August 2017 | Recirculated Draft Environmental Impact Report
State Clearinghouse No. 2016011073

CORONA DEL MAR MIDDLE AND HIGH SCHOOL SPORTS FIELD(S) PROJECT

Newport-Mesa Unified School District

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Table of Contents

Contents **Page**

Table of Contents

Contents **Page**

Table of Contents

Contents **Page**

Table of Contents

Contents **Page**

Table of Contents

Contents **Page**

Table of Contents

APPENDICES – The appendices are provided on the attached compact disc

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

ABBREVIATIONS AND ACRONYMS

AAQS	ambient air quality standards
AB	Assembly Bill
ADA	Americans with Disabilities Act
AELUP	airport environs land use plan
ALUC	airport land use commission
AQMP	air quality management plan
AR4	*Fourth Assessment Report: Climate Change 2007* (Intergovernmental Panel on Climate Change)
BAU	business as usual
bgs	below ground surface
BMP	best management practices
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CdM MS/HS	Corona del Mar Middle School and High School
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CGP	construction general permit
CMP	congestion management program
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
CWA	Clean Water Act
DAMP	drainage area management plan
dB	decibel
dBA	A-weighted decibel
DPM	diesel particulate matter
DWR	Department of Water Resources
EIR	environmental impact report
EPA	United States Environmental Protection Agency
fc	foot-candle
FEMA	Federal Emergency Management Agency

Abbreviations and Acronyms

FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gases
GWP	global warming potential
HCM	Highway Capacity Manual
HQTA	high quality transit area
ICU	intersection capacity utilization
IPCC	Intergovernmental Panel on Climate Change
ITE	Institute of Transportation Engineers
kBTU	thousand British thermal units
kWh	kilowatt hour
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LCFS	low-carbon fuel standard
LOS	level of service
LST	localized significance thresholds
LZ	lighting zone
MATES	Multiple Air Toxics Exposure Study
MMT	million metric tons
mph	miles per hour
MPO	metropolitan planning organization
MT	metric ton
MWDOC	Municipal Water District of Orange County
NBFD	Newport Beach Fire Department
NBPD	Newport Beach Police Department
N-MUSD	Newport-Mesa Unified School District
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
OCTA	Orange County Transportation Authority
OCWD	Orange County Water District
OEHHA	Office of Environmental Health Hazard Assessment
PA	public address (system)

Abbreviations and Acronyms

PM	particulate matter
PPV	peak particle velocity
PRC	Public Resources Code
RDEIR	recirculated draft environmental impact report
RH	relative humidity
RMS	root mean square
RPS	renewable portfolio standard
RTP/SCS	regional transportation plan / sustainable communities strategy
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SBR	styrene-butadiene rubber
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison
SIP	state implementation plan
SoCAB	South Coast Air Basin
SoCalGas	Southern California Gas Company
SO_X	sulfur oxides
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TDS	total dissolved solids
TMDL	total maximum daily load
TPO	Traffic Phasing Ordinance (City of Newport Beach)
V/C	volume-to-capacity ratio
VdB	velocity decibels
VMT	vehicle miles traveled
VOC	volatile organic compound
WQMP	water quality management plan
ZE/NZE	zero energy / near-zero energy

Abbreviations and Acronyms

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1. Executive Summary

1.1 INTRODUCTION

This recirculated draft environmental impact report (RDEIR) addresses the environmental effects associated with the implementation of the proposed Corona del Mar Middle and High School Sports Field(s) (CdM MS/HS) project. The California Environmental Quality Act (CEQA) requires that government agencies consider the environmental consequences before taking action on projects over which they have discretionary approval authority. An environmental impact report (EIR) analyzes potential environmental consequences in order to inform the public and support informed decisions by local and state governmental agency decision makers. This document focuses on impacts determined to be potentially significant in the Recirculated Initial Study completed for this project (see Appendix A2).

This RDEIR has been prepared pursuant to the requirements of CEQA and the Newport-Mesa Unified School District's (N-MUSD or District) CEQA procedures. The N-MUSD, as the lead agency, has reviewed and revised all submitted drafts, technical studies, and reports as necessary to reflect its own independent judgment, including review of all technical subconsultant reports.

Data for this RDEIR derive from onsite field observations; discussions with affected agencies; analysis of adopted plans and policies; review of available studies, reports, data and similar literature; and specialized environmental assessments (aesthetics, air quality, cultural resources, noise, and transportation and traffic).

1.2 ENVIRONMENTAL PROCEDURES

This DEIR has been prepared pursuant to CEQA to assess the environmental effects associated with implementation of the proposed project as well as anticipated future discretionary actions and approvals. CEQA established six main objectives for an EIR:

1. Disclose to decision makers and the public the significant environmental effects of proposed activities.
2. Identify ways to avoid or reduce environmental damage.
3. Prevent environmental damage by requiring implementation of feasible alternatives or mitigation measures.
4. Disclose to the public reasons for agency approval of projects with significant environmental effects.
5. Foster interagency coordination in the review of projects.
6. Enhance public participation in the planning process.

An EIR is the most comprehensive form of environmental documentation in CEQA and the CEQA Guidelines; it is intended to provide an objective, factually supported analysis and full disclosure of the environmental consequences of a proposed project with the potential to result in significant, adverse environmental impacts.

An EIR is one of various decision-making tools used by a lead agency to consider the merits and disadvantages of a project that is subject to its discretionary authority. Before approving a proposed project, the lead agency must consider the information in the EIR; determine whether the EIR was prepared in accordance with CEQA and the CEQA Guidelines; determine that it reflects the independent judgment of the lead agency; adopt findings concerning the project's significant environmental impacts and alternatives; and adopt a statement of overriding considerations if significant impacts cannot be avoided.

1.2.1 EIR Format

Chapter 1, Executive Summary. Summarizes the background and description of the proposed project, the format of this EIR, project alternatives, any critical issues remaining to be resolved, and the potential environmental impacts and mitigation measures identified for the project.

Chapter 2, Introduction. Describes the purpose of this EIR, background on the project, the notice of preparation, the use of incorporation by reference, and Final EIR certification.

Chapter 3, Project Description. A detailed description of the project, including its objectives, its area and location, approvals anticipated to be required as part of the project, necessary environmental clearances, and the intended uses of this EIR.

Chapter 4, Environmental Setting. A description of the physical environmental conditions in the vicinity of the project as they existed at the time the notice of preparation was published, from local and regional perspectives. These provide the baseline physical conditions from which the lead agency determines the significance of the project's environmental impacts.

Chapter 5, Environmental Analysis. Each environmental topic is analyzed in a separate section that discusses: the thresholds used to determine if a significant impact would occur; the methodology to identify and evaluate the potential impacts of the project; the existing environmental setting; the potential adverse and beneficial effects of the project; the level of impact significance before mitigation; the mitigation measures for the proposed project; the level of significance after mitigation is incorporated; and the potential cumulative impacts of the proposed project and other existing, approved, and proposed development in the area.

Chapter 6, Significant Unavoidable Adverse Impacts. Describes the significant unavoidable adverse impacts of the proposed project.

Chapter 7, Alternatives to the Proposed Project. Describes the alternatives and compares their impacts to the impacts of the proposed project. Alternatives include the No Project Alternative and a Reduced Intensity Alternative.

Chapter 8, Impacts Found Not to Be Significant. Briefly describes the potential impacts of the project that were determined not to be significant by the Initial Study and were therefore not discussed in detail in this EIR.

Chapter 9, Significant Irreversible Changes Due to the Proposed Project. Describes the significant irreversible environmental changes associated with the project.

Chapter 10, Growth-Inducing Impacts of the Project. Describes the ways in which the proposed project would cause increases in employment or population that could result in new physical or environmental impacts.

Chapter 11, Organizations and Persons Consulted. Lists the people and organizations that were contacted during the preparation of this EIR.

Chapter 12, Qualifications of Persons Preparing EIR. Lists the people who prepared this EIR for the proposed project.

Chapter 13, Bibliography. The technical reports and other sources used to prepare this EIR.

Appendices: The appendices for this document (in PDF format on a CD attached to the front cover) consist of these supporting documents:

- Appendix A1: 1st NOP/Initial Study
- Appendix A2: Recirculated NOP/Initial Study
- Appendix B1: Response to 1st NOP/Initial Study
- Appendix B2: Response to Recirculated NOP/Initial Study
- Appendix C: Comments on 1st DEIR
- Appendix D: Lighting Plans
- Appendix E: Air Quality/GHG Modeling Data
- Appendix F: Cultural Resources Data
- Appendix G: Noise Data
- Appendix H: Traffic Study

1.2.2 Type and Purpose of This DEIR

This RDEIR has been prepared as a "Project EIR," defined by Section 15161 of the CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3). This type of EIR examines the environmental impacts of a specific development project and should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation.

1.3 PROJECT LOCATION

Corona del Mar Middle School and High School (project site, CdM MS/HS, or CdM campus) is at 2101 Eastbluff Drive (Assessor's Parcel Map Number 440-092-06), City of Newport Beach, Orange County, California (Figure 3-1, *Regional Location*). The CdM MS/HS Sports Field Project would disturb approximately six acres at the northeast corner of the CdM campus. Minor changes may occur at other areas of the campus—physical changes to signage, fencing, pathways, placement of gates, etc.—and possible operational changes may include time and use of fields and parking lots. The existing sports field is bounded by Vista del Oro to the north, Eastbluff Drive to the east, student parking and tennis courts to the south, and turf athletic field to the west. The City of Newport Beach is surrounded by the cities of Costa Mesa and Irvine and is adjacent to John Wayne Airport in unincorporated Orange County, Crystal Cove State Park, Santa Ana River, and Banning Ranch in unincorporated Orange County in the city's sphere of influence. The regional access to the CdM campus is State Route (SR) 73, approximately 1.3 miles to the north. The CdM campus is irregularly shaped and bordered by Vista Del Oro to the north, Mar Vista Drive to the west and south, and Eastbluff Drive to the east (Figure 3-2, *Local Vicinity*).

1.4 PROJECT SUMMARY

The proposed project consists of replacement and reconfiguration of the existing natural-turf field and rubber track with a synthetic-turf field and track and construction of 664-seat-capacity bleachers. The District is considering two options.

Option A. Option A is the same as the originally proposed project except that the bleacher capacity is reduced to 664 seats (same as current capacity), and the visitor side bleachers have been eliminated. Option A includes a press box, public address (PA) system, nighttime lighting, an approximately 3,000-square-foot building with two ticket booths, two restroom areas, a main concession area, and storage. The 664-seat bleachers would be approximately 9 feet tall and 210 feet wide. Creation of the reconfigured sports field would disturb approximately 6 acres of the approximately 37-acre campus. See Figure 3-4, *Option A Site Plan*. This main field area is indicated as Field 1.

Option B. Option B includes the 664-seat bleachers and lighting, but eliminates the press box, PA system, and ticket booth/concession/restroom building. Under Option B, the proposed synthetic-turf field and rubber track would be very close to the current natural-turf field and rubber track's existing location (Field 1). This option includes a second lighted synthetic field (no track) north of the existing varsity baseball field (Field 2). Existing portable bleachers with a seating capacity of 200 would remain adjacent to the west side of the second field for spectators. These bleachers are currently used for games at this location. Creation of the reconfigured sports fields under Option B would disturb approximately 9 acres of the approximately 37-acre campus. See Figure 3-5, *Option B Site Plan*.

Other minor physical changes for other parts of the CdM campus, identified as plans are completed, would include signage, fencing, pathways, and placement of gates, etc.

1.5 SUMMARY OF PROJECT ALTERNATIVES

While the District considered various options and recommendations during scoping process, the final selection of alternatives was based on the CEQA Guidelines Section 15126.6[f], which states that the selection of alternative shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. The RDEIR identified only an operational noise impact during special events as a significant impact.

The following alternatives were considered during the scoping and planning process but were rejected for detailed analysis in the RDEIR for the reasons described in Section 7.3, *Alternatives Rejected from Further Review*:

- Alternative Sites
- Alternative Public Address Technologies
- Alternative Lighting Technologies/Pole Heights
- Parking Garage Alternative

Based on the criteria listed in Section 7.1.1, the following three alternatives were determined to represent a reasonable range of alternatives with the potential to feasibly attain most of the basic objectives of the project, but may avoid or substantially lessen any of the significant effects of the project. These alternatives are summarized in this chapter and analyzed in detail in Chapter 7, *Alternatives to the Proposed Project*.

- Alternative 1: No Project Alternative
- Alternative 2: Two Fields with Portable Lights
- Alternative 3: Two Fields, No Lights

1.6 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

1.6.1 Alternative 1: No Project

The CEQA Guidelines requires analysis of a No Project Alternative. This analysis must discuss the existing site conditions as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved. Under the No Project Alternative, the proposed synthetic turf field and track, second synthetic-turf field, 664-seat bleachers, 80-foot light poles, and home ticket booth and concession building would not be constructed. The existing track and field would continue to be used only during the day time, and CdM MS/HS students would continue to travel to other facilities in the District for some practices and games. This alternative would not meet any of the project objectives.

1.6.2 Alternative 2: Two Fields with Portable Lights

This alternative is identical to Option B except the only lights provided for evening use are portable lights. Portable lights would allow occasional nighttime games and nighttime practices. Compared to existing conditions, the provision of two synthetic fields would allow increased field usage with reduced scheduling conflicts and reduced injuries from uneven and compacted turf. Compared to the proposed project, the use of portable lights implies less frequent use than with permanent lighting systems on both fields.

1.6.3 Alternative 3: Two Fields with No Lights

This alternative would provide two synthetic fields as with Option B but without nighttime lighting. Two synthetic fields would allow increased field usage with fewer scheduling conflicts and reduce injuries from uneven or compacted turf. However, no nighttime practices or games would occur under this alternative.

1.7 ISSUES TO BE RESOLVED

Section 15123(b)(3) of the CEQA Guidelines requires that an EIR contain issues to be resolved, including the choice among alternatives and whether or how to mitigate significant impacts. With regard to the proposed project, the major issues to be resolved include decisions by the lead agency as to:

1. Whether this RDEIR adequately describes the environmental impacts of the project.
2. Whether the benefits of the project override the environmental impacts that cannot be feasibly avoided or mitigated to a level of insignificance.
3. Whether the proposed land use changes are compatible with the character of the existing area.
4. Whether the identified goals, policies, or mitigation measures should be adopted or modified.
5. Whether there are other mitigation measures that should be applied to the project besides those identified in the DREIR.
6. Whether there are any alternatives to the project that would substantially lessen any of the significant impacts of the proposed project and achieve most of the basic project objectives.

1.8 AREAS OF CONTROVERSY

The areas of controversy include issues related to day and nighttime aesthetics, especially the spill light and glare impacts from four or eight lighting poles, noise from a large crowd and PA system, and traffic congestion and parking issues from practices and spectator events. Comments received during circulation of the first NOP/IS are included in Appendix B1, and comments received during recirculation of the Recirculated NOP/IS are included in Appendix B2. Comments received during circulation of the first Draft EIR are included in Appendix C.

1.9 SUMMARY OF ENVIRONMENTAL IMPACTS, MITIGATION MEASURES, AND LEVELS OF SIGNIFICANCE AFTER MITIGATION

Table 1-1 summarizes the conclusions of the environmental analysis in this RDEIR. Impacts are identified as significant or less than significant, and mitigation measures are identified for all significant impacts. The level of significance after imposition of the mitigation measures is also shown.

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.1 AESTHETICS			
Impact 5.1-1: The proposed project (Options A and B) would not adversely affect any scenic vista or alter scenic resources within a state scenic highway.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.1-2: The proposed project (Options A and B) would alter but not degrade the visual appearance of the project site.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.1-3: The proposed project (Options A and B) would generate new sources of light and glare.	Potentially Significant	AE-1 Newport-Mesa Unified School District shall perform field light measurements after the lighting pole installation to demonstrate that actual spill light levels near the adjacent residential units to the north are a close match to the levels indicated in the light levels plan shown in Figures 5.1-16, Option A: Spill Light Levels (Horizontal), and 5.1-20, Option A: Spill Light Levels (Vertical), for Option A or Figures 5.1-18, Option B: Spill Light Levels (Vertical), and 5.1-21, Spill Light Levels (Vertical), for Option B. The vertical light levels at the vertical surface of any residential unit shall not exceed 0.8 foot-candle, and each luminaire affixed on the pole shall be fully shielded and adjusted so that no direct upward beam is permitted.	Less Than Significant.
5.2 AIR QUALITY			
Impact 5.2-1: The proposed project (Options A and B) would be consistent with the South Coast Air Quality Management District's Air Quality Management Plan.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.2-2: Construction activities associated with implementation of the proposed project (Options A and B) would not generate short-term emissions that exceed the South Coast Air Quality Management District's regional thresholds.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.2-3: Long-term criteria air pollutant emissions associated with the proposed project (Options A and B) would not exceed the South Coast Air Quality Management District's regional operational significance thresholds.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.2-4: Construction of the proposed project (Options A and B) would not expose sensitive receptors to substantial pollutant concentrations.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.2-5: Operation of the proposed project (Options A and B) would not expose offsite sensitive receptors to substantial concentrations of air pollutants.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
5.3 CULTURAL RESOURCES			
Impact 5.3-1: Development of the proposed project (Options A and B) could adversely impact archaeological resources.	Potentially Significant	CUL-1 Prior to the issuance of the first grading permit and/or action that would permit disturbance to the project site, the Newport-Mesa Unified School District shall retain a qualified archaeological and Native American monitor(s) to observe grading activities and identify opportunities to avoid and preserve archaeological and/or tribal resources. The qualified monitor(s) shall be invited to be present at the pregrading conference; shall establish procedures for archaeological and/or tribal resource surveillance; and shall establish, in coordination with the construction contractor, procedures for temporary halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts, as appropriate. The qualified Native American monitor shall be determined in consultation with the affected Native American tribe (i.e., Gabrieleno) representative, and could also be the same as archaeological monitor. Should archaeological resources, including tribal resources, be found during ground-disturbing activities, the qualified monitor shall first determine whether the resource is a "unique archaeological resource" pursuant to Section 21083.2(g) of the California Public Resources Code or a "historical resource" pursuant to Section 15064.5(a) of the State CEQA Guidelines (14 California Code of Regulations [CCR]), or "tribal cultural resources" pursuant to Public	Less Than Significant

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures		Level of Significance After Mitigation
			Resources Code Section 21074. Once the determination is made pursuant to CEQA Guidelines Section 21083.2, the appropriate actions shall be taken in appropriate sections of the regulations (e.g., 14 CCR §15126.4) to ensure that impacts are reduced to a less than significant level.	
Impact 5.3-2: The proposed project (Options A and B) could adversely impact paleontological resources.	Potentially Significant	CUL-2	Prior to the beginning of ground disturbances, the Newport-Mesa Unified School District shall retain a qualified paleontologist to monitor ground-disturbing activities that occur in older Quaternary Alluvium and terrace deposits and older sedimentary deposits. Before ground-disturbing activities begin, a qualified paleontologist shall prepare a monitoring plan specifying the frequency, duration, and methods of monitoring. Sediment samples shall be collected in the deposits and processed to determine the small-fossil potential in the project site, and any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution.	Less Than Significant
5.4 GREENHOUSE GAS EMISSIONS				
Impact 5.4-1: Development of the proposed project (Options A and B) would not result in a substantial increase of GHG emissions that would exceed the South Coast Air Quality Management District's significance criteria.	Less Than Significant	No mitigation measures are necessary.		Less Than Significant.
Impact 5.4-2: The proposed project (Options A and B) would not conflict with the California Air Resources Board's Scoping Plan or the Southern California Association of Governments' 2016-2040 Regional Transportation Plan / Sustainable Communities Strategy.	Less Than Significant	No mitigation measures are necessary.		Less Than Significant.
5.5 HYDROLOGY AND WATER QUALITY				
Impact 5.5-1: Development of the proposed project (Options A and B) could alter the existing drainage pattern or contribute runoff water that could exceed the capacity of the existing or planned stormwater drainage	Potentially Significant	HYD-1	Prior to grading, the District shall prepare a water quality management plan (WQMP) for the project. The WQMP shall be submitted and approved by the City of Newport Beach Community Development Department, Building Division. The WQMP shall include appropriate BMPs and LID measures to ensure that project runoff is treated and temporarily detained in accordance	Less Than Significant.

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
system.		with the requirements of the Orange County MS4 Permit and the Orange County Drainage Area Master Plan. HYD-2 Future site grading and construction activities shall comply with drainage controls imposed by the applicable municipal code requirements for the City of Newport Beach.	
Impact 5.5-2: Compliance with the required Construction General Permit would ensure that development of the proposed project (Options A and B) would not result in substantial additional sources of polluted runoff.	Potentially Significant	HYD-3 Prior to grading, a Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) to comply with the General Construction Permit shall be prepared, submitted to the State Water Resources Control Board (SWRCB), and made part of the construction program. The SWPPP shall detail measures and practices that will be in effect during construction to minimize the project's impact on water quality and minimize the potential for erosion and sedimentation.	Less Than Significant.
5.6 NOISE			
Impact 5.6-1: The proposed project (Options A and B) would not result in long-term, operation-related, roadway noise impacts.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.6-2: Option A: Sports field events would result in significant temporary and periodic increases in ambient noise levels. Option B: Sports field events would not result in significant temporary and periodic increases in ambient noise levels.	Option A: Potentially Significant Option B: Less Than Significant	N-1 Prior to holding the first spectator event, the Newport-Mesa Unified School District shall develop and enforce a good-neighbor policy for sports field events. The District shall authorize a representative responsible for enforcing this policy. Signs shall be erected at entry points that state prohibited activities during an event (e.g., use of air horns, unapproved audio amplification systems, bleacher foot-stomping, boisterous activity in parking lots upon exiting the field) and present a contact name and telephone number of the District-authorized representative to contact in the event of a noise complaint. If the authorized representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the District. N-2 The Newport-Mesa Unified School District shall not include a PA System in the Option A Design. Table 5.6-21 shows a building façade analysis for the residential buildings in Model Receiver Locations A and S in terms of project Option A with mitigation (no PA System). The table shows that with implementation of this mitigation measure, there would be no discernable noise increase over 3 dB at any of the nearby buildings.	Less Than Significant.

Table 1-1 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.6-3: The proposed project (Options A and B) would not create short-term or long-term groundborne vibration and groundborne noise.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.6-4: The proposed project (Options A and B) construction activities would not result in temporary noise increases in the vicinity of the project site.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
5.7 PUBLIC SERVICES			
FIRE PROTECTION AND EMERGENCY SERVICES			
Impact 5.7-1: The proposed project (Options A and B) would not have adverse physical impacts on the city's fire protection services.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
POLICE PROTECTION			
Impact 5.7-2: The proposed project (Options A and B) would not have adverse physical impacts on the city's police protection services.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
5.8 RECREATION			
Impact 5.8-1: The proposed project (Options A and B) would increase the use of existing park and recreational facilities, but would not result in substantial physical deterioration of the facilities.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.

1. Executive Summary

Table 1-1 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
5.9 TRANSPORTATION/TRAFFIC			
Impact 5.9-1: Project-related trip generation (Options A and B) would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system with the exception of one intersection under Buildout Year (Post-2030).	Potentially Significant	TRAN-1 The Newport-Mesa Unified School District (District) shall manage campus events and activities such that the four identified intersections are not impacted under Buildout year (Post-2030) conditions. In Post year 2030 conditions, the District shall limit facility permits for other campus venues during the 4:00 PM to 6:00 PM hours allowing a maximum of 756 participants when maximum capacity field events are expected.	Less Than Significant.
Impact 5.9-2: The proposed project (Options A and B) would not substantially increase the vehicle miles traveled.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.9-3: The proposed project (Options A and B) would not conflict with the Orange County Congestion Management Program.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.9-4: The proposed project (Options A and B) would not substantially increase hazards due to a design feature or inadequate emergency access.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.9-5: Implementation of the proposed project (Options A and B) would not result in inadequate parking capacity impact.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
5.10 Energy Resources			
Impact 5.10-1: The proposed project (Options A and B) would increase the demand for electrical services but would not require new or expanded electrical infrastructure for the provider or result in wasteful electrical energy consumption.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.

Table 1-1 Summary of Environmental Impacts, Mitigation Measures and Levels of Significance After Mitigation

Environmental Impact	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance After Mitigation
Impact 5.10-2: The proposed project (Options A and B) would not increase the demand for natural gas services to require new or expanded natural gas capacity for the provider or result in wasteful natural gas energy consumption.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.
Impact 5.10-3: The proposed project (Options A and B) would not result in increased demand for transportation energy, would not require new or expanded transportation energy capacity for the provider, and would not result in wasteful transportation energy consumption.	Less Than Significant	No mitigation measures are necessary.	Less Than Significant.

1. Executive Summary

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2. Introduction

2.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The California Environmental Quality Act (CEQA) requires that all state and local governmental agencies consider the environmental consequences of projects over which they have discretionary authority before taking action on those projects. This recirculated draft environmental impact report (RDEIR) has been prepared to satisfy CEQA and the CEQA Guidelines. The environmental impact report (EIR) is the public document designed to provide decision makers and the public with an analysis of the environmental effects of the proposed project, to indicate possible ways to reduce or avoid environmental damage, and to identify alternatives to the project. The EIR must also disclose significant environmental impacts that cannot be avoided; growth inducing impacts; effects not found to be significant; and significant cumulative impacts of all past, present, and reasonably foreseeable future projects.

The lead agency means "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment" (Guidelines § 21067). The Newport-Mesa Unified School District (N-MUSD or District) has the principal responsibility for approval of the Corona del Mar Middle and High School (CdM MS/HS) Sports Field(s) Project (proposed project). For this reason, the N-MUSD is the CEQA lead agency for this project.

The intent of the RDEIR is to provide sufficient information on the potential environmental impacts of the CdM MS/HS Sports Field(s) Project to allow the N-MUSD to make an informed decision regarding approval of the project. Specific discretionary actions to be reviewed by the District are described in Section 3.4, *Intended Uses of the EIR*.

This RDEIR has been prepared in accordance with requirements of the:

- California Environmental Quality Act (CEQA) of 1970, as amended (Public Resources Code, §§ 21000 et seq.)
- State Guidelines for the Implementation of the CEQA of 1970 (CEQA Guidelines), as amended (California Code of Regulations, §§ 15000 et seq.)

The overall purpose of this RDEIR is to inform the lead agency, responsible agencies, decision makers, and the general public about the environmental effects of the development and operation of the proposed project. This DEIR addresses effects that may be significant and adverse; evaluates alternatives to the project; and identifies mitigation measures to reduce or avoid adverse effects.

2.2 NOTICE OF PREPARATION AND INITIAL STUDY

The Newport-Mesa Unified School District determined that an EIR would be required for this project and held an informational community meeting on January 25, 2016, prior to issuance of a Notice of Preparation (NOP) and Initial Study. The District prepared and issued an NOP/IS on February 1, 2016 (see Appendix A1). Comments received during this public review period, from February 1, 2016, to March 1, 2016, are in Appendix B1. A Scoping Meeting was held on February 22, 2016, at the Corona del Mar MS/HS Lecture Hall, 2101 Eastbluff Drive.

In order to better respond to the community concerns received during the scoping period, the District prepared and released a Recirculated NOP/IS that circulated for a 60-day review period, from March 25, 2016, to May 23, 2016 (see Appendix A2). The comments received during the recirculation period are in Appendix B2. A Scoping Meeting for the Recirculated NOP/IS was held on March 28, 2016, at the Corona del Mar MS/HS Lecture Hall.

The NOP process helps determine the scope of the environmental issues to be addressed in the DEIR. Based on this process and the initial study for the project, certain environmental categories were identified as having the potential to result in significant impacts. Issues considered Potentially Significant are addressed in this DEIR, but issues identified as Less Than Significant or No Impact are not. Refer to the Recirculated Initial Study in Appendix A2 for discussion of how these initial determinations were made.

2.3 INITIALLY CIRCULATED ENVIRONMENTAL IMPACT REPORT

Pursuant to CEQA Guidelines Section 15088.5, a lead agency is required to circulate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. N-MUSD prepared and circulated a DEIR for the CdM MS/HS Sports Field project beginning February 6, 2017, and ending March 22, 2017. Comments received during this 45-day public review period are included as Appendix C to the recirculated DEIR.

However, on February 28, 2017, based on a dialogue between the school and the community, the Board of Education adopted Resolution No. 28-02-17 to limit the seating capacity of the bleachers for the existing sports track and field to no more than the current seating capacity. The current seating capacity at the existing sports tracks and field is 664; therefore, the original project description has been updated to reflect the reduction in maximum seating capacity from 1,000 seats to 664 seats. The change in the maximum seating capacity also resulted in modification and refinements to the original project objectives. Furthermore, it allowed the opportunity for the District to explore and evaluate an alternative to the original project in the same manner as the original project. Therefore, DEIR Chapter 3, *Project Description*, has been revised to include the original project with the current bleacher seating capacity of 664 seats as Option A and add Option B with two lighted sports fields and no PA system. Because the CdM campus has six portable bleachers totaling 200 seats that could be moved around anywhere in the back field area and swimming pool, construction of a second lit field in the back field assumes 200 portable bleacher seats in addition to the 664 bleacher seats for the main sports field.

The District determined that the modified project description, as further described in Chapter 3, *Project Description*, would be considered significant new information under CEQA Guidelines Section 15088.5 and warranted a recirculation of the EIR.

2.4 SCOPE OF THIS DEIR

The scope of the DEIR was determined based on the District's initial studies, comments received in response to the NOPs, and comments received at the scoping meetings conducted by the District. Additionally, the scope was further defined by the comments received during the initial circulation of the original DEIR and the changes to the project description subsequent to the adoption of the Resolution No. 28-02-17.

