site and storm drain gravity mains beneath the existing turf, to the northeast and south of the existing field (Psomas 2017).

According to a preliminary drainage analysis performed for the proposed project, the water drains from north to south into existing catch basins along the perimeter of the site. From there, it is collected into an existing storm drain system that captures flows from the surrounding areas (Appendix H). From there, it is collected into an existing storm drain system that captures flow from the surrounding areas (existing catch basins are shown on Figure 4.10-1). There are two drainage management areas identified for the project site, based on the location of the work. One is under the visitors' bleachers on the north side of the field, which is 0.5 acres in size, under both existing and proposed conditions. The other drainage management area is under the home bleachers on the south side of the field, which is 0.59 acres under both existing and proposed conditions (Appendix H). The existing drainage areas and features on the project site are shown on Figure 4.10-1, Existing Drainage, and the drainage management areas are shown on Figure 4.10-2, Preliminary Drainage Analysis.

Based on storm drain maps provided by OCFCD (2000), a municipal storm drain line runs through the middle of the Fullerton College campus and along East Chapman Avenue. The storm drain along East Chapman Avenue consists of a reinforced concrete pipe ranging in diameter from 29 to 36 inches. The storm drain running south through the Fullerton College campus consists of a corrugated metal arch with a base of 36 inches (OCFCD 2000). The municipal storm drain then conveys flows to the south for discharge into the Fullerton Creek Channel, which consists of a reinforced-concrete rectangular channel (28 feet wide by 15 feet high) maintained by OCFCD (OCFCD 2000).

Electricity

Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Because of the state's energy efficiency standards and efficiency and conservation programs, California's per-capita energy use has remained stable for more than 30 years, while the national average has steadily increased.

Southern California Edison (SCE) provides electricity to the proposed project. SCE, a subsidiary of Edison International, serves approximately 180 cities in 11 counties across central and Southern California. According to the California Public Utilities Commission (CPUC), approximately 84 billion kilowatt-hours (kWh) of electricity were used in SCE's service area in 2017. Demand forecasts anticipate that approximately 75 billion kWh of electricity will be used in SCE's service area in 2020 (CPUC 2018).

SCE receives electric power from a variety of sources. According to CPUC's 2018 California Renewables Portfolio Standard Annual Report, 32% of SCE's power came from eligible renewables, such as biomass/waste, geothermal, small hydroelectric, solar, and wind sources (CPUC 2018). SCE maintains a lower percentage of renewable energy procurement when compared with California's two other large Investor-Owned Utilities. The other two large utilities, Pacific Gas and Electric Company and San Diego Gas and Electric Company, procured 33% and 44% of their electric power, respectively, from eligible renewables (CPUC 2018). SCE also maintains a slightly lower percentage of renewables relative to statewide procurement. The California Energy Commission estimates that about 29% of the state's electricity retail sales in 2017 came from renewable energy (CEC 2018). The Renewables Portfolio Standard Program establishes a goal for California to increase the amount of electricity generated from renewable energy resources to 20% by 2010 and to 33% by 2020. Recent legislation revised the current Renewables Portfolio Standard target for California to obtain 50% of total retail electricity sales from renewable sources by 2030, with interim targets of 40% by 2024, and 45% by 2027 (CPUC 2016).

Natural Gas

According to the EIA, California used approximately 23 billion therms of natural gas in 2017 (EIA 2018). By sector, industrial uses utilize 37% of the state's natural gas, followed by 29% from electric power, 21% from residential, 12% from commercial, and 1% from transportation uses (EIA 2017).

The Southern California Gas Company (SoCalGas) provides the project with natural gas service. SoCalGas' service territory encompasses approximately 20,000 square miles and more than 500 communities. In the California Energy Demand mid-energy demand scenario, natural gas demand is projected to have an annual growth rate of 0.03% in SoCalGas' service territory. As of 2017, approximately 7,206 million therms[1] were used in SoCalGas' service area per year. Around the time of project building in 2020, natural gas demand is anticipated to be approximately 7,388 million therms per year in SoCalGas' service area (CEC 2014). The total capacity of natural gas available to SoCalGas in 2016 is estimated to be 3.9 billion cubic feet per day. In 2020, the total capacity available is also estimated to be 3.9 billion cubic feet per day[2] (California Gas and Electric Utilities 2016). This amount is approximately equivalent to 3.98 billion thousand British thermal units (kBtu) per day or 39.8 million therms per day. Over the course of a year, the available capacity would therefore be 14.5 billion therms per year, which is well above the existing and future anticipated natural gas demand in SoCalGas' service area.

Telecommunications

Telecommunication facilities are installed in the City by a variety of private utility companies, including AT&T, Direct TV, Spectrum, Cox Communications, DISH, and ViaSat. Fullerton College completed their cable upgrade of their campus-wide telecommunications 10 to 15 years ago. AT&T is the Local Exchange Carrier that provides off-site services. The interconnection of the campus switching system and the AT&T network occurs at two points, providing campus service redundancy. Fullerton College has emergency telephones distributed throughout the campus parking structure. The data system originates in Building 3100 and is distributed to all campus buildings (Psomas 2017).

4.10.2 Regulatory Framework

Federal

Federal Clean Water Act of 1977

Section 401 of the Clean Water Act (CWA) requires that an applicant for any federal permit (e.g., a U.S. Army Corps of Engineers Section 404 permit) obtain certification from the state that the discharge would comply with other provisions of the CWA and with state water quality standards. For example, an applicant for a permit under Section 404 of the CWA must also obtain water quality certification per Section 401 of the CWA. Section 404 requires a permit from the U.S. Army Corps of Engineers prior to discharging dredged or fill material into waters of the United States, unless such a discharge is exempt from CWA Section 404.[3] For the project site, the Santa Ana Regional Water Quality Control Board (RWQCB) must provide the water quality certification required under Section 401 of the CWA. Water quality certification under Section 401, and the associated

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[1] One therm is equal to 100,000 Btu or 100 kBtu.
[2] One cubic foot of natural gas has approximately 1,020 BTUs of natural gas or 1.02 kBtus of natural gas.
[3] The term "waters of the United States" as defined in the Code of Federal Regulations (40 CFR 230.3(s)) includes all navigable waters and their tributaries.

requirements and terms, is required in order to minimize or eliminate the potential water quality impacts associated with the actions requiring a federal permit.

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants from point sources. Section 404 of the CWA established a permit program to regulate the discharge of dredged or fill material into waters of the United States. Section 303 of the CWA requires states to identify surface waters that have been impaired. Under Section 303(d), states, territories, and authorized tribes are required to develop a list of water quality segments that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology (33 U.S.C. Section 1251 et seq.).

State

Protection of Underground Infrastructure

California Government Code, Section 4216 et seq., requires an excavator to contact a regional notification center (e.g., Underground Service Alert of Southern California (“DigAlert”)) at least 2 days prior to excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call DigAlert, the regional notification center for Southern California. DigAlert will notify representatives of the utilities that may have buried lines within 1,000 feet of the proposed project site. Representatives of the utilities, once notified, are required to mark the specific locations of their facilities within the work area prior to the start of project activities.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) (codified in the California Water Code, Section 13000 et seq.) is the overarching water quality control law for California. It is implemented by the State Water Resources Control Board and the nine RWQCBs. The State Water Resources Control Board establishes statewide policy for water quality control and provides oversight of the RWQCBs’ operations. In addition to other regulatory responsibilities, the RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the state could cause pollution or nuisance, including impacts to public health and the environment.[4] As is evident from the preceding regulatory discussion, the Porter-Cologne Act and the CWA overlap in many respects, as the entities established by the Porter-Cologne Act are in many cases enforcing and implementing federal laws and policies. However, there are some

[4] “Waters of the state” are defined in the Porter-Cologne Act as “any surface water or groundwater, including saline waters, within the boundaries of the state” (California Water Code, Section 13050(e)).

regulatory tools that are unique to the Porter-Cologne Act, including Waste Discharge Requirements (WDRs), as discussed in the following subsection.

Dredge/Fill Activities and WDRs

Actions that involve or are expected to involve discharge of waste are subject to water quality certification under Section 401 of the CWA (e.g., if a federal permit is being sought or granted) and/or WDRs under the Porter-Cologne Act. Chapter 4, Article 4, of the Porter-Cologne Act (California Water Code, Sections 13260–13274) states that persons discharging or proposing to discharge waste that could affect the quality of waters of the state (other than into a community sewer system) shall file a Report of Waste Discharge with the applicable RWQCB. For discharges directly to surface water (i.e., waters of the United States), an NPDES permit is required, which is issued under both state and federal law; for other types of discharges, such as waste discharges to land (e.g., spoils disposal and storage), erosion from soil disturbance, or discharges to waters of the state (such as isolated wetlands), WDRs are required and are issued exclusively under state law. WDRs typically require many of the same best management practices (BMPs) and pollution-control technologies required by NPDES-derived permits. Further, the WDR application process is generally the same as for CWA Section 401 water quality certification, although in this case, it does not matter whether the particular project is subject to federal regulation.

The Water Conservation Act of 2009

The Water Conservation Act of 2009 (Water Code Section 10608) (SB X7-7), which became effective on February 3, 2010, is the water conservation component to the Delta legislative package (Senate Bill 1, Delta Governance/Delta Plan). It seeks to implement water use reduction goals established in 2008 to achieve a 20% statewide reduction in urban per capita water use by December 31, 2020. The bill requires each urban retail water supplier to develop urban water use targets to help meet the 20% goal by 2020 and meet an interim 10% goal by 2015. The bill establishes methods for urban retail water suppliers to determine targets to help achieve water reduction targets. The retail water supplier must select one of four compliance options. The retail agency may choose to comply with Senate Bill X7-7 as an individual or as a region in collaboration with other water suppliers. Under the regional compliance option, the retail water supplier still has to report the water use target for its individual service area. The bill also includes reporting requirements in the 2010, 2015, and 2020 Urban Water Management Plans.

Local

The North Orange County Community College District (District) and Fullerton College are not subject to local plans, policies, or guidelines, so this analysis uses relevant policies from the local jurisdiction as guidance only.

City of Fullerton Municipal Code

Water Quality Ordinance

Fullerton Municipal Code Chapter 12.18 prohibits illicit connections and prohibited discharges to the City's storm drain system, and requires all new development and significant redevelopment comply with the Drainage Area Management Plan and any conditions and requirements established by the City. Prior to the issuance by the City of a grading permit, building permit, or nonresidential plumbing permit for any new development or significant redevelopment, the planning agency would review the project plans and impose terms, conditions, and requirements on the project in accordance with the ordinance. If the new development or significant redevelopment would be approved without application for a grading permit, building permit, or nonresidential plumbing permit, the planning agency (Community Development Department and Engineering Department) would review the project plans and impose terms, conditions, and requirements on the project in accordance with the ordinance prior to the issuance of a discretionary land use approval or, at the City's discretion, prior to recordation of a subdivision map.

The Fullerton Plan

The City's general plan, The Fullerton Plan (City of Fullerton 2012b), has the following policies that are relevant to utilities and service systems:

The Fullerton Built Environment

- **P7.3 Infrastructure Planning:** Support projects, programs, policies and regulations to plan for appropriate levels and types of infrastructure based on the desired character of each neighborhood or district.
- **P7.5 Appropriate Development Scale**: Support projects, programs, policies and regulations to ensure that development is appropriate in scale to current and planned infrastructure capabilities.

The Fullerton Natural Environment

- **P19.1 Agency Coordination for Water Supplies:** Support regional and subregional efforts to ensure that an adequate water supply, including groundwater, remains available.
- **P19.2 Conservation Efforts:** Support regional and subregional efforts to promote water efficiency and conservation.
- **P19.3 New Technologies:** Support projects, programs, policies and regulations to encourage the use of new technologies which reduce water use.

- **P19.4 Adequate Supply:** Support projects, programs, policies and regulations to maintain adequate quantities of water, including groundwater, available to the City now and in the future.
- **P19.7 Sustainable Water Practices in New Development**: Support projects, programs, policies and regulations to encourage water efficient practices in site and building design for private and public projects.
- **P20.2 Urban Runoff Management**: Support regional and subregional efforts to support cleaner and reduced urban runoff.
- **P20.6 Construction Impacts**: Support projects, programs, policies and regulations to reduce impacts to watersheds and urban runoff caused by private and public construction projects.
- **P20.7 Development Impacts**: Support projects, programs, policies and regulations to reduce impacts to watersheds and urban runoff caused by the design or operation of a site or use.
- **P25.2 Waterways Preservation**: Support projects, programs, policies and regulations to preserve the City's public creeks and lakes such as Tri City Lake, Bastanchury Greenbelt Creek, and Laguna Lake; pursue collaborative efforts to restore channelized portions of Brea Creek and Fullerton Creek.
- **P25.9 Mitigation of Impacts on Waterways**: Support projects, programs, policies and regulations to consider and mitigate project level impacts to public waterways at the site and building design stages.

4.10.3 Thresholds of Significance

The significance criteria used to evaluate the proposed project's impacts to utilities and service systems are based on Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.). According to Appendix G, a significant impact related to utilities and service systems would occur if the proposed project would:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years.
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

This resource area was originally eliminated from further consideration in the Initial Study (Appendix A); however, a comment related to utilities and service systems was received in response to the NOP from the City. Therefore, Thresholds 1 through 3 will be discussed further within Section 4.10.4 of this EIR.

Thresholds 4 and 5 were eliminated from further analysis in the Initial Study (Appendix A), and will not be discussed further in this EIR. Solid waste generated by the project site would be transported to the Madison Resources Recovery Facility in Santa Ana, and the remaining waste would be transported to the Frank R. Bowerman Landfill in Irvine and Olinda Alpha Landfill in Brea (Ware Disposal Company 2017; Ware, pers. comm. 2016). According to the County of Orange (2017), Frank R. Bowerman Landfill permits a maximum of 11,500 tons of waste per day, and does not accept public dumping. Olinda Alpha accepts public dumping and permits a maximum of 8,000 tons per day. Given the maximum tons of waste accepted per day at the landfill, any waste generated by the proposed project would represent a nominal percentage of the maximum waste accepted.

The California Emissions Estimator Model (CalEEMod) was used to estimate the Fullerton College campus's existing solid waste generation based on a generation factor for junior colleges of 1.30 tons/1,000 square feet/year (CAPCOA 2016). Based on the gross square footage for the existing uses on the Fullerton College campus, the entire campus is estimated to generate 1,060 tons per year of solid waste. The additional waste generated by the proposed project was estimated using rates from the California Department of Resources Recycling and Recovery for education facilities of 0.5 pounds per student per day (CalRecycle 2019). Upon completion, the proposed project would allow for approximately five regular and up to two playoff football games per year to occur. There would be approximately 1,600 attendees for a regular season football game and approximately 3,000 attendees for a playoff game (Saghieh, pers. comm. 2017). Conservatively assuming that each game constitutes a day, and the number of students is the maximum 4,417 seats provided by the installation of bleachers, the proposed project would generate approximately 15,460 pounds annually, or 7.73 tons per year.[5] Compared to the annual solid waste generated by Fullerton College, the proposed project represents approximately 0.73% of the waste, a nominal percentage. Additionally, the proposed project would not involve demolition of any existing structures, and would not result in demolition debris. Further,

[5] Assuming a generation factor of 0.5 pounds/student/day, 4,417 students (conservatively assuming maximum occupancy for each game), and 7 games (conservatively assuming each game is 1 day), the proposed project would generate 0.5 pounds/student/day × 4,417 students × 7 days = 15,460 pounds of solid waste.

solid waste generated by the proposed project would be transported to sorting/disposal facilities permitted to accept commercial solid waste, with each facility's operations routinely inspected by regional and state regulatory agencies for compliance with all applicable statutes and regulations. Therefore, the project would be served by a landfill with sufficient permitted capacity and would comply with applicable solid waste regulations, and impacts would be less than significant.

4.10.3.1 Methodology

Wastewater and Water Facilities

The proposed project involves the installation of bleachers, lighting, a sound system, a press box, and a storage building. None of these project features would necessitate new or expanded wastewater treatment and water facilities. Nonetheless, the proposed project would allow for new programming elements. Specifically the proposed project would allow four additional evening classes per week during the fall, spring, and summer semesters; five regular football games and up to two playoff football games during the fall semester; and three soccer games during the fall semester (as shown on Table 3-2 of this Draft EIR). The academic instruction and field events would generate additional water demand at the project site.

Academic Instruction

To determine the water demand for the 4 additional evening class, a generation rate of 20 gallons per day per student was utilized to calculate the increase in annual water demand. Classes would run 1 hour and 25 minutes, 2 nights a week. Evening classes would start at 6:15 p.m. A 9:15 ending time accounts for classes that start at 7:50 p.m., 2 nights per week (Monday and Wednesday or Tuesday and Thursday). Course sizes would range from 24 to 32 students (Saghieh, pers. comm. 2017; Moscol, pers. comm. 2018). The evening courses would allow up to 64 students for the 6:15 p.m. to 7:40 p.m. courses, and up to 64 students for the 7:50 p.m. to 9:15 p.m. courses for classes on Monday and Wednesday; and up to 64 students for the 6:15 p.m. to 7:40 p.m. courses, and up to 64 students for the 7:50 p.m. to 9:15 p.m. courses for classes on Tuesday and Thursday. The addition of lighting would allow 256 additional students to be enrolled in physical education classes each semester.

The results are presented in Table 4.10-1, below.

Table 4.10-1
Evening Classes Water Demand per Semester

Land Use	Unit of Measure	Flow (gpd)	Number of students[1]	Total Flow (gallons)
College/University	Student	20	256	5,120

Source: LACSD 2019; Moscol, pers. comm. 2018
Notes: gpd= gallons per day
1 Number of students per semester

As shown in Table 4.10-1, the proposed project would generate a water demand of 5,120 gallons per semester. The additional evening classes would occur during the fall, spring, and summer semesters; therefore, the proposed project's evening classes would generate an additional 15,360 gallons per year. Since the proposed project would allow up to 128 students to take an evening class at Sherbeck Field, the peak flow rate would be 2,560 gallons per day. The average flow rate would be 42 gallons per day or 15 gallons per minute.

Field Events

To determine the water demand generated by field events, the maximum water use based on the limits of the only water-using facility on the project site, the field house, was estimated over a 3-hour period. The field house is currently the only water-using feature on the project site. The water-using devices at the field house include 29 toilets (1.6 gallons per flush), 4 urinals (1.5 gallons per flush), 25 sinks (2 gpm), and 6 water fountains (0.75 gpm) (Moscol, pers. comm. 2018). Table 4.10-2 presents the estimated water demand per field event.

Table 4.10-2
Water Demand per Field Event

Water-Using Feature	Unit	Flow	Duration (minutes)[1]	Total Flow (gallons)
Toilet	29	1.6 gallons per flush[2]	180	2,784
Urinal	4	1.5 gallons per flush[3]	180	1,080
Sink	25	2 gallons per minute[4]	180	9,000
Water Fountain	6	0.75 gallons per minute[4]	180	810
			Total	**13,674**

Source: Moscol, pers. comm. 2018.
Notes:
1 Assumes the field events would last for 3 hours (180 minutes)
2 Assumes toilet flow rate would be 1 flush per 3 minutes
3 Assumes urinal flow rate would be 1 flush per minute
4 Assumes continuous flow

As shown in Table 4.10-2, the proposed project would result in generate a water demand of 13,674 gallons per field event, or a peak flow of 13,674 gallons per day. Given, the proposed project could result in up to 7 football games and 3 soccer games, the annual increase in demand would be 136,740 gallons per year. The average flow rate would be 76 gallons per minute.

4.10.4 Impacts Analysis

Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Potable Water

Water service for the proposed project is and would continue to be obtained through purchase of municipal water from the City. As discussed in Section 4.10.1, Existing Conditions, the field house is the only water-using feature on the project site. Based on the monthly water bills provided by Fullerton College for January 2009 through January 2016, the average annual water use for the Fullerton College campus is estimated to be 102,000 gpd. The estimated annual indoor water use for the field house is estimated to be 1,361 gpd. The proposed improvements would include bleachers, lighting, a sound system, a press box, and a storage building. The proposed improvements would allow for additional evening physical education classes, and five regular and up to two playoff football games per year. The evening classes would allow up to 32 students additional students to patronize the water-using features in the field house, while the football games could allow up to 4,417 students.[6] As such, the greatest water demand resulting from the proposed project would likely be during up to seven football games. This increase in use at Sherbeck Field could increase the annual indoor water use for the field house.

The field house is currently the only water-using feature on the project site. The water-using devices at the field house include 29 toilets (1.6 gallons per flush), 4 urinals (1.5 gallons per flush), 25 sinks, and 6 water fountains (Moscol, pers. comm. 2018). As previously discussed in Section 4.10.3.1, Methodology, the proposed project would generate a water demand of 15,360 gallons per year for academic instruction and 136,740 gallons per year for field events, for a total of 152,100 gallons per year.