Pursuant to Sections 15126.2 and 15126.4 of the CEQA Guidelines, the DEIR should identify any potentially significant adverse impacts and recommend mitigation that would reduce or eliminate these impacts to levels of insignificance.

The information in Chapter 3, *Project Description*, establishes the basis for analyzing project-related environmental impacts.

2.4.1 Impacts Considered Less Than Significant

The Recirculated Initial Study determined that eight environmental impact categories were not significantly affected by or did not affect the proposed project. These categories are not discussed in detail in this DEIR.

- Agriculture and Forestry Resources
- Biological Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Land Use and Planning
- Mineral Resources
- Population and Housing
- Utilities and Service Systems

2.4.2 Potentially Significant Adverse Impacts

The District determined that nine environmental factors have potentially significant impacts if the proposed project is implemented.

- Aesthetics
- Air Quality
- Cultural Resources
- Greenhouse Gas Emissions

- Hydrology and Water Quality
- Noise
- Public Services
- Recreation
- Transportation/ Traffic
- Energy

2.4.3 Unavoidable Significant Adverse Impacts

This RDEIR no significant and unavoidable adverse impact, as defined by CEQA, that would result from implementation of the proposed project. Unavoidable adverse impacts may be considered significant on a project-specific basis, cumulatively significant, and/or potentially significant. The District must prepare a "statement of overriding considerations" before it can approve the project, attesting that the decision-making body has balanced the benefits of the proposed project against its unavoidable significant environmental effects and has determined that the benefits outweigh the adverse effects, and therefore the adverse effects are considered acceptable. Because all potentially significant impacts could be reduced to a less than significant level, no significant and unavoidable adverse impact would occur and no statement of overriding considerations is necessary.

2.5 INCORPORATION BY REFERENCE

Some documents are incorporated by reference into this DEIR, consistent with Section 15150 of the CEQA Guidelines, and they are available for review at the District Office.

- *City of Newport Beach General Plan (2006).* The 2006 General Plan serves as the major blueprint for directing growth within the City of Newport Beach and presents a comprehensive plan to accommodate the City's growing needs. Currently this document regulates the existing land uses on the proposed project site. The General Plan analyzes existing conditions in the City, including physical, social, cultural, and environmental resources and opportunities. It also looks at trends, issues, and concerns that affect the region; describes City goals and objectives; and provides policies to guide development and change.

- *City of Newport Beach General Plan Environmental Impact Report (2006).* The General Plan EIR examined the potential effects of the City's General Plan implementation pursuant to Section 15168 of the CEQA Guidelines. It reviewed the existing conditions of the City of Newport Beach and the planning area at the time of EIR preparation, analyzed potential environmental impacts from implementation of the General Plan, identified policies from the General Plan that served to reduce and minimize impacts, and identified additional mitigation measures, if necessary, to reduce potentially significant impacts of the General Plan. However, it did not focus on any specific development projects in the City.

2.6 FINAL EIR CERTIFICATION

This RDEIR is being circulated for public review for 45 days. Interested agencies and members of the public are invited to provide written comments on the RDEIR to the address shown on the title page of this document. Upon completion of the 45-day review period, the District will review all written comments received and prepare written responses for each. A Final EIR (FEIR) will incorporate the received comments, responses to the comments, and any changes to the RDEIR that result from comments. The FEIR will be presented to the N-MUSD Board of Education for potential certification as the environmental document for the project. All persons who comment on the RDEIR will be notified of the availability of the FEIR and the date of the public hearing before the District.

The RDEIR is available to the general public for review at various locations:

- **Newport-Mesa Unified School District**
  Education Center
  2985 Bear Street, Building A
  Costa Mesa, California 92626
- **Corona del Mar MS/HS**
  Administrative Office
  2101 Eastbluff Drive
  Newport Beach, CA 92660

2.7 MITIGATION MONITORING

Public Resources Code, Section 21081.6, requires that agencies adopt a monitoring or reporting program for any project for which it has made findings pursuant to Public Resources Code 21081 or adopted a Negative Declaration pursuant to 21080(c). Such a program is intended to ensure the implementation of all mitigation measures adopted through the preparation of an EIR or Negative Declaration.

The Mitigation Monitoring Program for the CdM MS/HS Sports Field(s) Project will be completed as part of the Final EIR, prior to consideration of the project by the N-MUSD Board of Education.

2. Introduction

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3. Project Description

3.1 PROJECT LOCATION

Corona del Mar Middle and High School (project site or CdM MS/HS campus or CdM campus) is at 2101 Eastbluff Drive (Assessor's Parcel Map Number 440-092-06), City of Newport Beach, Orange County, California (Figure 3-1, *Regional Location*). The CdM MS/HS Sports Field(s) Project would disturb approximately six to nine acres of the CdM campus depending on the option selected (Options A and B, respectively). Minor changes may occur at other areas of the campus—such as physical changes to signage, fencing, pathways, placement of gates, etc.—and possible operational changes may include time and use of fields and parking lots. The existing track and field is bounded by Vista del Oro to the north, Eastbluff Drive to the east, student parking and tennis courts to the south, and turf athletic field to the west. The City of Newport Beach is surrounded by the cities of Costa Mesa and Irvine and is adjacent to John Wayne Airport in unincorporated Orange County, Crystal Cove State Park, Santa Ana River, and Banning Ranch in unincorporated Orange County in the City's sphere of influence. The regional access to the CdM campus is State Route (SR) 73, approximately 1.3 miles to the north. The CdM campus is irregularly shaped and bordered by Vista Del Oro to the north, Mar Vista Drive to the west and south, and Eastbluff Drive to the east (Figure 3-2, *Local Vicinity*, and Figure 3-3, *Aerial Photograph*).

3.2 PROJECT NEEDS

The CdM MS/HS campus has an enrollment of 1,774 high school students (9th through 12th grades) and 857 middle school students (7th and 8th grades), for a total of 2,631 students for the 2016-17 school year (CDE 2017). Approximately one thousand high school students participate in after-school indoor and outdoor athletic programs. Table 3-1 shows that there are 17 to 27 teams participating in after-school sports requiring track and field usage at a given time, depending on the season. Pre- and off-season demands are mainly for practices, and in-season demands include games as well as practices for the listed athletic teams. While there is a high demand for field use year-round, the existing athletic facilities are limited, and the existing grass fields degrade with heavy use and must be taken out of use periodically to recover. The recovery period takes about a month. This forces many of the school's athletic teams to travel to remote locations for practices and games. Table 3-2 shows attendance levels for different CdM athletic teams that require field and track use during practices and games. As shown, the number of participants for practices would range from 25 to 125 with 5 to 25 spectators, and during games from 35 to 135 participants and 100 to 500 spectators.

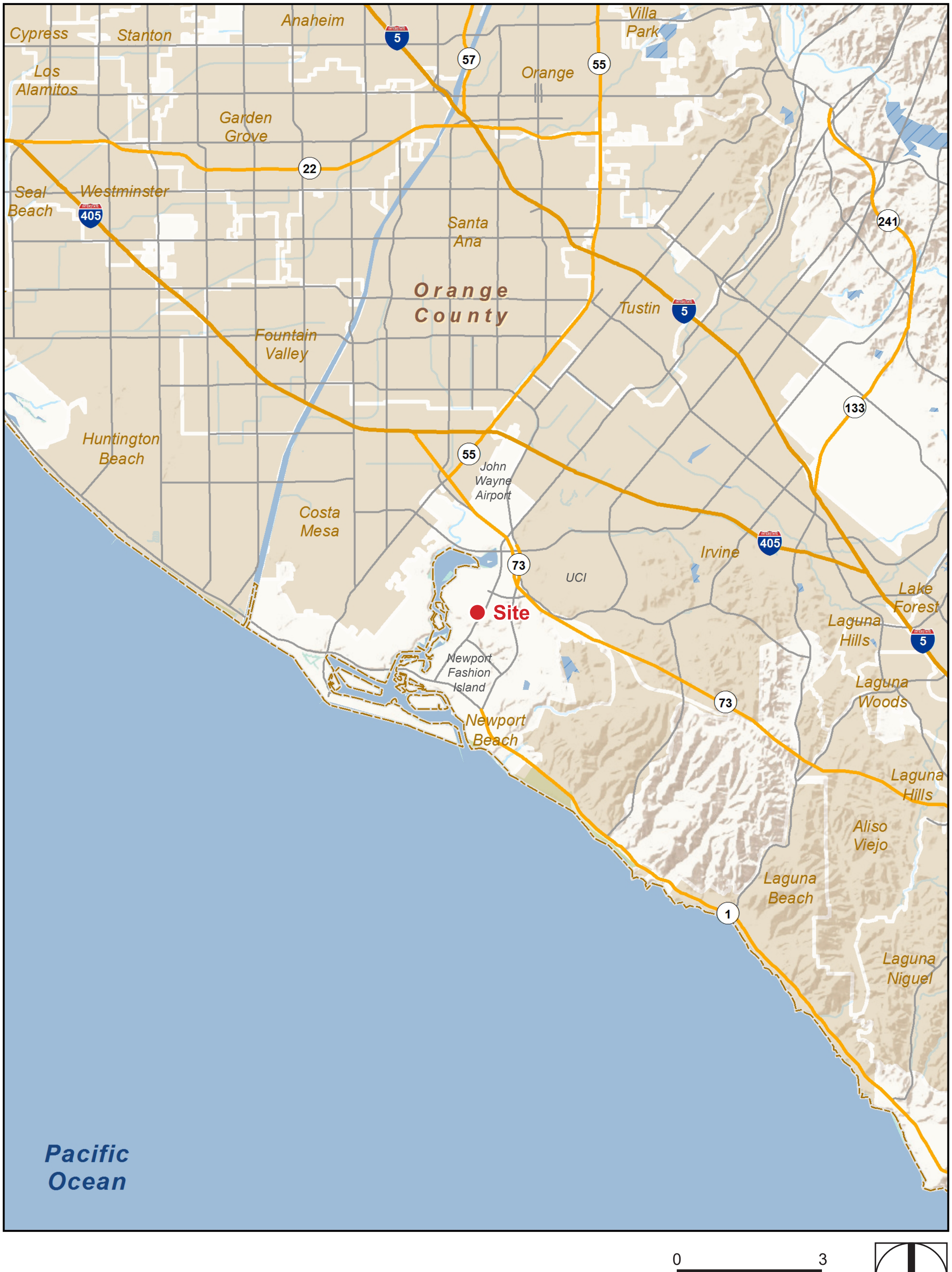
3. Project Description

Table 3-1 Demand for Field Use by CdM Athletic Teams for Practices and Games

Season	Month	In-Season	Pre-Season	Off-Season	Total Teams
Fall	Sept	V/JV/F FB	V/JV/FS B Soc, V/ JV/FS G Soc	V/JV/FS B LAX, V/JV/FS G LAX, JV/FS Bball	17
	Oct	V/JV/F FB	V/JV/FS B Soc, V/ JV/FS G Soc	V/JV/FS B LAX, V/JV/FS G LAX, JV/FS Bball	17
Winter (Nov 8: Winter Season Practices Begin)	Nov	V/JV/F FB; V/JV/FS B Soc, V/JV/FS G Soc	None	V/JV/FS B LAX, V/JV/FS G LAX, JV/FS Bball	17
	Dec	V/JV/FS B Soc, V/ JV/FS G Soc	V/JV/FS B LAX, V/JV/FS G LAX, JV/FS Bball	V/JV/F FB	17
	Jan	V/JV/FS B Soc, V/ JV/FS G Soc	V/JV/FS B LAX, V/JV/FS G LAX, JV/FS Bball	V/JV/F FB	17
Spring (Feb 14: Spring Season Practices Begins)	Feb	V/JV/FS B Soc, V/JV/FS G Soc, V/JV/FS B LAX, V/JV/FS G LAX, JV/FS Bball; V/JV/FS B Track; V/JV/FS G Track	None	V/JV/F FB	23
	Mar	V/JV/FS B LAX, V/JV/FS G LAX, JV/FS Bball, V/JV/FS B Track; V/Track/JV/FS G Track, 7th/8th B Soc, 7th/8th G Soc	None	V/JV/F FB, V/JV/FS B Soc, V/JV/FS G Soc	27
	Apr	V/JV/FS B LAX, V/JV/FS G LAX, JV/FS Bball, V/JV/FS B Track; V/Track/JV/FS G Track, 7th/8th B Soc, 7th/8th G Soc	None	V/JV/F FB, V/JV/FS B Soc, V/JV/FS G Soc	27
Summer (May 16: Spring Season Ends)	May	V/JV/FS B LAX, V/JV/FS G LAX, JV/FS Bball, V/JV/FS B Track; V/Track/JV/FS G Track, 7th/8th B Soc, 7th/8th G Soc	None	V/JV/F FB, V/JV/FS B Soc, V/JV/FS G Soc	27
	June	None	V/JV/F FB	V/JV/FS B Soc, V/JV/FS G Soc; V/JV/FS B LAX, V/JV/FS G LAX, JV/FS Bball	17

Source: CdM MS/HS Athletics Director (as of 6/9/2017)
V = Varsity; JV = Junior Varsity; FS = Freshman-Sophomore; B = Boys; G = Girls; FB = Football; Soc = Soccer; LAX = Lacrosse; Bball = Baseball

Figure 3-1 - Regional Location
3. Project Description



Source: ESRI, 2015

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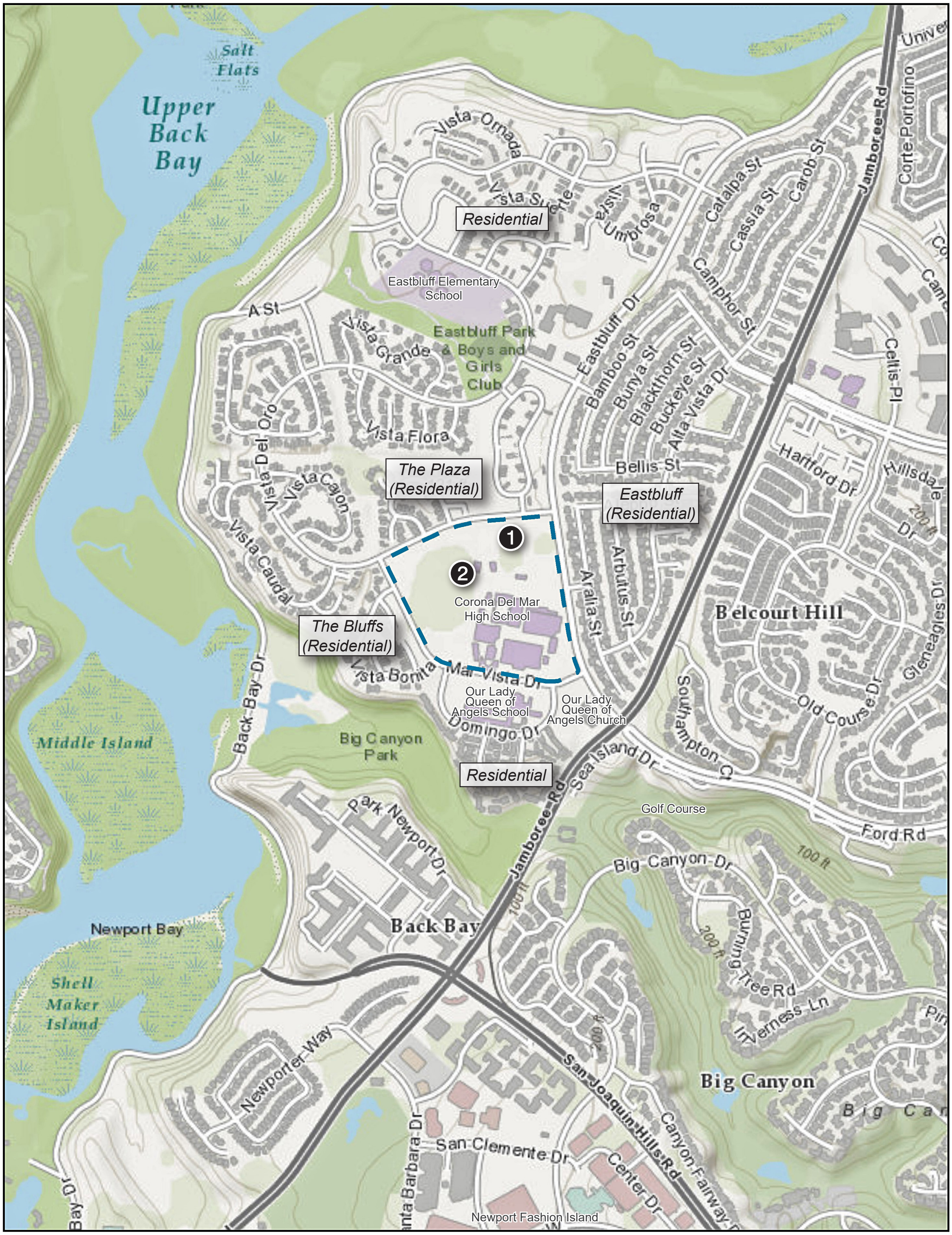
Figure 3-2 - Local Vicinity

3. Project Description



— — School Boundary

❶ Location of Main Sports Field - Options A & B

❷ Location of Second Field - Option B Only

0 1,000
Scale (Feet)

Source: ESRI, 2017

3. Project Description

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Figure 3-3 - Aerial Photograph

3. Project Description

Source: Google Earth Pro, 2015

3. Project Description

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3. Project Description

Table 3-2 Practice and Game Attendance Summary for Field and Track Programs

Activity/Use	# of Participants	# of Spectators		# of Events
		Max	Average	
Practices				
V Football	50	25	5	5 Weekly
JV Football	20	25	5	5 Weekly
F Football	50	25	5	5 Weekly
V B Soccer	25	25	5	5 Weekly
V G Soccer	25	25	5	5 Weekly
JV/FS B Soccer	40 (20/20)	25	5	5 Weekly
JV/FS G Soccer	40 (20/20)	25	5	5 Weekly
7th & 8th B Soccer	50	25	5	5 Weekly
7th & 8th G Soccer	50	25	5	5 Weekly
V B LAX	35	25	5	5 Weekly
V G LAX	20	25	5	5 Weekly
JV/FS B LAX	45 (30/15)	25	5	5 Weekly
JV/FS G LAX	50 (30/20)	25	5	5 Weekly
V XC/Track	45	25	5	5 Weekly
JV/FS XC/Track	90 (45/45)	25	5	5 Weekly
7th & 8th XC/Track	40	25	5	5 Weekly
Saturday Practice Use	25–75	25	5	1 per week
Games				
V Football	**NOT PLAYED AT CDM**			
JV Football	80–100	400	100	5 per season
F Football	80–100	400	100	5 per season
V B Soccer	50	400	100	10 per season
V G Soccer	50	400	100	10 per season
JV B Soccer	40	100	50	10 per season
JV G Soccer	40	100	50	10 per season
FS B Soccer	40	100	50	10 per season
FS G Soccer	40	100	50	10 per season
7th & 8th B Soccer	40	100	50	5 per season
7th & 8th G Soccer	40	100	50	5 per season
V B LAX	60	400	100	10 per season
V G LAX	60	400	100	10 per season
JV B LAX	40	100	50	10 per season
JV G LAX	40	100	50	10 per season
FS B LAX	40	100	50	10 per season
FS G LAX	40	100	50	10 per season
V/JV/FS XC/Track Meet	200	400	100	5 per season
7th & 8th XC/Track Meet	100	400	150	5 per season

Source: N-MUSD 2017.

3.3 STATEMENT OF OBJECTIVES

The following objectives have been established for the CdM MS/HS Sports Field(s) Project and will aid decision makers in their review of the project and project alternatives.

1) Reduce travel time and vehicle miles traveled for home events and practices.
2) Reduce the amount of District funds associated with transportation to and from off-campus venues.
3) Reduce field maintenance downtime by installing durable year-round surface materials.
4) Expand use of the field into evening hours by providing field lighting.
5) Provide bleachers with a maximum seating capacity of 664 seats, adequate to accommodate certain limited spectator events currently held off campus.
6) Enhance school pride by increasing the number of home sporting events to occur on campus. · Improve security around artificial surface fields.
7) Allow use of the facility by District-approved community groups per adopted Board Policy 1130 Use of School Facilities.
8) If feasible, further enhance on-campus athletics by providing second artificial surface field.

3.4 PROJECT CHARACTERISTICS

"Project" means the whole of an action, which has a potential for resulting in either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment, and that is any of the following:

(1) An activity directly undertaken by any public agency.

(2) An activity undertaken by a person which is supported in whole or in part through public agency contacts, grants, subsidies, loans, or other forms of assistance from one or more public agencies.

(3) An activity involving the issuance to a person of a lease, permit, license, certificate, or other entitlement for use by one or more public agencies. (Public Resources Code § 21065; 14 California Code of Regulations § 15378[a])

The proposed project involves an activity undertaken by a public agency to make improvements to an existing public facility; the proposed project is a project under CEQA.

3.4.1 Proposed Land Use

The proposed project consists of replacement and reconfiguration of the existing natural-turf field and rubber track with a synthetic-turf field and track and construction of 664-seat capacity bleachers. The District is considering two options.

Option A: Option A is the same as the originally proposed project except that the bleacher capacity is reduced to 664 seats (same as current capacity), and the visitor side bleachers have been eliminated. Option A includes a press box, public address (PA) system, nighttime lighting, an approximately 3,000-square-foot restroom/concession/storage building. The 664-seat bleachers would be approximately 9 feet tall and 210 feet wide. Creation of the reconfigured sports field would disturb approximately 6 acres of the approximately 37-acre campus. See Figure 3-4, *Option A Site Plan*. This main field area is indicated as Field 1.

Option B: Option B includes the 664-seat bleachers and lighting, but eliminates the press box, PA system and ticket booth/concession/restroom building. Under Option B, the proposed synthetic-turf field and rubber track would be very close to the current natural-turf field and rubber track's existing location (Field 1). Option B includes a second lighted synthetic field (no track) north of the existing varsity baseball field (Field 2). Existing portable bleachers with a seating capacity of 200 would remain adjacent to the west side of the second field for spectators. These bleachers are currently used for games at this location. Creation of the reconfigured sports fields under Option B would disturb approximately 9 acres of the approximately 37-acre campus. See Figure 3-5, *Option B Site Plan*.

Other minor physical changes identified for other parts of the CdM campus as plans are completed would include signage, fencing, pathways, and placement of gates, etc. Figures 3-4 and 3-5 show the proposed site plans for Options A and B, respectively.

Demolition and Clearance

Option A: Several existing field structures, such as goal posts, score board, and storage structures, would be demolished and removed. All vegetation within the area of disturbance—including 30 pepper trees ranging from 20 to 30 feet in height along Vista del Oro and Eastbluff Drive—would be removed and cleared, and the area would be graded as part of the project. Although these on-campus trees are in good condition, they are difficult to maintain and a nuisance because they produce numerous leaflets that fall and have branches that break frequently. Furthermore, the roots spread in search of water and nutrients, causing damage to pavement, sewers, and drains. Therefore, the District plans to remove the existing pepper trees and replace with other landscaping. Although no specific tree species have been determined, 24-inch box evergreen trees would be planted at a minimum replacement ratio of 1:1.

Option B: All structures and vegetation within the limits of the Option B project boundaries would be demolished and graded. Therefore, in addition to the two fields, including 30 pepper trees and other vegetation, several existing field structures, such as goal posts, structures, on the second field area (existing soccer field) would be demolished and removed.

3. Project Description

Sports Fields and Bleachers

Option A: Option A includes 664-seat bleachers with Americans with Disabilities Act (ADA) ramps on the south side of the main field, comprising six rows of seats (approximately 9 feet tall and 210 feet wide). No bleachers would be provided on the north side of the field, and the south side bleachers would be shared by home and visitor team spectators. The aluminum bleachers would include noise-reduction features such as vertical paneling to enclose the foot-wells.

Option B: Option B includes 664-seat bleachers with ADA ramps on the south side of the main field (Field 1), as with Option A. Additionally, for the second field (Field 2), the existing portable bleachers with a seating capacity of 200 spectators that are currently being moved around within the CdM campus athletic facilities and are used for games on the central grass field would be used for spectator events currently with the main field event. No changes to the 200-seat portable bleachers would occur.

Other Field Improvements and Fencing

Options A and B: Other field improvements would include ADA ramps for the 664-seat bleachers, high- and long-jump areas, shot put area, and goal posts. Ten-foot chain-link fencing would be provided around the perimeter of the field(s) to restrict access, and decorative ten-foot tubular steel fencing would be provided adjacent to the restroom/ticket/concession/storage building in Option A. Option A includes a press box as part of the bleachers. The locations of these improvements differ depending on the options (see Figures 3-4 and 3-5).

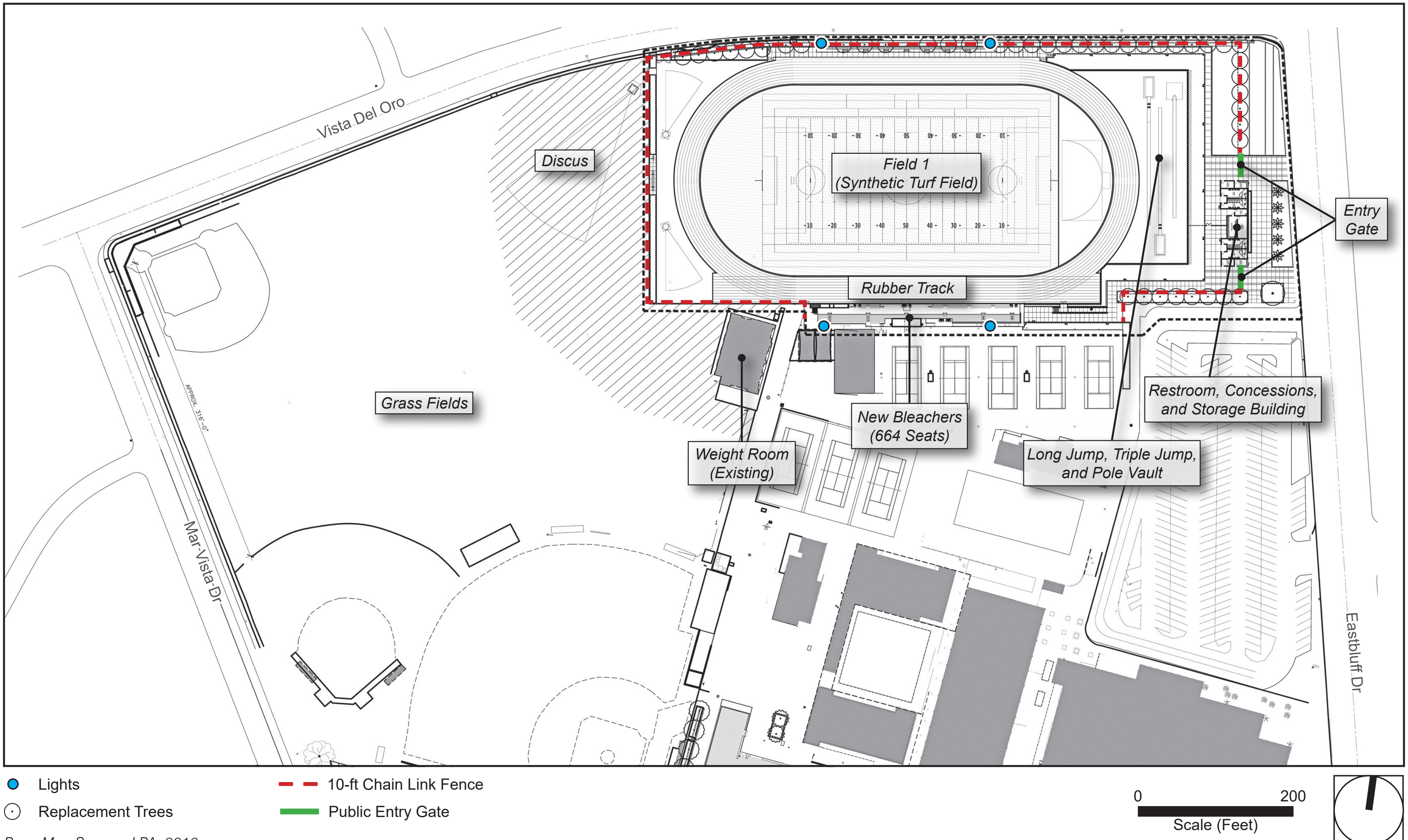
Public Address System

Option A: Option A includes a PA system with speakers installed/mounted on the two light poles and placed slightly above bleacher level. The PA system would be partially localized, and the speakers would be directional to allow for precise focusing of sound energy into the bleachers. An amplified sound system, including the PA system, would not be permitted in the evening hours or when the lights are on, with the exception of games and special events, such as opening day for sports teams, track meets, or graduations. The PA system would be turned off after the final announcement asking everyone to leave the facility.

Option B: Option B excludes the installation of a permanent PA system on both fields. Portable sound amplification units that are currently used on campus would be used at the two fields under Option B. An amplified sound system would not be permitted in the evening hours or when the lights are on with the exception of games and special events, such as opening day for sports teams, track meets, or graduations. The sound amplification would be turned off after the final announcement asking everyone to leave the facility.