According to the City of Fullerton's 2015 Urban Water Management Plan (UWMP), institutional/governmental uses accounted for 605 acre-feet (or 197,140,114 gallons per year) in fiscal year 2014–15. The projected 2020, 2025, 2030, 2035, and 2040 water demand by institutional/government uses is estimated to be 593 acre-feet, 636 acre-feet, 641 acre-feet, 641 acre-feet, and 642 acre-feet, respectively (City of Fullerton 2017). Using the actual water demand from fiscal year 2014–15, the project's projected increase in water demand would be 0.08% of the total water use for institutional/governmental use. Thus, the proposed project's contribution to water demand is considered nominal. Additionally, the 2015 UWMP determined that due to the

[6] This conservatively assumes the maximum attendance for games based on additional 4,417 seats. However, based on attendance at off-site games, there have been approximately 1,600 attendees for a regular season football game and approximately 3,000 attendees for a playoff game (Saghieh, pers. comm. 2017).

diversified supply and conservation measures, the water supply would meet demand for projected years between 2020 and 2040 under the multiple dry years scenario (City of Fullerton 2017).

Because the City's water demand can be met under multiple dry years, and because supply would meet projected demand due to diversified supply and conservation measures, the proposed project's water demands would be served by the City's projected current and future supplies, especially since the proposed project would use a relatively nominal percentage of the projected supplies available to the City moving forward. Therefore, the proposed project would not result in the relocation or construction of any new or expanded water facilities, and impacts associated with water facilities and supplies would thus be less than significant.

Wastewater

City sewer lines operating on the Fullerton College campus are connected to OCSD trunk lines and effluent is treated by the OCSD treatment plants in Huntington Beach and Fountain Valley.

The OCSD treatment plants have a combined primary treatment capacity of 372 MGD and are currently processing approximately 187 MGD (OCSD 2009, 2016). Reclamation Plant No. 1, located in Fountain Valley, has a primary capacity of 204 MGD and treats water to be reclaimed by Orange County Water District for landscape irrigation use and groundwater replenishment. To avoid overloading Reclamation Plant No. 1, wastewater can also be diverted to Treatment Plant No. 2, in Huntington Beach, where effluents are mixed, dechlorinated with sodium bisulfite, and disposed of in the ocean (OCSD 2011).

As previously discussed in Section 4.10.1, the average sewer flow for the Fullerton College campus, calculated based on annual water use, was determined to be 65 gpd per thousand square feet. The existing field house is approximately 20,940 GSF and thus generates approximately 1,361 gpd of sewer flow (Psomas 2017).

The proposed project would not result in the construction of new buildings, which would generate new indoor water uses and subsequently sewer flows. However, the additional academic instruction and field events resulting from the proposed project would result in additional water demand of 152,100 gallons per year, which would subsequently enter the City's sewer lines, then OCSD's trunk lines. The existing trunk lines at Sherbeck Field includes a 6-inch sewer line located just east of the existing field house, which gravity flows into an 8-inch pipe that runs along North Berkeley Avenue (Psomas 2017).

Given that the OCSD treatment plants have a remaining capacity of 185 MGD, the proposed project's maximum peak daily flow of 13,674 gallons per day represents 0.007% of the remaining capacity, and thus, would not exceed treatment capacity of the OCSD treatment plants. In addition, the proposed project would generate the same types of municipal wastewater that are currently generated throughout the City. Therefore, the proposed project would not result in the relocation or construction of any new or expanded wastewater facilities, and impacts associated with wastewater treatment facilities would thus be less than significant.

Stormwater

Under the existing conditions, stormwater that is not infiltrated through landscaped areas moves as sheet flow toward existing catch basins along the perimeter of the project site, and then enters an existing storm drain along East Chapman Avenue. The storm drains direct runoff to the City storm drain system and the Fullerton Creek channel, and eventually into the Pacific Ocean through Coyote Creek/Lower San Gabriel River. If rainfall is sufficiently intense and/or long lasting, and particularly if storm drain inlets have not been cleared of leaves and/or other debris, water may temporarily pond in low-lying areas. Under proposed project conditions, stormwater runoff would generally behave in the same manner, and it is not anticipated that any major drainage patterns would need to be altered to effectively treat stormwater on site (Appendix H). Sherbeck Field would continue to direct stormwater runoff to the City's storm drain system.

As discussed in Section 4.10.1, the pervious area on the project site consists of approximately 0.11 acres on the northern portion and 0.57 acres on the southern portion of the site. The project site is largely developed and would not result in the new construction or installation of stormwater drainage facilities. However, because the proposed project would increase impervious areas on the project site and in response to the City of Fullerton's NOP comment regarding anticipated quantities of discharge into storm drains, a preliminary drainage analysis was performed for the proposed project (Appendix H). The preliminary drainage analysis determined that approximately 90% of the pervious drainage areas would become impervious upon implementation of the proposed project. However, due to the nature of the proposed project it is not anticipated that any major drainage patterns would need to be altered to effectively treat stormwater on the project site (Appendix H). The proposed installation would not substantially change the amount or distribution of impervious surfaces relative to existing conditions, and because the project site is largely developed and surrounded by urban land uses, the proposed project is not anticipated to substantially modify existing topography, drainage-shed boundaries, or runoff rates/patterns. Nonetheless, because the proposed project would increase the amount of impervious surfaces on-site, impacts are potentially significant.

A preliminary drainage analysis prepared for the proposed project conducted a stormwater design and analysis per the Orange County Technical Guidance Document (TGD). In accordance with the TGD, any increase in runoff that would be generated from the increase in impervious areas must be treated through BMPs or captured and reused. Based on the TGD and site characteristics, the proposed project would ensure that the site runoff would be captured and directed into bioswales on the northern and southern sides of the site. Each swale would be designed as a trapezoid with side slopes of no more than 2:1, with a 3-foot base width, as shown in the preliminary drainage analysis (Appendix H) prepared for the proposed project, as specified in Mitigation Measure (MM) UTL-1 (see Section 4.10.5, Mitigation Measures). The drainage management areas recommended in the preliminary drainage analysis are depicted on Figure 4.10-2. Implementation of MM-UTL-1 would ensure that the proposed project would not result in an increase in stormwater runoff from the project site.

With implementation of MM-UTL-1, the impacts of the proposed project on drainage patterns and long-term effects on water quality would be less than significant.

Electric Power

The proposed project's operational phase would require electricity for building operation (appliances, lighting, etc.). The project is estimated to have a total electrical demand of 10,010 kilowatt-hours per year (or 0.01 gigawatt-hours (GWh) per year. The non-residential electricity demand in 2017 13,285 GWh for Orange County (County) (CEC 2018). The project would be built in accordance with the current Title 24 standards at the time of construction and CalGreen. The energy-using fixtures within the proposed project would likely be newer technologies, utilizing less electricity power. Therefore, the proposed project would not result in increased energy demand that would necessitate the relocation or construction of new or expanded off-site distribution systems, local or regional energy supplies, or power generating capacity, and no significant impacts would result from the proposed project.

Natural Gas

Natural gas consumption during operation would be required for various purposes, including, but not limited to, building heating and cooling of the Field House. The proposed project involves the installation of bleachers, lighting, a sound system, a press box, and a storage building. As such, the proposed improvements would not generate a substantial increase in natural gas use, such that construction or relocation of new or expanded facilities is required. Additionally, the applicant would ensure that the project would meet Title 24 requirements applicable at that time, as required by state regulations through their plan review process. Therefore, no significant impacts associated with natural gas facilities would result from the proposed project.

Telecommunications

The proposed project involves the installation of bleachers, lighting, a sound system, a press box, and a storage building. Since the project site is in an urbanized area and within the existing Fullerton College Campus, there are existing telecommunication facilities that would be able to serve the project site. The proposed improvements requiring telecommunication services (e.g., the press box) would be able to connect to existing telecommunication services without the need for expansion or construction of new facilities. Therefore, impacts would be less than significant.

Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

As discussed previously in Section 4.10.1, water service for the proposed project is and will continue to be obtained through purchase of municipal water from the City. The existing indoor water use for the field house was estimated using the monthly meter bills provided by Fullerton College for January 2009 through January 2016. The average annual water use for the entire Fullerton College campus is 102,000 gpd, and the average indoor water use for the field house is estimated to be 1,361 gpd. The proposed project improvements would include bleachers, lighting, a sound system, a press box, and a storage building. The proposed improvements would allow for additional evening physical education classes, five regular and up to two playoff football games per year, and five soccer games per year. These uses at Sherbeck Field could increase the annual indoor water use for the field house.

The field house is currently the only water-using feature on the project site. The water-using devices at the field house include 29 toilets (1.6 gallons per flush), 4 urinals (1.5 gallons per flush), 25 sinks, and 6 water fountains (Moscol, pers. comm. 2018). As previously discussed in Section 4.10.3.1, Methodology, the proposed project would generate a water demand of 15,360 gallons per year for academic instruction and 136,740 gallons per year for field events, for a total of 152,100 gallons per year.

According to the City of Fullerton's 2015 UWMP, institutional/governmental uses accounted for 605 acre-feet (or 197,140,114 gallons per year) in fiscal year 2014–15. The projected 2020, 2025, 2030, 2035, and 2040 water demand by institutional/government uses is estimated to be 593 acre-feet, 636 acre-feet, 641 acre-feet, 641 acre-feet, and 642 acre-feet, respectively (City of Fullerton 2017). Using the actual water demand from fiscal year 2014–15, the project's projected increase in water demand would be 0.08% of the total water use for institutional/governmental use. Thus, the proposed project's contribution to water demand is considered nominal. Additionally, the 2015 UWMP determined that due to the diversified supply and conservation measures, the water supply would meet demand for projected years between 2020 and 2040 under the multiple dry years scenario (City of Fullerton 2017).

Because the City's projected water demands can be met under normal, dry, and multiple dry years, and because supply would meet projected demand due to diversified supply and conservation measures, the proposed project's water demands would be served by the City's projected current and future supplies, especially since the proposed project would use a relatively nominal percentage of the projected supplies available to the City moving forward. Therefore, impacts associated with water supplies would be less than significant.

Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

As discussed previously, the proposed project involves installations of bleachers, lighting, a sound system, a press box, and a storage building. However, the additional academic instruction and field events resulting from the proposed project would result in additional water demand of 152,100 gallons per year, which would subsequently enter the City's sewer lines, then OCSD's trunk lines. Given that the OCSD treatment plants have a remaining capacity of 185 MGD, the proposed project's maximum peak daily flow of 13,674 gallons per day represents 0.007% of the remaining capacity, and thus, would not exceed treatment capacity of the OCSD treatment plants. In addition, the proposed project would generate the same types of municipal wastewater that are currently generated throughout the City. Therefore, impacts associated with wastewater treatment facilities would be less than significant.

4.10.5 Cumulative Analysis

Section 15130(b)(1)(A) of the CEQA Guidelines (14 CCR 15000 et seq.) allows for the preparation of a list of past, present, and reasonably anticipated future projects as a viable method of determining cumulative impacts. This discussion uses the following approach: an initial list and description of all related projects is presented, followed by a discussion of the effects that the proposed project may have on each environmental category of concern. Consistent with CEQA, this discussion is guided by the standards of practicality and reasonableness. A list of past, present, and reasonably foreseeable future projects that the City determined were most relevant to the proposed project are provided in Table 3-3, Cumulative Projects, in Chapter 3.

The geographic extent for the analysis of cumulative impacts associated with utilities and service systems consists of the City, because local jurisdictions or districts provide utilities.

Water

Fullerton College is continually looking for ways to decrease potable water consumption. In 2010, Fullerton College reduced water consumption by installing digital controls to optimize the irrigation systems. Fullerton College has also installed low-flow devices on toilets, urinals, sinks, and showers. Future upgrades include the installation of an automatic weather-sensing irrigation control system that would further reduce and manage water consumption on the Fullerton College campus (Fullerton College 2017). The proposed improvements would allow for additional evening physical education classes, and five regular and up to two playoff football games per year. The proposed project would generate a water demand of 15,360 gallons per year for academic instruction and 136,740 gallons per year for field events, for a total of 152,100 gallons per year. However, this total water demand would be 0.08% of the total water use for institutional/governmental use of the actual water demand in the City from fiscal year 2014–15.

The proposed project, along with cumulative projects would result in a cumulative impact to water supply if the City of Fullerton, as the water service provider, was unable to meet water demand. To determine future water demands, the UWMP estimated the City's population to increase by 14% from 2015-2040. The highest water demand uses are single family and multifamily uses, while the lowest are institutional/government and other. With the estimated increase in population, the UWMP determined the water supplies are projected to meet full-service demands of its members starting 2020 through 2040 through normal years, single dry year, and multiple dry years (City of Fullerton 2017). Additionally, as discussed further in Appendix A of this Draft EIR, although the proposed project would accommodate growth, the proposed project would not cause a substantial increase in population growth to the City of Fullerton, and thus, the proposed project and cumulative projects would be consistent with the City's growth projections. Therefore, the proposed project and cumulative projects would not result in a cumulative impact. Further, because the proposed project's estimated water demand represents 0.08% of total the total water use for institutional/governmental use, which is one of the lowest water demand uses in the City, the project's contribution to water demand is not cumulatively considerable. Therefore, cumulative impacts related to water demand would be less than significant.

Wastewater

The proposed project would not result in the construction of new buildings, which would generate new indoor water uses and subsequently sewer flows. However, the additional academic instruction and field events resulting from the proposed project would result in additional water demand of 152,100 gallons per year, and a maximum peak daily flow of 13,674 gallons per day, which would subsequently enter the City's sewer lines, then OCSD's trunk lines. Given that the OCSD treatment plants have a remaining capacity of 185 MGD, the proposed project's maximum peak daily flow of 13,674 gallons per day represents 0.007% of the remaining capacity, and thus, would not exceed treatment capacity of the OCSD treatment plants. The proposed project would have less than significant impacts with regard to wastewater treatment facilities, the expansion of existing facilities, and the capacity of wastewater treatment providers. All foreseeable projects would need to evaluate their wastewater generation prior to development, and upon review of the final site engineering and design plans, would be required to coordinate with the City. Considering that the proposed project would not result in a substantial change from the existing wastewater conditions, and additional projects in the vicinity would be subject to engineering and design review, cumulative impacts would be less than significant.

Stormwater Drainage

Because the drainage sheds would maintain the same boundaries, and because changes in impervious surfaces would be relatively minor, the proposed project is not anticipated to exceed the capacity of existing off-site stormwater drainage systems, requiring the construction or expansion of stormwater drainage facilities. However, because the proposed project would increase impervious areas on the project site and in response to the City's NOP comment regarding anticipated quantities of discharge into storm drains, a preliminary drainage analysis was performed for the proposed project (Appendix H). Implementation of MM-UTL-1 would ensure that the proposed project includes design features that would slow and retain stormwater runoff. The proposed project would not require the construction of new stormwater drainage facilities or the expansion of existing facilities. Other projects in the vicinity of the proposed project would need to be evaluated on an individual basis with regard to stormwater drainage facilities. There are existing stormwater conveyance facilities in the area, and combined with other projects, the proposed project is not expected to cause a significant impact related to stormwater runoff because all projects would be designed to meet stormwater capacity. The proposed project would not substantially change total surface runoff and would not combine with surrounding projects to contribute to significant cumulative impacts; therefore, cumulative impacts would be less than significant with mitigation.

Electric Power, Natural Gas, and Telecommunication

The proposed project and cumulative projects would cumulatively increase the demand for electricity, natural gas, and telecommunication within the City. The proposed project and cumulative projects would comply with existing regulations requiring energy conservation features to reduce the contribution of the proposed project and cumulative projects. As with the proposed project, other cumulative projects would be expected to incorporated CALGreen and state energy standards under Title 24, and incorporate regulations governing energy conservation. Therefore, the proposed project and cumulative projects would not contribute to cumulative impacts related to electricity and natural gas. In regards to telecommunication facilities, the proposed project would rely on existing telecommunication services without the need for expansion or construction of new facilities. Therefore, the proposed project would not contribute to cumulative impacts to telecommunication facilities. Further, the City is built out and upgrades in electric power, natural gas, and telecommunication capabilities are anticipated due to development in the form of revitalization of outdated or underserved areas. Upgrades to centralized power, natural gas, and telecommunication facilities would be determined by private utilities, as build-out of the City continues. Environmental impacts associated with such upgrades would be evaluated under separate CEQA review. As a result, cumulative impacts associated with upgrades of electric, natural gas, and telecommunication facilities would be less than significant.

4.10.6 Mitigation Measures

The following mitigation measure would reduce potential impacts to the existing utilities and service systems to a less than significant level.

MM-UTL-1 Based on the Orange County Technical Guidance Document and site characteristics, the proposed project would ensure that the site runoff is captured and directed into bioswales on the northern and southern sides of the site. Each swale shall be designed as a trapezoid with side slopes of no more than 2:1, with a 3-foot base width, as shown in the preliminary drainage analysis prepared for the proposed project. All overflow drainage in excess of the water quality treatment flow requirements will be directed into the existing curb and gutter system around the site.

4.10.7 Level of Significance after Mitigation

MM-UTL-1 is proposed to mitigate the impacts of stormwater runoff from the project site on drainage patterns and long-term effects on water quality. Implementation of MM-UTL-1 would reduce the identified impacts to a less than significant level.

4.10.8 References

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Drainage Area 1
(North of Sherbeck Field)

Drainage Area 2
(South of Sherbeck Field)

Catch Basin South of the site to be used for overflow conditions

Drainage Area 2 with existing catch basin used for drainage

SOURCE: Kimley Horn 2019

FIGURE 4.10-1

Existing Drainage

DUDEK

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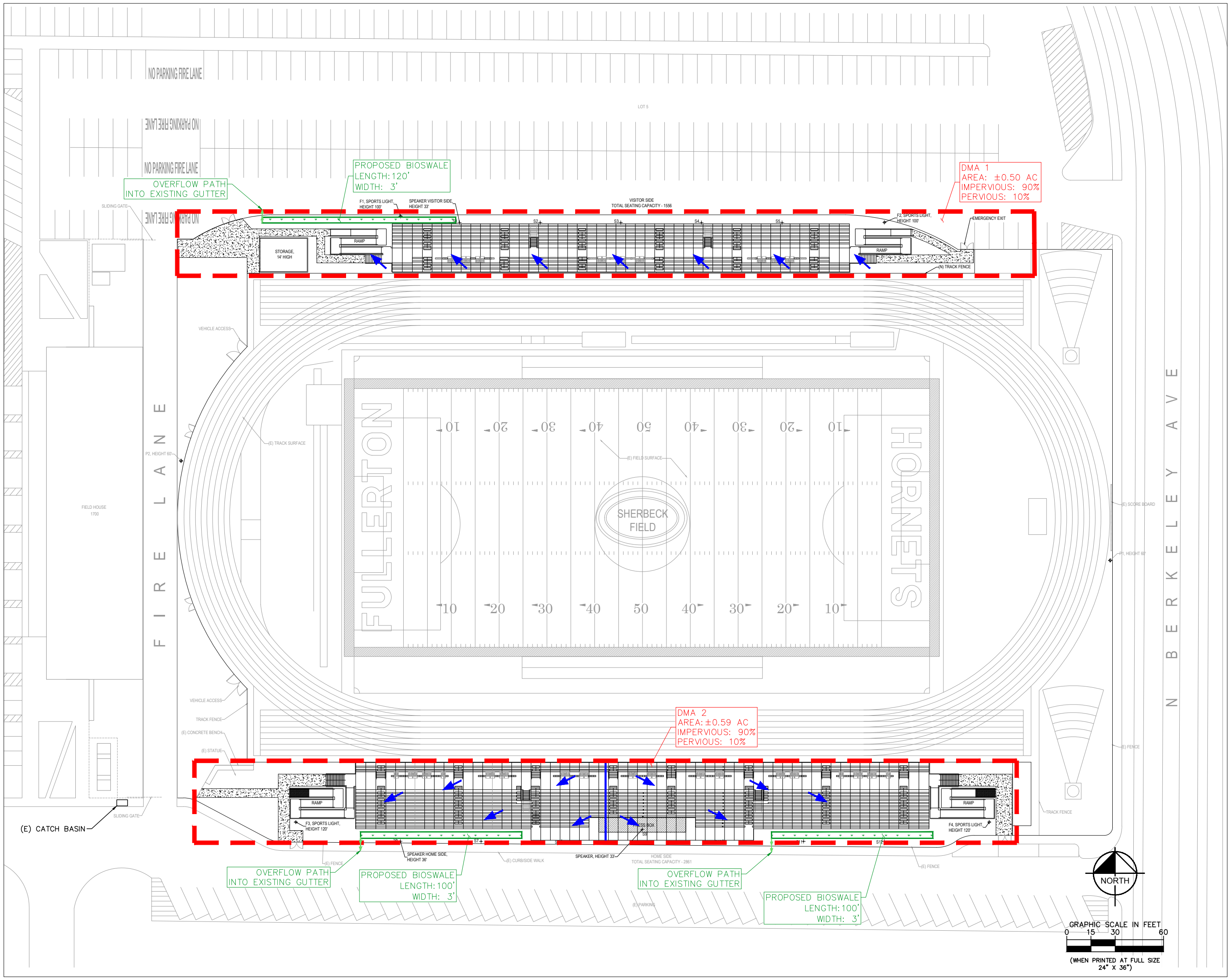
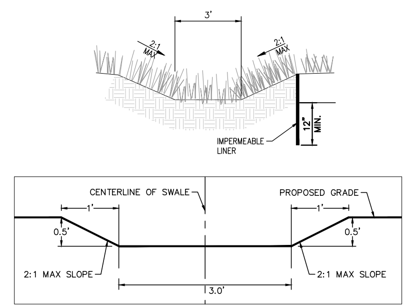
PRELIMINARY DRAINAGE ANALYSIS



Site Information			
DMA 1	0.50	ac	
DMA 2	0.59	ac	
Impervious Area:	90%		
Pervious Area:	10%		
Design Storm Depth (85th)	0.85	in	From Orange County Technical Guidance Document (TGD)
DMA 1			
Bioswale			Designed per Orange County TGD
C	0.825		C = (0.75*Impv. Area) + 0.15
A	0.50	ac	
Tc	12.5	min	Per Orange County Hyrdology Manual
I	0.22	in/hr	Per Orange County Hyrdology Manual
Q	0.091	cfs	Q = C x I x A
Swale Width	**2.42**	**ft**	Assumes flow depth of 2" and Slope in direction of flow
	0.46	sf	Assumes 2:1 Slope
CS Area at Flow Depth			
Flow Velocity	0.20	fps	
Required Swale Length	**119**	**lf**	L = 60 x 10 x Flow Velocity
DMA 2			
Bioswale			Designed per Orange County TGD
C	0.825		C = (0.75*Impv. Area) + 0.15
A	0.59	ac	
Tc	12.5	min	Per Orange County Hyrdology Manual
I	0.22	in/hr	Per Orange County Hyrdology Manual
Q	0.107	cfs	Q = C x I x A
Swale Width	**2.86**	**ft**	Assumes flow depth of 2" and Slope in direction of flow
	0.53	sf	Assumes 2:1 Slope
CS Area at Flow Depth			
Flow Velocity	0.20	fps	
Required Swale Length	**121**	**lf**	L = 60 x 10 x Flow Velocity



BIOSWALE CROSS SECTION

LEGEND
DMA BOUNDARY
FLOW ARROW
LANDSCAPED BIOSWALE
(MIN 100 LF LENGTH REQUIREMENT)

SOURCE: Kimley Horn 2019

DUDEK

FIGURE 4.10-2

Preliminary Drainage Analysis

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4.11 ENERGY CONSUMPTION

This section describes the existing setting of the project site related to energy, identifies associated regulatory requirements, evaluates potential impacts (including cumulative impacts), and identifies mitigation measures related to implementation of the proposed Sherbeck Field Improvements Project (proposed project), if any.