Figure 3-4 - Option A Site Plan

3. Project Description



Base Map Source: LPA, 2016

3. Project Description

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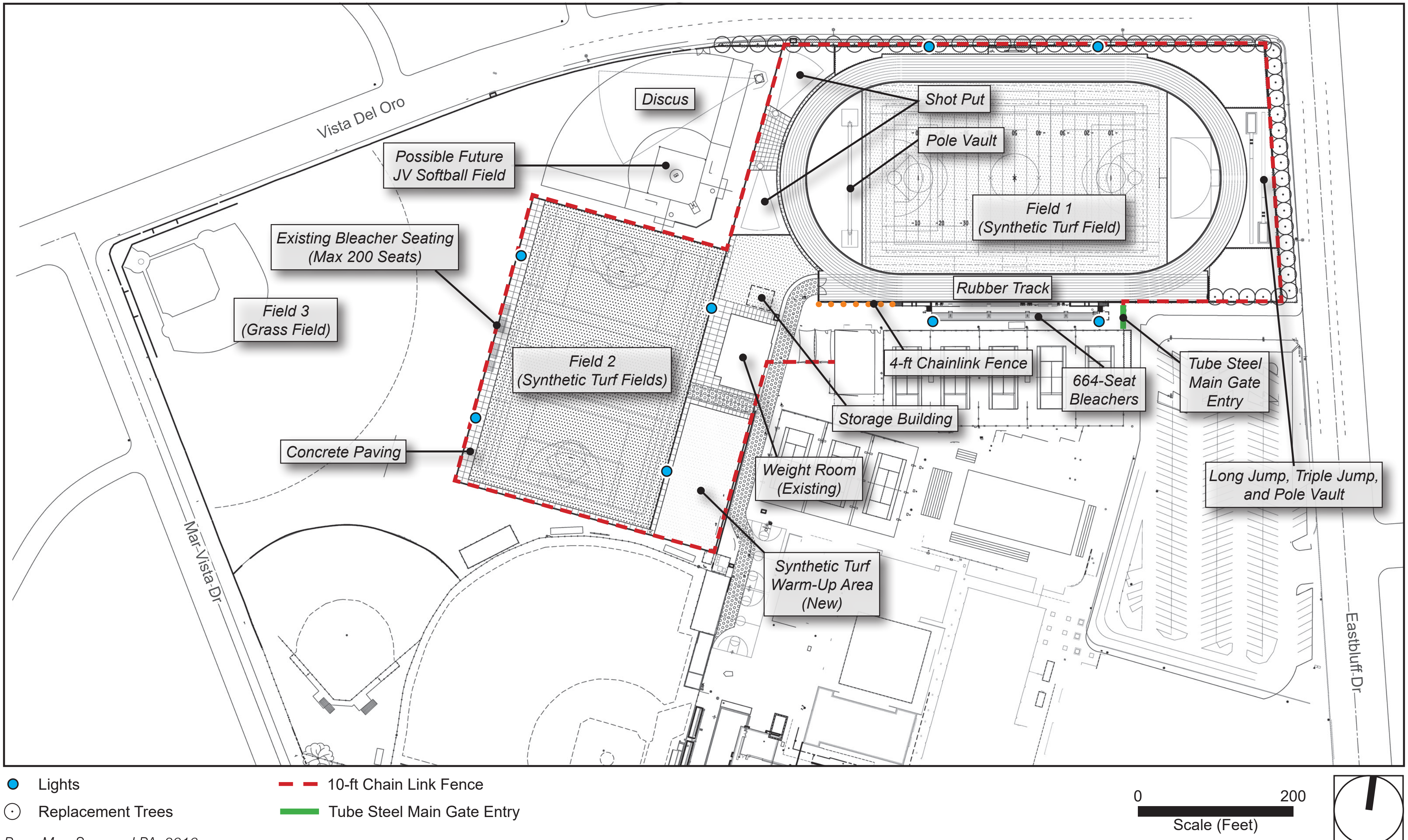
Figure 3-5 - Option B Site Plan



Base Map Source: LPA, 2016

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Lighting System

Option A. Nighttime lighting would be provided by four 80-foot light poles, two on the back side of the south side bleachers and two on the north side of the main field. The locations of the light poles are shown in Figure 3-4, *Option A Site Plan*, and the detailed lighting plan is included in Appendix D to the RDEIR. The new lighting improvements would use Musco Lighting's Green Generation lighting system, supporting 14 metal halide luminaires on each galvanized steel pole for a total of 56 individual luminaires. Each luminaire would be a 1500-watt MZ lamp type with 134,000 design lumens per lamp using 87.58 average kW. The proposed lighting control system would have various lighting modes programmed for different events. The football and soccer modes would average approximately 50 foot-candles on the sports field. The football mode (50 foot-candles) represents the maximum lighting level used at the field.

Option B. Identical nighttime lighting systems would be used on Field 1 as for Option A and four 70-foot light poles are proposed on Field 2. He locations of the light poles are shown in Figure 3-5, *Option B Site Plan*, and the detailed lighting plan is included in Appendix D to the RDEIR. As with Option A, Musco Lighting's Green Generation lighting system would be used with 12 1500-watt MZ lamp type per pole for a total of 48 luminaires. An average of 75.07 kW would be used per luminaire with 134,000 design lumens.

Policy on Use of School Facilities

A complete copy of the N-MUSD's "Use of School Facilities Under the Civic Center Act" is included as Appendix D of the Recirculated DEIR.

Use of the sports field(s) would be controlled by the Board Policy, 1000 Community Relations, BP 1330, as provided below.

> The Board of Education recognizes that district facilities and grounds are a community resource and authorizes their use by community groups for purposes provided for in the Civic Center Act when such use does not interfere with school activities.
>
> All school-related activities shall be given priority in the use of facilities and grounds under the Civic Center Act.
>
> The Superintendent or designee shall maintain procedures and regulations for the use of school facilities and grounds that: (Education Code 38133)
>
> 1. Aid, encourage, and assist groups desiring to use school facilities for approved activities.
> 2. Preserve order in school buildings and on school grounds and protect school facilities, designating a person to supervise this task, if necessary.
> 3. Ensure that the use of school facilities or grounds is not inconsistent with their use for school purposes and does not interfere with the regular conduct of school work.
>
> The Board authorizes the use of school facilities or grounds without charge by nonprofit organizations, clubs, or associations organized to promote youth and school activities. In

accordance with Education Code 38134(a), these groups include, but are not limited to, Girl Scouts, Boy Scouts, Camp Fire, Inc., parent-teacher associations, and school-community advisory councils. Other groups, including nonprofit groups not organized to promote youth and school activities or for-profit groups that request the use of school facilities under the Civic Center Act, shall be charged at least direct costs.

Groups shall be charged fair rental value when using school facilities or grounds for entertainment or meetings where admission is charged or contributions solicited and net receipts are not to be expended for charitable purposes or for the welfare of the district's students (Education Code 38134).

The District regulation requires that all facility use outside the normal school day must have approved permits, including school activities. No exceptions. Application procedure is summarized as follows:

- An application for use of facilities is submitted, where each site requested requires a separate permit, though multiple dates at a single site may be listed on the same permit.
- Applications are to be filled out completely, including set up and cleaning up time.
- Application by outside groups must be submitted not later than 21 prior to event, and no earlier than 180 days prior.
- Outside users may be displaced due to changes in school program calendars.
- An application is not valid without authorizing signature from District officials and is non-transferable to other groups.
- Priority of use categories are shown below and youth activities conducted for NMUSD students will have preference over adult activities;
  - Regular school programs, including summer school activities
  - City-sponsored and/or school-connected youth programs
  - Other local youth activities
  - City adult programs
  - Other adult programs

Table 3-3 describes District-wide policies for artificial turf field use. After practice, the lights would be on at approximately 40 percent of full level for 15 minutes for cleanup. After games, the lights would be at approximately 40 percent of full level for one hour for cleanup. The policy allows that in the event that requests are made at least 60 days in advance, the superintendent may allow occasional use outside the hours specified in Table 3-3.

Table 3-3 Adopted Artificial Field Use District Policy: Option A Use Restrictions

	Monday–Thursday	Friday	Saturday	Sunday
School in Session - Practice	7 AM–8 PM	7 AM–8 PM	9 AM–8 PM	10 AM–Dusk
School in Session - Games	--	7 AM–10 PM	9 AM–10 PM	
School not in Session - Practice	8 AM–8 PM	8 AM–8 PM	9 AM–8 PM	
School not in Session - Games	--	8 AM–10 PM	9 AM–10 PM	
Light Use - Practice	Until 8 PM	Until 8 PM	Until 8 PM	No Use of Lights
Light Use - Games	--	Until 10 PM	Until 10 PM	No Use of Lights

Source: N-MUSD 2017.

Option A: Under Option A, the artificial field would be used in accordance with the hours described in Table 3-3, per the District's artificial field use policy.

Option B: Under Option B, lights would be turned off by 9 PM for special events and games instead of 10 PM, as shown in Table 3-4.

Table 3-4 Proposed CDM Artificial Fields Use: Option B Use Restrictions

	Monday–Thursday	Friday	Saturday	Sunday
School in Session - Practice	7 AM–8 PM	7 AM–8 PM	9 AM–8 PM	10 AM–Dusk
School in Session - Games	--	7 AM–9 PM	9 AM–9 PM	
School not in Session - Practice	8 AM–8 PM	8 AM–8 PM	9 AM–8 PM	
School not in Session - Games	--	8 AM–9 PM	9 AM–9 PM	
Light Use - Practice	Until 8 PM	Until 8 PM	Until 8 PM	No Use of Lights
Light Use - Games	--	Until 9 PM	Until 9 PM	No Use of Lights

Source: Modified from existing Board Policy by N-MUSD.

Field Use Scheduling

While the initially circulated DEIR anticipated that the highest spectator attendance would be varsity football games in the fall season, the Board of Education has determined that no varsity football games will be played on the CdM campus. All home football games will be played at other venues, including Newport Harbor High School's 5,000-seat Davidson Field, Estancia High School's 2,600-seat Jim Scott Stadium, and Orange Coast College's 7,600-seat DeBard Stadium. Therefore, the maximum attendance for other sporting events (e.g., boys and girls lacrosse, soccer, cross country, and track) is expected to range between 300 and 500 spectators, and the average attendance would range between 100 and 200, as shown in Table 3-2, *Practice and Game Attendance Summary*. The proposed sports field would accommodate games with projected attendance of less than 664 spectators and expanded practice use. Games that would exceed 664 spectators would continue to be played at the three venues referenced above. An evening varsity soccer or lacrosse game is considered the "maximum event" anticipated because it has the greatest potential to reach 664 spectators and it may include band and cheerleader performances and use of the PA system; it would end by 10 PM for Option A and 9 PM for Option B.

3. Project Description

As shown in Tables 3-5 and 3-6, the track and field would normally be used for CdM athletic team practices from 1:30 PM to 8 PM during weekdays and used past 8 PM only for games and special events. Additionally, in-season sporting practices are scheduled on Saturdays from 9 AM to noon and no lighting would be necessary. As the field demands from 27 CdM athletic teams are high, the new synthetic sports field(s) would be used primarily by the CdM students, and the sports field(s) would generally be closed when not in use by the CdM athletic teams. However, pursuant to the Civic Center Act and District field use policy, the field(s) would be available for District-approved public organizations through a permitting process. The CdM administrator and the District have discretionary authority to allow or deny the use permit request. A Facility Use Permit is required for all activities taking place on N-MUSD facilities during non-school hours (after regular school hours, weekends and holidays). Therefore, there is no regularly scheduled outside use of the sports field, and specific community use schedule is not shown in Tables 3-5 and 3-6.

For example, an agreement with the City of Newport Beach and the District authorizes the City's exclusive use of the swimming pool from 6 PM to 9 PM on weekdays and 9 AM to 9 PM on school holidays, summer vacation periods, and Saturdays. However, the District must approve a facility use permit for any major events at the swimming pool. No such agreement with the City exists for the sports field(s). As the use of the on-campus facilities, including sports field(s) and the swimming pool, require facility use permit review and approval from the CdM staff and the District, CdM has the power to control and avoid concurrently occurring large events to prevent potential conflicts.

Option A: Under this option, various sporting practices and events that currently take place off-campus could be brought back to the CdM campus. Table 3-5, *Option A General Athletic Team Field Use and Lighting by Month*, lists the various sporting practices and events to be held at the proposed main sports field (Field 1) by time of day and month. Field 2 and Field 3 are the multipurpose grass field area west of Field 1 and they will not have lights. Although Field 2 and Field 3 areas not part of the Option A project description, they have been included to demonstrate a bigger picture of the field usage under Option A.

The activities would include boys and girls varsity (V), junior varsity (JV), and freshmen soccer, lacrosse, and cross-country/track practices and games; V, JV, and freshmen football practices; and JV and freshmen football games. As demonstrated in Table 3-1, there are 17 to 27 teams participating in after-school sports at a given time, depending on the season. The sports field would be used primarily by the CdM high school students and occasionally by CdM middle school students. No other District campuses would use the sports field on a regular basis. The yellow highlighting shows the worst-case duration for field light use, based on the general location of the sun in each month and the adopted field use policy. Events and practices shown in bold and highlighted in yellow represent times when the use of lights is expected. As shown, the maximum use of the lights would occur in the winter season from November to February, when lights would be necessary from approximately 5 PM to 8 PM for during practice times and for two more hours during game nights. During fall and spring months, the need for lights would diminish to between 30 minutes and 2 hours for practices. There are no regularly scheduled games that extend from 8 PM to 10 PM, and various in-season teams or special events could occur during that time.

3. Project Description

Table 3-5 Option A General Athletic Team Field Use and Lighting by Month

		PM																
		General Practice Schedule													For Game Nights Only			
Mo.	Field No.	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30
Sept	1	V/JV Football							V G LAX			**V B LAX**			**In-season teams**			
	2	V B/G Soc			F FB				JV/F B LAX									
	3	NV/FS B/G Soc or JV/F Bball							JV/F G LAX									
Oct	1	V/JV FB							V G LAX				**V B LAX**		**In-season teams**			
	2	V B/G Soc			F FB				JV/F B LAX									
	3	JV/F B/G Soc or JV/F Bball							JV/F G LAX									
Nov	1	V/JV FB							**V G LAX**			**V B LAX**			**In-season teams**			
	2	V B/G Soc			F FB													
	3	JV/F B/G Soc or JV/F Bball or JV/F B/G LAX																
Dec	1	V/JV/F B Soc							**V G LAX**			**V B LAX**			**In-season teams**			
	2	V/JV/F G Soc																
	3	JV/F B/G Soc or V/JV/F FB or JV/F Bball or JV/FS B/G LAX				JV/F B/G LAX												
Jan	1	V/JV/F G Soc							**V G LAX**			**V B LAX**			**In-season teams**			
	2	V/JV/F G Soc							JV/F B LAX			V B LAX						
	3	JV/F B/G Soc or V/JV/F FB or JV/F Bball or JV/F B/G LAX				JV/F B/G LAX												
Feb	1	V/JV/F B Soc							**V G LAX**			**V B LAX**			**In-season teams**			
	2	V/JV/F G Soc							JV/F B LAX			V B LAX						
	3	JV/F B/G Soc or V/JV/F FB or JV/F Bball or JV/F B/G LAX				JV/F B/G LAX												
Mar	1	JV/F G LAX			V G LAX			B/G LAX	**JV/F B LAX**			**V B LAX**			**In-season teams**			
	2	B/G Soc and FB			7/8 B/G Soc													
	3	JV/F Bball			7/8 B/G Soc													
Apr	1	JV/F G LAX			V G LAX			B/G LAX	JV/F B LAX		**V B LAX**				**In-season teams**			
	2	B/G SOc and FB																
	3	JV/F Bball																
May	1	JV/F G LAX			V G LAX			B/G LX	JV/F B LAX		**V B LAX**				**In-season teams**			
	2	B/G Soc and FB																
	3	JV/F Bball																
Jun	1	V/JV FB																
	2	V/JV/F B/G Soc			G LAX			B LAX										
	3	B/G Soc and/or B/G LAX																

3. Project Description

Table 3-5 Option A General Athletic Team Field Use and Lighting by Month

Mo.	Field No.	PM																
		General Practice Schedule													For Game Nights Only			
		1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	9:30
July	1	FB Summer Camps (times to be determined)																
	2	B/G Soc and LAX Summer Camps (times to be determined)																
	3	BB Summer Camps (times to be determined)																
Aug	1	V/JV FB (times to be determined)																
	2	FS FB (times to be determined)																
	3																	

V = Varsity; JV = Junior Varsity; FS = Fresh-Sophomore; G = Girls; B = Boys; LAX = Lacrosse; Soc = Soccer; FB = Football, BB = Baseball
Bold text and yellow highlight indicate worst case duration of field light use.
Field use past 8 PM will be allowed only for game nights.
Note: All athletic team levels are assumed where a specific level is not identified.
Source: CdM Athletics Director

Option B: Table 3-6 shows the proposed use of Fields 1 (main sports field), 2 (second field), and 3 (grass field) by time of day and month under Option B. "Field 3" is the multipurpose grass field area west of Field 2 and it would not have lights. Field 3 has been included to demonstrate a bigger picture of the field usage under the two lit fields under Option B. The yellow highlighting shows the worst-case duration for field light use, based on the general location of the sun in each month and the adopted field use policy. Events and practices shown in bold and yellow highlighted indicate times when the use of lights is expected. Generally, lighting would be turned off at 8 PM for practices and 9 PM for events in accordance with the field use restrictions described in Table 3-4.

The main field (Field 1) under Option B may be less likely to attract full capacity crowds due to the reduced amenities (no concession and restroom building, no press box, and no PA system) compared to the sports field under Option A, even with same 664-seating capacity. However, it is assumed that a 664-spectator event may occur and that a concurrent event may occur on the second field (Field 2). Given the area provided for viewing and the type of events anticipated, it is expected that up to 200 spectators may attend a concurrent event at the second field. The District plans to schedule events at the two fields to ensure concurrent events would not exceed the total capacity of 864 spectators (664 + 200 spectators). The environmental analysis for Option B will focus on two concurrent events with a combined spectator attendance of 864.

Table 3-6 CdM General Athletic Team Field Use and Lighting by Month

		PM														
		General Practice Schedule													For Game Nights Only	
Mo.	**Field No.**	**1:30**	**2:00**	**2:30**	**3:00**	**3:30**	**4:00**	**4:30**	**5:00**	**5:30**	**6:00**	**6:30**	**7:00**	**7:30**	**8:00**	**8:30**
Sept	1	V/JV FB							JV/FS G LAX			**V G LAX**			**In-season teams**	
	2	V B/G Soc			F FB				JV/FS B LAX			**V B LAX**			**In-season teams**	
	3	JV/FS B/G Soc Or JV/FS BB						--							--	
Oct	1	V/JV FB							JV/FS G LAX			**V G LAX**			**In-season teams**	
	2	V B/G Soc			F FB				JV/FS B LAX			**V B LAX**			**In-season teams**	
	3	JV/FS B/G Soc Or JV/FS BB						--							--	
Nov	1	V/JV FB							**JV/FS G LAX**						**In-season teams**	
	2	V/JV/FS B/G Soc			F FB				**JV/FS B LAX**			**V B LAX**			**In-season teams**	
	3	JV/FS B/G Soc Or JV/FS BB						--							--	
Dec	1	V/JV/FS B Soc							**V/JV/FS G LAX**			**V G LAX**			**In-season teams**	
	2	V/JV/FS G Soc							**JV/FS B LAX**			**V B LAX**			**In-season teams**	
	3	V/JV/FS Soc Or V/JV/F Football Or JV/FS BB							--						--	
Jan	1	V/JV/FS B Soc							**JV/FS G LAX**			**V G LAX**			**In-season teams**	
	2	V/JV/FS G Soc							**JV/FS B LAX**			**V B LAX**			**In-season teams**	
	3	V/JV/FS B/G Soc Or V/JV/FS Football Or JV/FS BB							--						--	
Feb	1	V/JV/FS B Soc							**JV/FS G LAX**			**V G LAX**			**In-season teams**	
	2	V/JV FS G Soc							**JV/FS B LAX**			**V B LAX**			**In-season teams**	
	3	V/JV/FS B/G Soc Or V/JV/FS Football Or JV/FS BB								--					--	
Mar	1	JV/FS G LAX			V G LAX						--				--	
	2	B/G Soc & FB			7/8 B/G Soc			JV/FS B LAX			**V B LAX**				--	
	3	JV/FS BB			7/8 B/G Soc						--				--	

3. Project Description

Table 3-6 CdM General Athletic Team Field Use and Lighting by Month

Mo.	Field No.	PM														
		General Practice Schedule													For Game Nights Only	
		1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30
Apr	1	JV/FS G LAX			V G LAX				--						--	
	2	B/G Soc and FB			JV/FS B LAX			V B LAX					--		--	
	3	JV/FS BB				--									--	
May	1	JV/FS G LAX			V G LAX				--						--	
	2	B/G Soc,& FB			JV/FS B LAX			V B LAX					--		--	
	3	JV/FS BB				--									--	
Jun	1	V/JV/FS FB							--						--	
	2	V/JV/FS B/G Soc			G LAX			B LAX			--				--	
	3	B/G Soc or B/G LAX			--										--	
July	1	FB Summer Camps (times to be determined)														
	2	B/G Soc and LAX Summer Camps (times to be determined)														
	3	BB Summer Camps (times to be determined)														
Aug	1	V/JV FB (times to be determined)														
	2	FS FB (times to be determined)														
	3	--														

Source: CdM Athletics Director.
Notes: As with all other field sports as well, this general field usage chart will be altered during contests for any of the stated sports.
High school and middle school track teams are not included as their practice times are irregular and will displace Field 1 only during actual home track meets, which will occur once every week or two.
All athletic team levels are assumed where specific level is not identified.
V = Varsity; JV = Junior Varsity; FS = Fresh-Sophomore; G = Girls; B = Boys; LAX = Lacrosse; Soc = Soccer; FB = Football, BB = Baseball
Bold text and yellow highlight indicate the worst case duration of field light use.
Field use past 8 PM will be allowed only for game nights, therefore the field lighting will not be used during practices.

3.4.2 Project Phasing

Options A and B: Development of the proposed project is preliminarily scheduled to begin in mid-2018—after project approval by the District Board of Education and Division of State Architect—and be completed by the end of 2019.

3.5 INTENDED USES OF THE EIR

This EIR is a project EIR that examines the environmental impacts of the proposed project. This DEIR also addresses various actions by the District and others to adopt and implement the proposed project. It is the intent of this EIR to evaluate the environmental impacts of the proposed project, thereby enabling the District, other responsible agencies, and interested parties to make informed decisions with respect to the requested entitlements. The anticipated approvals required for this project are shown below:

Lead Agency	Action
Newport-Mesa Unified School District	Approve Project Certify EIR Adopt Mitigation Monitoring Program
Responsible Agencies	**Action**
State	
Department of General Services, Division of State Architect	Approval of construction drawings
Regional	
Santa Ana Regional Water Quality Control Board	National Pollutant Discharge Elimination System Permit
South Coast Air Quality Management District	Rule 201: Permit to construct
Local	
Newport Beach Fire Department	Fire and emergency access
City of Newport Beach Public Works	Offsite improvement permits such as drainage, sewer, water, etc.
Southern California Edison	Offsite electrical improvements

3.5.1 References

California Department of Education (CDE). 2017, July 20 (accessed). DataQuest, Select Criteria, Select Report, Enrollment Data 2016-2017. http://dq.cde.ca.gov/dataquest/SearchName.asp?rbTimeFrame=oneyear&rYear=2016-17&cName=corona+del+mar&Topic=Enrollment&Level=School&submit1=Submit.

Newport-Mesa Unified School District (N-MUSD). 2017, July 20 (accessed). Newport-Mesa Unified School District Rule and Regulation, Use of School Facilities Under the Civic Center Act. http://nmusd-ca.schoolloop.com/file/1286003829731/1251534156287/5211059177890600937.pdf.

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4. Environmental Setting

4.1 INTRODUCTION

This section provides a "description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, ... from both a local and a regional perspective" (California Code of Regulations § 15125[a]), pursuant to provisions of the California Environmental Quality Act (CEQA) and the CEQA Guidelines. The environmental setting provides the baseline physical conditions from which the lead agency will determine the significance of environmental impacts resulting from the proposed project.

4.2 REGIONAL ENVIRONMENTAL SETTING

4.2.1 Regional Location

The City of Newport Beach is on the southwestern boundary of Orange County in Southern California. The City is bordered by Huntington Beach to the northwest, Costa Mesa to the north, Irvine to the northeast, and unincorporated areas (Crystal Cove State Park) of Orange County to the southeast. Figure 3-1, *Regional Location*, shows the nearby cities and the regional access to the city provided by various freeways. Interstate 405 runs north to south across southern California and intersects State Route 73 (San Joaquin Hills Transportation Corridor) and State Route 55. State Route 55 also runs north to south and terminates in the City of Costa Mesa. State Route 73 runs along the northwestern boundary of the city.

4.2.2 Regional Planning Considerations

4.2.2.1 SCAG REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

The Southern California Association of Governments (SCAG) is a council of governments representing Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. SCAG is the federally recognized metropolitan planning organization for this region, which encompasses over 38,000 square miles. SCAG is a regional planning agency and a forum for addressing regional issues concerning transportation, the economy, community development, and the environment. SCAG is also the regional clearinghouse for projects requiring environmental documentation under federal and state law. In this role, SCAG reviews proposed development and infrastructure projects to analyze their impacts on regional planning programs.

The 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted in April 2016 (SCAG 2016). Major themes in the 2016 RTP/SCS include integrating strategies for land use and transportation; striving for sustainability; protecting and preserving existing transportation infrastructure; increase capacity through improved systems managements; providing more transportation choices; leveraging technology; responding to demographic and housing market changes; supporting commerce, economic growth and opportunity; promoting the links between public health, environmental protection and economic opportunity; and incorporating the principles of social equity and environmental justice into the plan.

The SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce greenhouse gas (GHG) emissions from transportation (excluding goods movement). The SCS is meant to provide growth strategies that will achieve the regional GHG emissions reduction targets identified by the California Air Resources Board. The SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS but offers incentives to governments and developers for consistency. The proposed project's consistency with the applicable 2016-2040 RTP/SCS policies is analyzed in detail in Section 5.4, *Greenhouse Gas Emissions*.

4.2.2.2 SOUTH COAST AIR BASIN AIR QUALITY MANAGEMENT PLAN

Newport Beach is in the South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (SCAQMD). Pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law and standards are detailed in SCAQMD's air quality management plan. Air pollutants for which ambient air quality standards (AAQS) have been developed are known as criteria air pollutants—ozone (O_3), carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_X), sulfur dioxide, coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead. VOC and NOx are criteria pollutant precursors and go on to form secondary criteria pollutants, such as O_3, through chemical and photochemical reactions in the atmosphere. Air basins are classified as attainment/nonattainment areas for particular pollutants depending on whether they meet the AAQS for that pollutant. Based on the air quality management plan, the SoCAB is designated nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead (Los Angeles County only) under the California and National AAQS and nonattainment for NO_2 under the California AAQS.

4.2.2.3 GREENHOUSE GAS EMISSIONS REDUCTION LEGISLATION

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S 03 05; Assembly Bill 32, the Global Warming Solutions Act (2008); and Senate Bill 375, the Sustainable Communities and Climate Protection Act.

Executive Order S 03 05, signed June 1, 2005, set the following GHG reduction targets for the State of California:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill 32 was passed by the state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. It follows the emissions reduction targets established in Executive Order S 3 05.

In 2008, Senate Bill 375 was adopted to connect GHG emissions reductions targets for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled and vehicle trips. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035.

4.2.2.4 AIRPORT ENVIRONS LAND USE PLAN FOR JOHN WAYNE AIRPORT

The project site falls within the airport influence area of John Wayne Airport. In 1975, the Airport Land Use Commission (ALUC) of Orange County adopted an Airport Environs Land Use Plan (AELUP, amended April 17, 2008) that included John Wayne Airport; Fullerton Municipal Airport; and the Joint Forces Training Base, Los Alamitos. The AELUP is a land use compatibility plan that is intended to protect the public from adverse effects of aircraft noise, to ensure the people and facilities are not concentrated in areas susceptible to aircraft accidents, and to ensure that no structures or activities adversely affect navigable space. The AELUP identifies standards for development in the area based on noise contours, accident potential zones, and building heights. The ALUC is authorized under state law to assist local agencies in ensuring compatible land uses in the vicinity of airports. Primary areas of concern for the ALUC are noise, safety hazards, and airport operational integrity. The ALUC is not an implementing agency in the manner of local governments, nor does it issue permits for a project such as those required by local governments. However, pursuant to California Public Utilities Code, Section 21676, local governments are required to submit all general plan amendments and zone changes that occur in the ALUC planning areas for consistency review by ALUC. If such an amendment or change is deemed inconsistent with the AELUP, a local government may override the ALUC decision by a two-thirds vote of its governing body if it makes specific findings—that the proposed action is consistent with the purposes stated in Section 21670(a)(2) of the Public Utilities Code: "to protect public health, safety, and welfare by ensuring the orderly expansion of airports and the adoption of land use measures that minimize the public's exposure to excessive noise and safety hazards in areas around public airports to the extent that these areas are not already devoted to incompatible uses."

4.3 LOCAL ENVIRONMENTAL SETTING

4.3.1 Location

Corona del Mar Middle and High School campus (project site or CdM campus or CdM MS/HS) is at 2101 Eastbluff Drive (Assessor's Parcel Map Number 440-092-06), City of Newport Beach, Orange County, California. The main area of disturbance under Option A encompasses approximately 6 acres around the existing sports field (turf field and rubber track) at the northeast corner of the CdM campus. The area of disturbance under Option B would be approximately 9 acres, including the existing track and field and adjoining field to southwest. (See Figure 3-3, *Aerial Photograph*.) Minor changes at other areas of the campus may include physical changes to signage, fencing, pathways, placement of gates, etc. The main sports field (Field 1) is bounded by Vista del Oro to the north, Eastbluff Drive to the east, student parking and tennis courts to the south, and turf athletic field to the west. The second field (Field 2) is surrounded by turf fields to the west and north, tennis courts and main sports field to east, and baseball field to the south.

4. Environmental Setting

The CdM campus is irregularly shaped and bordered by Vista Del Oro to the north, Mar Vista Drive to the west and south, and Eastbluff Drive to the east (Figure 3-2, *Local Vicinity*).

4.3.2 Land Use

The 37-acre CdM campus is currently developed with high school classroom buildings, middle school enclave, administration, a gymnasium, a 350-seat performing arts center, three parking lots totaling 592 stalls, a high school student loading zone, a middle school student loading zone, a baseball field, multipurpose athletic fields, eight tennis courts, hardcourts, swimming pool, outdoor lunch quad, pedestrian walkways, and landscaped planters (see Figure 3-3, *Aerial Photograph*). The existing sports field contains a score board, discus area, and long-jump area. A small storage hut and a storage box are at the northwest corner of the sports field. Thirty mature trees are planted along and near Vista Del Oro and Eastbluff Drive. There are no permanent bleachers on the existing sports field, but 664-seat portable bleachers are available. The back field area contains four goal posts and six portable bleachers providing a total 200-seat capacity. These portable bleachers could be moved around anywhere in the backfield area and the swimming pool.

The total 2016–17 school year enrollment at CdM campus was 2,631 students—857 in the 7th and 8th grade middle school, and 1,774 in the 9th through 12th grade high school. There are 50 full-time equivalent or 111 headcount certified faculty and staff (i.e., teachers, administrators, and pupil services); many of the 111 headcount staff are part-time employees (CDE 2016). Additionally, there were approximately 20 volunteers.

Parking and Access

Main vehicular access to the high school student loading zone, sports field, tennis courts, aquatic center, and sports parking lot is provided from Eastbluff Drive. Access to the faculty/visitor parking lot, middle school loading zone, and high school senior parking lot is provided via Mar Vista Drive. The CdM campus provides three parking lots totaling 592 spaces (573 regular spaces and 19 ADA spaces), as listed below:

- **Lot 1 (232 spaces).** A student/staff parking lot adjacent to Eastbluff Drive, accessed via two driveways on Eastbluff Drive.
- **Lot 2 (140 spaces).** A faculty/visitor parking lot at the northwest corner of Eastbluff Drive and Mar Vista Drive, accessed from Mar Vista Drive near Domingo Drive.
- **Lot 3 (220 spaces).** The west lot behind the middle school enclave, accessed from two driveways on Mar Vista Drive.

The CdM MS/HS allows parking permits to students in "good standing" with attendance and discipline the previous school year. Seniors get priority and then juniors.

Existing Use and Schedule

Competitive sporting events (e.g., football, soccer, lacrosse, and track and field) for CdM HS are played at Davidson Field at Newport Harbor High School in Newport Beach, Jim Scott Stadium at Estancia High

School in Costa Mesa, and LeBard Stadium at Orange Coast College in Costa Mesa. Students currently travel occasionally to Estancia High School for football practices and boys lacrosse practices, Eastbluff Elementary School for girls lacrosse practices, and to Bonita Creek Park for girls soccer practices.

Various authorized outside groups use CdM campus facilities on weekdays and weekends throughout the year. Regularly occurring activities include: CalCoast Track Club uses the track and field, generally between 4:00 and 7:00 PM (average of 50 attendees); Volleyball Enterprises uses the gymnasiums, generally between 6:30 and 9:00 PM (50 to 250 attendees); and various groups use the swimming pool until 8:00 PM (average of 50 attendees). The baseball fields are also used for Little League on weekends and fall baseball academy from 3:30 to 5:30 PM. The existing turf field and rubber track is also open to community uses, where residents are allowed outside of normal school hours for walking, running, and various recreational purposes without prior authorization from the District.

Surrounding Uses

Off-Campus Land Uses

The CdM campus is in a residential community. Immediately across the north half of the campus to the north are one- and two-story attached single-unit residences in the Plaza Homeowners Community Association (the Plaza). Across Eastbluff Drive to the east are one- and two-story detached single-unit residences in the Eastbluff Homeowners Community Association (the Eastbluff). One- and two-story attached single-unit residences in the Bluffs Homeowners Association (the Bluffs) bound the CdM campus to the northwest and southwest. Figure 4-1, *Cross-Section Views A and B*, shows the relative elevations from the main sports field to the north and east. The east–west cross-section view "A" shows that the Eastbluff neighborhood rises above the campus, with views of the sports field and campus from various vantage points. The north–south cross-section "B" shows that the Plaza community is only a few feet above the elevation of the sports field.

Figure 4-2, *Cross-Section Views C and D*, shows the relative elevations from the second field to the residences to the northwest (View C) and to the southwest (View D). These residences are all part of the Bluffs Homeowners Community Association. As shown by the section views, these areas are a few feet above the campus and the second field.

Figure 4-3, *Photo Locations*, shows the angles of photos A through E, which are in Figures 4-4 through 4-6, *Community Views*, and show the adjacent roadways and residential uses. Photo A (Figure 4-4) shows that residences along Mar Vista Drive to the west of the CdM campus are at a slightly higher elevation. Photos B and C (Figures 4-4 and 4-5) show residences, landscaping, and sidewalks adjacent to Vista Del Oro without a noticeable elevation difference from the sports field. Eastbluff Drive and adjacent residences are at a higher elevation, as shown in Photo D (Figure 4-5). Our Lady Queen of Angels Catholic Church and associated K–8 school are south across Mar Vista Drive. Apartment units are behind the church, and Big Canyon Park is behind the apartment units. Photo E in Figure 4-6 shows the church complex and adjacent Mar Vista Drive and Domingo Drive.

The Park Newport Apartments are south of Big Canyon Park. Upper Newport Bay is approximately 1,275 feet from the CdM campus boundary and approximately 1,875 feet from the project site. Other uses in the area include Eastbluff Elementary School, Eastbluff Village Center with retail and office uses, Newport Beach Tennis Club near Eastbluff Drive and Vista Del Sol to the north, and residential units beyond these. Residential units are also east across Jamboree Road, including the private Big Canyon Country Club south of Ford Road/Eastbluff Drive. John Wayne Airport is approximately two miles to the north.

Figure 4-7, *Distances between Light Poles and Nearest Residences*, shows the location of the proposed lights under Options A and B and the distances between the lights and nearest residences. The nearest residential unit is approximately 100 feet from the proposed light pole north of Vista Del Oro under Option A and the nearest residential unit from Option B light pole is approximately 110 feet. The light poles in the second field are approximately 260 feet from the nearest residential uses to the north across Vista Del Oro and 445 feet from the nearest residential uses west across Mar Vista Drive.

On-Campus Uses

The main sports field is at the northeast corner of the CdM campus and is bordered by student parking, tennis courts, and a weight room building to the south and a turf multipurpose athletic field to the west.

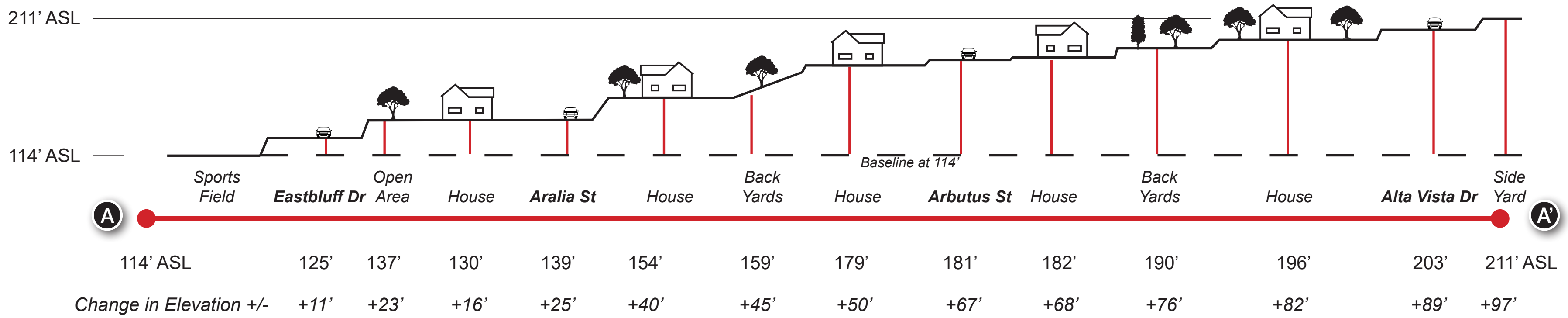
The second field would be surrounded by natural turf baseball fields on to the south and west, grass field to the north, tennis courts and weight room to the east.

4.3.3 Climate and Air Quality

The project site is approximately 1.5 miles inland from the Orange County coast in the western portion of the SoCAB. The climate in the SoCAB is mild and tempered by cool ocean breezes, particularly in Newport Beach. Temperatures are normally mild (62° to 72°F), with rare extremes above 100°F or below freezing (32°F). Precipitation is typically 9 to 15 inches annually in the SoCAB. The climate of Orange County is typified by warm temperatures and light winds. The average monthly high temperatures range from about 52°F in the coastal areas in January to 72°F in the inland areas of the coastal plain in August. In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all annual rains fall between November and April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Annual average humidity is 70 percent along the coast and 57 percent in the eastern portions of the SoCAB.

The SoCAB is designated nonattainment for O_3, $PM_{2.5}$, PM_{10}, and lead (Los Angeles County only) under the California and National AAQS and nonattainment for NO_2 under the California AAQS. An air quality analysis was performed for the project, and the results are discussed in Section 5.2, *Air Quality*. Additionally, project-related impacts from GHG emissions are discussed in Section 5.4, *Greenhouse Gas Emissions*.

Figure 4-1 - Cross-Section Views A and B



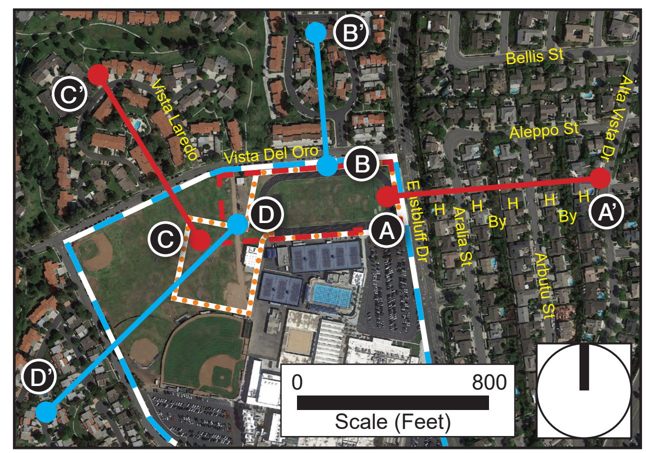
Cross-Section A

992' Cross-Section Length

School Boundary

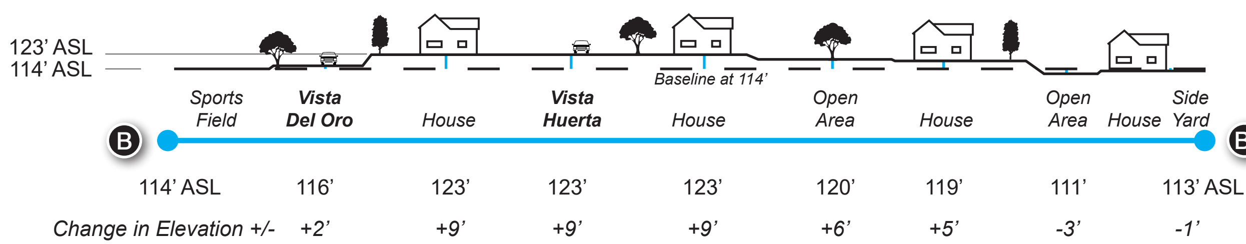
Sports Field - Option A

Sports Fields - Option B



Cross-Section B

667' Cross-Section Length



Note: House and tree heights are approximate and for illustrative purposes only. ASL: Above Sea Level

Base Map Source: Google Earth Pro, 2017

4. Environmental Setting

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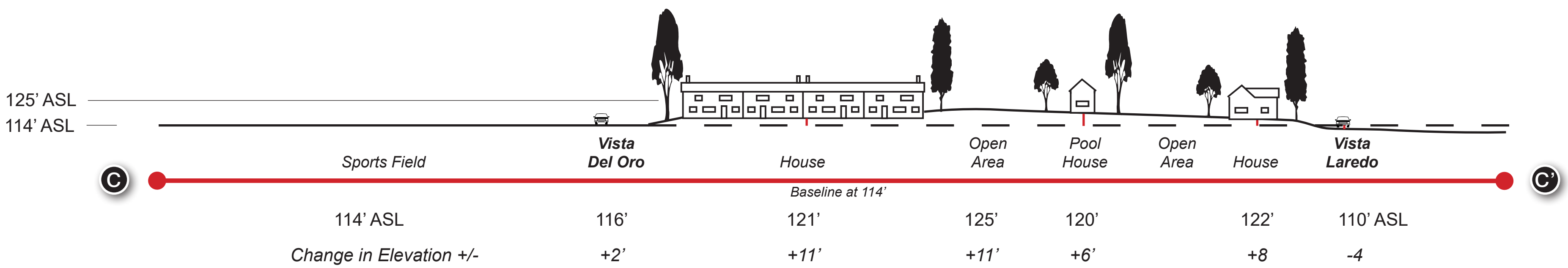
Figure 4-2 - Cross-Section Views C and D

4. Environmental Setting



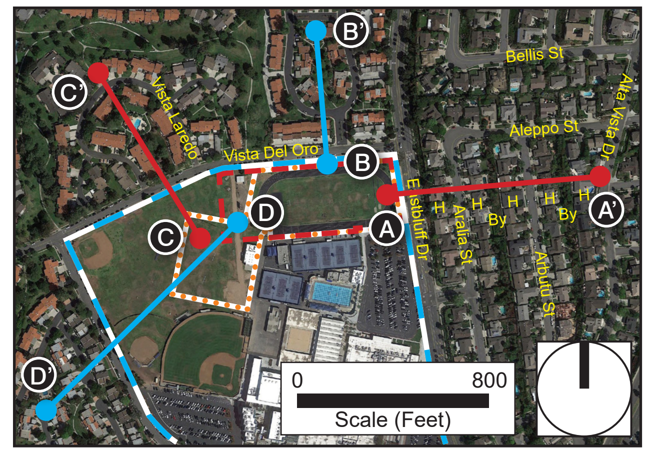
Cross-Section C

888' Cross-Section Length

School Boundary

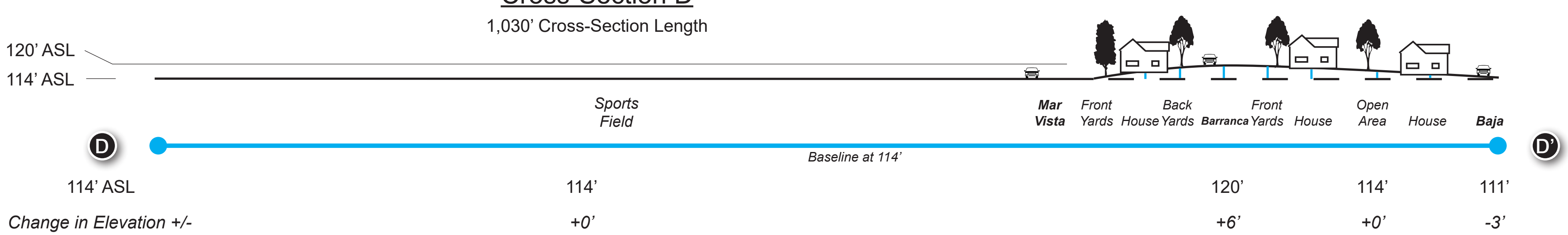
Sports Field - Option A

Sports Fields - Option B



Cross-Section D

1,030' Cross-Section Length



Note: House and tree heights are approximate and for illustrative purposes only. ASL: Above Sea Level

Base Map Source: Google Earth Pro, 2017

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Figure 4-3 - Photo Locations

4. Environmental Setting

Options A and B

0 1,000
Scale (Feet)

Base Map Source: USGS, FAO, NPS, NRCAN, 2016

4. Environmental Setting

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Figure 4-4 - Community Views A and B

Photo A. Residences along Mar Vista Drive.

Photo B. Residences along Vista Del Oro.
See Figure 4-3, *Photo Locations*, for key map.

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Figure 4-5 - Community Views C and D

Photo C. Residences along Vista Del Oro.

Photo D. Residences along Eastbluff Drive.
See Figure 4-3, *Photo Locations*, for key map.

4. Environmental Setting

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Figure 4-6 - Community View E

Photo E. Our Lady Queen of Angels.

See Figure 4-3, *Photo Locations*, for key map.

4. Environmental Setting

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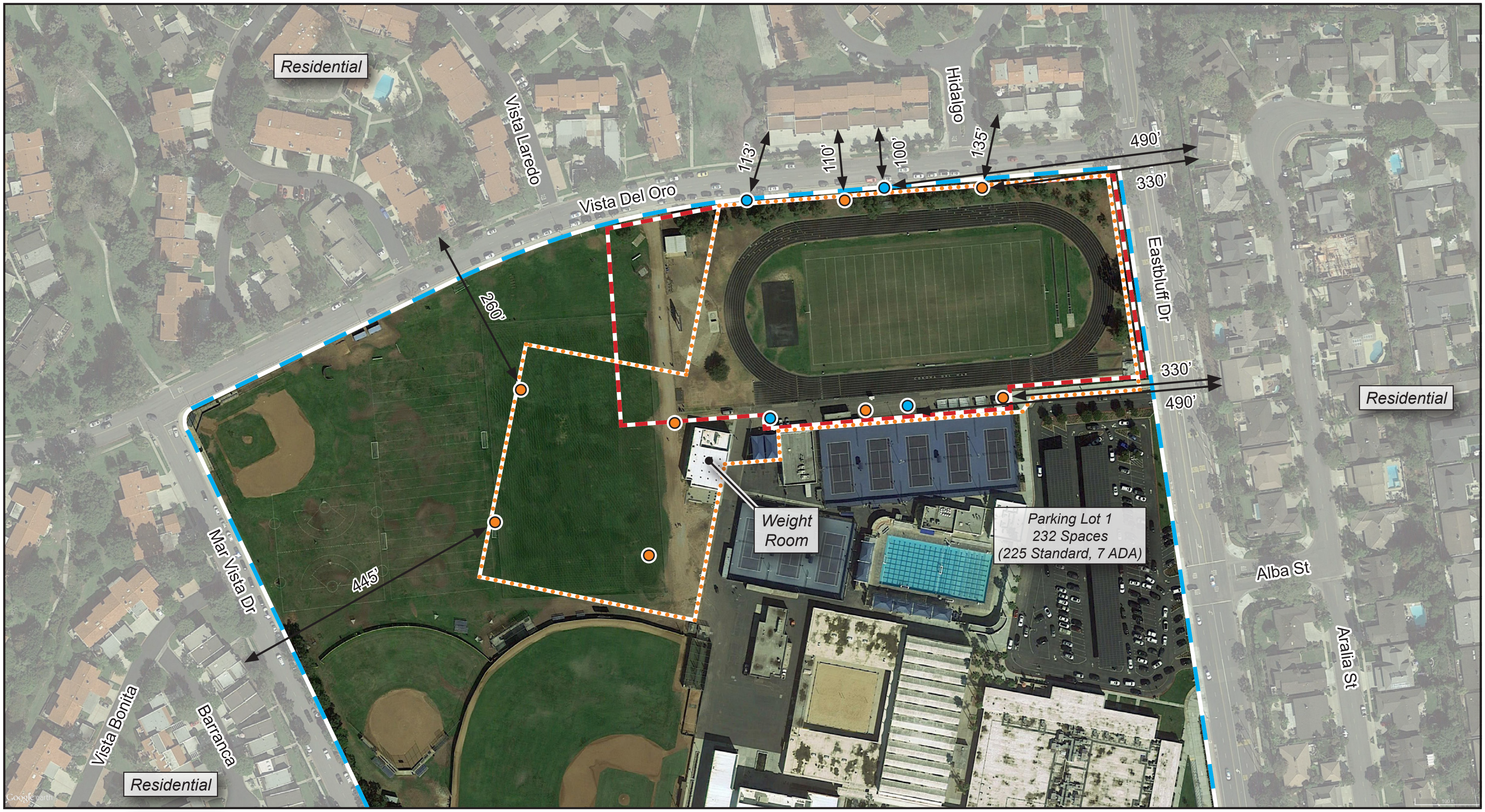
Figure 4-7 - Distances between Light Poles and Nearest Residences



School Boundary
Sports Field - Option A
Sports Fields - Option B
Option A Light Locations
Option B Light Locations
100' Approximate Distance to Nearest Residence
0 250 Scale (Feet)

Base Map Source: Google Earth Pro, 2017

4. Environmental Setting

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4.3.4 Hydrology

The project site is in the Newport Bay Watershed, which spans 154 square miles in central and southern Orange County. The Newport Bay Watershed is defined by the foothills of the Santa Ana Mountains to the east (Loma Ridge) and the San Joaquin Hills to the west and southwest. The watershed is divided into four subwatersheds—Peters Canyon Wash, Upper San Diego Creek, Lower San Diego Creek, and Newport Bay. Nine cities are partly or fully within the watershed—Costa Mesa, Irvine, Lake Forest, Laguna Hills, Laguna Woods, Newport Beach, Orange, Santa Ana, and Tustin—as well as several unincorporated areas of Orange County. Water quality in the Newport Bay Watershed is currently listed by the U.S. Environmental Protection Agency as impaired by various pollutants, including pesticides, copper and other metals, pathogens, sediment toxicity, and selenium (USEPA 2015).

Refer to Section 5.5, *Hydrology and Water Quality*, for additional information regarding hydrological conditions and an analysis of project impacts on hydrology and water quality.

4.3.5 Noise

The noise environment around the project site is generally typical for a medium-density residential area. In the residential areas that are accessed from roadways branching off of Eastbluff Drive, the typical noise environments are generally controlled by local traffic flows and general suburban din. However, because of the take-off track from John Wayne Airport, this relatively low ambient environment is often raised considerably for a few moments during over-flights. During the daytime, the time-averaged sound level in the vicinity of the project site is 56 to 62 dBA.

Refer to Section 5.6, *Noise*, for additional information concerning the noise environment and an analysis of project-related noise impacts.

4.3.6 Scenic Features

Pacific Coast Highway is an “eligible” state scenic highway, not “officially designated,” and it is approximately 1.65 miles to the southwest (Caltrans 2016). There are a number of public view points and scenic view roads near the CdM campus.

Refer to Section 5.1, *Aesthetics*, for additional information concerning the visual environment and an analysis of project-related aesthetic impacts.

4.3.7 Public Services and Utilities

The project site is located in a highly urbanized area of the city with existing public services and utilities available to the site. Local utilities and service systems that serve the existing CdM campus are available to serve the proposed project.

Fire protection services are provided by the Newport Beach Fire Department. Law enforcement services are provided by the Newport Beach Police Department at 870 Santa Barbara Drive, approximately 0.6 mile north of the site.

Domestic and reclaimed water service and wastewater service for the project site are provided by the Newport Beach Municipal Operations Department. Wastewater is treated by the Orange County Sanitation District. Newport Beach is under contract with CR&R Environmental Services and Franchised Haulers for solid waste hauling and OC Waste & Recycling for disposal. Electricity and natural gas services are provided by Southern California Edison and Southern California Gas Company, respectively.

4.3.8 Transportation and Traffic

The existing local roadway network in the project area includes Vista del Oro, Eastbluff Drive, Pacific Coast Highway, MacArthur Boulevard, Jamboree Road, San Joaquin Hills Road, University Drive, Ford Road, Bonita Canyon Drive, Bison Avenue, Bristol Street, Santa Cruz Drive, and Santa Rosa Drive. The regional transportation system in the vicinity of the project site includes SR-73, SR-55, and I-405. Orange County Transportation Authority bus routes are provided at the corner of Eastbluff Drive and Bixia Street/Vista del Sol. Additionally, John Wayne Airport is approximately two miles north of the project site.

4.3.9 General Plan and Zoning

The project site is zoned "PF" Public Facilities and designated Public Facilities by the City's General Plan. Pursuant to Government Code Section 53094, the District rendered all zoning standards inapplicable to the campus by approval of Resolution 44-06-11 on June 14, 2011. Sports fields are considered a "classroom facility" under *City of Santa Cruz v. Santa Cruz City School Board of Education* (1989) 210 Cal.App.3d 1, which noted "our Supreme Court has itself observed in a different context that so called 'extracurricular activities' [citation omitted] such as sports and drama, are an integral and vital part of an educational program and that they are 'educational' within the free education guaranteed by the California Constitution."

4.4 ASSUMPTIONS REGARDING CUMULATIVE IMPACTS

Section 15130 of the CEQA Guidelines states that cumulative impacts shall be discussed where they are significant. It further states that this discussion shall reflect the level and severity of the impact and the likelihood of occurrence, but not in as great a level of detail as that necessary for the project alone. Section 15355 of the Guidelines defines cumulative impacts to be "...two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." Cumulative impacts represent the change caused by the incremental impact of a project when added to other proposed or committed projects in the vicinity.

The CEQA Guidelines (Section 15130 [b][1]) state that the information utilized in an analysis of cumulative impacts should come from one of two sources:

A. A list of past, present and probable future projects producing related cumulative impacts, including, if necessary, those projects outside the control of the agency.

4. Environmental Setting

B. A summary of projections contained in an adopted General Plan or related planning document designed to evaluate regional or area-wide conditions.

The cumulative impact analyses in Chapter 5, *Environmental Analysis*, of this DEIR primarily use Method A. The cumulative projects are listed and numbered in Table 4-1 and mapped on Figure 4-8, *Cumulative Projects Location Map*.

Table 4-1 Cumulative Projects

#	Project	Proposed Land Use
1	Ullman Sail Lofts (PA2017-059)	Demolish existing 9,962 SF commercial building and construct new mixed-use structure with 1,171 SF of retail floor area and 4 residential units.
2	Newport Pointes	Construct 350 rental units and 7,500 SF of retail.
3	Harbor Point Senior Living (PA2015-210)	New 90,000 SF convalescent and congregate care facility with 121 beds (about 108 care units).
4	Koll Newport Residential (PA2015-024)	Mixed use residential of up to 260 units, 3,000 sf. retail and one-acre park.
5	ExplorOcean (PA2014-069)	Demolition of 26,219 square foot commercial building and subterranean parking garage; and the construction of a 70,295 SF literacy facility, removal of space surface parking lot and construct a 141,000 SF parking structure; and a 6,500 SF classroom.
6	Newport Harbor Yacht Club (PA2012-091)	Replace existing 20,500 SF yacht club with new 23,163 SF facility.
7	Lido Villas (DART) (PA2012-146)	Demolition of existing church and office building and construct 23 townhome condominiums.
8	Villas Fashion Island (PA2012-020)	Increase residential development allocation from 430 dwelling units to 524 dwelling units (increase of 94 units).
9	D.I.S.C. 3501 Jamboree Rd and 301 Bayview Circle (PA2010-062)	Text amendment to add outpatient surgery and medical office as permitted uses and to add a parking requirement of 1/200 SF for such uses. Includes Traffic study pursuant to TPO for conversion of 38, 759 square feet of general office and retail to outpatient surgical center.
10	Plaza Corona del Mar (PA2010-061)	Development of 1,750 SF new office space and six detached townhomes.
11	AERIE Project (PA2005-196)	Demolition of the existing residential structures on the 1.4-acre site and development of 8 residential condominiums. Development of existing gangway platform, pier walkway, and dock facilities.
12	Newport Business Plaza Project (PA2008-164)	Demolition of 2 existing buildings to construct a new 46,044 SF business plaza.
13	PRES Office Building B Project (PA2007-213)	Increase the maximum allowable entitlement by 11,544 SF. Increase maximum allowable entitlement in office suite B by 9,917 SF

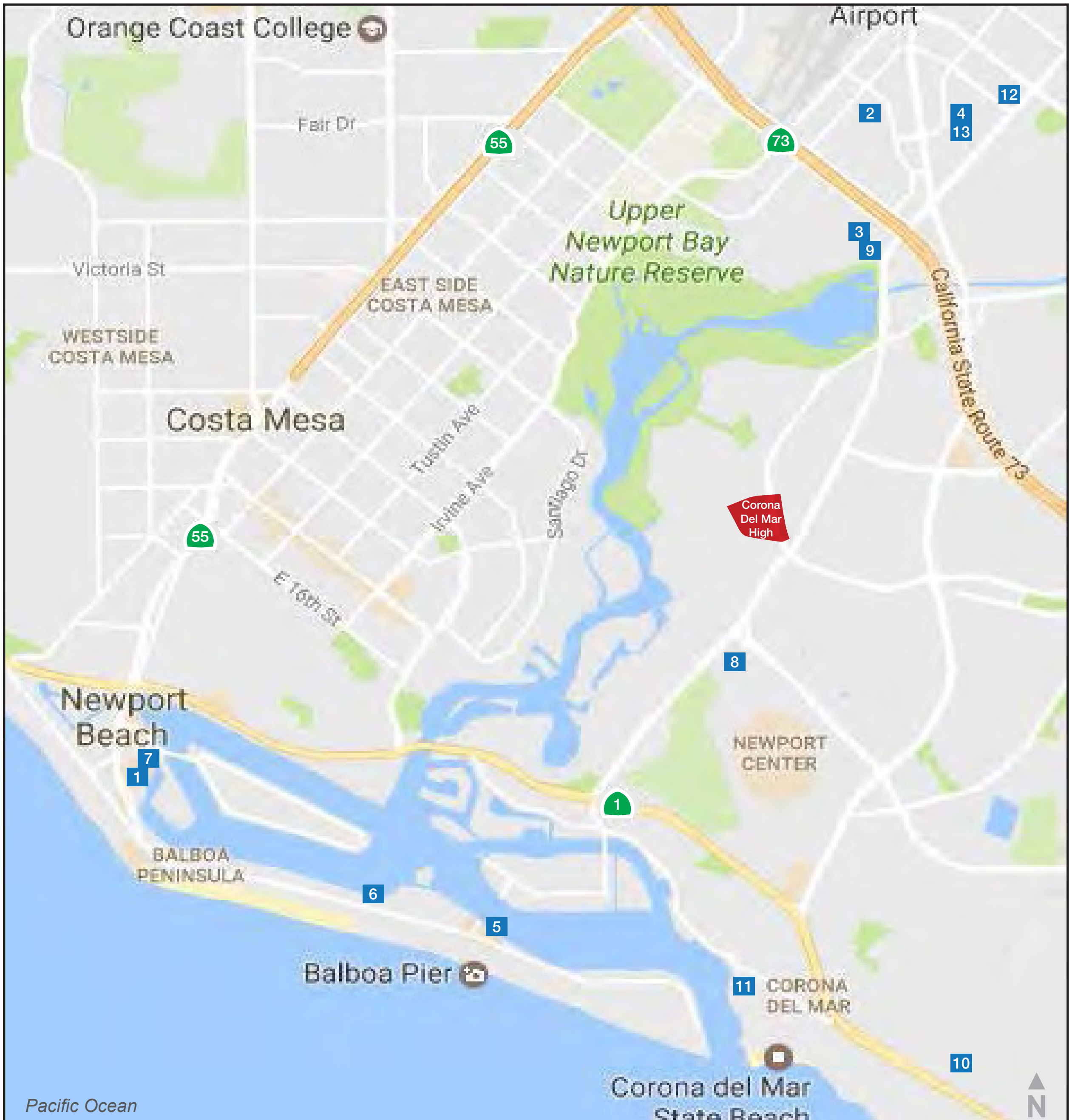
4.4.1 References

California Department of Education (CDE). 2016 (accessed). DataQuest Reports, Staffing, Teacher and Staff Data – 2014-15. http://data1.cde.ca.gov/dataquest/PaifSearchName.asp?TheYear=2014-15&cTopic=Paif&cLevel=School&cName=30665973031697&cCounty=&cTimeFrame=S.