4.11.1 Existing Conditions

The environmental setting for the project, as it relates to electricity, natural gas, and petroleum, including associated service providers, supply sources, and estimated consumption, is discussed below.

Electricity

According to the U.S. Energy Information Administration (EIA), California used approximately 257,268 gigawatt hours of electricity in 2017 (EIA 2019a). The sector-specific breakdown for energy consumption in 2017 indicates that commercial uses utilized 46% of the state's electricity, followed by 35% for residential uses, and 19% for industrial uses (EIA 2019a). Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the residential sector is lower than any other state except Hawaii (EIA 2018a).

Southern California Edison (SCE) provides electricity to the project site. SCE, a subsidiary of Edison International, serves approximately 180 cities in 11 counties across Central and Southern California. According to the California Public Utilities Commission (CPUC), approximately 84 billion kilowatt-hours (kWh) of electricity were used in SCE's service area in 2017. Demand forecasts anticipate that approximately 75 billion kWh of electricity will be used in SCE's service area in 2020 (CPUC 2018).

SCE receives electric power from a variety of sources. According to CPUC's 2018 California Renewables Portfolio Standard Annual Report, 32% of SCE's power came from eligible renewables, such as biomass/waste, geothermal, small hydroelectric, solar, and wind sources (CPUC 2018).

Natural Gas

According to the EIA, California used approximately 2,110,829 million cubic feet of natural gas in 2017 (EIA 2019b). The majority of California's natural gas customers are residential and small commercial customers (core customers). These customers accounted for approximately 30% of the natural gas delivered by California utilities in 2017. Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 70% of the natural gas delivered by California utilities in 2017 (EIA 2019b). While the supply of natural gas in the United States and production in the lower 48 states has increased greatly since 2008, California produces little, and imports 90% of its supply of natural gas (EIA 2019b).

The Southern California Gas Company (SoCalGas) provides the project with natural gas service. SoCalGas' service territory encompasses approximately 20,000 square miles and more than 500 communities. In the California Energy Demand mid-energy demand scenario, natural gas demand is projected to have an annual growth rate of 0.03% in SoCalGas' service territory. As of 2017, approximately 7,206 million therms[1] were used in SoCalGas' service area per year. Around the estimated time of project completion in 2020, natural gas demand is anticipated to be approximately 7,388 million therms per year in SoCalGas' service area (CEC 2014). The total capacity of natural gas available to SoCalGas in 2016 is estimated to be 3.9 billion cubic feet per day. In 2020, the total capacity available is also estimated to be 3.9 billion cubic feet per day[2] (California Gas and Electric Utilities 2016). This amount is approximately equivalent to 3.98 billion thousand British thermal units (kBtu) per day or 39.8 million therms per day. Over the course of a year, the available capacity would therefore be 14.5 billion therms per year, which is well above the existing and future anticipated natural gas demand in SoCalGas' service area.

Petroleum

California used approximately 18.6 billion gallons of petroleum in 2017 (EIA 2019c). The majority of California's natural gas customers are residential and small commercial customers (core customers). This equates to a daily use of approximately 51 million gallons of petroleum. By sector, transportation uses utilize approximately 85.5% of the state's petroleum, followed by 11.1% from industrial, 2.5% from commercial, 0.9% from residential, and 0.01% from electric power uses (EIA 2018b). In California, petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation, which are described in Section 4.11.2, below. As such, the California Energy Commission (CEC) anticipates an overall decrease of gasoline demand in the state over the next decade.

[1] One therm is equal to 100,000 Btu or 100 kBtu.
[2] One cubic foot of natural gas has approximately 1,020 Btu of natural gas or 1.02 kBtu of natural gas.

4.11.2 Regulatory Framework

Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

This federal legislation requires ever-increasing levels of renewable fuels (the RFS) to replace petroleum (EPA 2015). The U.S. Environmental Protection Agency is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in greenhouse gas (GHG) emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States. The updated program is referred to as "RFS2" and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline.

- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.
- EISA established new categories of renewable fuel, and set separate volume requirements for each one.
- EISA required the U.S. Environmental Protection Agency to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green" jobs.

State

Warren-Alquist Act

The California Legislature passed the Warren-Alquist Act in 1974. The Warren-Alquist Act created the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for both buildings constructed and appliances sold in California.
- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high-demand projections, and transferred it to a more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

State of California Energy Action Plan

The CEC and CPUC approved the first State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure that adequate, reliable, and reasonably priced electrical power and natural gas supplies are provided, and identified policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers. In 2005, a second Energy Action Plan was adopted by the CEC and CPUC to reflect various policy changes and actions of the prior 2 years.

At the beginning of 2008, the CEC and CPUC determined that it was not necessary or productive to prepare a new energy action plan. This determination was based, in part, on a finding that the state's energy policies have been significantly influenced by the passage of Assembly Bill (AB)

32, the California Global Warming Solutions Act of 2006 (discussed below). Rather than produce a new energy action plan, the CEC and CPUC prepared an "update" that examines the state's ongoing actions in the context of global climate change.

Senate Bills 1078 (2002), 107 (2006), X1-2 (2011), 350 (2015) and 100 (2018)

Senate Bill (SB) 1078 established the California Renewables Portfolio Standard (RPS) Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill relatedly required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) requires all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20% had to come from renewables; by December 31, 2016, 25% had to come from renewables; and by December 31, 2020, 33% will come from renewables.

SB 350 (2015) expanded the RPS because it requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 (2018) accelerated and expanded the standards set forth in SB 350 by establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030 be secured from qualifying renewable energy sources. SB 100 also states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources does not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the 60% RPS in 2030. Therefore, any project's reliance on non-renewable energy sources would also be reduced.

Assembly Bill 1007 (2005)

AB 1007 (2005) required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with the California Air Resources Board (CARB) and in consultation with other state agencies, plus federal and local agencies. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 (2006) and Senate Bill 32 (2016)

In 2006, the State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted SB 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, CARB prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focused on increasing energy efficiencies, using renewable resources, and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources. Additional information on AB 32 and SB 32 is provided in Section 3.4.2 of this EIR.

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The 2016 Title 24 building energy efficiency standards, which became effective on January 1, 2017, further reduce energy used in the state. In general, single-family homes built to the 2016 standards are anticipated to use approximately 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and non-residential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards (CEC 2015). The 2016 Title 24 standards are the current applicable building energy efficiency standards, and became effective on January 1, 2017. The 2019 Title 24 standards will continue to improve upon the 2016 standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 standards will go into effect on January 1, 2020.

Title 24 also includes Part 11, the California's Green Building Standards (CALGreen). The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, as well as schools and hospitals. The 2016 CALGreen standards became effective on January 1, 2017. The mandatory standards require the following:

- 20% mandatory reduction in indoor water use
- 50% diversion of construction and demolition waste from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency

Integrated Energy Policy Report

The CEC is responsible for preparing integrated energy policy reports that identify emerging trends related to energy supply, demand, conservation, public health and safety, and maintenance of a healthy economy. The CEC's 2018 Integrated Energy Policy Report discusses the state's policy goals of decarbonizing buildings, doubling energy efficiency savings and increasing flexibility in the electricity grid system to integrate more of renewable energy. Specifically for the decarbonizing of building energy, the goal would be achieved by designing future commercial and residential buildings to have their energy sourced almost entirely from electricity in place of natural gas. Regarding the increase in renewable energy flexibility, the goal would be achieved through increases in energy storage capacity within the state, increases in energy efficiency, and adjusting energy use to the time of day when the most amount of renewable energy is being generated. Over time these policies and trends would serve to beneficially reduce the project's GHG emissions profile and energy consumption as they are implemented.

State Vehicle Standards

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, AB 1493 was enacted in 2002. AB 1493 required CARB to set GHG emissions standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set GHG emissions standards for motor vehicles manufactured in 2009 and all subsequent model years. The 2009–2012 standards resulted in a reduction in approximately 22% of GHG emissions compared to emissions from the 2002 fleet, and the 2013–2016 standards resulted in a reduction of approximately 30%.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global-warming gases with requirements for greater numbers of zero-emissions vehicles into a single package of standards called Advanced

Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 34% fewer global-warming gases and 75% fewer smog-forming emissions (CARB 2011).

Although the focus of the state's vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of implementation of these standards is a reduced demand for petroleum-based fuels.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or SB 375, coordinates land use planning, regional transportation plans, and funding priorities to help California meet its GHG emissions reduction mandates established in AB 32. As codified in California Government Code Section 65080, SB 375 requires Metropolitan Planning Organizations (e.g., the Southern California Association of Governments) to include a Sustainable Communities Strategy (SCS) in their Regional Transportation Plan (RTP). The main focus of the SCS is to plan for growth in a fashion that will ultimately reduce GHG emissions, but the strategy is also part of a bigger effort to address other development issues, including transit and vehicle miles traveled (VMT), which influence the consumption of petroleum-based fuels.

Local

Southern California Association of Governments

SCAG's first-ever SCS was included in the 2012–2035 Regional Transportation Plan/Sustainable Communities Strategy (2012–2035 RTP/SCS), which was adopted by SCAG in April 2012. The SCS goals and policies that reduce VMT (and result in corresponding decreases in transportation-related fuel consumption) focus on transportation and land use planning and include building infill projects, locating residents closer to where they work and play, and designing communities with access to high quality transit service. Subsequently, SCAG adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016–2040 RTP/SCS). The goals and policies of the 2016–2040 RTP/SCS are substantially the same as those in the 2012–2035 RTP/SCS.

SCAG's 2016–2040 RTP/SCS presents a long-term transportation vision through the year 2040 for the six-county region of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. On April 7, 2016, the SCAG Regional Council adopted the 2016–2040 RTP/SCS, the mission of which is "leadership, vision and progress which promote economic growth, personal well-being, and livable communities for all Southern Californians." The 2016–2040 RTP/SCS includes land use strategies that focus on urban infill growth and walkable, mixed-use communities in existing urbanized and opportunity areas. More mixed-use, walkable, and urban infill development would be expected to accommodate a higher proportion of growth in more energy-efficient housing types like townhomes, apartments, and smaller single-family homes, as well as more compact commercial buildings types. Furthermore, the 2016–2040 RTP/SCS includes transportation investments and land use strategies that encourage carpooling, increased transit use, active transportation opportunities, and promoting more walkable and mixed use communities which would potentially help to offset passenger VMT (SCAG 2016).

4.11.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to energy are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). According to Appendix G, a significant impact related to energy would occur if the project would:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy.
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.11.4 Impacts Analysis

Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy?

Implementation of the project would increase the demand for electricity and natural gas at the project site and gasoline consumption in the region during construction and operation.

Electricity

Construction Use

Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers, and heating, ventilation, and air conditioning) would be provided by SCE. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools and several construction trailers by managerial staff during the hours of construction activities. The majority of the energy used during construction would be from petroleum. The electricity used for construction activities would be temporary and minimal; therefore, impacts would be **less than significant**.

Operational Use

The operational phase would require electricity for multiple purposes including, but not limited to, building heating and cooling, lighting, appliances, and electronics. The California Emissions Estimator Model (CalEEMod), version 2016.3.2, provides default values for electricity consumption for retail and commercial land uses that were applied to the project (California Air Pollution Control Officers Association (CAPCOA) 2017). The electricity use for non-residential buildings was calculated in CalEEMod using energy intensity value (electricity use per square foot per year) assumptions, which were based on the California Commercial End-Use Survey database (CEC 2006).

The project is estimated to have a total electrical demand of 10,010 kilowatt-hours per year (or 0.01 gigawatt-hours ((GWh)) per year). The non-residential electricity demand in 2017 was 13,285 GWh for Orange County (County) (CEC 2018). The project would be built in accordance with the current Title 24 standards at the time of construction and CALGreen. Therefore, due to the limited amount of electricity use compared to that generated by the project, and the inherent increase in efficiency of building code regulations, the project would not result in a wasteful use of energy. Impacts related to operational electricity use would be **less than significant**.

Natural Gas

Construction Use

Natural gas is not anticipated to be required during construction of the project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the subsection “Petroleum,” below. Any minor amounts of natural gas that may be consumed as a result of project construction would be temporary and negligible, and would not have an adverse effect; therefore, impacts would be **less than significant**.

Operational Use

Natural gas consumption during operation would be required for various purposes, including, but not limited to, building heating and cooling. Default natural gas generation rates in CalEEMod for the proposed land use and climate zone were used. According to these estimations, the project would consume approximately 22,990 thousand British thermal units (kBtu) per year. The non-residential natural gas consumption in 2017 was 13.92 million MMBtu for the County (CEC 2018).

The project is subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Title 24, Part 11, contains additional energy measures that are applicable to project under CALGreen. Prior to project approval, the applicant would ensure that the project would meet Title 24 requirements applicable at that time, as required by state regulations through their plan review process. Thus, the natural gas consumption of the project would not be considered inefficient or wasteful, and impacts would be **less than significant**.

Petroleum

Construction Use

Petroleum would be consumed throughout construction of the project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and VMT associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities, and on-site haul trucks involved in relocating dirt around the project site would rely on diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed that construction workers would travel to and from the project site in gasoline-powered vehicles.

Heavy-duty construction equipment of various types would be used during construction. CalEEMod was used to estimate construction equipment usage; results are included in Appendix D of this EIR. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 6,238 hours, as summarized in Table 4.11-1, Hours of Operation for Construction Equipment.

Table 4.11-1
Hours of Operation for Construction Equipment

Phase	Hours of Equipment Use
Site Preparation	280
Grading	320
Building Construction	5,168
Paving	440
Architectural Coating	30
Total	6,238

Note: See Appendix D.

Fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2018). The estimated diesel fuel use from construction equipment is shown in Table 4.11-2, Construction Equipment Diesel Demand.

Table 4.11-2
Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO_2 (MT)	kg CO_2/Gallon[a]	Gallons
Site Preparation	7	196.92	10.21	19,286.91
Grading	2	402.60	10.21	39,431.47

Table 4.11-2
Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO_2 (MT)	kg CO_2/Gallon[a]	Gallons
Building Construction	9	91.50	10.21	8,961.47
Paving	6	20.02	10.21	1,961.17
Architectural Coating	1	2.55	10.21	250.08
			Total	**69,891.10**

Sources:
[a] The Climate Registry 2018.
Notes: See Appendix D, CO_2 = carbon dioxide; kg = kilogram; MT = metric ton

Fuel consumption from worker and vendor trips was estimated by converting the total CO_2 emissions from the construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline fueled, and vendor vehicles are assumed to be diesel fueled.

Calculations for total worker and vendor fuel consumption are provided in Table 4.11-3, Construction Worker Vehicle Gasoline Demand, and Table 4.11-4, Construction Vendor Truck Diesel Demand, respectively. Because construction of the project would not require haul truck trips to import or export construction materials, no fuel consumption associated with haul trucks is anticipated to occur.

Table 4.11-3
Construction Worker Vehicle Gasoline Demand

Phase	Trips	Vehicle CO_2 (MT)	kg CO_2/Gallon[a]	Gallons
Site Preparation	90	14.02	8.78	1,597.10
Grading	160	28.40	8.78	3,234.46
Building Construction	6,080	72.42	8.78	8,247.85
Paving	160	1.79	8.78	203.38
Architectural Coating	100	3.69	8.78	420.33
			Total	**13,703.12**

Sources:
[a] The Climate Registry 2018.
Notes:
CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
See Appendix D.

Table 4.11-4
Construction Vendor Truck Diesel Demand

Phase	Trips	Vehicle CO_2 (MT)[a]	kg/CO_2/Gallon[a]	Gallons
Site Preparation	0	0.00	10.21	0.00
Grading	0	0.00	10.21	0.00

Table 4.11-4
Construction Vendor Truck Diesel Demand

Phase	Trips	Vehicle CO_2 (MT)[a]	kg/CO_2/Gallon[a]	Gallons
Building Construction	2,432	70.20	10.21	6,875.20
Paving	0	0.00	10.21	0.00
Architectural Coating	0	0.00	10.21	0.00
			Total	**6,875.20**

Source:
[a] The Climate Registry 2018.
Notes:
CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
See Appendix D.

As shown in Tables 4.11-2 through 4.11-4, the project is estimated to consume 90,469 gallons of petroleum during the construction phase. By comparison, approximately 6.14 billion gallons of petroleum would be consumed in California over the course of the project's construction phase based on the California daily petroleum consumption estimate of approximately 52.9 million gallons per day (CEC 2016b). By comparison, Countywide total petroleum use by vehicles is expected to be 1.4 billion gallons per year by 2020 (CARB 2018). The project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Additionally, the project is anticipated to be balanced on-site and not require intensive use of haul trucks for the import or export of earthwork material. Therefore, because petroleum use during construction would be temporary and relatively minimal, and would not be wasteful or inefficient, impacts would be **less than significant**.

Operational Use

The fuel consumption resulting from the project's operational phase would be attributable to employees and visitors traveling to and from the project site.

Petroleum fuel consumption associated with motor vehicles traveling to and from the project site during operation is a function of VMT. As shown in Appendix F, the annual VMT attributable to the project is expected to be 2.25 million VMT per year. However, it should be noted that this estimate conservatively does not account for existing VMT from the hosting of games and events off site at Yorba Linda High School. By proposing to meet the demand for academic- and athletic-related functions on the campus, the project likely would increase the efficiency of VMT as compared to existing conditions.

Similar to construction worker and vendor trips, fuel consumption for operation was estimated by converting the total CO_2 emissions from the retail and commercial land use type to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. The employee and visitor vehicles were assumed to be 92% gasoline powered and 8% diesel powered.

Calculations for annual mobile-source fuel consumption are provided in Table 4.11-5, Mobile Source Fuel Consumption – Operation. Mobile sources from the project would result in approximately 1.08 million gallons of gasoline per year beginning in 2020.

Table 4.11-5
Petroleum Consumption – Operation

Fuel	Vehicle MT CO_2	kg CO_2/Gallon[a]	Gallons
Gasoline	950	8.78	108,173
Diesel	77	10.21	7,563

Source:
[a] The Climate Registry 2018.
Notes:
CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
See Appendix D.

By comparison, California as a whole consumes approximately 19.3 billion gallons of petroleum per year (CEC 2016b). Countywide total petroleum use by vehicles is expected to be 1.4 billion gallons per year by 2020 (CARB 2018).

Over the lifetime of the project, the fuel efficiency of the vehicles being used by the employees and visitors is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emissions vehicles in California (CARB 2013). As such, operation of the project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy.

In summary, although the project would increase petroleum use during operation as a result of employees and visitors traveling to and from the project site, the use would be a small fraction of the statewide use and, due to efficiency increases, would diminish over time. Given these considerations, petroleum consumption associated with the project would not be considered inefficient or wasteful and would result in a **less than significant impact.**

Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Title 24 of the California Code of Regulations contains energy efficiency standards for residential and non-residential buildings based on a state mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the energy impact of the building envelope such as windows, doors, wall/floor/ceiling assemblies, and roofs.