California Department of Education (CDE). 2017 (accessed). Enrollment by Grade for 2016-17. http://dq.cde.ca.gov/dataquest/Enrollment/GradeEnr.aspx?cType=ALL&cGender=B&cYear=2016-17&Level=School&cSelect=Corona+del+Mar+High--Newport-Mesa+Un—3066597-3031697&cChoice=SchEnrGr.

California Department of Transportation (Caltrans). 2016 (accessed). California Scenic Highway Mapping System. Orange County. http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/index.htm.

Figure 4-8 - Cumulative Project Location



1 Ullman Sail Lofts (PA2017-059)
2 Newport Pointes
3 Harbor Point Senior Living (PA2015-210)
4 Koll Newport Residential (PA2015-024)
5 ExplorOcean (PA2014-069)
6 Newport Harbor Yacht Club (PA2012-091)
7 Lido Villas (DART) (PA2012-146)
8 Villas Fashion Island (PA2012-020)
9 D.I.S.C. 3501 Jamboree Rd and 301 Bayview Circle (PA2010-062)
10 Plaza Corona del Mar (PA2010-061)
11 AERIE Project (PA2005-196)
12 Newport Business Plaza Project (PA2008-164)
13 PRES Office Building B Project (PA2007-213)

0 1
Scale (Mile)

Source: IBI Group, 2017

4. Environmental Setting

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5. Environmental Analysis

Chapter 5 examines the environmental setting of the proposed project, analyzes its effects and the significance of its impacts, and recommends mitigation measures to reduce or avoid impacts. This chapter has a separate section for each environmental issue area that was determined to need further study in the EIR. This scope was determined in the initial study and notice of preparation (NOP) process, which were published first time in February 2016 (see Appendix A1) and second time in March 2016 (see Appendix A2), as well as through public and agency comments received during the NOP comment periods first from February 1, 2016 to March 1, 2016 (see Appendix B1), and recirculated from March 25, 2016 to May 23, 2016 (see Appendix B2). Based on the identified scope, the Newport-Mesa Unified School District (N-MUSD or District) prepared and circulated a Draft EIR for the CdM MS/HS Sports Field project beginning February 6, 2017, and ending March 22, 2017. After the release of the Draft EIR in February 6, 2017, the Board of Education adopted Resolution No. 28-02-17 to limit the seating capacity of the bleachers for the existing sports track and field to no more than the current seating capacity, which also allowed the District to explore a second field option. Therefore, the scope was further defined to include Option A as originally proposed under the circulated DEIR except for the 664-seat bleacher capacity as and Option B with two lighted sports fields and no PA system, also with existing bleacher seat capacity on two fields, one with 664 seats and one with 200 seats. The environmental issues included in this recirculated DEIR are:

- 5.1 Aesthetics
- 5.2 Air Quality
- 5.3 Cultural Resources
- 5.4 Greenhouse Gas Emissions
- 5.5 Hydrology and Water Quality
- 5.6 Noise
- 5.7 Public Services
- 5.8 Recreation
- 5.9 Transportation and Traffic
- 5.10 Energy

Sections 5.1 through 5.10 provide a detailed discussion of the environmental setting, impacts associated with the proposed project under Options A and B, and mitigation measures designed to reduce significant impacts where required and when feasible. The residual impacts following the implementation of any mitigation measure are also discussed.

The initial study also determined that certain issues under an environmental topic would not be significantly affected by implementation of the project; these issues are not discussed further in this EIR.

5. Environmental Analysis

Organization of Environmental Analysis

To assist the reader with comparing information between environmental issues, each section is generally organized under nine major headings:

- Environmental Setting
- Thresholds of Significance
- Environmental Impacts
- Cumulative Impacts
- Existing Regulations and Standard Conditions
- Level of Significance Before Mitigation
- Mitigation Measures
- Level of Significance After Mitigation
- References

In addition, Chapter 1, *Executive Summary,* has a table that summarizes all impacts by environmental issue.

Terminology Used in This EIR

The level of significance is identified for each impact in this EIR. Although the criteria for determining significance are unique for each topic area, the environmental analysis applies a uniform classification of the impacts based on definitions consistent with CEQA and the CEQA Guidelines:

- **No impact.** The project would not change the environment.
- **Less than significant.** The project would not cause any substantial, adverse change in the environment.
- **Less than significant with mitigation incorporated.** The EIR includes mitigation measures that avoid substantial adverse impacts on the environment.
- **Significant and unavoidable.** The project would cause a substantial adverse effect on the environment, and no feasible mitigation measures are available to reduce the impact to a less than significant level.

5.1 AESTHETICS

This section of the Recirculated Draft EIR (RDEIR) evaluates the potential for project development to impact aesthetic resources on and near the Corona del Mar Middle School and High School campus. The analysis in this section is based in part on the following lighting modeling:

- *Musco Lighting Project Summary for Corona Del Mar High School Football, 1500W MZ,* Musco Lighting, July 25, 2017.
- *Musco Lighting Project Summary for Corona Del Mar High School Football*, *TLC-LED-1150*, Musco Lighting, June 26, 2017

These lighting project summaries are included as Appendix D of this Recirculated Draft EIR.

5.1.1 Environmental Setting

5.1.1.1 REGULATORY FRAMEWORK

California State Scenic Highway Program

California Streets and Highways Code Sections 260 through 263 authorize the California State Scenic Highways Program and set forth criteria and procedures for designation of scenic highways.

Nighttime Sky, CCR Title 24, Outdoor Lighting Standards

The California legislature passed a bill in 2001 requiring the California Energy Commission to adopt energy efficiency standards for outdoor lighting, both public and private. In November 2003 the commission adopted changes to the California Code of Regulations, Title 24, parts 1 and 6, Building Energy Efficiency Standards. These standards became effective on October 1, 2005, and included changes to the requirements for outdoor lighting for residential and nonresidential development. These standards improved the quality of outdoor lighting and helped to reduce the impacts of light pollution, light trespass, and glare. The standards regulate lighting characteristics such as maximum power and brightness, shielding, and sensor controls to turn lighting on and off. Different lighting standards are set for different “lighting zones” (LZ), and the zone for a specific area is based on population figures from the 2000 Census. Areas can be designated LZ1 (dark), LZ2 (rural), or LZ3 (urban). Based on this classification, the project site is designated LZ3.

City of Newport Beach Municipal Code

Provisions from the municipal code help minimize light and glare impacts associated with new development projects in the city. As a state agency, the District is not subject to these codes, but they are presented for informational purposes and to establish guidelines in evaluating aesthetic impacts of the project.

- **Chapter 20.30 (Property Development Standards), Section 20.30.060 (Height Limits and Exceptions).** This section establishes regulations for determining compliance with the maximum allowable height limits established for each zoning district. In addition to building height limits by zoning district, specific standards and boundaries are established in Section 20.30.060 for the Shoreline Height Limitation Zone and High Rise Height Zone. The Shoreline Height Limitation Zone does not include the project site.

- **Chapter 20.30 (Property Development Standards), Section 20.30.070 (Outdoor Lighting).** This section outlines outdoor lighting standards to reduce impacts of glare, light trespass, over-lighting, sky glow, and poorly shielded lighting fixtures.

  A. General Outdoor Lighting Standards

  1. All outdoor lighting fixtures shall be designed, shielded, aimed, located, and maintained to shield adjacent properties and to not produce glare onto adjacent properties or roadways. Parking lot light fixtures and light fixtures on buildings shall be full cut-off fixtures.

- **Chapter 20.30 (Property Development Standards), Section 20.30.100 (Public View Protection).** This section includes regulations to preserve significant visual resources from public viewpoints and corridors, but it does not protect views from private property. View-impact analysis is required where a proposed development has a potential to obstruct a public view from an identified public viewpoint or corridor on General Plan Figure NR 3 (Coastal Views). The analysis shall include recommendations to minimize impacts to public views while allowing the project to proceed and maintain development rights. Landscaping, signage, rooftop equipment, and antennas shall be designed and sited to ensure they minimize impacts to public views.

5.1.1.2 EXISTING CONDITIONS

Visual Character

The new sports field boundary is part of the existing Corona del Mar Middle School and High School (CdM) campus and is currently developed with natural turf field and rubber track, score board, field goal posts, and portable bleachers with 664 seats on the south side of the track. The rest of the CdM campus is developed with various one- to three-story structures, walkways, landscaping, athletic facilities, parking lots, and other ancillary improvements typical of public middle- and high-school campuses. The project site does not contain any unusual or unique visual element that could be considered a scenic resource. There are 30 mature pepper trees in varying heights along the northern and eastern boundaries of the existing sports field. These ornamental trees are shown in Photo B of Figure 4-4, *Community Views A and B*.

The project site is in a residential community surrounded by the Eastbluff Homeowners Community Association, the Plaza Homeowners Association, and the Bluffs Homeowners Association. In addition to the primarily residential surrounding, Our Lady Queen of Angels Catholic Church and associated K–8 school border the CdM campus to the south across Mar Vista Drive. Beyond the church are apartment units and Big Canyon Park, a 39.16-acre open space area with public viewpoint and hiking trails.

Topography

The project site is generally flat, with topographic elevation ranging from approximately 113 to 115 feet above sea level, because the area to be disturbed is already developed as a natural turf sports field and synthetic rubber track. As shown in Figures 4-1 and 4-2, *Cross-Section Views*, the off-site east-west topography gains substantial elevation to the east—the house to the east on Aralia Street is approximately 155 feet above sea level, and the property east of Alta Vista Drive is approximately 211 above sea level. The north-south topography is generally similar to the project site, gaining less than 10 feet at the residences north of Vista Huerta. The new sports field would be bounded by existing CdM campus facilities such as tennis courts, swimming pool, surface parking, etc.

Scenic View Points and Corridors

A sensitive viewpoint includes any scenic vista, designated scenic highway, view from residential property, public park, recreational area, and/or important historic location from which the visual resource can be seen.

The California Scenic Highway Program was created in 1963 to protect and enhance the natural scenic beauty of California highways and adjacent corridors. Pacific Coast Highway is an “eligible” state scenic highway approximately 1.65 miles to the southwest, but it is not “officially designated.” The Newport Beach General Plan Natural Resources Element also identifies several public viewpoints and coastal view roads throughout Newport Beach. The public viewpoints and coastal roads primarily provide views toward Upper and Lower Newport Bay, Balboa Island, Lido Isle, and the Pacific Ocean. As shown in Figure 5.1-1, *Coastal View Roads*, the project site is outside of the shoreline height limitation zone, but there are a number of coastal view roads and viewpoints in the project area.

Light and Glare

The CdM campus provides nighttime sports lighting for the swimming pool, tennis courts, and parking lots. The swimming pool lights comprise 8 poles and a total of 16 metal halide medium-beam parabolic flood lighting lamps, and they are a major source of nighttime light and glare impacts in the area. Nighttime lighting is provided for the tennis courts but does not represent a major source of spill light or glare. The swimming pool and tennis court lights are mounted on approximately 30-foot poles. No nighttime sports lighting is at the existing track and field. In addition to the sports lighting, the campus provides security lighting at the parking lots and walkways.

Offsite nighttime light sources include street lights and general urban lights from residential uses. A major lighting source in the project vicinity is the tennis court lights at Park Newport, approximately 0.50 mile to the southwest, and building lights from Fashion Island. Existing nighttime views are discussed further in Impact 5.1-3.

5.1.2 Thresholds of Significance

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

AE-1 Have a substantial adverse effect on a scenic vista.

AE-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway.

AE-3 Substantially degrade the existing visual character or quality of the site and its surroundings.

AE-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

5.1.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Recirculated Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.1-1: The proposed project (Options A and B) would not adversely affect any scenic vista or alter scenic resources within a state scenic highway. [Thresholds AE-1 and AE-2]

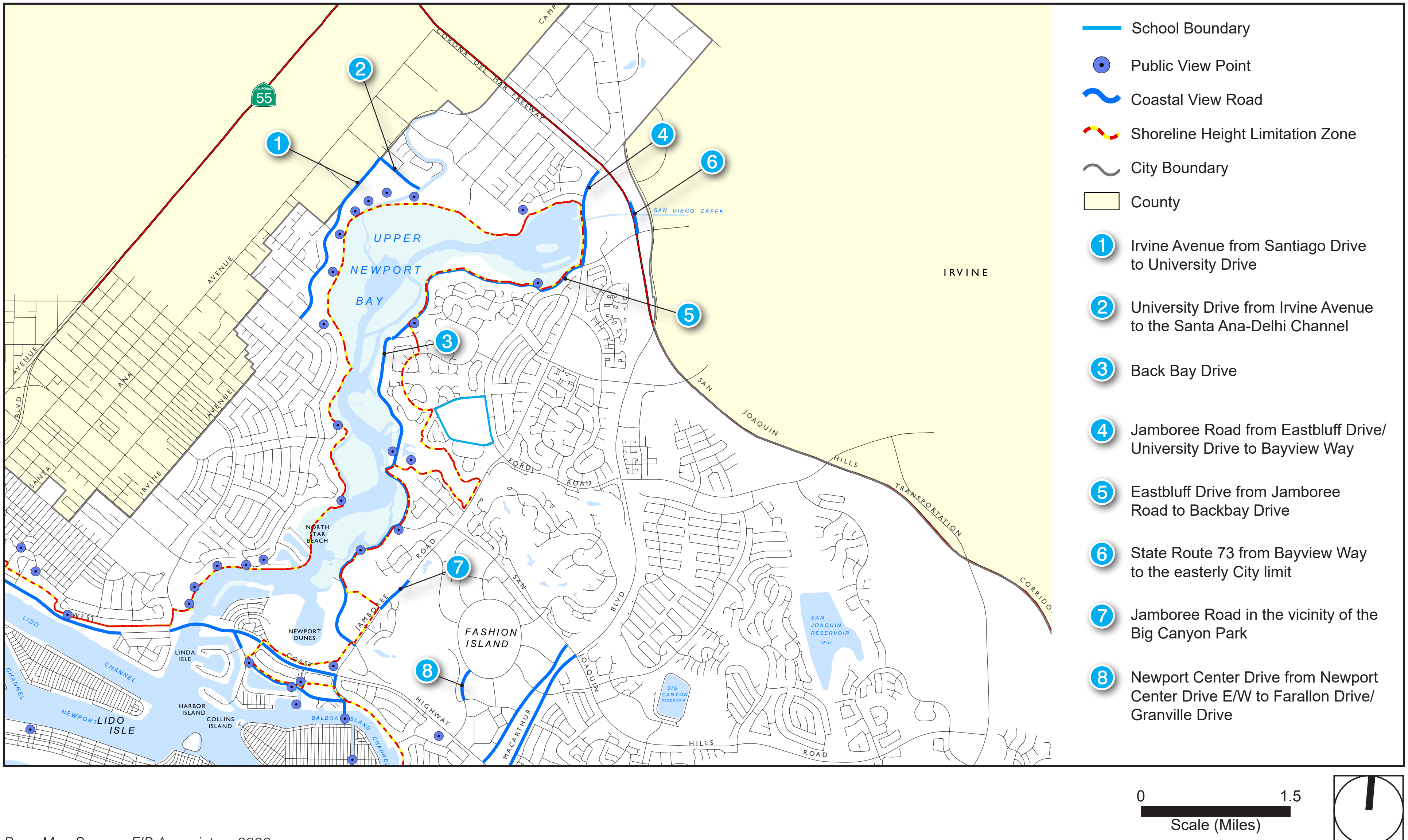
Impact Analysis:

Scenic Vista or Resource Impact, Option A

Aesthetic impact assessment generally deals with the issue of contrast—the degree to which elements of the environment differ visually. Aesthetic features vary by environment, which ranges in character from urban to rural to wildlands. Adverse visual effects can include the loss of natural features or areas, the removal of urban features with aesthetic value, or the introduction of contrasting urban features into natural areas or urban settings. Under CEQA, the term "aesthetics" pertains to the perceived visual quality of an area characterized by one or more visual elements such as open space, scenic views, or architecture type. Therefore, the assessment of aesthetic impacts is subjective by nature where there is no established significance threshold.

The project site is in a residential community in an urban setting but is also surrounded by numerous scenic viewpoints, natural open space, and coastal viewsheds with high visual sensitivity. The proposed project would replace the existing sports field with the newly configured sports field with various upgraded features—such as synthetic turf field and rubber track, four 80-foot light poles, 664-seat bleachers on the south side, a 3,000-square-foot restroom/ticket/concession building, long- and triple-jump area on the east end of the track, and shot put areas on the west end of the track. The project site does not contain any natural or scenic beauty and provides visual characteristics of a high school sports field. Construction and operation of the proposed project under Option A would continue to provide visual characteristics of a high school sports field. Although the existing mature pepper trees along Vista Del Oro and Eastbluff Avenue would be removed, they would be replaced with other ornamental trees at a minimum of 1:1 ratio. Therefore, the current visual relief provided by these ornamental perimeter trees would be maintained.

Figure 5.1-1 - Coastal View Roads



Base Map Source: EIP Associates, 2006

5. Environmental Analysis
AESTHETICS

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Sensitive viewpoint includes any scenic vista, designated scenic highways, views from residential property, public parks, recreational areas, and/or important historic locations from which the visual resource can be seen. The City of Newport Beach Municipal Code, Section 20.30.100 (Public View Protection), preserves significant visual resources from public viewpoints and corridors, but does not protect views from private property. View impact analysis is required where a proposed development has a potential to obstruct a public view from an identified public view corridor or viewpoint. The project site is close to city-designated coastal view roads and public viewpoints, identified in Figure 5.1-1, *Coastal View Roads*. Figure 5.1-2, *Street Views from Coastal View Roads*, depicts the representative view from two nearby coastal view roads and shows that the proposed sports field and improvements would not be visible from the nearby coastal view roads due to roadway alignment and intervening topography, landscaping, and development. As shown in the view from Eastbluff Drive, between Jamboree Road and Back Bay Drive (i.e., segment #5 in Figure 5.1-1), the roadway alignment of Eastbluff Drive curves slightly, and the intervening development and vegetation block a direct line of sight to the CdM campus from this coastal view road. Also shown in Figure 5.1-2 is a view from Jamboree Road (i.e., segment #7 in Figure 5.1-1), where the view of the CdM campus is obstructed by intervening Harbor Cove and Park Newport residential neighborhoods and trees. While not shown, the view of the project site from nearby Back Bay Drive is also blocked by the abutting topography and vegetation, which slopes up and creates an elevation difference of more than 70 feet—from approximately 12 feet above sea level at Back Bay Drive to over 80 feet adjacent to the North Bluff Bayview Community and the Bluffs residential neighborhoods. Therefore, the project site would be unrecognizable from these coastal view roadways, and the proposed project would not have a substantial adverse effect on a scenic vista.

Additionally, visual simulations were conducted looking toward the project site from three scenic view locations—Pacific Coast Highway, Galaxy View Park, and Interpretative Center (see Figure 5.1-3, *Visual Simulation Location Map, Scenic Views*). Figure 5.1-4, *Visual Simulation from Pacific Coast Highway*, compares the existing and simulated views from Pacific Coast Highway. As shown, the 80-foot poles are recognizable as three small dots in the background and do not change or degrade the visual quality from Pacific Coast Highway toward the project site. No other parts of the proposed facilities are visible. Figure 5.1-5, *Visual Simulation from Galaxy View Park*, compares the existing and simulated views from Galaxy View Park. Although all four light poles can be pointed out from this location, the tops of the light poles do not exceed the backdrop skyline, and the poles do not change the general character or the scenic quality.

Figure 5.1-6, *Visual Simulation from Interpretative Center*, compares the existing and simulated views from the Interpretative Center. As shown, no part of the lights poles or other CdM facilities is visible from this location. As demonstrated by the visual simulations on Figures 5.1-4 through 5.1-6, the proposed project would not change the visual perception or aesthetic value of the scenic resources. Therefore, no public view roads or viewpoints would be substantially impacted by the proposed project.

Aesthetic value typically refers to the perception of the natural beauty of an area, as well as to the elements that create or enhance its visual quality. The project site is part of an existing CdM campus in a residential neighborhood and does not provide natural beauty to be protected or enhanced. Therefore, implementation of the proposed project, Option A, would not have a have a substantial adverse effect on scenic resources.

Although new light poles and restroom/concession/storage building would change the existing visual setting, no local-, regional-, or state-protected scenic vista would be obstructed or adversely affected, and no damage to any scenic resources would occur, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway. Therefore, impacts under Option A would be less than significant.

Scenic Vista or Resource Impact, Option B

The conditions described above for Option A are also applicable to Option B. Under this option, the existing sports field and track location and layout would be maintained in roughly the same position and would not be shifted to the west as with the proposed project Option A. A second field with artificial turf field and no track would be constructed (see Figure 3-5), and both fields would include nighttime lighting. Therefore, under Option B, four 80-foot lights on the existing field location (Field 1) plus four additional 70-foot lights on the second field (Field 2) would be provided. However, the 3,000-square-foot restroom/ concession/storage building would not be constructed under Option B.

As with Option A, Figure 5.1-2 shows that the project site would not be visible from the nearby coastal view roads due to roadway alignment and intervening topography, landscaping, and development.

The visual simulations provided from Pacific Coast Highway and Galaxy View Park in Figures 5.1-4 and 5.1-5 show that the 80-foot lights are recognizable only as small dots in the background. Therefore, it is reasonable to assume that the four additional 70-foot light poles would also be recognizable only as small dots. The four 80-foot light poles are not visible from the Interpretative Center (Figure 5-1.6), and the four additional 70-foot light poles would not be visible from this viewpoint.

The CdM campus, which includes Field 1 and Field 2 under Option B, is not part of a scenic vista and does not contain unique visual resources. Implementation of the proposed project under Option B would not adversely affect scenic vistas or alter scenic resources.

Neither option would have a significant impact on scenic vistas or scenic resources. While Option B has four additional 70-foot light poles, the difference at this visual scale is negligible.

Figure 5.1-2 - Street Views from Coastal View Roads

View from the coastal view road segment #5 (Eastbluff Drive from Jamboree Road to Back Bay Drive) looking south toward the project site.

View from the coastal view road segment #7 (Jamboree Road in the vicinity of the Big Canyon Park) looking north toward the project site.

Photo Source: Google Street Map, 2016

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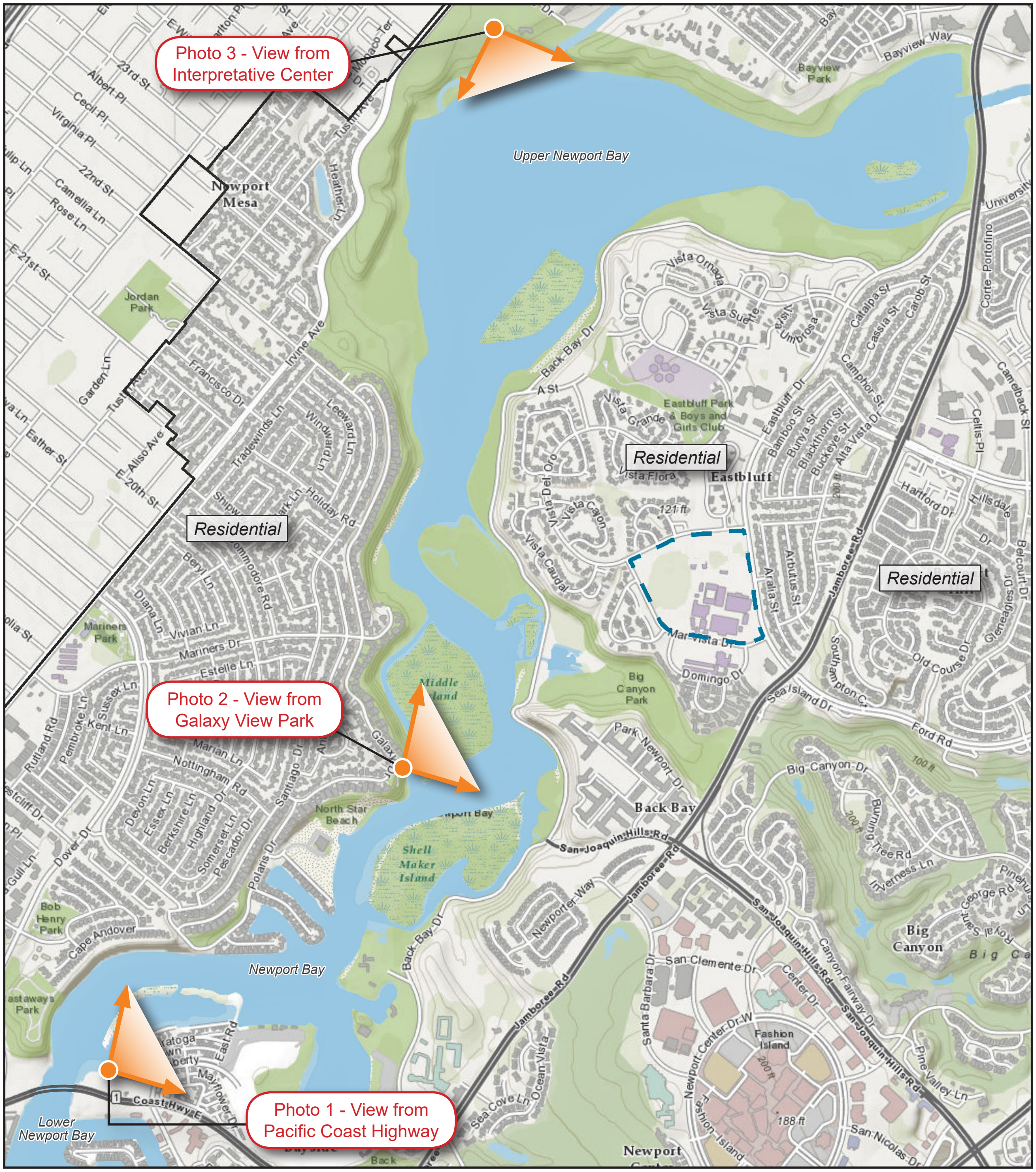
Figure 5.1-3 - Daytime Visual Simulation Location Map, Scenic Views



School Boundary

0 2,000
Scale (Feet)