Part 6 of Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. The project would comply with Title 24, Part 6, per state regulations. Based on the foregoing, the proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts during construction and operation of the proposed project would be less than significant.

4.11.5 Cumulative Impacts

Cumulative projects that could exacerbate the proposed project's impacts include any projects that could result in wasteful, inefficient, or unnecessary use of energy. However, the proposed project would not result in wasteful, inefficient, or unnecessary use of energy, in large part due to the short-term and temporary nature of the construction period, and because there is no alternative location to obtain the necessary construction materials that would result in the use of less petroleum. Additionally, the operational activity would be minimized through energy reduction strategies pursuant to Title 24, as described in Section 4.16.4, Impacts Analysis. Therefore, cumulative impacts to energy use would be **less than significant**.

4.11.6 Mitigation Measures

The project would result in less than significant impacts to energy consumption, no mitigation is required.

4.11.7 Level of Significance After Mitigation

The project would result in less than significant impacts to energy consumption, no mitigation is required.

4.11.8 References

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4.12 WILDFIRE

This section describes the existing setting of the project site related to wildfire, identifies associated regulatory requirements, evaluates potential impacts (including cumulative impacts), and identifies any mitigation measures related to implementation of the proposed Sherbeck Field Improvements Project (proposed project).

4.12.1 Existing Conditions

The California Department of Forestry and Fire Protection (CAL FIRE) maps State Responsibility Areas (SRA) and Very High Fire Hazard Severity Zones (VHFHSZ). SRAs are defined as lands classified by the State Board of Forestry as areas in which the primary financial responsibility for preventing and suppressing fires is the State's. VHFHSZs are determined by CAL FIRE based on fire hazard models, which takes into account vegetation, topography, weather, crown fire potential, and ember production and movement.

According to CAL FIRE's Fire Hazard Severity Zone Map, the project site is not located within a FHSZ (CAL FIRE 2019). The nearest zone is a high/moderate FHSZ located approximately 0.5 miles northwest of the project site, north of the North Harbor Boulevard and Brea Boulevard intersection. The nearest VHFHSZ is located approximately 2 miles northwest of the project site at the Robert E. Ward Nature Preserve. Consistent with the CAL FIRE Fire Hazard Severity Zone Map, Exhibit 28 of the Fullerton Plan (i.e., the City's general plan) does not identify the project site as a FHSV (City of Fullerton 2012). Figure 4.12-1 shows the FHSZs as mapped by CAL FIRE.

4.12.2 Regulatory Framework

Federal

There are no federal laws or regulations related to wildfire that are applicable to the proposed project.

State

Assembly Bill 337

This legislation was signed by the Governor on September 29, 1992 and became known as the Bates Bill. It requires CAL FIRE to identify areas of VHFHSZs in the Local Responsibility Areas of California, and notify the local authority of the identified areas. The local authority then has the option to adopt the ordinance developed by the State Fire Marshal, which pertain to new construction or replacement of existing roofs and other fire defense improvements.

Senate Bill 1241

Senate Bill (SB) 1241 requires the legislative body of a city or county to adopt a comprehensive long-term plan that includes various elements, including, among others, a safety element for the protection of the community from unreasonable risks associated with, among other things, wildland and urban fires. The safety element includes requirements for SRAs and VHFHSZs.

SB 1241 revises the safety element requirements for SRAs and VHFHSZs. In addition, SB 1241 requires that the safety element be reviewed and updated to address the risk of fire in SRAs and VHFHSZs, upon revision of the housing element on or after January 1, 2014.

California Fire Code 2016

California Code of Regulations, Title 24, Part 9, incorporates adoption of the 2015 International Fire Code of the International Code Council with necessary California Amendments. The California Fire Code establishes minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The California Fire Code applies to construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure within the State of California (24 CCR, Part 9).

Local

The proposed project is located within the City of Fullerton (City). The North Orange County Community College District (District) and Fullerton College are not subject to local plans, policies, or guidelines related to wildfire, so this analysis uses relevant policies from the local jurisdiction as guidance only.

The Fullerton Plan

The Fullerton Plan (i.e., the City's general plan) is the City's governance tool focused on achieving the Fullerton Vision by aligning City efforts, reaching out to partners in Fullerton and the region, and engaging the Fullerton community (City of Fullerton 2012). The Fullerton Natural Environment addresses natural resources, open space, natural hazards, and related topics pertaining to the Fullerton community's quality of life. The Fullerton Natural Environment contains the following goals and policies relevant to fire hazards:

- **P24.6 Watershed Management.** Support projects, programs, policies, and regulations to manage open space watersheds to limit potential fire and erosion hazards.

- **P24.12 Environmental Impact of Support Facilities.** Support projects, programs, policies and regulations to limit the construction of facilities in open space areas and to design necessary improvements, such as fire roads, access roads, and parking facilities, to minimize environmental impacts and maintain the visual qualities of the open space.
- **P26.5 Hazard Specific Development Regulations.** Support projects, programs, policies and regulations to utilize hazard specific development regulations to mitigate risks associated with identified potential natural hazards, including flooding, wildland fires, liquefaction, and landslides when development does occur.

4.12.3 Thresholds of Significance

The significance criteria used to evaluate the project impacts to wildfire are based on Appendix G of the CEQA Guidelines. According to Appendix G of the CEQA Guidelines, a significant impact related to wildfire would occur if the project would:

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan.
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.
3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.
4. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

4.12.4 Impacts Analysis

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Substantially impair an adopted emergency response plan or emergency evacuation plan?

As discussed in Section 4.12.1, the project site is located approximately 2 miles from lands classified as VHFHSZ. As such, the project site is not located in a VHFHSZ area. In addition, the areas between the project site and the nearest VHFHSZ are built-out and connected via local roads. Further, mandated fire department and Division of the State Architect fire and life safety review on the project plans would ensure implementation of the proposed project would not interfere with an adopted emergency response or evacuation plan. Therefore, emergency access would be ensured and the proposed project would not interfere with an adopted emergency response or evacuation plan. Impacts would be less than significant.

Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

As previously addressed, the project site is not located in a VHFHSZ area. In addition, the project site and surrounding area is urbanized and relatively flat. Therefore, the proposed project would not due to slope, prevailing winds, and other factors, exacerbate wildfire risks. Impacts would be less than significant.

Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

As discussed in Section 4.12.1, the project site is located approximately 2 miles from lands classified as VHFHSZ. As such, the project site is not located in a VHFHSZ area. The proposed project involves the installation of bleachers, lighting, a sound system, a press box, and a storage building within the existing Sherbeck Field at the Fullerton College campus. Since the project site is within a developed portion of the City, the proposed project would not require the installation or maintenance of infrastructure that may exacerbate fire risk. Impacts would be less than significant.

Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

As previously discussed, the project site and surrounding area is urbanized and relatively flat. The project site is not within a VHFHSZ and is located two miles away from a VHFHSZ. There are no existing drainage features located on the project site, which would be subject to downstream flooding. Additionally, the project site is already developed and would not experience runoff, post-fire slope instability, or drainage changes as a result of being located in or near a VHFHSZ. Impacts would be less than significant.

4.12.5 Cumulative Impacts

Section 15130(b)(1)(A) of the CEQA Guidelines allows for the preparation of a list of past, present, and reasonably anticipated future projects as a viable method for determining cumulative impacts. This discussion uses the following approach: an initial list and description of all related projects are presented and followed by a discussion of the effects that the project may have on each environmental category of concern. Consistent with CEQA (California Public

Resources Code, Section 21000 et seq.), this discussion is guided by the standards of practicality and reasonableness. A list of past, present, and reasonably foreseeable projects that the City determined were most relevant to the proposed project are provided in Table 3-3, Cumulative Projects, of Chapter 3, Project Description.

As discussed above, the project site is not susceptible to wildland fires. The proposed project and cumulative projects are located within an urbanized portion of the City surrounded by other developed uses; therefore, impacts related to wildfires is low. In addition, the proposed project and cumulative project plans would be reviewed by the Fullerton Fire Department, and comply with fire codes and regulations. Through the proposed project's and cumulative projects' compliance with the numerous fire-related regulations, and incorporation of fire protection features, the potential cumulative impacts from wildland fires would be less than significant.

4.12.6 Mitigation Measures

Impacts related to wildfire were found to be less than significant; therefore, no mitigation measures are necessary.

4.12.7 Level of Significance After Mitigation

Because there would be no significant impacts requiring mitigation, residual impacts would be less than significant.

4.12.8 References

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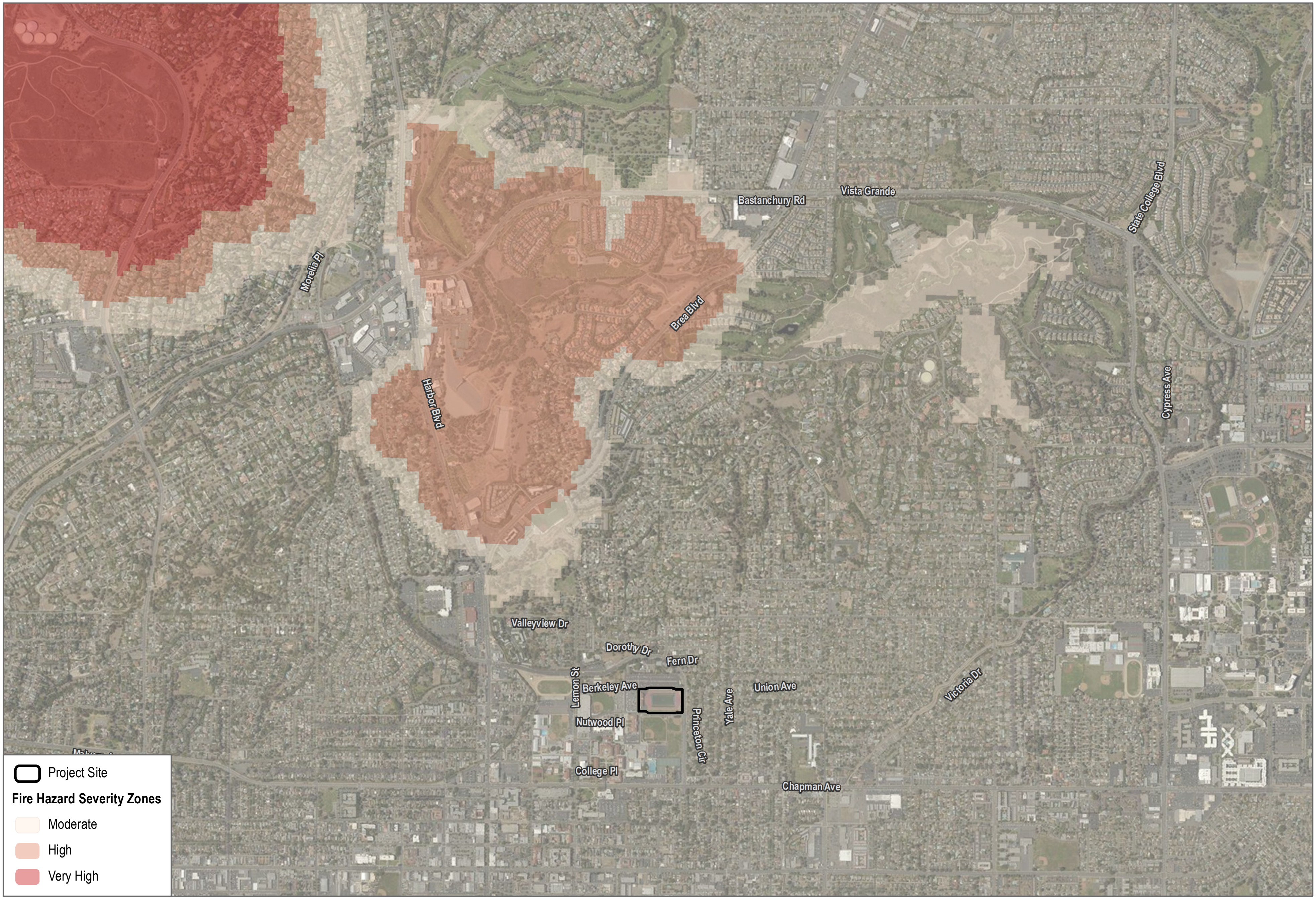

SOURCE: Bing Maps

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FIGURE 4.12-1

Fire Hazard Severity Zone Map

Sherbeck Field Improvements Project Draft Environmental Impact Report

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CHAPTER 5
OTHER CEQA CONSIDERATIONS

This chapter of the Environmental Impact Report (EIR) for the proposed Sherbeck Field Improvements Project (proposed project) has been prepared in furtherance of the content requirements set forth in CEQA Guidelines Section 15126.2. As such, this chapter discusses:

- Significant and Unavoidable Environmental Impacts (Section 5.1)
- Significant and Irreversible Environmental Effects (Section 5.2)
- Growth Inducement (Section 5.3)
- Potential Secondary Effects of Mitigation (Section 5.4)
- Effects Found Not to Be Significant (Section 5.5)

5.1 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

Section 15126.2(c) of the CEQA Guidelines requires than an EIR describe any significant impacts which cannot be avoided. Specifically, Section 15126.2(c) states:

> Describe any significant impacts, including those which can be mitigated but not reduced to a level of insignificance. Where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.

Implementation of the project-specific mitigation measures identified in Chapter 4, Environmental Analysis, of this EIR would reduce all significant impacts to below a level of significance, with the exception of noise impacts due to periodic operation of the proposed Sherbeck Field Improvements Project (proposed project); impacts, as discussed throughout the entirety of this EIR, resulting from construction of recreational facilities; and impacts to California Department of Transportation (Caltrans) intersections. Those impacts are summarized further below.

5.1.1 Significant Environmental Effects Which Cannot be Avoided

Noise

On Site

As discussed in Section 4.5, Noise, the operational noise impacts associated with the proposed project includes periodic increases in on-site noise resulting from the proposed improvements to Sherbeck Field. The periodic on-site operational noise would be generated by crowd noise, on-field/sideline noise, the proposed speaker system, and existing traffic noise in the project area.

Compared to the existing modeled noise levels, the periodic sound level increase at the nearby residences would range from approximately 7 to 13 decibels (dB).[1] The periodic increase in noise of up to 13 dB is considered a substantial noise increase. Various mitigation measures were considered and were determined to be either ineffective or infeasible, as discussed further in EIR Section 4.5, Noise. Therefore, the impact of on-site operational noise from the proposed project on off-site residences is considered significant and unavoidable.

Off Site

As discussed in Section 4.5, Noise, the operational noise impacts associated with the proposed project also include periodic increases in off-site noise generated by vehicular traffic. On Saturdays, when football games would take place, greater numbers of vehicle trips would be generated during the approximately 2 hours of arrival time (generally in the late morning/early afternoon hours) and 2 hours of departure time (generally in the late afternoon hours). For the existing traffic scenario, project-related, peak-hour traffic noise levels are predicted to increase approximately 0 to 6 dB, depending on the location. For Year 2030 traffic scenarios, project-related, peak-hour traffic noise levels are predicted to increase approximately 0 to 5 dB, depending on the location. Periodic changes in the traffic noise level of up to 5 to 6 dB are considered clearly audible.

Because the project-related traffic noise increases are predicted to occur for relatively short periods (for the 2 hours prior to and 2 hours after the games), these increases would not result in a significant change in the overall 24-hour noise levels. The maximum periodic traffic noise of 6 dB would result in a 1 dB or less increase in terms of the community noise equivalent level (CNEL), which is not perceptible or significant. Nonetheless, based on the FICON thresholds for increases in community noise, the periodic noise increase (in terms of hourly average (L_{eq})) at residences along the east side of North Berkeley Avenue between East Chapman Avenue and North Lemon Street is considered substantial. Because the project would result in periodic noise level increases of up to 6 dB, and because there is no feasible mitigation to address this vehicular-based noise, this is considered a significant unavoidable adverse impact.

Recreation

As discussed in Section 4.7, Recreation, because the proposed project includes a recreational facility, the impacts are analyzed throughout this EIR. As such, the potential environmental impacts related to recreational facilities are part of the impacts assessment conducted for the entirety of the proposed project. The proposed project would result in significant and unavoidable noise and transportation impacts; therefore, impacts related to recreation are significant and unavoidable.

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[1] The noise levels reported here are "worst case" and reflect a conservative analysis for the football games (approximately five regular and up to two playoff football games per season) that would be held at Sherbeck Field.

Transportation

Intersections that would be impacted during a Saturday field event include Lemon Street at Berkeley Avenue, Berkeley Avenue at College Driveway No. 1, and Berkeley Avenue at College Driveway No. 2. Implementation of a Traffic Management Plan at these key intersections would mitigate the impacts; however, because the implementation of a Traffic Management Plan requires the City of Fullerton's involvement, impacts would be considered significant and unavoidable.

Intersections that would be impacted during a Friday night field event include Lemon Street at Berkeley Avenue, Lemon Street at Fullerton College Drive, Berkeley Avenue at College Driveway No. 1, and Berkeley Avenue at College Driveway No. 2. Implementation of a Traffic Management Plan at these key intersections would mitigate the impacts; however, because the implementation of a Traffic Management Plan requires the City of Fullerton's involvement, impacts would be considered significant and unavoidable.

In the Year 2030 plus Project cumulative condition, Saturday Event traffic would significantly impact the State College Boulevard/Chapman Avenue intersection. This fair share contribution would be applied to the Citywide Traffic Impact Fee, pursuant to Chapter 21.30 of the City's Municipal Code – Fees for Traffic Impact Mitigation. Although implementation of improvements at State College Boulevard/Chapman Avenue would reduce potential impacts, the proposed project cannot guarantee that these improvements, which are located in the City of Fullerton, will be implemented. Therefore, impacts are significant and unavoidable.

Additionally, an analysis of Year 2030 plus Project Weekday traffic indicates that the proposed project would impact the State Route (SR) 57 NB Ramps at Chapman Avenue. With implementation of improvements at the ramps, the impact would be less than significant. Although implementation of improvements at the state-controlled intersection of the SR-57 NB Ramps/Chapman Avenue would sufficiently mitigate the impact of project traffic, the proposed project cannot guarantee that these improvements, which are located in the City of Fullerton and/or also under the jurisdiction of Caltrans, will be implemented. Therefore, impacts are significant and unavoidable.

Further, Saturday Event traffic is anticipated to significantly impact one freeway segment under the Existing plus Project condition, two freeway segments under the Year 2020 Cumulative plus Project condition, and three freeway segments under the Year 2030 Buildout plus Project condition. The three freeway segments forecast to operate at an unacceptable level of service during a Saturday Event in Year 2030 are key freeway segment no. 4, SR-57 at Chapman; key freeway segment no. 6, westbound SR-91 west of Harbor Boulevard; and key freeway segment no. 7, eastbound SR-91 west of Harbor Boulevard. The proposed project's incremental impacts on these freeway segments are considered unmitigable, as there are no feasible mitigation measures that will reduce cumulative mainline impacts to below significance thresholds or achieve acceptable service level goals. Impacts to these freeway segments, therefore, are significant and unavoidable.

Additionally, Saturday Event traffic during peak hours would significantly impact one freeway ramp (i.e., no. 7 – diverge segment), which is forecast to operate at an unacceptable level of service in the Year 2020 Cumulative plus Project condition. Three freeway ramps are forecast to operate at an unacceptable level of service in the Year 2030 Cumulative plus Project condition during the Saturday Event peak hours (i.e., no. 4 – merge segment; no. 6 – merge segment; and no. 7 – diverge segment). Impacts to these freeway ramps, therefore, are cumulatively significant..

5.1.2 Reasons Why the Project is Being Proposed, Notwithstanding Their Effect

In addition to identification of a project's significant unavoidable impacts, Section 15126.2(c) of the CEQA Guidelines states that where there are impacts that cannot be alleviated without imposing an alternative design, their implications and the reasons why the project is being proposed, notwithstanding their effect, should be described.

As discussed in Section 3, Project Description, the proposed project involves improvements to Sherbeck Field, which is located on the campus of Fullerton College. Sherbeck Field is 4.36 acres and currently consists of a turf football field that is surrounded by a 400-meter-long track, with a two-story field house at the western edge of the field and a scoreboard at the eastern end of the field. Currently, Sherbeck Field does not have permanent seating or lighting. The proposed project improvements includes 4,417 permanent prefabricated aluminum bleachers, six field lighting stanchions, a sound system, a press box, and a storage building. These improvements would enhance Sherbeck's Field use for academic instruction and competitive athletics.

The proposed improvements would provide Fullerton College a football field to host regular season and playoff football games at Fullerton College. Under the existing conditions, Fullerton College plays regular season football games at Yorba Linda High School. However, because Yorba Linda High School does not meet the college field and goalpost sizing requirements of the California Community College Athletic Association Regulations, Bylaw 4.26A, the College must ask the Southern California Football Association (SCFA) for a waiver each year to play at high school fields. For playoff games, Fullerton College is required to secure a college field and incurs additional costs associated with the rental. The proposed improvements would provide the Fullerton College football program a football field at Fullerton College that meets the college field and goalpost sizing requirements of the California Community College Athletic Association Regulations, Bylaw 4.26A. Further, Fullerton College would no longer require (SCFA) waivers for regular season games, and would no longer be required to identify another college field for playoff games.

In addition, the boiler room at the Field House at Sherbeck Field is used for football and track and field practice equipment due to inadequate storage space. As such, the proposed storage building would address the existing inadequacies. The installation of permanent bleachers would reduce the costs associated with bleacher rentals during the annual Fullerton College commencement ceremony. Further, the field lighting would enable Fullerton College to provide more evening class options for the physical education program to meet student demand, and evening football and soccer games.

As discussed above, the proposed project would result in significant and unavoidable impacts related to noise, recreation, and transportation. Four alternatives were considered in Section 6, Alternatives. The No Project Alternative: No Development/Continued Use of Yorba Linda High School and Alternative Site Location at California State University Fullerton would reduce significant and unavoidable impacts associated with noise, recreation, and transportation. The Reduced Project Alternative would not reduce any significant and unavoidable impacts associated with the proposed project. The Alternative Site Location at Fullerton Union High School would only reduce significant and unavoidable impacts associated with recreation.

As discussed in Section 6, Alternatives, the proposed project, as proposed, satisfies the proposed project objectives to a greater degree than any of the proposed alternatives. This Draft EIR also includes mitigation measures that reduce the potential impacts associated with the proposed project to the extent feasible. Overall, the proposed project presents several benefits that override the limited adverse effects it may have on the environment.

5.2 SIGNIFICANT AND IRREVERSIBLE ENVIRONMENTAL EFFECTS

The CEQA Guidelines (14 CCR 15000 et seq.) require an EIR to address any significant irreversible environmental changes that would result from the proposed project should it be implemented. An impact would fall into this category if (14 CCR 15126.2(d)):

- The project would involve a large commitment of nonrenewable resources;
- The primary and secondary impacts of the project would generally commit future generations of people to similar uses;
- The project involves uses in which irreversible damage could result; and/or,
- The proposed consumption of resources is not justified (e.g., the project results in wasteful use of energy).

Determining whether the proposed project may result in significant and irreversible effects requires a determination of whether key resources would be degraded or destroyed in such a way that there would be little possibility of restoring them.

Commitment to Future Uses

Sherbeck Field was originally constructed in 1956 to 1957. The existing field house, turf, and rubberized track were constructed in 2010 (California Community Colleges 2016). Implementation of the proposed project would involve the continued use of the project site for football practice, soccer practice and Friday evening games, track and field practice and events. In addition, Fullerton College would continue to rent out Sherbeck Field to private schools and organizations to host athletic courses and practice, and the Fullerton College annual commencement ceremony would continue to take place at Sherbeck Field. Under the proposed project, football games would be relocated from Yorba Linda High School to Sherbeck Field. Because the project site is already developed as Sherbeck Field, the proposed project would not result in primary and secondary impacts that would generally commit future generations to new uses on the project site.

Environmental Accidents

Potential environmental accidents of concern include those events that would adversely affect the environment or public due to the type or quantity of materials released and the receptors exposed to that release. Because the property was formerly used for agricultural purposes, residual pesticides and metals may still be present in the soil, which could present a potentially hazardous condition. Due to the potential for encountering contaminated soils during construction activities on the Fullerton College Campus, a hazardous materials contingency plan was prepared in conjunction with the District’s recently adopted Facilities Master Plan. This contingency plan details the procedures to be followed within the campus if potentially contaminated soils or contaminated sources are encountered during excavation activities. Because the earthwork processes that previously took place to develop the current field at the project site would have reduced any existing pesticide concentrations, impacts related to the former orchard would be less than significant. Nonetheless, compliance with the contingency plan would ensure that hazards to the public or environment as a result of contaminated soils would not occur. Therefore, for the reasons listed previously, impacts as a result of the proposed project would not create significant and irreversible effects. (See Section 4.4, Hazards and Hazardous Materials, of this EIR for analysis of the proposed project’s impacts relative to hazardous materials.)

Nonrenewable Energy Consumption

Construction of the proposed project would result in the use of nonrenewable resources and energy sources, including fossil fuels, natural gas, and electricity. Fossil fuels would be used to power construction equipment, vehicles and equipment used for delivery of construction materials, and employee vehicles. Construction equipment would also use electricity and natural gas. Use of these energy sources would be considered a permanent commitment of resources. In addition, a variety of resource materials would be used during the construction process, including steel, wood, concrete, and fabricated materials. Once these materials and fuels are used for purposes of construction, the commitment of such materials and fuels would be considered irreversible.

Once operational, the project components would consume more energy on a periodic basis due to the use of field lighting during evening classes and the PA system during football games. New project components would be subject to the State Building Energy Efficiency Standards, which are provided in Title 24 of the California Code of Regulations. The efficiency standards apply to new construction of both residential and nonresidential buildings and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting.

Natural resources in the form of construction materials would be utilized in the construction of the proposed project; however, their use is not expected to negatively impact the availability of these resources. Due to the scale of the proposed project, the use of construction materials and nonrenewable resources is not unusual or extraordinary; as a result, there would be no significant and irreversible environmental effects related to resource consumption during construction. The proposed project would not result in the excessive use of fuel or energy or the use of excessive amounts of power, and impacts would not be irreversible.

5.3 GROWTH INDUCEMENT

CEQA requires a discussion of ways in which the proposed project could be growth inducing. The CEQA Guidelines identify a project as growth inducing if it fosters economic or population growth or results in the construction of additional housing, either directly or indirectly, in the surrounding environment (14 CCR 15126.2(e)). New employees from commercial or industrial development and new population from residential development represent direct forms of growth. These direct forms of growth have a secondary effect of expanding the size of local markets and inducing additional economic activity in the area. A project could indirectly induce growth by reducing or removing barriers to growth or by creating a condition that attracts additional population or new economic activity. However, a project's potential to induce growth does not automatically result in growth. Growth can only happen through capital investment in new economic opportunities by the private or public sectors.

Direct growth-inducing impacts are commonly associated with the extension of new public services, utilities, and roads into areas that have previously been undeveloped. The extension of such infrastructure into a non-serviced area can represent the elimination of a growth-limiting factor, thereby inducing growth. Increases in the population may tax existing community service facilities, requiring construction of new facilities and ultimately resulting in an increase in the pace of development or the density of the existing surrounding development. Indirect growth-inducing impacts include an increased demand for housing, commodities, and services that new development causes or attracts by increasing the population or job growth in an area.

Fullerton College would continue to offer courses for track and field, cross country, football, and soccer, as well as various fitness courses. The proposed project would allow for more evening fitness courses to occur at Sherbeck Field to accommodate student growth, not necessarily induce growth. The new improvements at Sherbeck Field also would not indirectly growth through extension of new public services, utilities, and roads in undeveloped areas. Additionally, it is not anticipated the additional evening courses would require new employees. Further, the proposed project would not result in an increase in student growth or employee growth resulting from allowing football games to occur at Sherbeck Field. Therefore, growth-inducing impacts would be less than significant.

5.4 POTENTIAL SECONDARY EFFECTS OF MITIGATION MEASURES

Section 15126.4(a)(1)(D) of the CEQA Guidelines states that "if a mitigation measure would cause one or more significant effects in addition to those that would be caused by the project as proposed, the effects of the mitigation measure shall be discussed but in less detail than the significant effects of the project as proposed." With regard to this section of the CEQA Guidelines, the potential impacts that could result with the implementation of each mitigation measure proposed for the project was reviewed. The following provides a discussion of the potential secondary impacts that could occur as a result of the implementation of the proposed mitigation measures, listed by environmental issue area.

Hazards and Hazardous Materials

MM-HAZ-1 would require the proposed project to comply with applicable procedures set forth in the Hazardous Materials Contingency Plan for Fullerton College, 321 East Chapman Avenue Fullerton, California 92832, and dated February 2018. Upon implementation of MM-HAZ-1, impacts related to hazards and hazardous materials would be less than significant. As such, implementation of these mitigation measures would not result in adverse secondary impacts.

Noise

Mitigation measure (MM) NOI-1 requires noise-reduction devices on construction equipment, stationary sources and construction staging areas be located away from noise-sensitive land uses to the extent feasible, and notification to residential areas 1 week prior to construction. A temporary construction noise barrier shall be constructed at the eastern boundary of the project site. The noise barrier shall be a minimum of 8 feet in height, must have a surface density of at least 4 pounds per square foot, and be free of openings and cracks. However, due to the temporary nature of the noise barrier, no secondary adverse impacts would occur. MM-NOI-2 would require restricting field event hours. These mitigation measures would be required to reduce impacts related to construction noise to a less than significant level. As such, these measures would not result in secondary adverse impacts.

Traffic

MM-TRA-1 is required to ensure impacts to the surrounding street system are kept a minimum during project construction through implementation of a Construction Management Plan. MM-TRA-1 would implement traffic controls, specific transport activity hours, etc. These features would not result in a secondary potential impact because they would comply with standards in the current *California Manual on Uniform Traffic Control Devices* as well as City of Fullerton requirements. MM-TRA-2 requires implementation of a Traffic Management Plan, which may include intersection signal timing adjustments to improve traffic flow, routing of traffic via traffic cones/delineators, and/or programmable changeable message signs. MM-TRA-2 would reduce impacts associated with the conflict of an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance or the circulation system. Mitigation measures MM-TRA-3 and MM-TRA-4 require the proposed project to pay a fair-share contribution to reduce improvement costs. However, the proposed project cannot guarantee that these improvements that are located in the City of Fullerton and/or also under the jurisdiction of Caltrans will be implemented. Therefore, impacts are significant and unavoidable. Impacts associated with improvements could result in secondary adverse effects.

Tribal Cultural Resources

MM-TRC-1 requires in the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior’s Professional Qualification Standards, can evaluate the significance of the find and determine whether additional study is warranted. MM-TRC-1 is proposed to reduce potential impacts associated with archaeological resources. As such, implementation of these mitigation measures would not result in adverse secondary impact

Utilities

MM-UTL-1 requires the proposed project to include two bioswales located on the northern and southern parts of the site to reduce potential impacts associated with stormwater to less than significant. As such, implementation of this mitigation measure would not result in adverse secondary impacts.

5.5 EFFECTS FOUND NOT TO BE SIGNIFICANT

Section 15128 of the CEQA Guidelines requires that an EIR briefly describe potential environmental effects that were determined not to be significant and, therefore, were not discussed in detail in the EIR. The environmental issues discussed in the following sections are not considered significant, and the reasons for the conclusion of non-significance are discussed below.

5.4.1 Aesthetics

Scenic Vistas

The Fullerton Plan does not identify any scenic areas, vistas, or corridors in the vicinity of Fullerton College (City of Fullerton 2012). Analysis performed during the initial study (IS) phase of the proposed project’s CEQA process determined that impacts to a scenic vista would be less than significant, and further analysis in the EIR was not required. Additional information is provided in Appendix A.

Scenic Roadways

There are no designated scenic roadways within the project vicinity. The nearest eligible scenic roadway is the stretch of SR-57 from SR-90 to SR-60, which is approximately 1.9 miles from the project site at its closest point. The nearest officially designated state scenic highway is SR-91 east of SR-55, which is approximately 5.6 miles from the project site at its closest point (Caltrans 2017). Further, views to Fullerton College from the corridor are screened by intervening terrain, vegetation, and development. Analysis performed during the IS phase of the proposed project’s CEQA process determined that impacts to scenic resources within a state scenic highway would be less than significant, and further analysis in the EIR was not required. Additional information is provided in Appendix A.

5.4.2 Agriculture and Forestry Resources

The proposed project’s IS determined that all impacts associated with agriculture and forestry resources would be less than significant, and no additional analysis in the EIR would be required. For a detailed discussion of the less than significant impacts regarding agriculture and forestry resources, see Appendix A.

5.4.3 Biological Resources

The proposed project’s IS determined that all impacts associated with biological resources would be less than significant, and no additional analysis in the EIR would be required. For a detailed discussion of the less than significant impacts regarding biological resources, see Appendix A.

5.4.4 Cultural Resources

The proposed project's IS determined that all impacts associated with cultural resources would be less than significant, and no additional analysis in the EIR would be required. For a detailed discussion of the less than significant impacts regarding cultural resources, see Appendix A.

5.4.5 Geology and Soils

The proposed project's IS determined that all impacts associated with geology and soils would be less than significant, and no additional analysis in the EIR would be required. For a detailed discussion of the less than significant impacts regarding geology and soils, see Appendix A.

5.4.6 Hazards and Hazardous Materials

Route Transport, Use, or Disposal of Hazardous Materials

Hazardous substances and wastes would be transported, used, and disposed of in accordance with all federal, state, and local laws regulating the management and use of hazardous materials during construction activities and operations of the proposed project. Analysis performed during the IS phase of the proposed project determined that impacts related to the use of hazardous materials would be less than significant, and further analysis in the EIR was not required. Additional information is provided in Appendix A.

Release of Hazardous Materials into the Environment

All storage, handling, and disposal of these materials are regulated by the Department of Toxic Substances Control, the U.S. Environmental Protection Agency, the Occupational Safety and Health Administration, and the City of Fullerton and Orange County Fire Departments. The proposed project would involve very little use of hazardous materials, which would be associated with janitorial, maintenance, and repair activities (e.g., commercial cleaners, lubricants, or paints and household cleaning supplies). Use of these materials would be subject to all federal, state, and local laws regulating the management and use of hazardous materials. Therefore, the IS determined that impacts would be less than significant and no further analysis in the EIR was required. Additional information is provided in Appendix A.

Hazardous Materials within One-Quarter Mile of a School

With adherence to applicable laws, regulations, and standards, the proposed project would not create a significant risk to the public or the environment related to the use or upset of hazardous materials. As such, it would not create a risk to nearby schools. The proposed project's IS determined that impacts would be less than significant and no further analysis in the EIR was required. Additional information is provided in Appendix A.

Near an Airport or within an Airport Land Use Plan Area

The Airport Land Use Commission for Orange County has adopted the Airport Environs Land Use Plan. The project site is located approximately 3.4 miles east of Fullerton Municipal Airport. The project site is not located within the planning area for Fullerton Municipal Airport or any other airport land use plan (ALUC 2005). Additionally, proposed project activities would not pose a hazard for people residing or working in the project site. Therefore, the proposed project's IS determined that impacts would be less than significant and no further analysis in the EIR was required. Additional information is provided in Appendix A.

Within the Vicinity of a Private Airstrip

The project site is not located within the vicinity of a private airstrip. No private airstrips exist within 2 miles of the proposed project site; therefore, the IS determined that no impact would occur and no further analysis in the EIR was required. Additional information is provided in Appendix A.

Impaired Emergency Response

Permitting requirements mandate that the Fullerton Fire Department and the Division of the State Architect perform an access compliance review and a fire and life safety review prior to approval of individual project drawings and specification documents. Therefore, emergency access would be ensured, and the proposed project would not interfere with an adopted emergency response or evacuation plan. Therefore, the proposed project's IS determined that impacts would be less than significant and no further analysis in the EIR was required. Additional information is provided in Appendix A.

Wildland Fire Risks

The project site is in an urbanized area with no adjacent wildlands. The area surrounding the project site is generally urbanized and developed. Therefore, impacts were determined in the IS to be less than significant, and no further analysis was included in this EIR. Additional information is provided in Appendix A.

5.4.7 Hydrology and Water Quality

The proposed project's IS determined that all impacts associated with hydrology and water quality would be less than significant, and no additional analysis in the EIR would be required. For a detailed discussion of the less than significant impacts regarding hydrology and water quality, see Appendix A.

5.4.8 Land Use and Planning

The proposed project's IS determined that all impacts associated with land use and planning would be less than significant, and no additional analysis in the EIR would be required. For a detailed discussion of the less than significant impacts regarding land use and planning, see Appendix A.

5.4.9 Mineral Resources

The proposed project's IS determined that all impacts associated with mineral resources would be less than significant, and no additional analysis in the EIR would be required. For a detailed discussion of the less than significant impacts regarding mineral resources, see Appendix A.

5.4.10 Noise

Exposing People to Excessive Noise near a Public Airport

The project site is not located within the planning area for Fullerton Municipal Airport or any other airport land use plan (ALUC 2005), and Fullerton Municipal Airport is approximately 3.1 miles west of the project site. Therefore, there is little potential to expose people on Sherbeck Field excessive noise levels. Impacts would be less than significant. Additional information is provided in Appendix A.

Exposing People to Excessive Noise near a Private Airstrip

The project site is not located within the vicinity of a private airstrip. No private airstrips exist within 2 miles of the proposed project site; therefore, no impact would occur. Additional information is provided in Appendix A.

5.4.11 Population and Housing

The proposed project's IS determined that all impacts associated with population and housing would be less than significant, and no additional analysis in the EIR would be required. For a detailed discussion of the less than significant impacts regarding population and housing, see Appendix A.

5.4.12 Public Services

Schools

The proposed project would not involve the development of campus housing that would generate additional students. Although the field lighting would allow for more evening class options for the physical education program to meet student demand, the project would not directly or indirectly induce substantial population growth. Therefore, the Fullerton School District and Fullerton Joint

Union High School District located in the City would not experience adverse impacts resulting from the proposed project. Impacts would be less than significant. Additional information is provided in Appendix A.

Parks

The proposed project would have no impact on local parks. The proposed project would involve improvements to Sherbeck Field, the Fullerton College campus recreational facility, so athletic activities and games could remain on campus. Therefore, nearby parks would not experience an increase in visitors and acceptable service ratios would be maintained. No impacts would occur. Additional information is provided in Appendix A.

Other Public Facilities

The proposed project would have no impact on libraries and other public facilities. Fullerton College has a library on campus to serve the students; therefore, any increase in student enrollment (which is not expected due to the nature of the proposed project) would not adversely affect local libraries, and acceptable service ratios would be maintained. No impacts would occur. Additional information is provided in Appendix A.

5.4.13 Recreation

The proposed project would not result in an increase in the use of these existing parks or recreation areas. The project would involve improvements to Sherbeck Field, the Fullerton College campus recreational facility, so athletic activities and games could remain on campus. Therefore, off-site recreational facilities would not experience physical deterioration due to an increase of use. No impacts to existing recreational facilities would occur. Additional information is provided in Appendix A.

5.4.14 Transportation

Change in Air Traffic Patterns

According to The Fullerton Plan, the project site is located outside of the Fullerton Municipal Airport Runway Protection Zone. Further, the proposed project would not change air traffic patterns or result in substantial safety risks regarding air traffic (City of Fullerton 2012). The IS determined that no impact would occur (see Appendix A).

Design Feature Hazard

The proposed project would not involve construction of any transportation–related elements, nor would operations involve incompatible uses to the transportation system. The project site would continue to be used as an athletic field. No impacts related to hazardous design features or incompatible uses would occur (see Appendix A).

5.4.15 Utilities and Service Systems

Sufficient Landfill Capacity

The proposed project would not involve demolition of any existing structures. In addition, given the maximum tons of waste accepted per day at the landfill, any operational waste generated by the proposed project would represent a nominal percentage of the maximum waste accepted. Therefore, the project could be served by a landfill with sufficient permitted capacity, and impacts would be less than significant (see Appendix A).

Conflict with Solid Waste Regulations

Solid waste generated by Fullerton College is collected and transported by Ware Disposal Company, which is permitted and licensed to collect and transport solid waste. Once collected, solid waste is transported to sorting/disposal facilities permitted to accept commercial solid waste, with each facility's operations routinely inspected by regional and state regulatory agencies for compliance with all applicable statutes and regulations. Given these considerations, impacts associated with solid waste statutes and regulations would be less than significant (see Appendix A).

5.6 REFERENCES

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CHAPTER 6
ALTERNATIVES

The California Environmental Quality Act (CEQA) requires that environmental impact reports (EIRs) "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives" (14 CCR 15126.6(a)). The CEQA Guidelines direct that the selection of alternatives be governed by "a rule of reason" (14 CCR 15126.6(a) and (f)). As defined by the CEQA Guidelines:

> The range of alternatives required in an EIR is governed by a 'rule of reason' that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the Lead Agency determines could feasibly attain most of the basic objectives of the project (14 CCR 15126.6(f)).

As presented in prior sections of this EIR, the proposed project would result in significant and unavoidable impacts with respect to noise, recreation, and transportation. These impacts are summarized below:

- **Noise:** The primary on-site noise source would be from the proposed public address (PA) system. Combined (crowd noise, PA system noise, and ambient [traffic] noise) sound levels range from approximately 69 A-weighted decibels equivalent sound level (dBA L_{eq}) at residences to the northeast of the project site, to approximately 76 dBA L_{eq} at the nearest residences directly east of the project site. Compared to the existing modeled noise levels, the periodic sound level increase at the nearby residences would range from approximately 7 to 13 decibels (dB). The periodic increase in noise of up to 13 dB is considered a substantial noise increase. Various mitigation measures were considered and were determined to be either ineffective or infeasible, as discussed further in EIR Section 4.5, Noise. Therefore, the impact of on-site operational noise from the proposed project on off-site residences is considered significant and unavoidable.