Base Map Source: USGS, FAO, NPS, NRCAN, 2016

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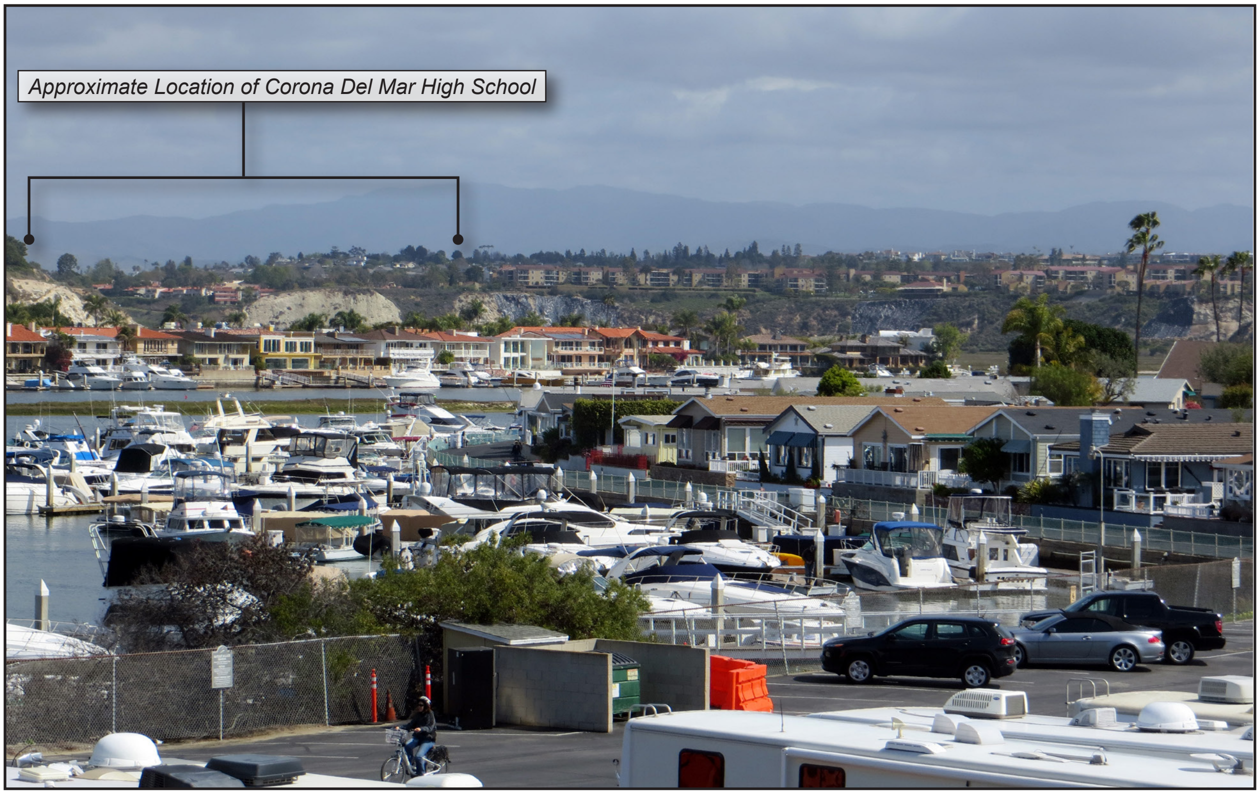
Figure 5.1-4 - Visual Simulation from Pacific Coast Highway



Existing View

Simulated View

5. Environmental Analysis
AESTHETICS

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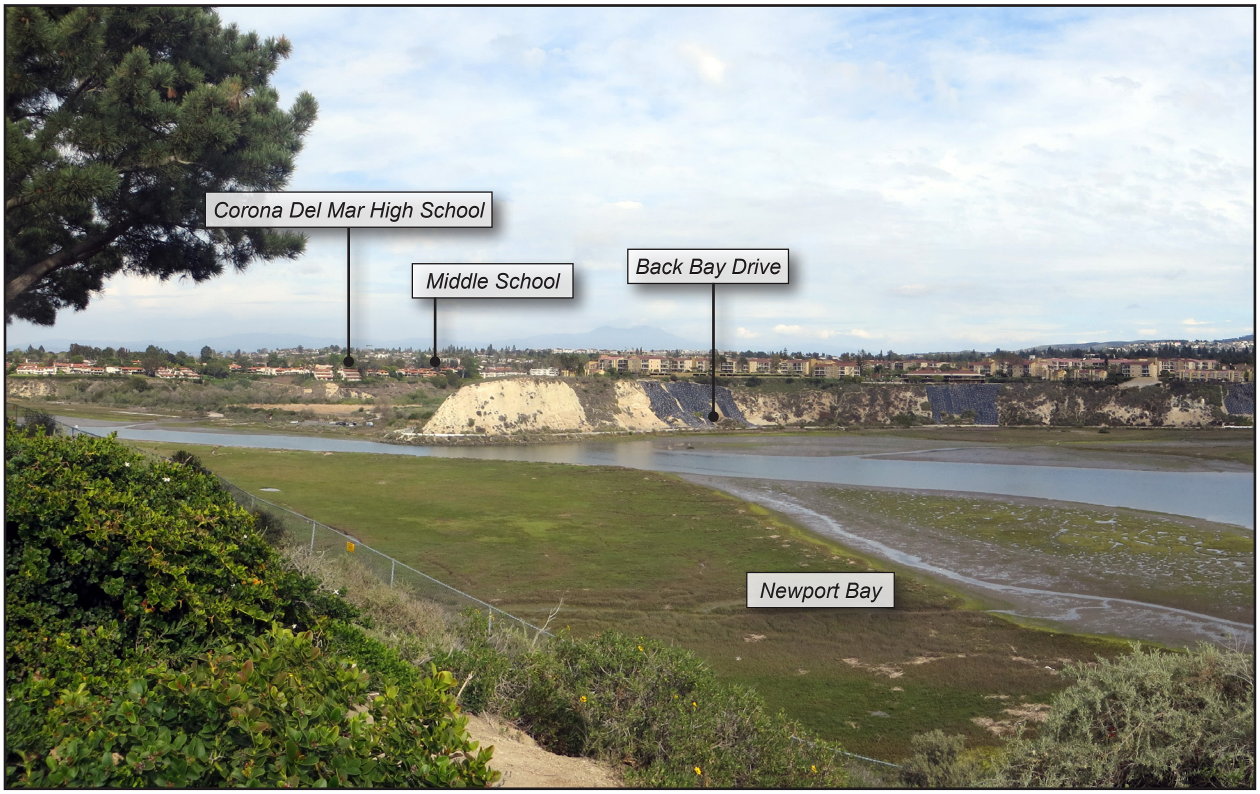
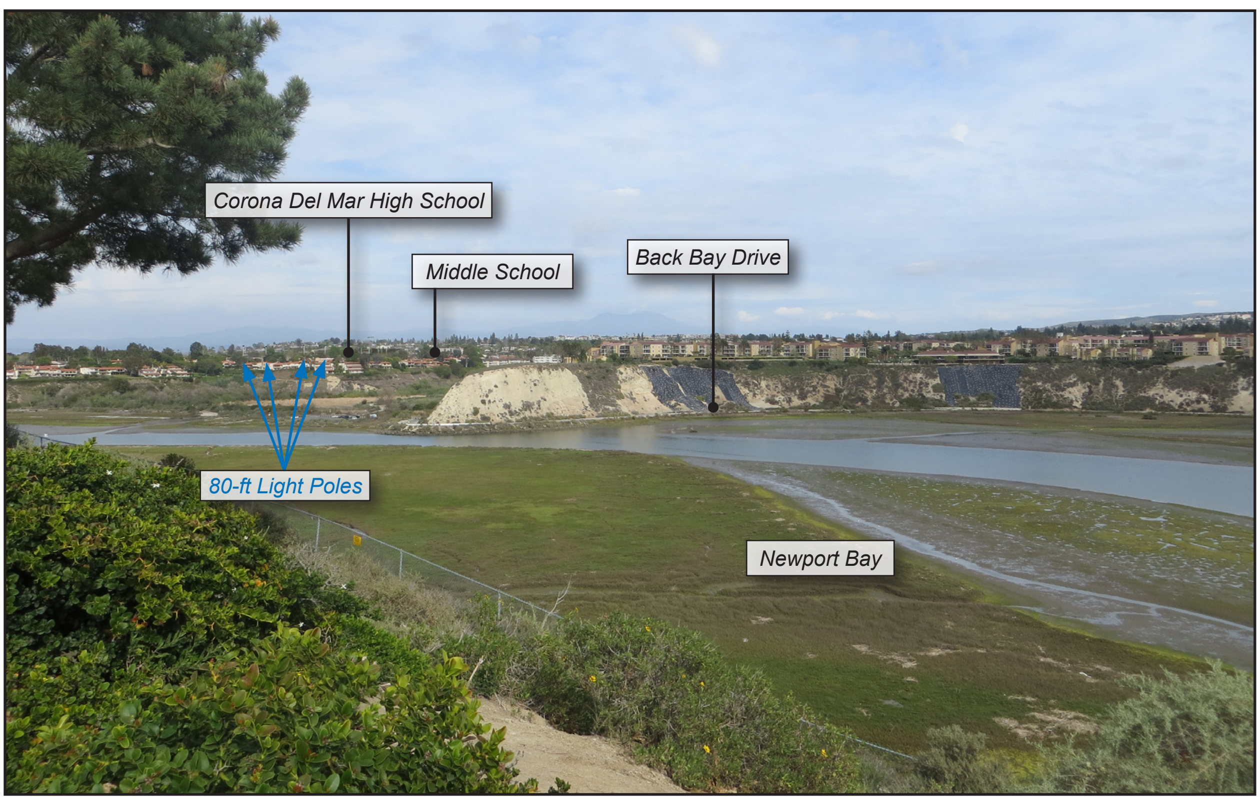
Figure 5.1-5 - Visual Simulation from Galaxy View Park



Existing View



Simulated View

5. Environmental Analysis
AESTHETICS

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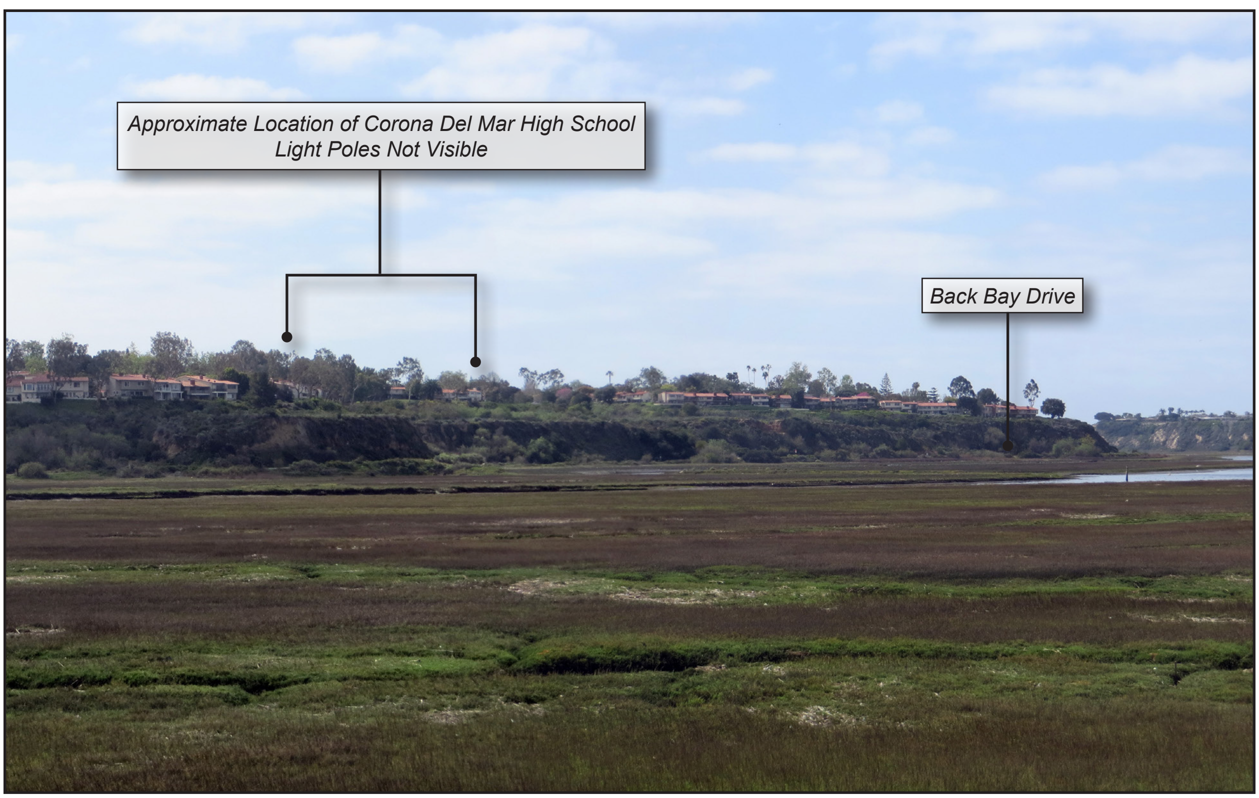
Figure 5.1-6 - Visual Simulation from Interpretive Center

5. Environmental Analysis

Existing View



Simulated View

5. Environmental Analysis
AESTHETICS

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Impact 5.1-2: The proposed project (Options A and B) would alter but not degrade the visual appearance of the project site. [Threshold AE-3]

Impact Analysis:

Sensitive receptors are generally associated with land uses such as residential, school, church, open space, and recreation. Sensitive receptors fall into three categories:

- **High sensitivity** exists when the views are rare, unique, or in other ways special to the region or locale. Sensitivity is generally higher for views seen by people who are driving for pleasure; people engaging in recreational activities such as hiking, biking, or camping; and residents. Residential viewers typically have extended viewing periods and are concerned about changes in the views from their homes; therefore, they are generally considered to have high visual sensitivity. Viewers using recreation trails and areas, scenic highways, and scenic overlooks are also usually assessed as having high visual sensitivity.

- **Medium sensitivity** exists when the views are secondary in importance or are similar to others in the region or locale.

- **Low sensitivity** exists when the public can be expected to have little or no concern about changes in the landscape. Sensitivity tends to be lower for views seen by people driving to and from work or as part of their work. Commuters and nonrecreational travelers typically have fleeting views and tend to focus on traffic, not on surrounding scenery; therefore, they are generally considered to have low visual sensitivity.

The proposed project under both options would change the aesthetics of the project site, therefore affecting the viewing experience from surrounding residential neighborhoods, which are considered to have high sensitivity. Adverse visual effects can include the loss of natural features or areas, the removal of urban features with aesthetic value, or the introduction of contrasting urban features into natural areas or urban settings. However, aesthetic impacts are subjective, and alteration does not automatically indicate adverse impact. Under both options, the new sports field(s) with nighttime sports lighting is compatible with the current use of the project site as a middle and high school campus sports field, and would maintain its visual character and function of supporting physical education for CdM students. The proposed project would not eliminate valuable natural features, remove aesthetically or architecturally valuable urban features, or introduce contrasting urban features into natural areas or urban settings. The existing sports field area is visible from some of the surrounding residential neighborhood and would continue to be visible. While new sports field structures would be introduced—such as four 80-foot light poles (under Option A) or four 80-foot poles and four 70-foot poles (under Option B), new bleachers replacing existing bleachers (both options), and concession/ restroom/storage building (only under Option A)—they are compatible uses that could be found in other high school sports fields and are not considered contrasting urban features that substantially degrade valuable natural areas or urban settings, as further discussed below.

5. Environmental Analysis
AESTHETICS

Visual Impact, Option A

Figure 5.1-7, *Daytime Visual Simulation Location Map, Community Views*, shows four daytime visual simulation locations (views 1 through 4) from the nearby residential neighborhoods for both Options A and B. The proposed project would be part of the existing campus setting and would not create contrasting structures or design elements that could contribute substantially to people's experience of the project site. Figure 5.1-8, *Option A: Visual Simulation from Residential Neighborhoods (View 1)*, shows existing and simulated views from the second-story balcony of a residential unit at the southwest corner of Mar Vista and Vista Del Oro (i.e., View Location 1 on Figure 5.1-7). The existing view shows the baseball netting, bleachers, baseball field, and weight-room building. The background view is Eastbluff Homeowner's Community, with elevations ranging from 130 feet to 211 feet above sea level. The proposed project under Option A would add four light poles, two field goal posts, 10-foot-high chain-link fencing, and new perimeter trees. Although the poles would exceed the background skyline view, the background view is not a unique or rare view, and such a change can be considered part of the changing urban built environment, compatible with the existing visual character of the project site with baseball netting and other athletic facilities typical of a high school sports field.

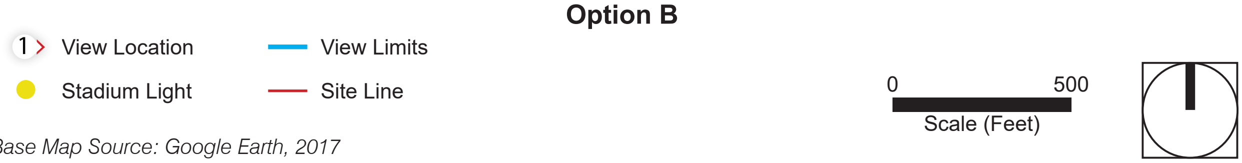
Figure 5.1-9, *Option A: Visual Simulation from Residential Neighborhoods (View 2)*, shows the existing view from the second-story window of a residential unit on Vista Del Oro, representing the closest sensitive receptors (i.e., View Location 2 from Figure 5.1-7). The background view shows urban developments in and around Fashion Island, partially shielded by the pepper trees. As shown, the nearest pole would be prominently visible, as would other sports field facilities. The proposed 664-seat bleachers with ADA ramps on the south side would be slightly larger than the existing 664-seat portable bleachers. No bleachers would be provided on the north side. Although implementation of the proposed project would alter the existing appearance from this sensitive receptor, the existing primary view to the south is of the CdM campus and urban development near Fashion Island, and there is no public scenic view or important natural viewshed to be obstructed by the proposed development. Visibility of new structures from residential neighborhoods is not considered a significant degradation of surrounding visual quality.

Figure 5.1-10, *Option A: Visual Simulation from Residential Neighborhoods (View 3)*, and Figure 5.1-11, *Option A: Visual Simulation from Residential Neighborhoods (View 4)*, show views from the second story of a residence east of Eastbluff Drive (i.e., View Locations 3 and 4 of Figure 5.1-7), where topography progressively slopes up toward the east. From View Location 3, the view is toward the Upper Newport Bay but the background view mostly shows trees in the Bluffs and the Plaza residential communities. From View Location 4, the background view shows trees and urban development in Costa Mesa. As shown in simulated views, the light poles and associated athletic facilities would be visible, although some would be shielded by existing and proposed landscaping and vegetation, and the poles exceed the backdrop skyline. However, visibility of proposed facilities and alteration of an existing skyline through erection of light poles would not necessarily result in significant degradation of aesthetic value. The project site is part of an urban environment with its own visual characteristic as a sports field, as represented by the existing athletic facilities. The visual experience from the east already includes artificial built-environment features, such as the existing sports field and rooftops of residential properties, and the changes would not obstruct or substantially changes the overall impression of the viewshed. Therefore, impacts would not be considered significant.

Figure 5.1-7 - Visual Simulation Location Map, Community Views

Option A

Option B



Base Map Source: Google Earth, 2017

5. Environmental Analysis
AESTHETICS

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Figure 5.1-8 - Option A: Visual Simulation from Residential Neighborhoods (View 1)

Existing View

Simulated View

5. Environmental Analysis
AESTHETICS

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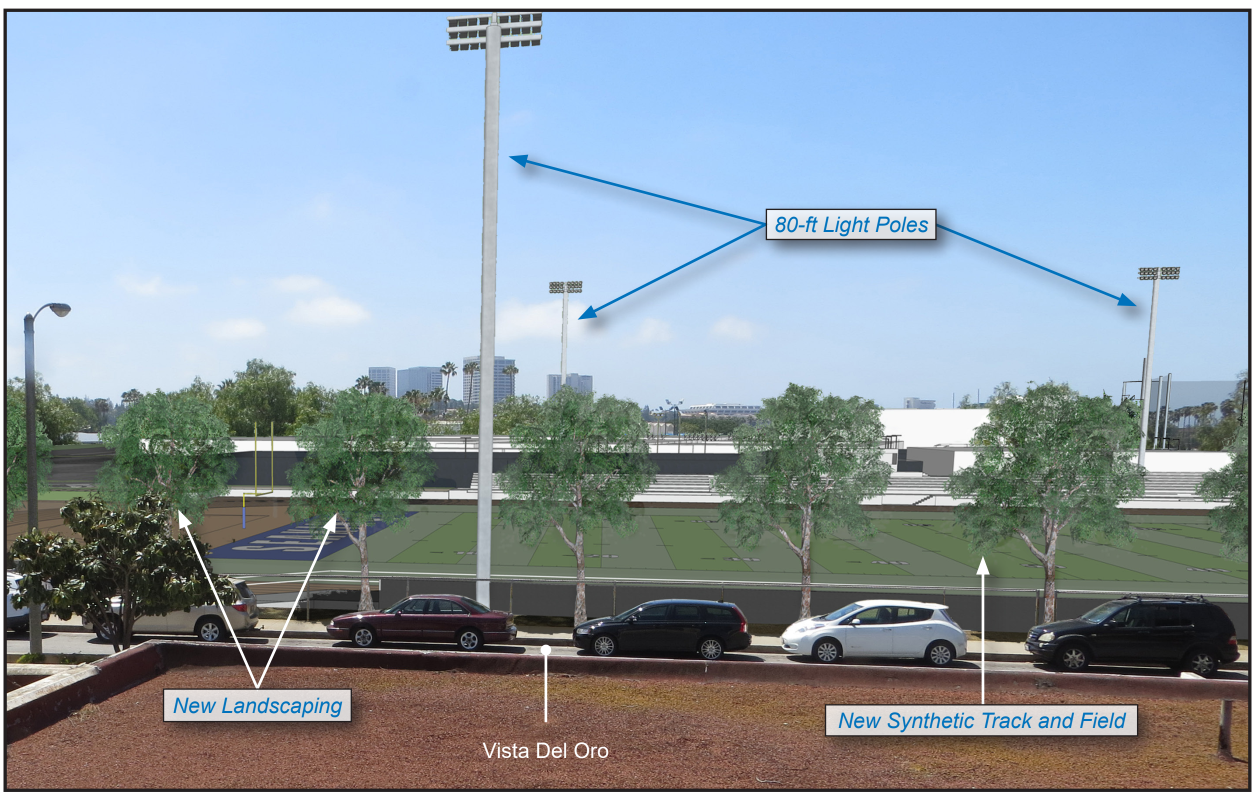
Figure 5.1-9 - Option A: Visual Simulation from Residential Neighborhoods (View 2)

Existing View



Simulated View

5. Environmental Analysis
AESTHETICS

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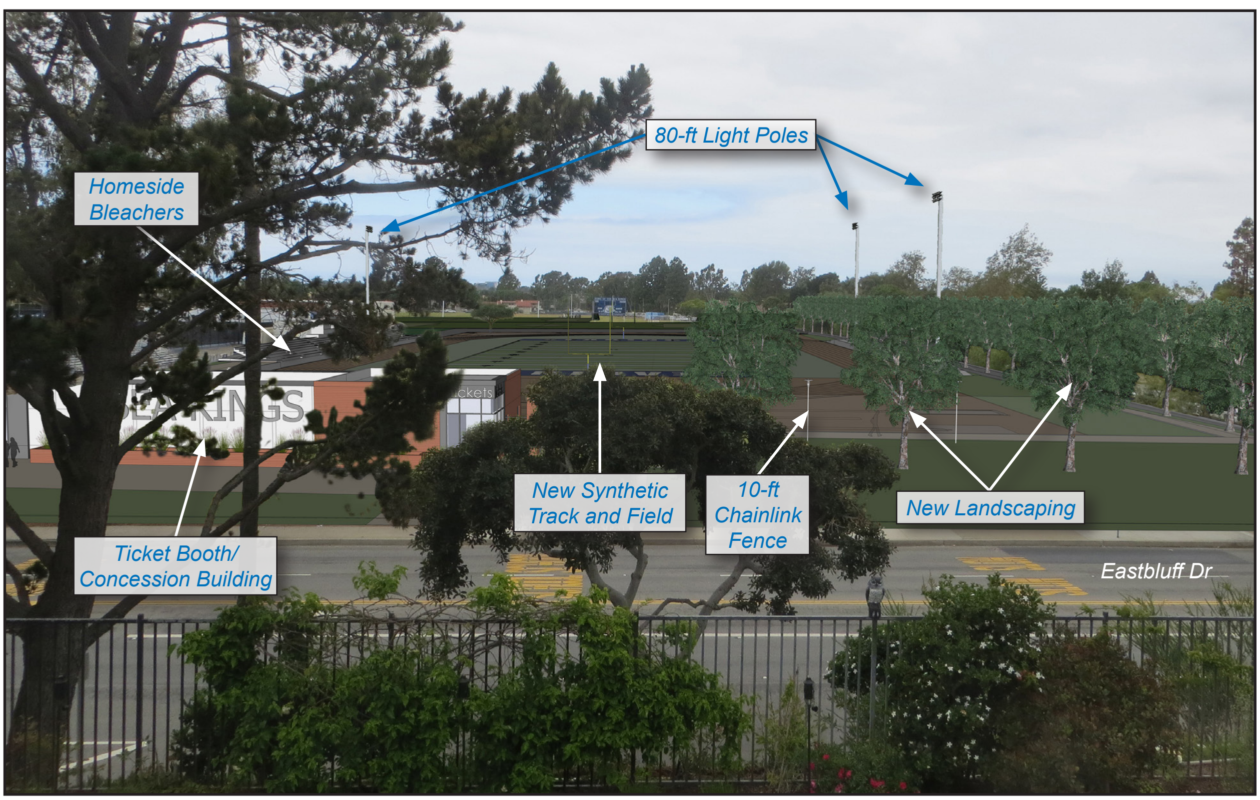
Figure 5.1-10 - Option A: Visual Simulation from Residential Neighborhoods (View 3)

Existing View



Simulated View

5. Environmental Analysis
AESTHETICS

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Figure 5.1-11 - Option A: Visual Simulation from Residential Neighborhoods (View 4)

Existing View

Simulated View

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In addition to direct changes to the visual character of the project site, the increased number of events at the sports field could result in accumulation of trash on the perimeter of the campus, causing indirect visual impacts to the surrounding streets. However, it should be noted that these events and athletic programs currently take place at other District facilities, and the District staff and school administrators are committed to and also experienced in cleaning up and maintaining District facilities. Therefore, although there could be a slight increase in trash volumes with the proposed project, substantial overall degradation of visual character is not anticipated. The District and school staffs are anticipated to continue to make their best efforts to keep the area clean before and after each event. Such indirect visual impacts would be considered less than significant.

Visual Impact, Option B

Figure 5.1-7 shows four daytime visual simulation locations from the nearby residential neighborhoods. Figure 5.1-12, *Option B: Visual Simulation from Residential Neighborhoods (View 1)*, shows existing and simulated views from the corner of Mar Vista and Vista Del Oro. The existing view shows the baseball netting, bleachers, baseball field, and weight-room building. The background view is Eastbluff Homeowner's Community with elevations ranging from 130 feet to 211 feet above sea level. Option B would add eight light poles, two goal posts, 10-foot-tall chain-link fencing, and new perimeter trees. Although the poles would exceed the background skyline view, the background view is not a unique view, and such a change can be considered part of the changing urban built environment, compatible with the existing visual character of the project site with baseball netting and other athletic facilities typical of a high school sports field.

Figures 5.1-13a and 5.1-13b, *Option B: Visual Simulation from Residential Neighborhoods (View 2)*, show the existing view from a second story of a residence on Vista Del Oro, representing the closest sensitive receptors. The background view shows urban developments in and around Fashion Island. As shown, the nearest pole would be prominently visible, as would other sports field facilities. Although implementation of the proposed project would alter the existing appearance from this sensitive receptor, the existing primary view to the south is of the CdM campus and urban development near Fashion Island, and there is no public scenic view or important natural viewshed to be obstructed by the proposed development. Visibility of new structures from residential neighborhoods is not considered a significant degradation of surrounding visual quality.

Figure 5.1-14, *Option B: Visual Simulation from Residential Neighborhoods (View 3)*, and Figure 5.1-15, *Option B: Visual Simulation from Residential Neighborhoods (View 4)*, show views from the second story of a residence east of Eastbluff Drive (i.e., View Location 3 and View Location 4 from Figure 5.1-7), where topography progressively slopes up toward the east. As shown, the light poles and the associated athletic facilities would be visible, although some would be shielded by existing and proposed landscaping and vegetation, and the poles exceed the backdrop skyline. However, visibility of proposed facilities and alteration of an existing skyline through erection of eight light poles would not necessarily result in significant degradation of aesthetic value. The project site is part of an urban environment with its own visual characteristic as a sports field, as represented by the existing athletic facilities. The visual experience from the east already includes artificial built-environment features, such as the existing sports field and rooftops of residential properties, and the changes would not obstruct or substantially change the overall impression of the viewshed. Therefore, impacts would not be considered significant.

5. Environmental Analysis
AESTHETICS

The proposed project would not have a significant visual impact under either Option A or B. However, in comparing the two, Option B has four additional 70-foot lights, increasing the number of visual elements associated with the project and increasing the number of vantage points from which these elements are visible in the community.

Impact 5.1-3: The proposed project (Options A and B) would generate new sources of light and glare. [Threshold AE-4]

Impact Analysis: Nighttime illumination and glare analysis addresses the effects of a project's nighttime lighting on adjoining uses and areas. Light and glare impacts are determined through a comparison of the existing light sources with the proposed lighting plan or policies. If the project has the potential to generate spill light on adjacent sensitive receptors or generate glare at receptors in the vicinity of the site, mitigation measures can be provided to reduce potential impacts, as necessary. The following provides relevant lighting assessment terminology used in this analysis.

Foot-candle. The unit of measure expressing the quantity of light on a surface. One foot-candle is the illuminance produced by a candle on a surface of one square foot from a distance of one foot. The general benchmarks for light levels are shown in Table 5.1-1.

Table 5.1-1 General Light Levels Benchmark

Outdoor Light	Foot-candles
Direct Sunlight	10,000
Full Daylight	1,000
Overcast Day	100
Dusk	10
Twilight	1
Deep Twilight	0.1
Full Moon	0.01
Quarter Moon	0.001
Moonless Night	0.0001
Overcast Night	0.00001
Gas station canopies	25–30
Typical neighborhood streetlight	1.0–5.0

Source: NOAO 2016.