  The proposed project's operational noise impacts also include periodic increases in off-site noise generated by vehicular traffic. On Saturdays, when football games would take place, greater numbers of vehicle trips would be generated during the approximately 2 hours of arrival time (generally in the late morning/early afternoon hours) and 2 hours of departure time (generally in the late afternoon hours). For the existing traffic scenario, project-related, peak-hour traffic noise levels are predicted to increase approximately 0 to 6 dB, depending on the location. For Year 2030 traffic scenarios, project-related, peak-hour traffic noise levels are predicted to increase approximately 0 to 5 dB, depending on the location. Periodic changes in the traffic noise level of up to 5 to 6 dB are considered clearly audible.

Because the project-related traffic noise increases are predicted to occur for relatively short periods (for the 2 hours prior to and 2 hours after the games), these increases would not result in a significant change in the overall 24-hour noise levels. The maximum periodic traffic noise of 6 dB would result in a 1 dB or less increase in terms of the community noise equivalent level (CNEL), which is not perceptible or significant. Nonetheless, based on the Federal Interagency Committee on Noise thresholds for increases in community noise, the periodic noise increase (in terms of hourly average (L_{eq})) at residences along the east side of North Berkeley Avenue between East Chapman Avenue and North Lemon Street is considered substantial. Because the project would result in periodic noise level increases of up to 6 dB, and because there is no feasible mitigation to address this vehicular-based noise (as discussed further in EIR Section 4.5, Noise), this is considered a significant and unavoidable impact.

- **Recreation:** The project includes the construction of a recreational facility, and the impacts of that proposal are analyzed throughout this EIR. The proposed project would result in significant and unavoidable noise and transportation impacts (as summarized here); therefore, impacts related to recreation are significant and unavoidable.

Transportation: Intersections that would be impacted during a Saturday field event include Lemon Street at Berkeley Avenue, Berkeley Avenue at College Driveway No. 1, and Berkeley Avenue at College Driveway No. 2. Implementation of a Traffic Management Plan at these key intersections would mitigate the impacts; however, because the implementation of a Traffic Management Plan requires the City of Fullerton's involvement, impacts would be considered significant and unavoidable.

Intersections that would be impacted during a Friday night field event include Lemon Street at Berkeley Avenue, Lemon Street at Fullerton College Drive, Berkeley Avenue at College Driveway No. 1, and Berkeley Avenue at College Driveway No. 2. Implementation of a Traffic Management Plan at these key intersections would mitigate the impacts; however, because the implementation of a Traffic Management Plan requires the City of Fullerton's involvement, impacts would be considered significant and unavoidable.

In the Year 2030 plus Project cumulative condition, Saturday Event traffic would significantly impact the State College Boulevard/Chapman Avenue intersection. This fair share contribution would be applied to the Citywide Traffic Impact Fee, pursuant to Chapter 21.30 of the City's Municipal Code – Fees for Traffic Impact Mitigation. Although implementation of improvements at State College Boulevard/Chapman Avenue would reduce potential impacts, the proposed project cannot guarantee that these improvements, which are located in the City of Fullerton, will be implemented. Therefore, impacts are significant and unavoidable.

Additionally, an analysis of Year 2030 plus Project Weekday traffic indicates that the proposed project would impact the State Route (SR) 57 NB Ramps at Chapman Avenue. With implementation of improvements at the ramps, the impact would be less than significant. Although implementation of improvements at the state-controlled intersection of the SR-57 NB Ramps/Chapman Avenue would sufficiently mitigate the impact of project traffic, the proposed project cannot guarantee that these improvements, which are located in the City of Fullerton and/or also under the jurisdiction of Caltrans, will be implemented. Therefore, impacts are significant and unavoidable.

Further, Saturday Event traffic is anticipated to significantly impact one freeway segment under the Existing plus Project condition, two freeway segments under the Year 2020 Cumulative plus Project condition, and three freeway segments under the Year 2030 Buildout plus Project condition. The three freeway segments forecast to operate at an unacceptable level of service during a Saturday Event in Year 2030 are key freeway segment no. 4, SR-57 at Chapman; key freeway segment no. 6, westbound SR-91 west of Harbor Boulevard; and key freeway segment no. 7, eastbound SR-91 west of Harbor Boulevard. The proposed project's incremental impacts on these freeway segments are considered unmitigable, as there are no feasible mitigation measures that will reduce cumulative mainline impacts to below significance thresholds or achieve acceptable service level goals. Impacts to these freeway segments, therefore, are significant and unavoidable.

Additionally, Saturday Event traffic during peak hours would significantly impact one freeway ramp (i.e., no. 7 – diverge segment), which is forecast to operate at an unacceptable level of service in the Year 2020 Cumulative plus Project condition. Three freeway ramps are forecast to operate at an unacceptable level of service in the Year 2030 Cumulative plus Project condition during the Saturday Event peak hours (i.e., no. 4 – merge segment; no. 6 – merge segment; and no. 7 – diverge segment). Impacts to these freeway ramps, therefore, are cumulatively significant.

Consistent with CEQA, the analysis presented in this chapter considers whether a reasonable range of alternatives to the proposed Sherbeck Field Improvements Project (proposed project) could reduce those impacts.

The selection of alternatives and their discussion must "foster informed decision making and public participation" (14 CCR 15126.6(a)). Therefore, this chapter identifies potential alternatives to the proposed project and evaluates them, as required by CEQA.

6.1 PROJECT OBJECTIVES

As presented in Chapter 3, Project Description, of this EIR, the proposed project's objectives are as follows:

- Provide a facility for the Fullerton College football program at Fullerton College that meets the college field and goalpost sizing requirements of the California Community College Athletic Association Regulations, Bylaw 4.26A.
- Provide a facility for the Fullerton College football program for full-season play so that the college does not have to request waivers from the Southern California Football Association to play at high school fields.
- Provide field lighting to allow for more evening class options for the physical education program to meet student demand, and to allow for evening soccer games and occasional evening football games.
- Install permanent bleachers so that Fullerton College can host regular season and playoff football games at the college.
- Install permanent bleachers so that Fullerton College can reduce the costs associated with renting bleachers for the annual Fullerton College commencement ceremony.
- Construct a press box, which is required for football games in order to house football coaching staff, media, and statisticians.
- Construct a storage building to address the inadequacy of the current storage of football equipment and track and field equipment at the field house.

These objectives are considered in evaluating the alternatives contained in this chapter.

6.2 ALTERNATIVES CONSIDERED AND ELIMINATED DURING THE SCOPING/PROJECT PLANNING PROCESS

The CEQA Guidelines provide that this EIR should "identify any alternatives that were considered by the Lead Agency but were rejected as infeasible during the scoping process and briefly explain the reasons underlying the Lead Agency's determination" (14 CCR 15126.6(c)). The following is a discussion of the Sherbeck Field alternatives considered during the scoping and planning process and the reasons they were not selected for detailed analysis in this EIR. Because Fullerton College has considered several potential projects involving a stadium at Sherbeck Field over the course of the past 20 years, the following is brief overview of the planning process during that time frame.

In 1999, during the campus' facilities master planning process,[1] Fullerton College considered a new, all-purpose stadium with seating for 10,000 to 12,000 spectators that would be available for joint use by the campus and community as one of the top priorities. When Measure X was passed,[2] the original plan was to demolish Building 1200 and construct a new physical education complex (gyms, weight room, and offices) and build an on-campus stadium. When bond monies ran out, the District planned instead to remodel Building 1200, build a new field house, and build an on-campus stadium. The remodeling of Building 1200 has not been completed; a new field house was built in 2010;and the District has now proposed the Sherbeck Field Improvements project instead of construction of an on-campus stadium.

Another option considered was a football-only stadium. Those plans eventually faded, since they were dependent on a location for the stadium that is where the Fullerton Union High School farm[3] is sited. Since this site is under Fullerton Union High School's jurisdiction, and Fullerton Union High School plans to keep the farm where it is currently sited, the District would not be able to construct a stadium at this location. In 2010, the field house, synthetic field, and rubberized track were constructed as part of Bond Measure X, and are all part of the existing Sherbeck Field. When the Sherbeck Field Improvements Project was publicly bid for construction in Fall 2008, lights and bleachers were part of the project. Community feedback led to the removal of the lights and bleachers as part of the project.

In the 2017 Master Plan Program EIR, the Sherbeck Field improvements were initially included in the plan, but after significant public comment, the project was removed from the Master Plan Program EIR, and a separate NOP and Initial Study was circulated in 2018, so that the public would have a chance to review the project in detail and comment on an EIR specific to the project. This EIR is the District's commitment to that promise to the public to engage in a detailed analysis of the project's impacts as well as a thorough alternatives analysis.

As to selecting an alternative location for the proposed project, the "key question and first step in [the] analysis is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location" (14 CCR 15126(f)(2)(A)). "Only

1 Fullerton College's Facilities Master Plan includes a number of near-, mid- and long-term improvements designed to update and modernize campus facilities in order to accommodate projected growth in the student body and meet the North Orange County Community College District's academic mission. The current Facilities Master Plan was adopted in December 2017, and does not include the improvements to Sherbeck Field proposed by this project.

2 Measure X, approved by voters in 2002, provided $239 million for the improvement and expansion of North Orange County Community College District-wide facilities. As a result, 22 major projects were completed or addressed at Cypress College, Fullerton College, and the School of Continuing Education.

3 This area houses the Fullerton Union High School Farm and Agriculture Department. The history of the high school and the junior college are intertwined until 1935 when the District purchased 16 acres of land for the junior college, and the College could develop independently of the high school. However, today the land for the farm school is across Lemon Street on the main campus for Fullerton College.

locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR" (14 CCR 15126(f)(2)(A)).

The City of Fullerton recommends including an analysis of the ability to construct a new stadium at the Cypress College campus. However, there is no funding for the proposed project at Cypress College (Giles, pers. comm. 2019). Further, new construction at Cypress College would result in greater impacts than the proposed project or moving the project to an existing field at an alternative location. The proposed project involves installation of improvements to Sherbeck Field, which would result in fewer construction activities compared the construction of an entirely new stadium at the Cypress College campus. Therefore, the proposed project would generate fewer construction-related air quality, greenhouse gas, noise, and traffic impacts than construction of a new stadium at the Cypress College campus. Additionally, there would be no new construction resulting from using an alternative location, and thus, construction-related air quality, greenhouse gas, noise, and traffic impacts (and potentially others) would also be less than construction of a new stadium at the Cypress College campus.

6.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

This section discusses a reasonable range of alternatives to the proposed project, including a no project alternative in compliance with CEQA Guidelines Section 15126.6(e). These alternatives include the following:

- No Project Alternative: No Development/Continued Use of Yorba Linda High School
- Reduced Project Alternative
- Alternative Site Location at California State University, Fullerton
- Alternative Site Location at Fullerton Union High School

Each alternative's environmental impacts are compared to the proposed project and determined to be environmentally superior, neutral, or inferior. Figure 6-1 shows the alternative locations for Yorba Linda High School; California State University, Fullerton (CSUF); and Fullerton Union High School in relation to Fullerton College.

As background, numerous comment letters submitted in response to the Notice of Preparation (NOP) for this EIR referenced the CSUF Stadium and Fullerton Union High School Stadium as two proximate and viable alternative locations for the proposed project. As such, they are considered in this analysis.

However, as to the latter location (Fullerton Union High School Stadium), in 2017, the California Community College Athletic Association revised the bylaws applicable to football games, rendering high school fields unsuitable for college competition due to goalpost and field sizing requirements. Specifically, the March 2017 emergency legislation for California Community College Athletic Association Bylaw 4.2.6A was to prohibit the waiving of Rule 1, Section 2 of the NCAA Football Rulebook (governing the line striping and size of goal posts field requirements) for playoff and the state championship games (California Community College Athletic Association Constitution Committee 2017).[4]

Fullerton College must apply for a waiver each year from the Southern California Football Association (SCFA) to allow play at high school fields for regular season and non-playoff games. The waiver is not guaranteed and leaves the College in a tenuous position each year, as it tries to find locations for regular season and non-playoff games. (Additionally, as mentioned above, Fullerton College is responsible for securing non-high school football fields compliant with Rule 1, Section 2 of the NCAA Football Rulebook for playoff games and the state championship.) Therefore, the Fullerton Union High School Stadium, the Yorba Linda High School Stadium, and any other high school football field are not feasible alternatives over the long term because: (1) they are dependent upon the granting of a waiver to Fullerton College each year to play at high school fields for regular season and non-playoff games, and (2) Fullerton College must also secure a non-high school football field for playoff games and the state championship.

As such, use of high school football fields leaves Fullerton College in a difficult position. For example, 2017 was the first year the rule was implemented, and Fullerton College played at Whittier College, about 12 miles away from Fullerton College. The access and parking at Whittier College were very difficult. There are also costs associated with renting other fields. The Whittier College field cost approximately $5,000 for the rental (Whittier College 2017). Although the Yorba Linda High School Stadium and Fullerton Union High School Stadium are not considered long-term feasible alternatives, the continued use of the Yorba Linda High School Stadium and the use of Fullerton Union High School Stadium as alternative locations to the Sherbeck Field site are analyzed in Section 6.3.

It also is noted that Section 15126.6(b) of the CEQA Guidelines requires that an alternatives discussion focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives or would be more costly. The proposed Sherbeck Field Improvements Project would result in significant and unavoidable noise impacts (see EIR Section 4.5, Noise). Moving the project to an alternative location would avoid the noise impact to the campus' neighbors east of North Berkeley Avenue, but likely would shift those impacts to other locations and

[4] Palomar College and Fullerton College are the only two Southern California community colleges that play at high school fields. Palomar College is now constructing their own football field. Sooner rather than later, all community colleges will be required by the California Community College Athletic Association to play on college fields (Giles, pers. comm. 2019).

other noise-sensitive receptors. Nonetheless, based on the NOP comments, Section 6.3 considers alternative locations for the project at CSUF and Fullerton Union High School.

6.3.1 No Project Alternative: No Development/Continued Use of Yorba Linda High School

Section 15126.6(e) of the CEQA Guidelines requires that an EIR evaluate and analyze the impacts of a no project alternative. The "purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project" (14 CCR 15126.6(e)(1)). When defining the no project alternative, the analysis shall be informed by "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" (14 CCR 15126.6(e)(2)).

Here, the No Project Alternative consists of no changes to the existing Sherbeck Field and the continued use of Yorba Linda High School for certain campus-related functions (e.g., football). Under the No Project Alternative, the bleachers, PA sound system, and press box associated with the proposed project would *not* be added to the existing field. Rather, the field would remain as it is today: class offerings would be capped at sunset; temporary bleacher seating would be rented each year for commencement ceremonies; regular football games would not be played at Fullerton College (but rather would be hosted at Yorba Linda High School's field for as long as the SCFA allows it); and Fullerton College would continue to find a non-high school field in compliance with Rule 1, Section 2 of the NCAA Football Rulebook for playoff games.[5] Football practice, soccer practice and Friday evening soccer games, and track and field practice and events would occur at Sherbeck Field under the No Project Alternative, as a continuation of the existing operations. In addition, with the No Project Alternative, Fullerton College would continue to rent out Sherbeck Field to private schools and organizations to host athletic competitions and practices, and the Fullerton College annual commencement ceremony would continue to take place at Sherbeck Field. Figure 6-2 shows the alternative at Yorba Linda High School.

Analysis

Aesthetics

Under the No Project Alternative, there would be no construction activity and no change to the current visual appearance of or setting at Sherbeck Field. Since no changes would occur under the No Project Alternative, the project site would have no change from the existing environmental conditions. Therefore, the No Project Alternative would be environmentally superior to the proposed project in terms of aesthetics impacts to the Fullerton College campus environment.

5 There are approximately five regular and up to two playoff football games per year (Saghieh, pers. comm. 2017).

There also would be no change to the Yorba Linda High School environment compared to the existing conditions.

Air Quality

Under the No Project Alternative, no construction activities would occur; therefore, there would be no short-term, construction-related air pollutant emissions. The No Project Alternative also would not introduce additional trip-generating uses to Fullerton College, and would not result in corresponding vehicular emissions. Instead, the No Project Alternative would result in the continuation of existing emission increments associated with existing uses at Sherbeck Field and Yorba Linda High School. Although the proposed project would not exceed the air quality thresholds of significance, the No Project Alternative would be environmentally superior to the proposed project in terms of air quality impacts.

Greenhouse Gas Emissions

Under the No Project Alternative, no construction activities would occur; therefore, there would be no short-term, construction-related GHG emissions. Additionally, since no changes in operation at Fullerton College or Yorba Linda High School would occur, operational GHG emissions would continue as under the current conditions. Although the proposed project would not have significant GHG emissions impacts, the No Project Alternative would be environmentally superior to the proposed project in terms of GHG emission impacts.

Hazards and Hazardous Materials

The proposed project's hazardous materials contingency plan (see EIR Section 4.4, Hazards and Hazardous Materials) recommends that soil sampling be conducted in former orchard areas prior to construction activities, in order to confirm that residual pesticide concentrations do not exceed regulatory levels. The former orchards are located on the eastern portion of the campus, including the project site and surrounding area. Because the earthwork processes that took place to develop the current field would have reduced any existing pesticide concentrations, the potential for pesticides and arsenic to impact the soil is considered low. Nonetheless, the No Project Alternative would not disturb any potentially contaminated soils since no construction activities would occur. Therefore, the No Project Alternative would be environmentally superior to the proposed project in terms of hazards and hazardous materials impacts.

Noise

Under the No Project Alternative, no construction activities would occur on the project site; therefore, no short-term construction noise from the use of construction equipment, such as heavy equipment, would occur. As such, construction noise impacts to sensitive receptors adjacent to the project site would not occur under the No Project Alternative.

Operational noise impacts associated with the proposed project would include periodic increases in on-site noise resulting from the proposed improvements. Based on the Fullerton Municipal Code, the proposed project is exempt from the City's on-site operational noise standards (see Noise Ordinance Section 15.90.040.A.1). Therefore, the proposed project would not violate the City's noise standards. However, the periodic increase in noise of up to 13 decibels is considered a substantial noise increase, based on the Federal Interagency Committee on Noise guidance. Noise impacts associated with periodic operation of the proposed project would be significant and unavoidable. The No Project Alternative would have no impacts on Fullerton residents related to operational noise. In addition, noise impacts at Yorba Linda High School would remain consistent with the current noise levels generated by Fullerton College football games.[6] Therefore, the No Project Alternative would be environmentally superior to the proposed project in terms of noise impacts.

Public Services

Under the No Project Alternative, there would be no changes to the existing environmental conditions. Thus, the No Project Alternative would not generate additional calls for service, because calls generated by the use of Yorba Linda High School's football field are part of the existing conditions. Under the proposed project, there would be few, if any, additional calls for service and there would be no need for new or physically altered governmental facilities. As such, the No Project Alternative would be environmentally neutral compared to the proposed project in terms of public services impacts.

Recreation

Under the No Project Alternative, the project site would remain unchanged. Although the proposed project would not expand or result in the construction of additional off-site recreational facilities, the proposed project would involve improvements to Sherbeck Field. Because under the No Project Alternative there would be no construction of any new facilities, there would be no environmental impacts related to construction or operation of facilities. Therefore, the No Project Alternative would be environmentally superior to the proposed project in terms of recreation impacts.

Transportation

Under the No Project Alternative, no construction activities would occur. As such, no construction traffic from haul trucks, cement trucks, equipment and material delivery trucks, or

6 While sensitive receptors located approximately 150 feet from Yorba Linda High School's football field would be exposed to similar noise levels as sensitive receptors located approximately 85 feet from Sherbeck Field under the proposed project, the noise generated at Yorba Linda High School is part of the existing environmental condition.

construction worker vehicles would occur. The No Project Alternative also would not generate any new trips compared to the current traffic and circulation conditions at Yorba Linda High School. Therefore, the No Project Alternative would be environmentally superior compared to the proposed project in terms of transportation impacts.

Tribal Cultural Resources

Under the No Project Alternative, no earthwork activities, which could disrupt tribal cultural resources, would occur. However, no listed, or eligible for listing, tribal cultural resources were identified on the project site as a result of the California Historical Resources Information System (CHRIS) records search, Native American Heritage Commission (NAHC) Sacred Lands File search, and Native American consultation. Additionally, the proposed project is subject to compliance with Assembly Bill (AB) 52 (California Public Resources Code, Section 21074), which requires the consideration of impacts to tribal cultural resources as part of the CEQA process, and requires the North Orange County Community College District (District) to notify groups that are traditionally or culturally affiliated with the geographic area of the proposed project and that have requested notification. The District received one request from California Native American tribes for AB 52 project notification. The request came from Andrew Salas, Chairman of the Gabrieleño Band of Mission Indians–Kizh Nation. Mr. Salas sent a letter to the District dated April 1, 2018, to request formal notification of the project. The District contacted Mr. Salas on April 12, 2018, with formal notification of the proposed project. The District followed up with an email to Mr. Salas on June 14, 2018, and still has received no response from the tribe. Because the District did not receive any response, no consultation was required, and therefore consultation did not occur. To date, no known geographically defined tribal cultural resources were identified within, or in the immediate vicinity of, the Fullerton College campus during consultation for the proposed project. Therefore, the No Project Alternative is environmentally neutral compared to the proposed project in terms of tribal cultural resources.

Utilities and Service Systems

Under the No Project Alternative, no new construction would occur. The proposed project improvements would allow for additional evening physical education classes, and five regular and up to two playoff football games per year at Fullerton College. As further described in Section 4.10, Utilities and Service Systems, the proposed project would generate a water demand of 15,360 gallons per year for academic instruction and 136,740 gallons per year for field events, for a total of 152,100 gallons per year. Based on the City's water demand projections identified in the 2015 Urban Water Management Plan and based on the Orange County Sanitation District's remaining capacity, water and wastewater impacts would be less than significant under the proposed project. However, under the proposed project, installation of the bleachers on existing pervious areas would result in an increase in stormwater flows and would require mitigation to reduce impacts to less than significant. Under the No Project Alternative, there would not be an increase in impervious areas requiring mitigation at Sherbeck Field. Therefore, the No Project Alternative would be environmentally superior to the proposed project in terms of utilities and service systems.

Conclusion

The No Project Alternative would be environmentally superior to the proposed project in almost all resource areas. It would be environmentally neutral compared to the proposed project with regard to public services and tribal cultural resources. Although it is part of the existing condition, Yorba Linda High School is approximately 7 miles from the campus, and it is not environmentally efficient from a mobile emissions standpoint or time standpoint, to have an entire team, support staff, and spectators drive to Yorba Linda for Fullerton College football games.

The adoption of the No Project Alternative would not meet the project objectives identified by the District for providing field lighting to allow for more evening class options for the physical education program to meet student demand at Fullerton College; it would not provide a football field for the Fullerton College football program that meets the sizing requirements of the California Community College Athletic Association Regulations, Bylaw 4.2.6A; it is not certain that the California Community College Athletic Association would continue to permit waivers for regular and non-playoff games at high school fields; and it would not install permanent bleachers so that Fullerton College can host regular season and playoff football games at the College and reduce the costs associated with renting bleachers for the annual Fullerton College commencement ceremony. Additionally, the No Project Alternative would not construct a storage building to address the inadequacy of the current storage of football equipment and track and field equipment at the field house. Although the No Project Alternative would be environmentally superior to the proposed project, it would not meet the District's project objectives.

6.3.2 Reduced Project Alternative

The Reduced Project Alternative represents a reduction in the proposed project with fewer permanent, prefabricated aluminum bleachers. The Reduced Project Alternative chosen for analysis is one with capacity for 2,000 seats (1,500 home spectators and 500 visitor spectators) because it has the least noise impact of all the reduced project alternatives analyzed by Veneklasen Associates, compared to the proposed project, which would install 4,417 seats (2,861 home spectators and 1,556 visitor spectators). (A series of reduced project alternatives between 2,000 and 3,500 seats were considered in the noise analysis conducted by Veneklasen Associates, none of which reduced the significant and adverse noise impacts of the proposed project. See Appendix E. As with the proposed project, the Reduced Project Alternative would involve the installation of bleachers, six field lighting stanchions, a sound system, a press box, and a storage building.

Analysis

Aesthetics

Construction activities associated with the Reduced Project Alternative would temporarily alter the visual character and quality of the project site similarly to the proposed project. For example, both the proposed project and the Reduced Project Alternative would result in the installation of permanent, prefabricated bleachers (of varied quantities); six light stanchions ranging in height from 60 feet to 120 feet; and a storage building that would be 30 feet long by 20 feet wide by 14 feet high. Although the Reduced Project Alternative would result in a reduction in the size of the bleachers, the installation of other improvements at the field would similarly present a contrast in mass and scale with the adjacent single-family residences. Therefore, the Reduced Project Alternative would be environmentally neutral compared to the proposed project in terms of aesthetic impacts.

Air Quality

Under the Reduced Project Alternative, the majority of the proposed project improvements would be installed but with a reduction in permanent seating capacity. This would result in a small reduction in the construction time associated with installation of the bleachers. With the reduction in construction under the Reduced Project Alternative, there would be less construction-related criteria air pollutant emissions. However, based on the analysis included within this EIR, the proposed project would not generate emissions in excess of the daily construction emissions thresholds.

Similarly to the proposed project, the Reduced Project Alternative would generate criteria air pollutant emissions from mobile sources, including vehicle trips from students and event attendees; area sources, including the use of consumer products, architectural coatings for repainting, and landscape maintenance equipment; and energy sources. Because the majority of the new construction planned under the proposed project would also occur under the Reduced Project Alternative, the operational pollutant emissions resulting from area and energy sources would be similar to those of the proposed project. The Reduced Project Alternative would involve construction of 2,000 permanent seats, compared to the proposed project’s 4,417 permanent seats; therefore, the Reduced Project Alternative would result in fewer emissions from mobile sources. The Reduced Project Alternative would be environmentally superior to the proposed project in terms of air quality impacts.

Greenhouse Gas Emissions

The Reduced Project Alternative’s reduction in the size of the bleachers would result in less construction-related GHG emissions compared to the proposed project. With regard to long-term operational GHG emissions, the majority of the proposed programming would continue under the

Reduced Project Alternative. Both the proposed project and the Reduced Project Alternative would result in generation of GHG emissions through motor vehicle trips, landscape maintenance, energy use, solid waste disposal, stationary sources, and the use of electricity and natural gas. Project-related traffic based on permanent seating capacity would be greater under the proposed project compared to the Reduced Project Alternative due to the reduction in seating from 4,417 to 2,000. Thus, mobile GHG emissions would likely be greater under the proposed project. Therefore, the Reduced Project Alternative would be environmentally superior to the proposed project in terms of GHG emissions impacts.

Hazards and Hazardous Materials

The Reduced Project Alternative would result in similar excavation activities and have the same location as the proposed project; therefore, like the proposed project, the Reduced Project Alternative could encounter contaminated soil associated with former orchards. Both the Reduced Project Alternative and the proposed project would be required to implement mitigation measures and comply with the applicable procedures set forth in the hazardous materials contingency plan (see EIR Section 4.4, Hazards and Hazardous Materials). Therefore, the Reduced Project Alternative would be environmentally neutral compared to the proposed project in terms of hazards and hazardous materials impacts.

Noise

Construction activities under the Reduced Project Alternative would result in a temporary increase in noise levels from the operation of construction equipment, similar to the proposed project. The Reduced Project Alternative would also expose receptors to elevated noise levels due to construction equipment. However, the construction duration of the Reduced Project Alternative would be reduced from that of the proposed project due to the reduction in seating capacity.

Operational noise impacts associated with the proposed project would include periodic increases in on-site noise resulting from the proposed improvements. The Reduced Project Alternative would reduce the crowd noise as a result of the reduction in seating capacity; however, as shown in Table 4.5-11 (see Section 4.5, Noise, of this EIR), the primary on-site noise source would be from the proposed PA system. Alternative speaker placement was investigated but found to be infeasible because proper placement of these loudspeakers would require installation in the center of the proposed track. In addition, the Reduced Project Alternative would slightly reduce periodic off-site noise impacts associated with traffic due to the reduced seating capacity. Thus, while the Reduced Project Alternative would reduce noise, it would not substantially reduce noise, and noise impacts associated with a Reduced Project Alternative would still be significant and unavoidable. Therefore, the Reduced Project Alternative would be environmentally neutral to the proposed project in terms of noise impacts.

Public Services

Under the Reduced Project Alternative, the proposed programming activities would be consistent with those that would occur under the proposed project. However, the Reduced Project Alternative would have a decreased seating capacity. Under the proposed project, there would be few, if any, additional calls for service and there would be no need for new or physically altered governmental facilities. Therefore, the Reduced Project Alternative would be environmentally neutral compared to the proposed project in terms of public services impacts.

Recreation

Similar to the proposed project, the Reduced Project Alternative would result in the construction and installation of bleachers, lighting, a sound system, a press box, a storage building, and a scoreboard. Although the proposed project would not expand or result in the construction of additional off-site recreational facilities, both the proposed project and Reduced Project Alternative would involve improvements to Sherbeck Field that would have significant and unavoidable noise, recreational, and transportation impacts. As such, the potential environmental impacts related to recreational facilities are part of the impacts assessment conducted for the entirety of the proposed project. The Reduced Project Alternative would result in a shorter construction duration and would generate fewer traffic trips compared to the proposed project. However, because the Reduced Project Alternative would not reduce the significant and unavoidable noise, recreation, and traffic impacts, it would be environmentally neutral to the proposed project in terms of recreation impacts.

Transportation

Under the Reduced Project Alternative, construction activities would occur. As such, construction traffic from haul trucks, cement trucks, equipment and material delivery trucks, and construction worker vehicles would occur. Once operational, the proposed project would generate 528 weekday daily trips and 4,307 event daily trips. The Reduced Project Alternative would continue to generate 528 weekday daily trips due to the proposed lighting allowing for additional evening classes. Based on the generation factor of 0.975 trips/seat used in the Traffic Impact Analysis for the proposed project (Appendix F to this EIR), the Reduced Project Alternative would generate approximately 1,950 event daily trips, which represents a 55% decrease in event daily trips compared to the proposed project. The proposed project would result in significant and unavoidable impacts under the Year 2030 traffic conditions at the State College Boulevard/ Chapman Avenue intersection and the state-controlled State Route (SR) 57 northbound (NB) Ramps at Chapman Avenue. Although the Reduced Project Alternative would result in decreased event daily trip generation, under the Year 2030 traffic conditions, the Reduced Project Alternative would only reduce impacts at three intersections to less than significant levels, and would still result in impacts at State College Boulevard/Chapman Avenue intersection (Linscott, Law & Greenspan, Engineers 2019). As is the case with the proposed project, the Reduced Project Alternative cannot guarantee that installation of improvements to the impacted intersection at State College Boulevard/Chapman Avenue that are located in the City of Fullerton will be implemented. Therefore, the Reduced Project Alternative would still have significant and unavoidable traffic impacts and would be environmentally neutral compared to the proposed project in terms of transportation impacts.

Tribal Cultural Resources

Under both the proposed project and the Reduced Project Alternative, earthwork activities, which could disrupt tribal cultural resources, would occur. However, as discussed in Section 6.3.1 above, no listed, or eligible for listing, tribal cultural resources were identified on the project site (or within, or in the immediate vicinity of, the Fullerton College campus) as a result of the CHRIS records search, NAHC Sacred Lands File search, and Native American consultation. Therefore, the Reduced Project Alternative would be environmentally neutral compared to the proposed project with respect to tribal cultural resources.

Utilities and Service Systems

The Reduced Project Alternative would result in the installation of the same improvements as the proposed project, including a reduced number of bleachers. The proposed improvements associated with the proposed project would increase demand for water and wastewater; however, both the Reduced Project Alternative and the proposed project would result in less than significant impacts. Additionally, both the Reduced Project Alternative and the proposed project would increase the amount of impervious areas on the project site, thereby increasing stormwater flows. Similarly to the proposed project, the Reduced Project Alternative would require mitigation to reduce stormwater impacts to less than significant. Therefore, the Reduced Project Alternative would be environmentally neutral compared to the proposed project in terms of impacts to utilities and service systems.

Conclusion

The Reduced Project Alternative would be considered environmentally superior to the proposed project in two resource areas (air quality and greenhouse gas emissions) and would be environmentally neutral compared to the proposed project in eight areas (aesthetics, hazards and hazardous materials, noise, public services, recreation, transportation, tribal cultural resources, and utilities and service systems).

The adoption of the Reduced Project Alternative would not meet the objectives identified by the District because it would not provide the number of bleacher seats needed to accommodate regular season and playoff game football attendance at the College or provide enough seating to meaningfully reduce the costs associated with bleacher rental during commencement. Although the Reduced Project Alternative would be environmentally superior to the proposed project, it would not meet the District’s project objectives.

6.3.3 Alternative Site Location at California State University, Fullerton

The Alternative Site Location at California State University, Fullerton (CSUF Site Alternative), considers relocating the proposed football games that would result from the new improvements at Sherbeck Field to the CSUF Titan Stadium. Titan Stadium is located approximately 1.7 miles northeast of Fullerton College, or 2.2 miles via local roads. The CSUF Titan Stadium can accommodate collegiate play and 10,000 spectators.

The proposed project would allow Fullerton College to add more evening class options at Sherbeck Field. Under the CSUF Site Alternative, it is not anticipated that the proposed academic instruction would be relocated onto the CSUF campus due to the distance and potential conflict with CSUF evening activities. With regard to other athletic activities, football practice, soccer practice and Friday evening soccer games, and track and field practice and events would continue to occur at Sherbeck Field under the CSUF Site Alternative. In addition, Fullerton College would continue to rent out Sherbeck Field to private schools and organizations to host athletic courses and practice, and the Fullerton College annual commencement ceremony would continue to take place at Sherbeck Field. However, regular season football games would no longer be held at the Yorba Linda High School field, and playoff and state champion games would no longer have to be secured at another non-high school field in compliance with Rule 1, Section 2 of the NCAA Football Rulebook. Instead both regular and playoff games would be relocated to Titan Stadium.

Of note, CSUF does not encourage football at their stadium, which is rented out to professional soccer teams for practice and games. CSUF also has communicated to Fullerton College that they would charge a substantial fee to rent the field in order to provide sufficient funds for repair of the turf should damage occur during football games. These factors adversely influence the feasibility of the CSUF Site Alternative. Figure 6-3 shows the alternative location at CSUF.

Analysis

Aesthetics

Under the CSUF Site Alternative, there would be no construction activities and no new improvements at Sherbeck Field. As such, there would be no change to the current visual appearance of Sherbeck Field to on- or off-site viewers. In addition, there would be no temporary construction impacts. Since no visual changes would occur under the CSUF Site Alternative, there would be no change from the existing environmental conditions. Therefore, the CSUF Site Alternative would be environmentally superior to the proposed project in terms of aesthetics impacts.

Air Quality

Under the CSUF Site Alternative, there would be no new improvements proposed at Sherbeck Field. No construction activities would occur; therefore, there would be no construction-related air pollutant emissions. Operationally, compared to the proposed project, the CSUF Site Alternative would shift football games from occurring at Sherbeck Field to Titan Stadium. Thus, the CSUF Site Alternative would shift mobile emissions associated with football games from Sherbeck Field to Titan Stadium. According to Table 4.2-8, Estimated Maximum Daily Operational Emissions (see Section 4.2, Air Quality, of this Draft EIR), the majority of emissions resulting from the proposed project would be mobile source emissions. Both the CSUF Site Alternative and the proposed project would generate criteria air pollutant emissions from mobile sources. Although neither the proposed project nor the CSUF Site Alternative would exceed the air quality thresholds of significance, the proposed project would generate mobile-source emissions due to construction (although temporary) and additional evening classes. However, the fact that everyone would have to travel about 2 miles down the road to CSUF for every practice and game would lead to an increase in emissions overall for all the staff, students, and spectators that might have walked or biked to a game at Fullerton College and now have to get into cars. From an environmental standpoint, the CSUF Site Alternative would be environmentally neutral to the proposed project in terms of air quality impacts.

Greenhouse Gas Emissions

Under the CSUF Site Alternative, no new improvements would be installed at Sherbeck Field. Therefore, there would be no construction associated with the CSUF Site Alternative and no GHG emissions associated with construction. Operations associated with the proposed project would generate GHG emissions through motor vehicle trips to and from the project site; landscape maintenance equipment operation; energy use (natural gas and generation of electricity consumed by the project); solid waste disposal; stationary sources; and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. The CSUF Site Alternative would result in similar operational GHG emissions. Although the proposed project and CSUF Site Alternative would not have significant GHG emissions impacts, the proposed project would generate greater mobile-source emissions due to construction and additional evening classes. However, the fact that everyone would have to travel about 2 miles down the road to CSUF for every practice and game would lead to an increase in emissions overall for all the staff, students, and spectators that might have walked or biked to a game at Fullerton College and now have to get into cars. Therefore, the CSUF Site Alternative would be environmentally neutral to the proposed project in terms of GHG emission impacts.

Hazards and Hazardous Materials

The proposed project would be required to implement mitigation measures and comply with the applicable procedures set forth in the hazardous materials contingency plan (see EIR Section 4.4, Hazards and Hazardous Materials). The CSUF Site Alternative would not result in construction at Sherbeck Field and would not disturb any potentially contaminated soils; thus, impacts would be less than significant. Therefore, the CSUF Site Alternative would be environmentally superior to the proposed project in terms of hazards and hazardous materials impacts.

Noise

Under the CSUF Site Alternative, there would be no new improvements at Sherbeck Field. No construction activities would occur; therefore, construction-related noise would not occur under the CSUF Site Alternative. Compared to the proposed project, the CSUF Site Alternative would shift football games from occurring at Sherbeck Field to Titan Stadium. Thus, the operational noise impacts associated with the football games, such as crowd noise and on-field/sideline noise, speaker noise, and traffic noise, would be shifted from Sherbeck Field to Titan Stadium. As such, the single-family residences located across State College Boulevard would experience elevated noise levels during Fullerton College football games at Titan Stadium. However, the nearest sensitive receptors at Sherbeck Field are approximately 85 feet east from the noise source, compared to 700 feet west from the noise source at Titan Stadium. Similarly to the proposed project, the CSUF Site Alternative would be exempt from City on-site operational noise standards (shown in Table 4.5-6) due to the exemption in Section 15.90.040.A.1 of the Noise Ordinance. Due to the distance between sensitive receptors and the noise source, the CSUF Site Alternative would be environmentally superior to the proposed project in terms of noise impacts.

Public Services

Under the CSUF Site Alternative, there would be no new improvements at Sherbeck Field. Compared to the proposed project, the CSUF Site Alternative would shift football games from occurring at Sherbeck Field to Titan Stadium. Under both the proposed project and the CSUF Site Alternative, there would be few, if any, additional calls for service and there would be no need for new or physically altered governmental facilities. Therefore, the CSUF Site Alternative would be environmentally neutral compared to the proposed project in terms of public services impacts.

Recreation

Under the CSUF Site Alternative, there would be no new construction. Although the proposed project would not expand or result in the construction of additional off-site recreational facilities, the proposed project would involve improvements to Sherbeck Field, a recreational facility. As such, the potential environmental impacts related to recreational facilities are part of the impacts assessment conducted for the entirety of the proposed project. Because the CSUF Site Alternative would not involve the construction of any new facilities, there would be no construction-related activities or associated impacts to environmental resources. Therefore, compared to the proposed project, the CSUF Site Alternative would be environmentally superior to the proposed project in terms of recreation impacts.

Transportation

Under the CSUF Site Alternative, no construction activities would occur. As such, no construction traffic from haul trucks, cement trucks, equipment and material delivery trucks, or construction worker vehicles would occur.

Compared to the proposed project, the CSUF Site Alternative would shift football games from occurring at Sherbeck Field to Titan Stadium. Thus, the CSUF Site Alternative would shift additional trips associated with football games from Sherbeck Field to Titan Stadium.

The proposed project would result in significant and unavoidable impacts under the Year 2030 traffic conditions at the State College Boulevard/Chapman Avenue intersection and the state-controlled SR-57 NB Ramps at Chapman Avenue. The impacts at the intersection of State College Boulevard/Chapman Avenue are related to the Saturday traffic scenario. Since regional access to CSUF via the SR-57 NB Ramp would generate traffic at the State College Boulevard/Chapman Avenue, impacts under the CSUF Site Alternative would likely be similar to the proposed project’s traffic impacts at this City-controlled intersection. However, since the impacts related to the state-controlled SR-57 NB Ramps at Chapman Avenue would result from weekday academic instruction, no impacts under the CSUF Site Alternative would occur at this state-controlled intersection.

In addition, due to the greater seating capacity of the Titan Stadium, traffic impacts during events would generate similar conditions within the surrounding street network as occurs under the existing conditions. Although the proposed project would reduce significant impacts to the intersections of Lemon Street/Berkeley Avenue, Lemon Street/Fullerton College Drive, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2 through implementation of a Traffic Management Plan, the CSUF Site Alternative would not significantly impact these local intersections.

For these reasons, it is anticipated that the CSUF Site Alternative would also result in significant and unavoidable impacts related to the State College Boulevard/Chapman Avenue intersection. However, the CSUF Site Alternative would not result in potentially significant impacts requiring mitigation to four of the key study intersections, as occurs under the proposed project. Therefore, the CSUF Site Alternative would be environmentally superior to the proposed project in terms of transportation impacts.

Tribal Cultural Resources

Under the CSUF Site Alternative, no earthwork activities, which could disrupt tribal cultural resources, would occur. However, no listed, or eligible for listing, tribal cultural resources were identified on the project site as a result of the CHRIS records search, NAHC Sacred Lands File search, and Native American consultation. Therefore, the CSUF Site Alternative would be environmentally neutral to the proposed project with regard to tribal cultural resources.

Utilities and Service Systems

Under the CSUF Site Alternative, there would be no proposed project improvements. As further described in Section 4.10, Utilities and Service Systems, the proposed project would generate a water demand of 15,360 gallons per year for academic instruction and 136,740 gallons per year for field events, for a total of 152,100 gallons per year. Based on the City's water demand projections identified in the 2015 Urban Water Management Plan and based on the Orange County Sanitation District's remaining capacity, water and wastewater impacts would be less than significant under the proposed project. Under the proposed project, installation of the bleachers on existing pervious areas would result in an increase in stormwater flows, and would require mitigation to reduce impacts to less than significant. Under the CSUF Site Alternative, there would not be an increase in water and wastewater flows nor an increase in impervious areas at Sherbeck Field (which would increase stormwater runoff flow), as would occur under the proposed project. Therefore, the CSUF Site Alternative would be environmentally superior to the proposed project in terms of utilities and service systems impacts.