Figure 5.1-12 - Option B: Visual Simulation from Residential Neighborhoods (View 1)

Existing View

Simulated View

5. Environmental Analysis
AESTHETICS

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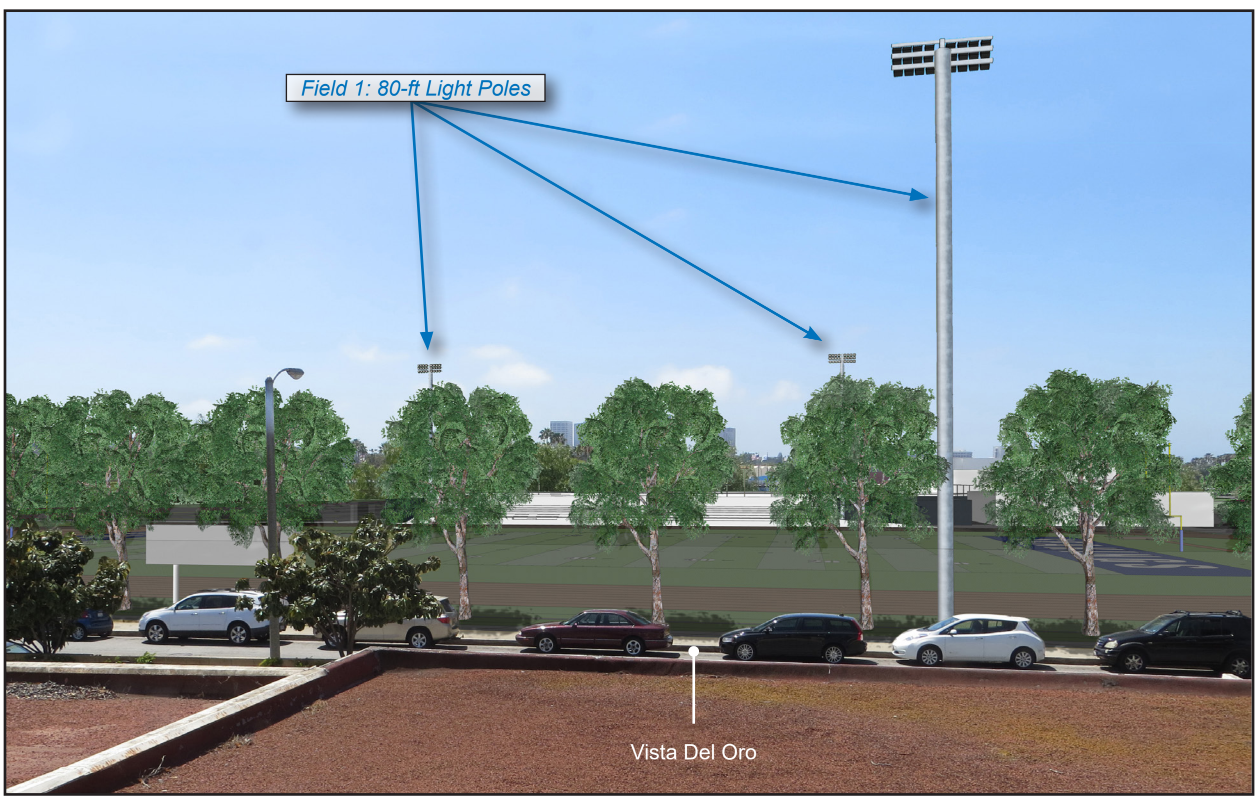
Figure 5.1-13a - Option B: Visual Simulation from Residential Neighborhoods (View 2)

Existing View



Simulated View

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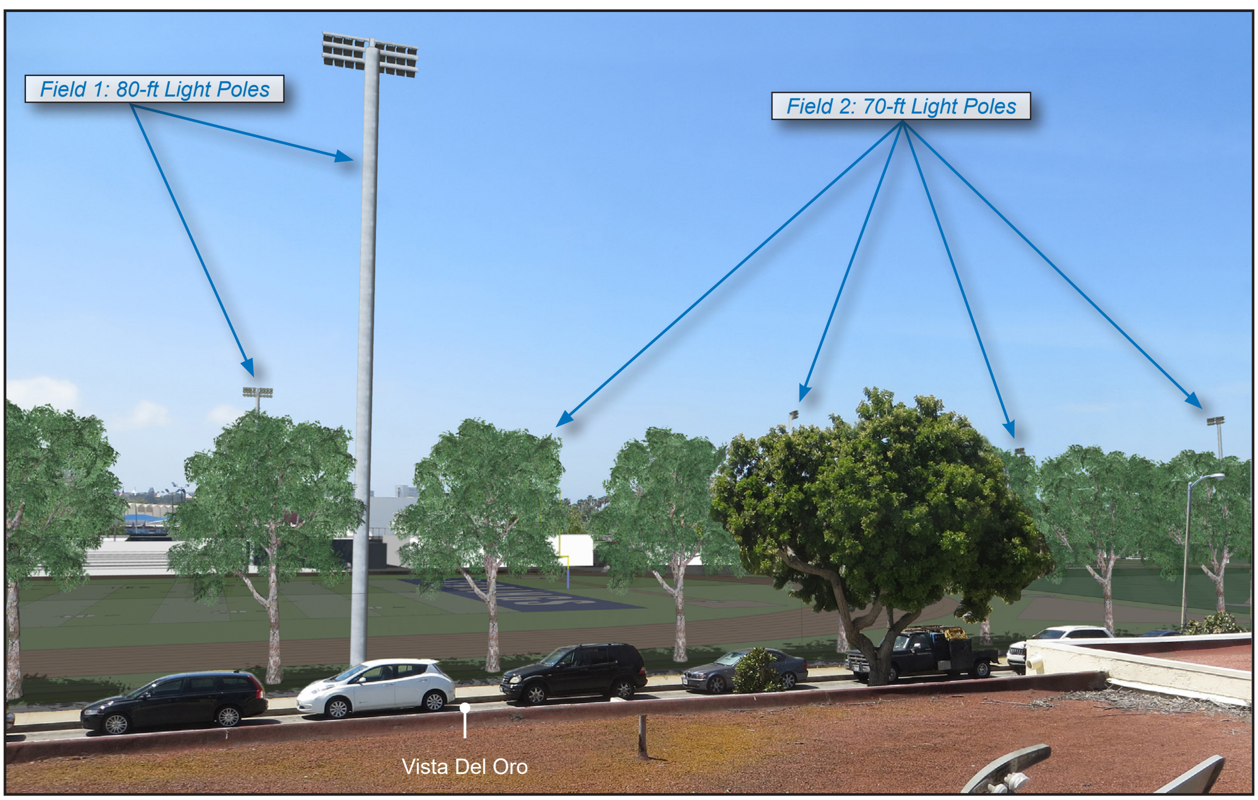
Figure 5.1-13b - Option B: Visual Simulation from Residential Neighborhoods (View 2)

Existing View



Simulated View

5. Environmental Analysis
AESTHETICS

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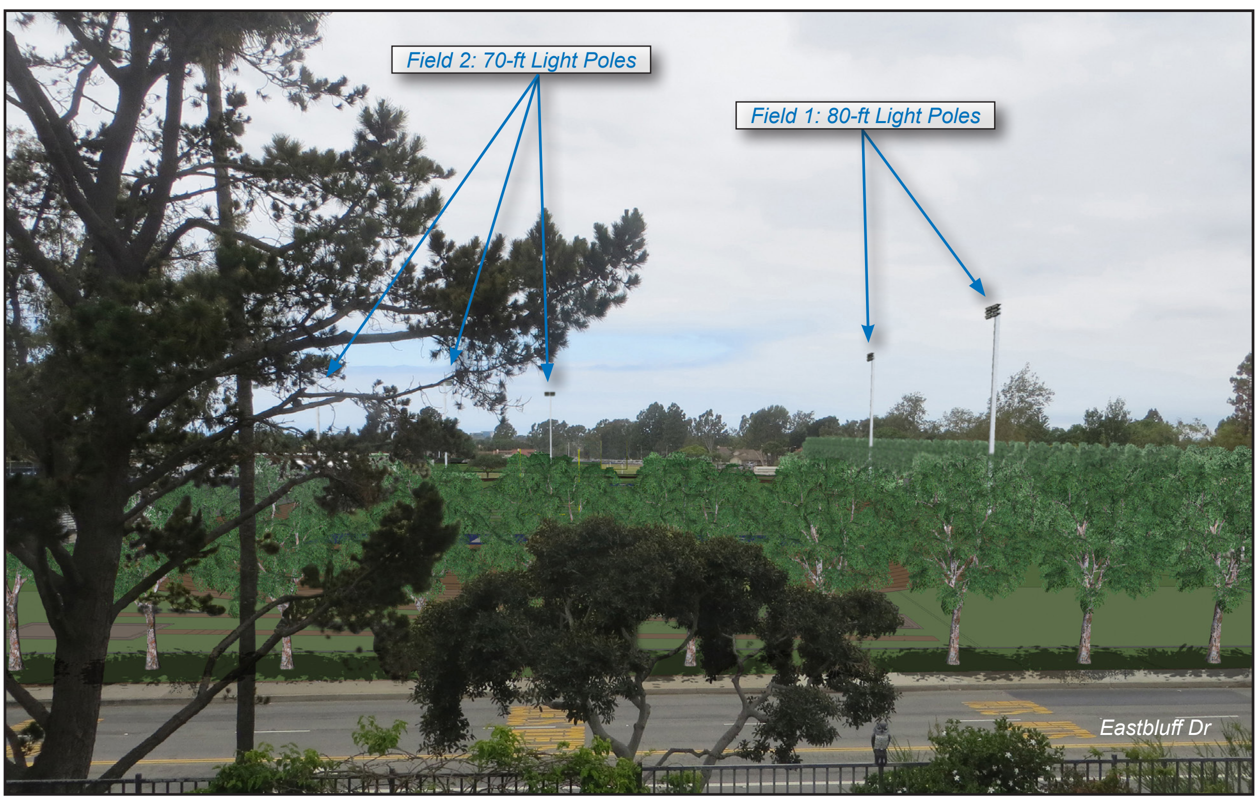
Figure 5.1-14 - Option B: Visual Simulation from Residential Neighborhoods (View 3)

Existing View



Simulated View

5. Environmental Analysis
AESTHETICS

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Figure 5.1-15 - Option B: Visual Simulation from Residential Neighborhoods (View 4)

Existing View

Simulated View

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Horizontal foot-candle. The amount of light received on a horizontal surface such as a roadway or parking lot pavement.

Vertical foot-candle. The amount of light received on a vertical surface such as a billboard or building façade.

Lumen. A unit of measure for quantifying the amount of light energy emitted by a light source. In other words, foot-candles measure the brightness of the light at the illuminated object, and lumens measure the amount of light radiated by the light source.

Luminaire ("light fixture"). The complete lighting unit (fixture) consists of a lamp—or lamps and ballast(s)—and the parts that distribute the light (reflector, lens, diffuser), position and protect the lamps, and connect the lamps to the power supply. An important component of luminaires is their shielding:

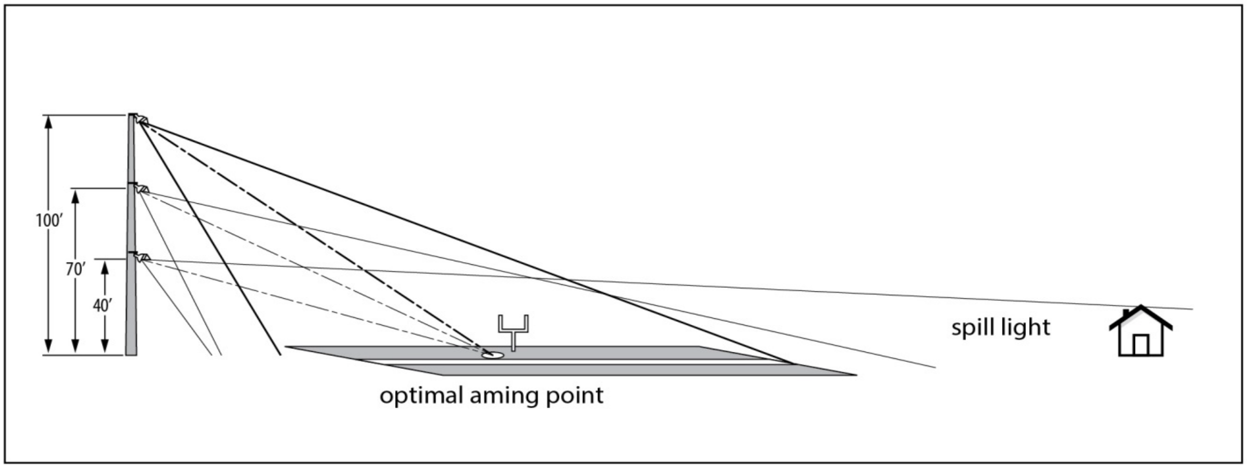
- ***Fully shielded.*** A luminaire emitting no light above the horizontal plane.
- ***Shielded.*** A luminaire emitting less than 2 percent of its light above the horizontal plane.
- ***Partly shielded.*** A luminaire emitting less than 10 percent of its light above the horizontal plane.
- ***Unshielded.*** A luminaire that may emit light in any direction.

Spill light. Light from a lighting installation that falls outside the boundaries of the property for which it is intended.

Light trespass. Spill light that, because of quantitative, directional, or type of light, causes annoyance, discomfort, or loss in visual performance and visibility. Light trespass is light cast where it is not wanted or needed, such as light from a streetlight or a floodlight that illuminates someone's bedroom at night, making it difficult to sleep. As a general rule, taller poles allow fixtures to be aimed more directly on the playing surface, which reduces the amount of light spilling into surrounding areas. Proper fixture angles ensure even light distribution across the playing area and reduce spill light. See Illustration AE-1*, Light Trespass*, below, adapted from Musco Lighting (Musco 2015).

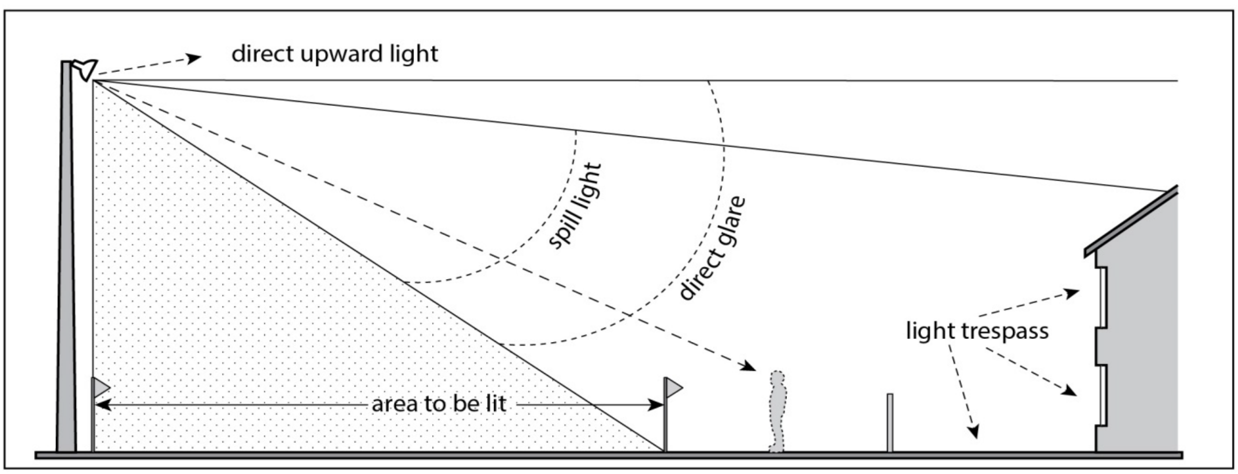
5. Environmental Analysis
AESTHETICS

Illustration AE-1. Light Trespass



Glare. Light that causes visual discomfort or disability or a loss of visual performance when a bright object appears against a dark background. Glare can be generated by building-exterior materials, surface-paving materials, vehicles traveling or parked on roads and driveways, and stadium lights. Any highly reflective façade material is a concern because buildings can reflect bright sunrays. The concepts of spill light, direct glare, and light trespass are illustrated in Illustration AE-2, *Glare*, below, adapted from Institution of Lighting Engineers (ILE 2003).

Illustration AE-2. Glare



The District recognizes that light trespass varies according to surrounding environmental characteristics. Areas that are more rural in character are more susceptible to impacts resulting from the installation of new artificial lighting sources, whereas urbanized areas are characterized by a large number of existing artificial lighting sources and are less susceptible to adverse effects associated with new artificial lighting sources. Therefore, lighting standards vary according to the amount and intensity of existing light sources in the area.

In order to determine appropriate lighting standards that reflect the existing lighting conditions, land uses are categorized into four lighting zones (IES 2011):

- **LZ1: Low ambient lighting.** Areas where lighting might adversely affect flora and fauna or disturb the character of the area. The vision of human residents and users is adapted to low light levels. Lighting may be used for safety and convenience, but it is not necessarily uniform or continuous. After curfew, most lighting should be extinguished or reduced as activity levels decline.

- **LZ2: Moderate ambient lighting.** Areas of human activity where the vision of human residents and users is adapted to moderate light levels. Lighting may typically be used for safety and convenience, but it is not necessarily uniform or continuous. After curfew, lighting may be extinguished or reduced as activity levels decline.

- **LZ3: Moderately high ambient lighting.** Areas of human activity where the vision of human residents and users is adapted to moderately high light levels. Lighting is generally desired for safety, security, and/or convenience, and it is often uniform and/or continuous. After curfew, lighting may be extinguished or reduced in most areas as activity levels decline.

- **LZ4: High ambient lighting.** Areas of human activity where the vision of human residents and users is adapted to high light levels. Lighting is generally considered necessary for safety, security, and/or convenience, and it is mostly uniform and/or continuous. After curfew, lighting may be extinguished or reduced in some areas as activity levels decline.

The project site is identified as LZ3 based on population figures from the 2000 Census and the above IES lighting zone description.

Light Trespass Impact, Options A and B

Illustration AE-3, *Hours of Field Lighting by Time of Year*, shows the maximum duration of hours the field lights would be on throughout the year based on the anticipated use of the field(s) and position of the sun. "Practice days" occur frequently and "game days" are rare, so the typical use of the field lights would be a maximum of three hours between 5:00 PM and 8:00 PM during winter months. Practices would extend only to 8 PM under both Options A and B, so this exhibit applies to both.

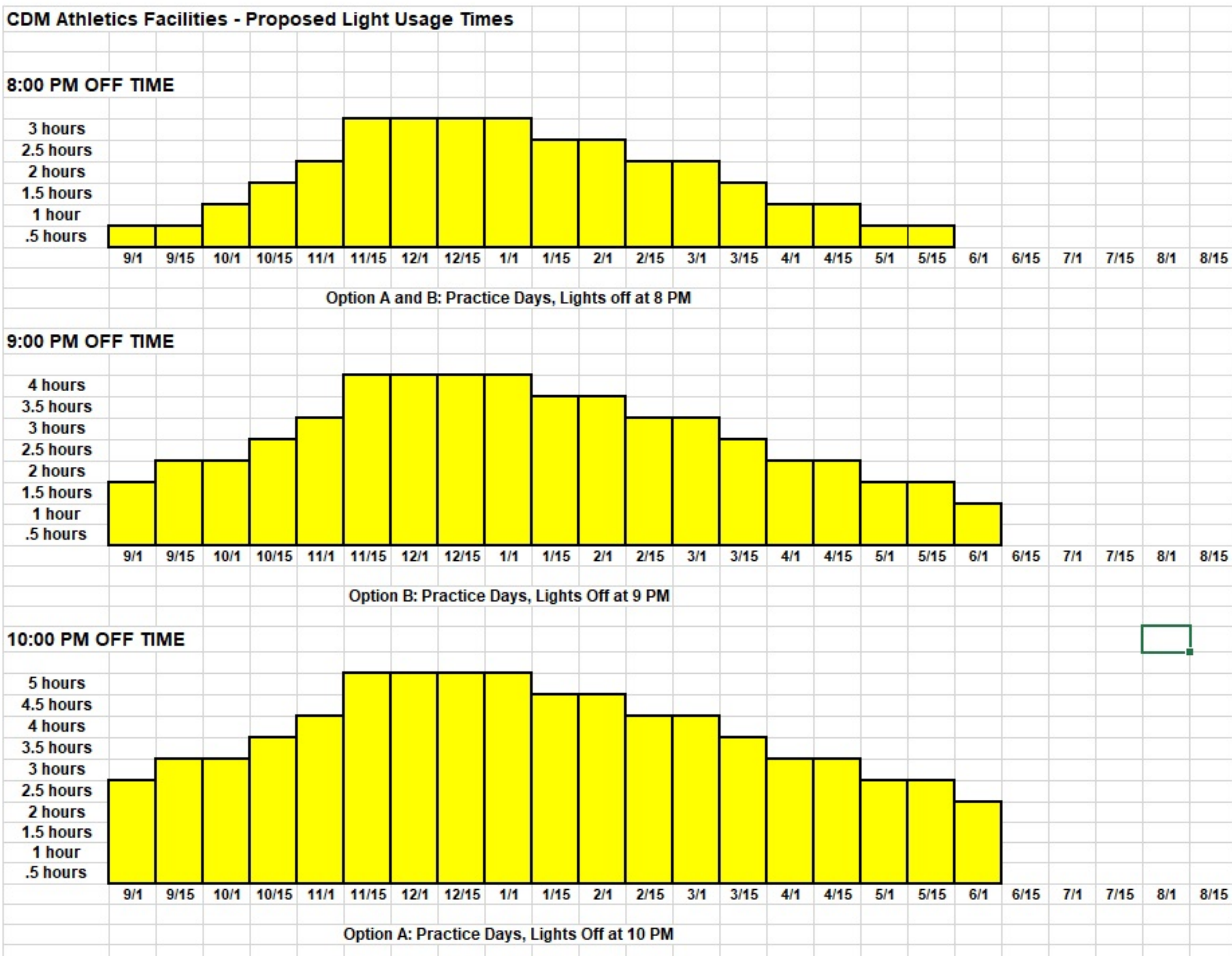
Option A would allow games and events to extend to 10:00 PM on one field. In this circumstance, the maximum duration of lighting would be five hours during the winter (i.e., 5:00 PM to 10:00 PM), shown in the third graph of Illustration AE-3. Lighting would be limited to Field 1 as the second field would not be constructed under Option A.

Option B would allow games and events to extend to 9:00 PM on two fields. During game days under Option B, the maximum duration of hours the fields may be lit would be four hours during the winter (5:00 PM to 9:00 PM), as shown in the second graph of Illustration AE-3.

5. Environmental Analysis

AESTHETICS

Illustration AE-3. Hours of Field Lighting by Time of Year



The proposed 70- to 80-foot-tall light poles provide the minimum height required to effectively illuminate Field 1 (both options) and Field 2 (Option B) with an average maximum of 50 foot-candles (fc). It is not possible to completely eliminate spillover of light and glare onto adjoining properties and roadways, but the proposed pole height allows the best control to minimize spillover light. Higher mounting heights are generally more effective in controlling spill light, because a more controlled and/or narrower beam may be used, making it easier to confine the light to the design area. Lower mounting heights increase the spill light beyond the property boundaries. Lower mounting heights make bright parts of the floodlights more visible from positions outside the property boundary, which can increase glare.

Horizontal Light Levels, Option A

Figure 5.1-16, *Option A: Spill Light Levels (Horizontal)*, shows spill light levels from the 56 luminaires on four 80-foot lights poles with an average maximum of 50 fc on horizontal surface. The figure illustrates horizontal spill light levels in foot-candles on a 30- by 30-foot grid. As described earlier, horizontal foot-candles represent the light level received on a horizontal surface such as a sports field, roadway, or parking lot pavement. As shown, the proposed system provides intended lighting levels on the field, but spill light quickly dissipates. For example, the horizontal light levels between the two north side poles (i.e., F1 and F2) range from 7.5 fc to 3.5 fc; in the next 30-foot grid to the north along Vista Del Oro, the light levels range from 1.1 fc to 0.8 fc; and along the next 30-foot grid that falls on the residential parking garage driveway area, the levels range from a minimum 0.1 fc to a maximum of 0.4 fc. Therefore, at 150 feet from the edge of the football field, the maximum level would be 0.4 fc and the minimum level would be 0.1 fc north of Vista Del Oro (see Figure 5.1-17, *Option A: Spill Light at 150 Feet [Horizontal])*. Comparative light levels are shown in Table 5.1-1, *Light Levels*, and levels from 0.1 fc to 0.4 fc would be between the deep twilight (0.1 fc) to twilight (1 fc) and would not result in substantial light nuisance.

Moreover, Table 5.1-2, *Average Maintained Illumination at Pavement by Pedestrian Area Classification*, shows recommended average illuminance for the intersection of continuously lighted urban streets, and the most conservative light level for local streets is 0.8 fc. Therefore, a maximum of 0.4 fc near the residential property boundary, which is far below the 0.8 fc figure, further demonstrates that the project would not result in a substantial light trespass impact. This table is intended for light levels at local intersections, illustrating that 0.8 fc is a very low light level even for local streets, where high level is 1.8 fc and medium is 1.4 fc.

Table 5.1-2 Average Maintained Illumination at Pavement by Pedestrian Area Classification

Functional Classification	Average Maintained Illumination at Pavement by Pedestrian Area Classification		
	High (fc)	Medium (fc)	Low (fc)
Major/Major	3.4	2.6	1.8
Major/Collector	2.9	2.2	1.5
Major/Local	2.6	2.0	1.3
Collector/Collector	2.4	1.8	1.2
Collector/Local	2.1	1.6	1.0
Local/Local	**1.8**	**1.4**	**0.8**

Source: IES 2011.

Furthermore, as shown in Figure 5.1-16, *Option A: Spill Light Levels (Horizontal)*, the lighting levels near the 12 residential properties most impacted by spill light north of Vista Del Oro average 0.23 fc. Table 5.1-3 shows the recommended values for low pedestrian conflict areas for different residential areas from rural/semirural setting to medium density residential. As shown, the average light level is lower than the recommended average value under the medium density residential setting of 0.4 fc, and even lower than the recommended level for low density residential setting of 0.3 fc. It should be noted that medium density residential refers to 2.1 to 6.0 dwelling units per acre, and low density residential refers to 2 or fewer dwelling units per acre. The 12 units closest to the light poles are in Tract Map. 5798, which provides 106 lots in 15.84 acres, or 6.69 dwelling units per acre, which exceeds the medium density residential setting (Newport Beach 2017). Therefore, recommended values have been provided for reference purposes only to demonstrate that the anticipated light levels are very low compared to different conservative standards.

5. Environmental Analysis
AESTHETICS

Table 5.1-3 Recommended Values for Low Pedestrian Conflict Areas

	Maintained Illuminance Values for Walkways		
	E_{avg} (lux/fc)	EV_{min} (lux/fc)	E_{avg}/E_{min}*
Rural/Semi-Rural Areas	2.0/0.2	0.6/0.06	10.0
Low Density Residential (2 or fewer dwelling units per acre)	3.0/0.3	0.8/08	6.0
Medium Density Residential (2.1 to 6.0 dwelling units per acre)	4.0/0.4	1.0/0.1	4.0

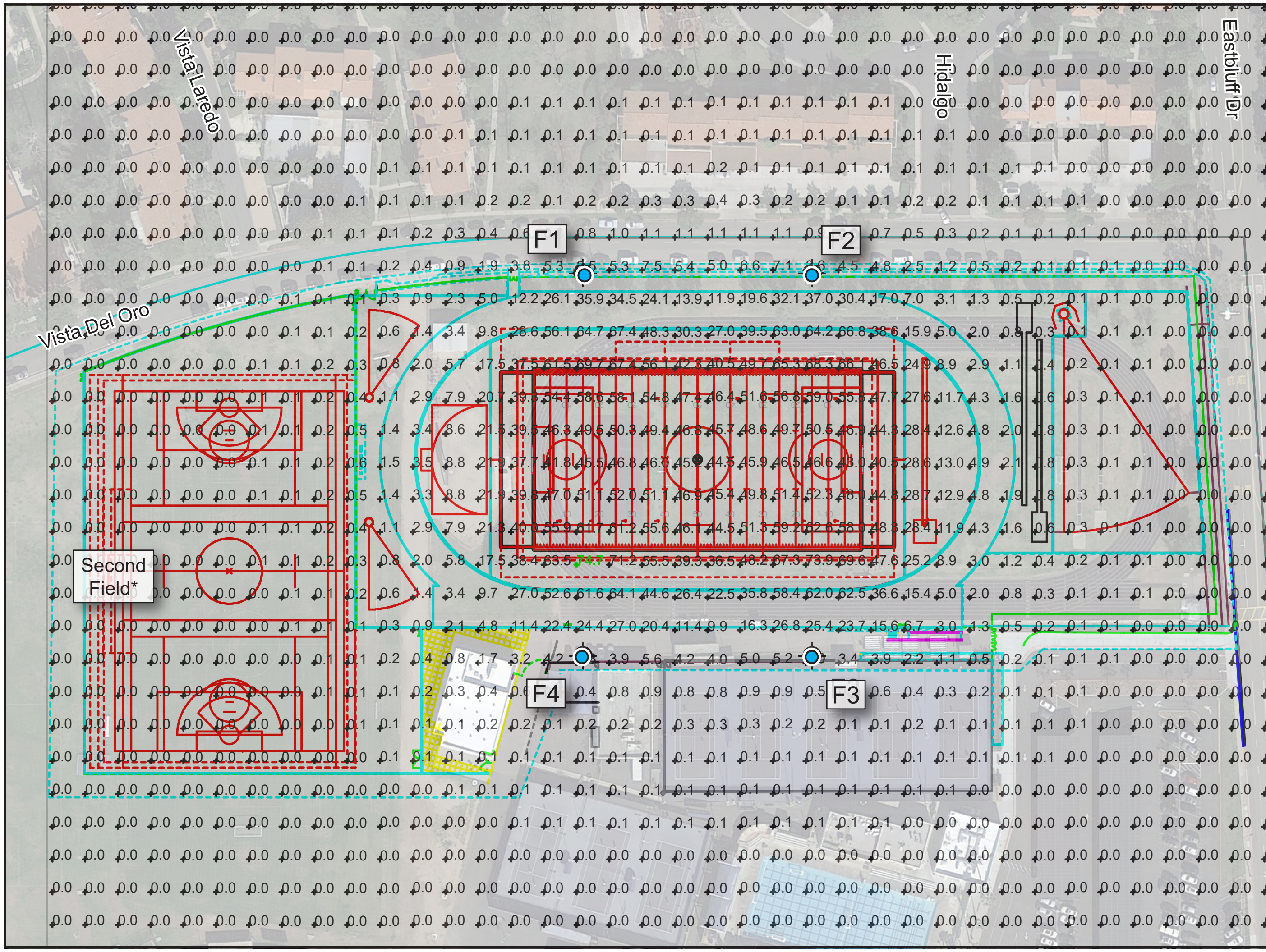
Source: ANSI/IES RP-8-14 Section 4.2.1 – Pedestrian Areas and Bikeways
E_{avg} – minimum maintained average horizontal illuminance at pavement
E_{min} – minimum horizontal illuminance at pavement
EV_{min} – minimum vertical illuminance at 1.5 m above pavement
* Horizontal only

Horizontal Light Levels, Option B

Figure 5.1-18, *Option B: Spill Light Levels (Horizontal)*, shows spill light levels from the 56 luminaires on four 80-foot light poles on Field 1 and 48 luminaires on four 70-foot light poles on Field 2. Under both Option A and Option B, the same type, number, and height of light poles would be provided. Due to the configuration of Field 1 under Option B, the distance between the nearest residences to the light poles would increase by 10 feet, from 100 feet to 110 feet. Therefore, corresponding spill light at the nearest residences would be reduced compared Option A as the lights are moved 10 feet to the south (see Figure 4-7, *Distances between Lights and Nearest Residences)*. Figure 5.1-18 illustrates horizontal spill light levels in foot-candles on a 30- by 30-foot grid. As shown, the proposed system provides intended lighting levels on the field, but spill light quickly dissipates. For example, the horizontal light levels between the two north side poles of Field 1 (i.e., F1 and F2) range from 16.3 fc to 3.8 fc; approximately 60 feet north of these light poles, spill light levels decrease to 0.5 fc to 0.1 fc range. In the next 30-foot grid that falls on the nearest residences north of Vista Del Oro, the levels range from a minimum 0.1 fc to 0.2 fc. At 150 feet from the edge of the football field, the maximum level would be 0.27 fc, and the minimum level would be 0.11 fc north of Vista Del Oro (see Figure 5.1-19, *Option B: Spill Light at 150 Feet [Horizontal]*). Comparative light levels are shown in Table 5.1-1, and levels from 0.1 fc to 0.27 fc would be between deep twilight (0.1 fc) and twilight (1 fc) and would not result in substantial light nuisance. The spill light levels along eastside of Eastbluff Drive would be 0.0 fc and 0.1 fc.