Conclusion

The CSUF Site Alternative would be considered environmentally superior in almost all resources areas. It would be environmentally neutral compared to the proposed project for air quality, greenhouse gas emissions, public services impacts and tribal cultural resources impacts.

The adoption of the CSUF Site Alternative would not meet the project objectives identified by the District because it would not provide field lighting to allow for more evening class options for the physical education program to meet student demand at Fullerton College; and, it would not install permanent bleachers so that Fullerton College can host regular season and playoff football games at the College and reduce the costs associated with renting bleachers for the annual Fullerton College commencement ceremony. Additionally, the CSUF Site Alternative would not construct a storage building to address the inadequacy of the current storage of football equipment and track and field equipment at the field house. Although the CSUF Site Alternative would be environmentally superior to the proposed project, it would not meet the District's project objectives.

6.3.4 Alternative Site Location at Fullerton Union High School

The Alternative Site Location at Fullerton Union High School (FUHS Site Alternative) considers relocating the proposed football games that would result from the new improvements at Sherbeck Field to Fullerton Union High School Stadium. The Fullerton Union High School Stadium is located approximately 0.27 miles from the Fullerton College campus.

The proposed project would allow Fullerton College to add more evening class options at Sherbeck Field. Under the FUHS Site Alternative, it is not anticipated that the proposed academic instruction would be relocated onto the Fullerton Union High School campus; therefore, academic instruction at Sherbeck Field would be capped at sunset. With regard to other athletic activities, football practice, soccer practice and Friday evening soccer games, and track and field practice and events would continue to occur at Sherbeck Field under the FUHS Site Alternative. In addition, Fullerton College would continue to rent out Sherbeck Field to private schools and organizations to host athletic courses and practice, and the Fullerton College annual commencement ceremony would continue to take place at Sherbeck Field. However, regular season Fullerton College football games would no longer be held at the Yorba Linda High School field, and would instead be relocated to the Fullerton Union High School Stadium. Fullerton College would need to continue to find a non-high school field in compliance with Rule 1, Section 2 of the NCAA Football Rulebook for playoff games. Figure 6-4 shows the alternative location at Fullerton Union High School.

Analysis

Aesthetics

Under the FUHS Site Alternative, there would be no construction activities and no new improvements at Sherbeck Field. As such, there would be no change to the current visual appearance of Sherbeck Field to on- or off-site viewers. In addition, there would be no temporary construction impacts. Since no visual changes would occur under the FUHS Site Alternative, there would be no change from the existing environmental conditions. Therefore, the FUHS Site Alternative would be environmentally superior to the proposed project in terms of aesthetics impacts.

Air Quality

Under the FUHS Site Alternative, there would be no new improvements proposed at Sherbeck Field. No construction activities would occur; therefore, there would be no construction air pollutant emissions. Compared to the proposed project, the FUHS Site Alternative would shift football games from occurring at Sherbeck Field to Fullerton Union High School Stadium. Thus, the FUHS Site Alternative would shift mobile emissions associated with football games from Sherbeck Field to Fullerton Union High School Stadium. According to Table 4.2-8, Estimated Maximum Daily Operational Emissions (see Section 4.2, Air Quality, of this EIR), the majority of emissions resulting from the proposed project would be mobile source emissions. Both the FUHS Site Alternative and the proposed project would generate criteria air pollutant emissions from mobile sources. Although neither the proposed project nor the FUHS Site Alternative would exceed the air quality thresholds of significance, the proposed project would generate greater mobile-source emissions due to construction and additional evening classes. From an environmental standpoint, the FUHS Site Alternative would be environmentally superior to the proposed project in terms of construction air quality impacts.

Greenhouse Gas Emissions

Under the FUHS Site Alternative, no new improvements would be installed at Sherbeck Field. Therefore, there would be no construction associated with the FUHS Site Alternative and no GHG emissions associated with construction. Operations associated with the proposed project would generate GHG emissions through motor vehicle trips to and from the project site; landscape maintenance equipment operation; energy use (natural gas and generation of electricity consumed by the project); solid waste disposal; stationary sources; and generation of electricity associated with water supply, treatment, and distribution and wastewater treatment. The FUHS Site Alternative would result in similar operational GHG emissions. Although neither the proposed project nor the FUHS Site Alternative would have significant GHG emissions impacts, the proposed project would generate greater mobile-source emissions due to construction and additional evening classes. Therefore, the FUHS Site Alternative would be environmentally superior to the proposed project in terms of GHG emission impacts.

Hazards and Hazardous Materials

The proposed project would be required to implement mitigation measures and comply with the applicable procedures set forth in the hazardous materials contingency plan (see EIR Section 4.4, Hazards and Hazardous Materials). The FUHS Site Alternative would not result in construction at Sherbeck Field and would not disturb any potentially contaminated soils. Therefore, the FUHS Site Alternative would be environmentally superior to the proposed project in terms of hazards and hazardous materials impacts.

Noise

Under the FUHS Site Alternative, there would be no new improvements at Sherbeck Field. No construction activities would occur; therefore, construction-related noise would not occur under the FUHS Site Alternative.

Compared to the proposed project, the FUHS Site Alternative would shift regular season football games from occurring at Sherbeck Field to Fullerton Union High School Stadium. Thus, the operational noise impacts associated with the football games, such as crowd noise and on-field/sideline noise, speaker noise, and traffic noise would be shifted from Sherbeck Field to Fullerton Union High School Stadium, which is a larger facility, and thus, could accommodate larger crowds. As such, the single-family residences located across North Berkeley Avenue would experience elevated noise levels during Fullerton College football games at Fullerton Union High School Stadium. While the sensitive receptors at Sherbeck Field are approximately 85 feet from the noise source and at grade compared to the sensitive receptors near the Fullerton Union High School Stadium, who are located 160 feet from the noise source and at elevation, the potential for greater noise impacts related to a larger crowd make this a similar noise impact. Similarly to the proposed project, the FUHS Site Alternative would be exempt from City on-site operational noise standards (shown in Table 4.5-6) due to the exemption in Section 15.90.040.A.1 of the Noise Ordinance. In sum, the FUHS Site Alternative would be environmentally neutral to the proposed project in terms on noise impacts.

Public Services

Under the FUHS Site Alternative, there would be no new improvements at Sherbeck Field. Compared to the proposed project, the FUHS Site Alternative would shift football games from occurring at Sherbeck Field to Fullerton Union High School Stadium. Under both the proposed project and the FUHS Site Alternative there would be few, if any, additional calls for service and there would be no need for new or physically altered governmental facilities. Therefore, the FUHS Site Alternative would be environmentally neutral compared to the proposed project in terms of public services impacts.

Recreation

Under the FUHS Site Alternative, there would be no new construction. Although the proposed project would not expand or result in the construction of additional off-site recreational facilities, the proposed project would involve improvements to Sherbeck Field, a recreational facility. As such, the potential environmental impacts related to recreational facilities are part of the impacts assessment conducted for the entirety of the proposed project. Because the FUHS Site Alternative would not result in construction of any new facilities, there would be no construction-related activities and associated impacts to environmental resources. Therefore, compared to the proposed project, the FUHS Site Alternative would be environmentally superior to the proposed project in terms of recreation impacts.

Transportation

Under the FUHS Site Alternative, no construction activities would occur. As such, no construction traffic from haul trucks, cement trucks, equipment and material delivery trucks, or construction worker vehicles would occur.

Compared to the proposed project, the FUHS Site Alternative would shift football games from occurring at Sherbeck Field to Fullerton Union High School Stadium. Thus, the FUHS Site Alternative would shift additional trips associated with football games from Sherbeck Field to Fullerton Union High School Stadium.

The proposed project would result in significant and unavoidable impacts under the Year 2030 traffic conditions at the State College Boulevard/Chapman Avenue intersection and the state-controlled SR-57 NB Ramps at Chapman Avenue. The impacts at the intersection of State College Boulevard/Chapman Avenue are related to the Saturday traffic scenario. Since regional access to Fullerton Union High School via the SR-57 NB Ramp would generate traffic at the State College Boulevard/Chapman Avenue intersection, impacts under the FUHS Site Alternative would likely be similar to the proposed project's traffic impacts at this City-controlled intersection. However, since the impacts related to the state-controlled SR-57 NB Ramps at Chapman Avenue would result from weekday academic instruction, no impacts under the FUHS Site Alternative would occur.

As discussed in the Traffic Impact Analysis (Appendix F), the proposed project would result in significant impacts to the intersections of Lemon Street/Berkeley Avenue, Lemon Street/Fullerton College Drive, Berkeley Avenue/College Driveway No. 1, and Berkeley Avenue/College Driveway No. 2, which requires implementation of a Traffic Management Plan to reduce impacts to less than significant. Under the FUHS Site Alternative, these intersections would also require mitigation measures to reduce impacts to less than significant.

For these reasons, it is anticipated that the FUHS Site Alternative would also result in significant and unavoidable impacts related to the State College Boulevard/Chapman Avenue intersection, and similarly to the proposed project would require mitigation measures to reduce impacts to four key study intersections. From an environmental standpoint, the FUHS Site Alternative would be environmentally neutral compared to the proposed project in terms of transportation impacts.

Tribal Cultural Resources

Under the FUHS Site Alternative, no earthwork activities, which could disrupt tribal cultural resources, would occur. However, no listed, or eligible for listing, tribal cultural resources were identified on the project site as a result of the CHRIS records search, NAHC Sacred Lands File search, and Native American consultation. Therefore, the FUHS Site Alternative would be environmentally neutral compared to the proposed project.

Utilities and Service Systems

Under the FUHS Site Alternative, there would be no proposed project improvements. As further described in Section 4.10, Utilities and Service Systems, the proposed project would generate a water demand of 15,360 gallons per year for academic instruction and 136,740 gallons per year for field events, for a total of 152,100 gallons per year. Based on the City's water demand projections identified in the 2015 Urban Water Management Plan and based on the Orange County Sanitation District's remaining capacity, water and wastewater impacts would be less than significant under the proposed project. Under the proposed project, installation of the bleachers on existing pervious areas would result in an increase in stormwater flows, and would require mitigation to reduce impacts to less than significant. Under the FUHS Site Alternative, there would not be an increase in water and wastewater flows nor an increase in impervious areas at Sherbeck Field (which would increase stormwater runoff flow), as would occur under the proposed project. Therefore, the FUHS Site Alternative would be environmentally superior to the proposed project in terms of utilities and service systems impacts.

Conclusion

The FUHS Site Alternative would be considered environmentally superior in almost all resource areas. It would be environmentally neutral in noise, public services, transportation, and tribal cultural resources.

The adoption of the FUHS Site Alternative would not meet the project objectives identified by the District for providing a football field at Fullerton College for regular season and playoff games that would meet the sizing requirements of the California Community College Athletic Association Regulations, Bylaw 4.2.6A; it would not provide lighting to allow for more evening classes for the physical education program; and it would not install permanent bleachers so that Fullerton College can host regular season and playoff football games at the college and reduce the costs associated with renting bleachers for the annual Fullerton College commencement ceremony. Additionally, the FUHS Site Alternative would not construct a storage building to address the inadequacy of the current storage of football equipment and track and field equipment at the field house In addition, the locker rooms at FUHS would need to be modified to accommodate the larger-sized football teams for collegiate play, along with separation of opposing teams, and it would require the approval of these improvements by Fullerton Union High School, which is not under the jurisdictional control of the Board of Trustees. The logistics of having two teams practice and play at the same field would be challenging from a scheduling perspective. Lastly, the SCFA may not continue to grant waivers for Fullerton College to play on high school fields. Although the FUHS Site Alternative would be environmentally superior to the proposed project, it would not meet the District's project objectives.

6.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

An EIR must identify an "environmentally superior" alternative; and, where the no project alternative is environmentally superior, the EIR is then required to identify an alternative from among the others evaluated as environmentally superior (14 CCR 15126.6(e)(2)).

The environmentally superior alternative is the CSUF Site Alternative, because it reduces the proposed project's significant and unavoidable noise and transportation impacts. Under the CSUF

Site Alternative, residential receptors are 700 feet away to the west, compared to the proposed project, which is 85 feet from residential receptors. In addition, the CSUF Site Alternative would not result in significant and unavoidable impacts to the state-controlled SR-57 NB Ramps at Chapman Avenue since no weekday academic instruction would occur. Further, due to the greater seating capacity of the CSUF Titan Stadium, traffic impacts during events would generate similar conditions within the surrounding street network as occurs under the existing conditions.

Although the No Project Alternative would result in a greater number of environmentally superior impacts (eight, compared to six under the CSUF Site Alternative), Section 15126.6(e)(2) of the CEQA Guidelines indicates that if the environmentally superior alternative is the no project alternative, the EIR shall also identify another environmentally superior alternative among the other alternatives. Additionally, the No Project Alternative would fail to meet any of the District's project objectives, whereas the CSUF Site Alternative would provide a football field for the Fullerton College football program that meets the sizing requirements of the California Community College Athletic Association Regulations, Bylaw 4.2.6A. Thus, the CSUF Site Alternative is the environmentally superior alternative under CEQA.

Table 6-1 shows the comparison of alternatives by resource area and determines the total impacts that are environmentally superior to the proposed project.

Table 6-1
Comparison of Alternatives

Impact	No Project/ No Development/ Continued Use of Yorba Linda High School	Reduced Project	Alternative Site Location at California State University, Fullerton	Alternative Site Location at Fullerton Union High School
Aesthetics	+1	0	+1	+1
Air Quality	+1	+1	0	+1
Greenhouse Gas Emissions	+1	+1	0	+1
Hazards and Hazardous Materials	+1	0	+1	+1
Noise	**+1**	**0**	**+1**	**0**
Public Services	0	0	0	0
Recreation	**+1**	**0**	**+1**	**+1**
Transportation	**+1**	**0**	**+1**	**0**
Tribal Cultural Resources	0	0	0	0
Utilities and Service Systems	+1	0	+1	+1
Total (environmentally superior only)	8	2	6	6
Eliminates a Significant Impact of the Proposed Project?	Yes	No	Yes	Yes

Notes: 0 = environmentally neutral; −1 = environmentally inferior; +1 = environmentally superior
Bold for environmental resource categories where the proposed project would result in a significant and unavoidable impact following implementation of all feasible mitigation.

Table 6-2 compares the alternatives in terms of whether they meet the project objectives. Only the Reduced Project Alternative meets some of the project objectives. However, as shown in Table 6-1, the Reduced Project Alternative does not avoid having significant adverse noise, recreation, and transportation impacts.

Table 6-2
Comparison of Alternatives – Meeting the Project Objectives

Does the Project Meet the Following Project Objectives?	No Project/ No Development/ Continued Use of Yorba Linda High School	Reduced Project	Alternative Site Location at California State University, Fullerton	Alternative Site Location at Fullerton Union High School
Provide a football field for the Fullerton College football program at Fullerton College that meets the college field and goalpost sizing requirements of the California Community College Athletic Association Regulations, Bylaw 4.26A	No	Yes	No	No
Provide a football field at Fullerton College for full season play so that the College does not have to ask the NCAA for waivers to play at high school fields	No	Yes	No	No
Provide field lighting to allow for more evening class options for the physical education program to meet student demand, and for evening football and soccer games	No	Yes	No	No
Install permanent bleachers so that Fullerton College can host regular season and playoff football games at the college	No	Partial[1]	No	No
Install permanent bleachers to reduce the costs associated with renting bleachers for the annual Fullerton College commencement ceremony	No	Partial[2]	No	No
Construct a press box, which is required for football games in order house football coaching staff, media, and statisticians	No	Yes	No	No
Construct a storage building to address the inadequacy of the current storage of football equipment and track and field equipment at the field house	No	Yes	No	No
How many project objectives are met?	0	5	0	0

Notes:

1 The Reduced Project Alternative would meet the capacity of a regular season game, but would not be able to accommodate the attendance for a playoff game.

2 The Reduced Project Alternative would partially meet the objective to reduce costs associated with bleacher seat rental, but it would require greater seat rental and higher costs on an annual basis for the bleacher seat rental.

6.5 REFERENCES

California Community College Athletic Association Constitution Committee. 2017. “Request for Official Interpretation.” Date issued December 7, 2017.

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Saghieh, O. 2017. “2016 Fullerton College football attendance.” Email from O. Saghieh (Project Manager/Campus Capital Projects, Fullerton College) to C. Munson (Dudek). October 16, 2017.

Whittier College. 2017. “Reservation and Permit.” Whittier College Department of Athletics. November 6, 2017.

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SOURCE: Bing Maps

FIGURE 6-1

Alternative Locations

Sherbeck Field Improvements Project

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SOURCE: Bing Maps

DUDEK

0 500 1,000 Feet

FIGURE 6-2

Yorba Linda High School

Sherbeck Field Improvements Project

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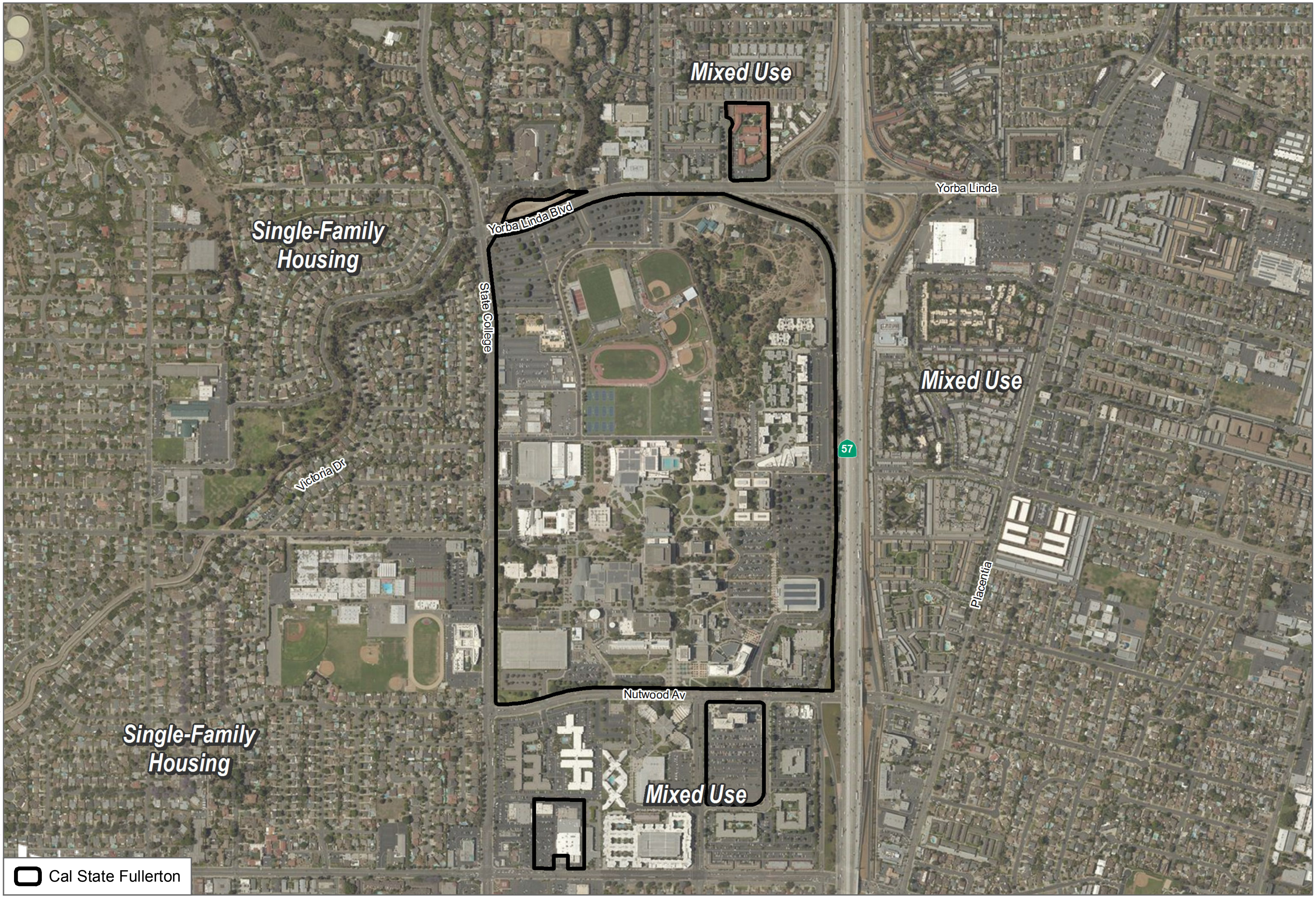

SOURCE: Bing Maps

DUDEK

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FIGURE 6-3

Cal State Fullerton

Sherbeck Field Improvements Project

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SOURCE: Bing Maps

DUDEK

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FIGURE 6-4

Fullerton Union High School

Sherbeck Field Improvements Project

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CHAPTER 7
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