Under Option B, spill light levels at the nearest residences to north ranged from a maximum of 0.27 fc to 0.1 fc. Compared to Option A, where spill light levels at the nearest residences ranged from a maximum of 0.4 fc to 0.1 fc, the overall spill light impacts under Option B would be less. No significant spill light impact would occur.

Figure 5.1-16 - Option A: Spill Light Levels (Horizontal)



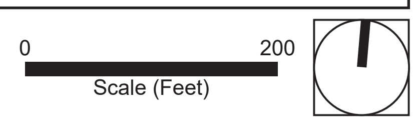
EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	F1-F4	80'	-	80'	1500W MZ	14	14	0
4	TOTALS					56	56	0

GRID SUMMARY	
Name:	**Blanket Grid**
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

F1 Light Posts (4)

NOTE: Light levels shown in foot-candles. See Table 5.1-1 for comparative light levels.

*This second field is not part of Option A.



Base Map Source: Google Earth Pro, 2016; Lighting Data: Musco, 2016

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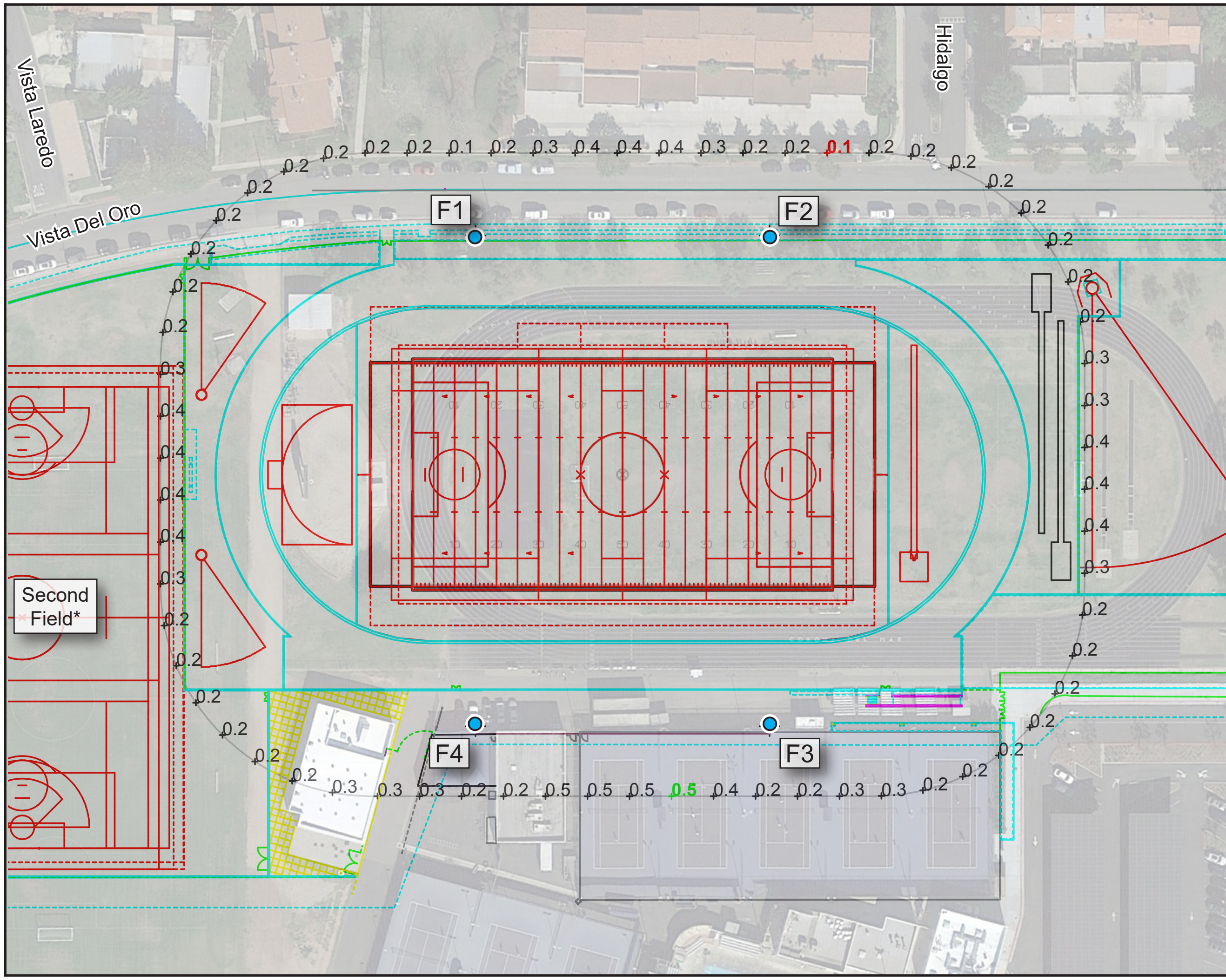
Figure 5.1-17 - Option A: Spill Light at 150 Feet (Horizontal)



EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	F1-F4	80'	-	80'	1500W MZ	14	14	0
4	TOTALS					56	56	0

GRID SUMMARY	
Name:	**Spill @ 150'**
Spacing:	30.0'
Height:	3.0' above grade

● F1 Light Posts (4)

NOTE: Light levels shown in foot-candles. See Table 5.1-1 for comparative light levels.

*This second field is not part of Option A.

0 150
Scale (Feet)

Base Map Source: Google Earth Pro, 2016; Lighting Data: Musco, 2016

5. Environmental Analysis
AESTHETICS

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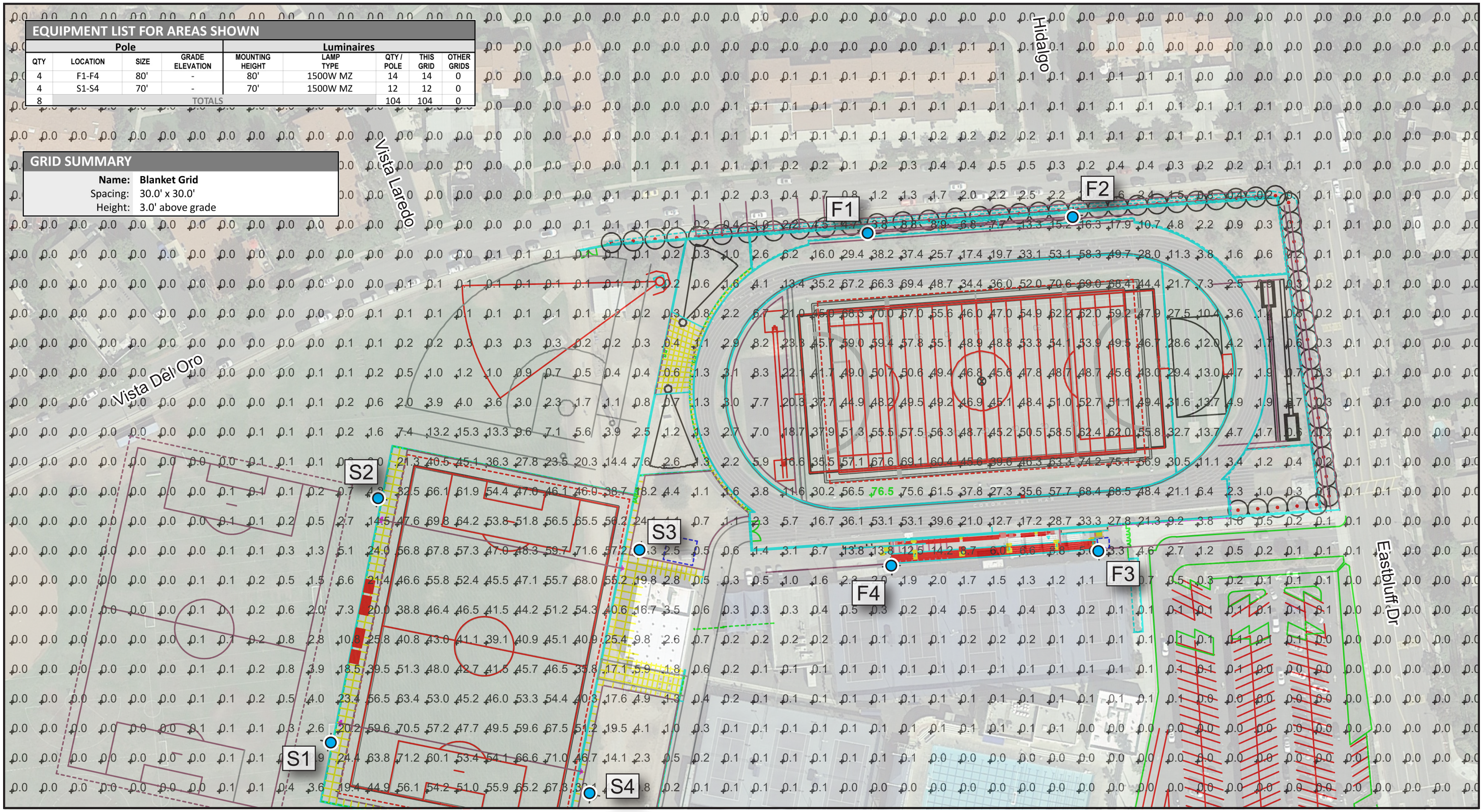
Figure 5.1-18 - Option B: Spill Light Levels (Horizontal)



F1/S1 Light Posts (8)

NOTE: Light levels shown in foot-candles. See Table 5.1-1 for comparative light levels.

0 200 Scale (Feet)

Base Map Source: Google Earth Pro, 2017; Lighting Data: Musco, 2017

5. Environmental Analysis
AESTHETICS

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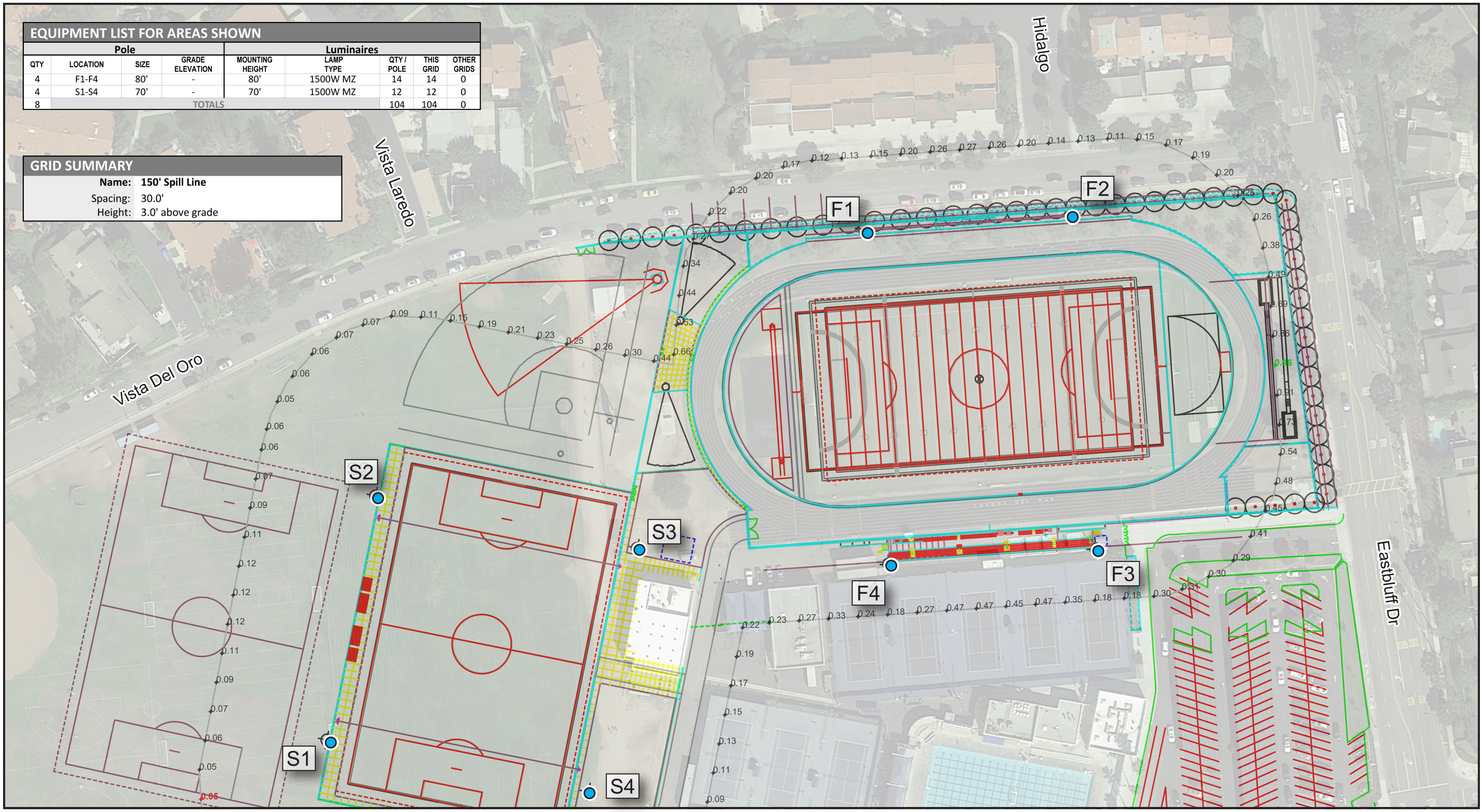
Figure 5.1-19 - Option B: Spill Light at 150 Feet (Horizontal)



EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	F1-F4	80'	-	80'	1500W MZ	14	14	0
4	S1-S4	70'	-	70'	1500W MZ	12	12	0
8	TOTALS					104	104	0

GRID SUMMARY

Name:	**150' Spill Line**
Spacing:	30.0'
Height:	3.0' above grade

F1/S1 Light Posts (8)

NOTE: Light levels shown in foot-candles. See Table 5.1-1 for comparative light levels.

0 200 Scale (Feet)

Base Map Source: Google Earth Pro, 2017; Lighting Data: Musco, 2017

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Vertical Light Levels, Option A

A vertical foot-candle represents light levels received on a vertical surface such as a building façade. Because the City of Newport Beach does not have a significance threshold for spill light impacts, this analysis used the conservative vertical light trespass standards shown in Table 5.1-4, *Light Trespass, Vertical Illumination*. The project site is in LZ3 with moderately high ambient lighting, and light trespass impacts could be considered significant if the vertical illuminance exceeds 0.8 fc. As shown in Figure 5.1-20, *Option A: Spill Light Levels (Vertical)*, the light levels between the north side poles range from 8.2 fc to 3.6 fc, drop to a range of 1.8 fc to 1.4 fc along Vista Del Oro, and further decrease to a range of 1.0 fc to 0.7 fc on the residential parking garage driveway area. As the light beams are received on the vertical surface of the parking garage approximately 90 feet from the northern poles, the light levels would be in the 0.7 fc to 0.4 fc range, not exceeding the 0.8 fc vertical threshold level shown in Table 5.1-4. The light levels received on the residential structure near Vista Laredo to the northwest of the light pole would be 0.5 fc to 0.7 fc, and no significant impact is anticipated.

Table 5.1-4 Light Trespass, Vertical Illuminance

Lighting Zone	Foot Candle
LZ1	0.1 fc
LZ2	0.3 fc
LZ3	0.8 fc
LZ4	1.5 fc

Source: IES 2011.

Vertical Light Levels, Option B

As shown in Figure 5.1-21, *Option B: Spill Light Levels (Vertical)*, the light beams received on the vertical surface of the nearest residential parking garage approximately 110 feet from the northern poles would be a maximum of 0.5 fc, not exceeding the 0.8 fc vertical threshold shown in Table 5.1-4. The vertical light levels received on other residential structures east of Hidalgo would be 0.4 fc and near Vista Laredo to the northwest of the Field 1 light pole would be 0.3 fc. Therefore, vertical spill light levels under Option B would not exceed the 0.8 fc threshold level, and impacts would be less than significant.

LED Lights

LED lights emit directional light over a target area, whereas metal halide lights emit omnidirectional light that needs to be reflected and/or redirected to the target area. Therefore, LED lights provide more sharply focused light with less spill light. Unlike metal halide lights, LED lights do not require a warming period to reach full operating power and can respond almost instantaneously to different lighting-level setting options.

Although LED lights would provide more operating efficiency over metal halide lights and also provide additional spill light reduction, the spill light levels under the proposed project would not result in significant light trespass impact, and an alternative LED lighting technology would not be required. The proposed metal halide lighting system would not result in a significant light and glare impact; therefore the LED lighting technology is not necessary to change the significance determination.

Glare

The proposed project would provide four or eight light poles with 14 metal halide luminaires per 80-foot pole, for a total of 56 luminaires under Option A, or 14 metal halide luminaires per 80-foot pole and 12 metal halide luminaires per 70-foot pole, for a total of 104 luminaires under Option B. The type of luminaire to be installed is shown on Illustration AE-4, *Metal Halide Luminaire*, below. As shown, the proposed metal halide "Green Generation Lighting" allows each luminaire to be directionally shielded, aimed, and controlled so that the directed lights are substantially confined to the intended sports field area.

Illustration AE-4. Metal Halide Luminaire

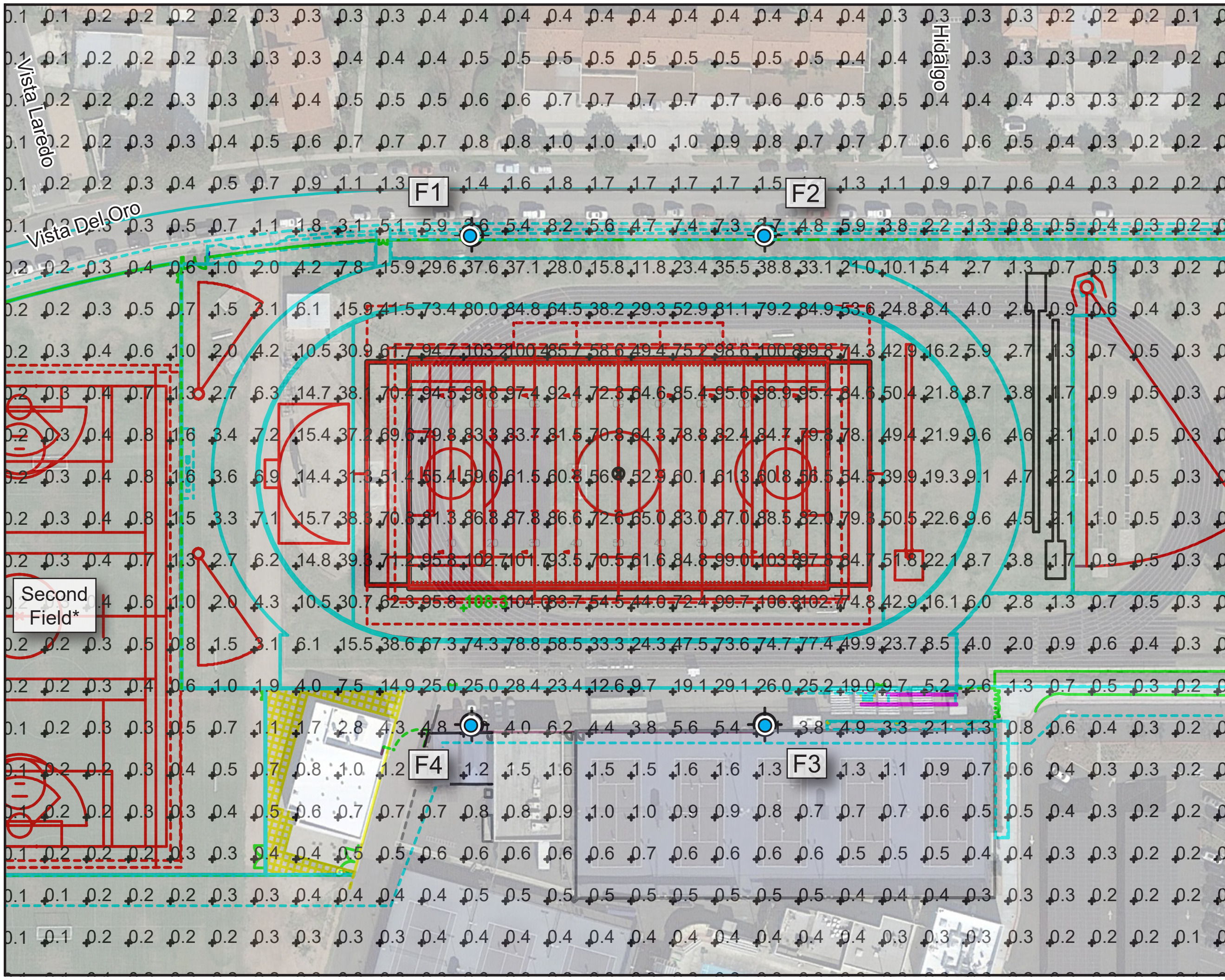
Glare is light that causes visual discomfort or disability or a loss of visual performance. It generally occurs when an individual is facing the light source so that the light from it directly enters the eye. Illustration AE-2, above, shows the concepts of spill light, direct glare, and light trespass. Glare differs from spill light in that a viewer is not directly facing the source for spill light, but is seeing the illumination of objects receiving light from it.

Nighttime Visual Simulations, Option A

As shown on Figure 5.1-22, *Nighttime Visual Simulation Location Map, Scenic Views*, three simulated views were tested from scenic view locations, but the proposed lights were only visible from Galaxy View Park. Although nighttime photos were taken from the Interpretative Center and Pacific Coast Highway, because of the intervening topography and background developments, distance, and the existing ambient lighting conditions, the proposed lighting poles were indistinguishable, and visual simulation could not be conducted.

Figure 5.1-23, *Option A: Nighttime Visual Simulation from Galaxy View Park*, provides a simulated nighttime view from Galaxy View Park. As shown, the most prominent light sources are the Park Newport Tennis Courts and buildings at Fashion Island. As shown in this figure, the 80-foot light poles are very difficult to identify and do not make a substantial glare impact to the nighttime skyline.

Figure 5.1-20 - Option A: Spill Light Levels (Vertical)



EQUIPMENT LIST FOR AREAS SHOWN

Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	F1-F4	80'	-	80'	1500W MZ	14	14	0
4	TOTALS					56	56	0

GRID SUMMARY

Name:	**Blanket Grid**
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

F1 Light Posts (4)

*This second field is not part of Option A.

NOTE: Light levels shown in foot-candles. See Table 5.1-1 for comparative light levels.

Base Map Source: Google Earth Pro, 2016; Lighting Data: Musco, 2016

0 150
Scale (Feet)

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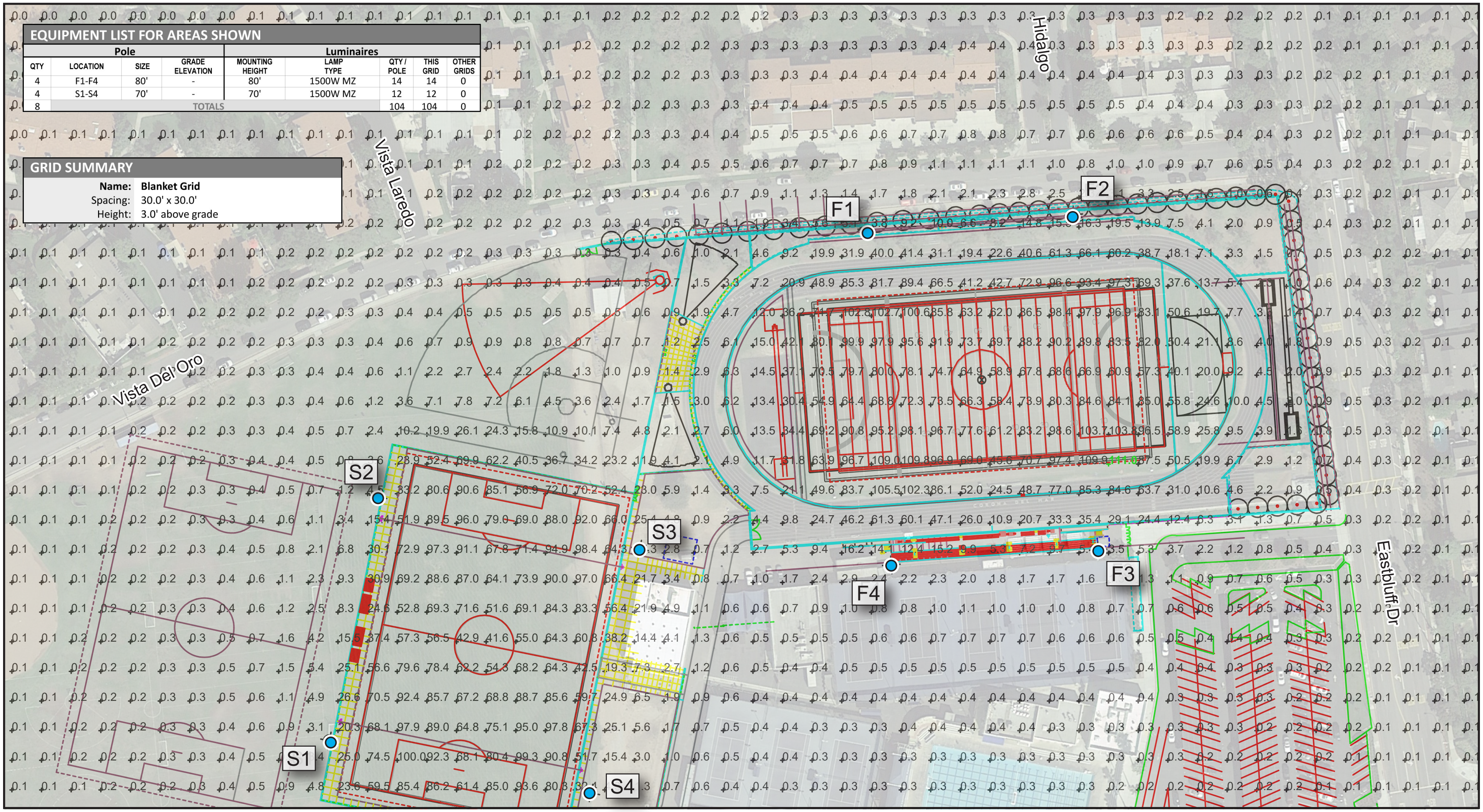
Figure 5.1-21 - Option B: Spill Light Levels (Vertical)

5. Environmental Analysis



EQUIPMENT LIST FOR AREAS SHOWN								
Pole				Luminaires				
QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LAMP TYPE	QTY / POLE	THIS GRID	OTHER GRIDS
4	F1-F4	80'	-	80'	1500W MZ	14	14	0
4	S1-S4	70'	-	70'	1500W MZ	12	12	0
8	TOTALS					104	104	0

GRID SUMMARY	
Name:	Blanket Grid
Spacing:	30.0' x 30.0'
Height:	3.0' above grade

F1/S1 Light Posts (8)

NOTE: Light levels shown in foot-candles. See Table 5.1-1 for comparative light levels.

0 200
Scale (Feet)

Base Map Source: Google Earth Pro, 2017; Lighting Data: Musco, 2017

5. Environmental Analysis
AESTHETICS

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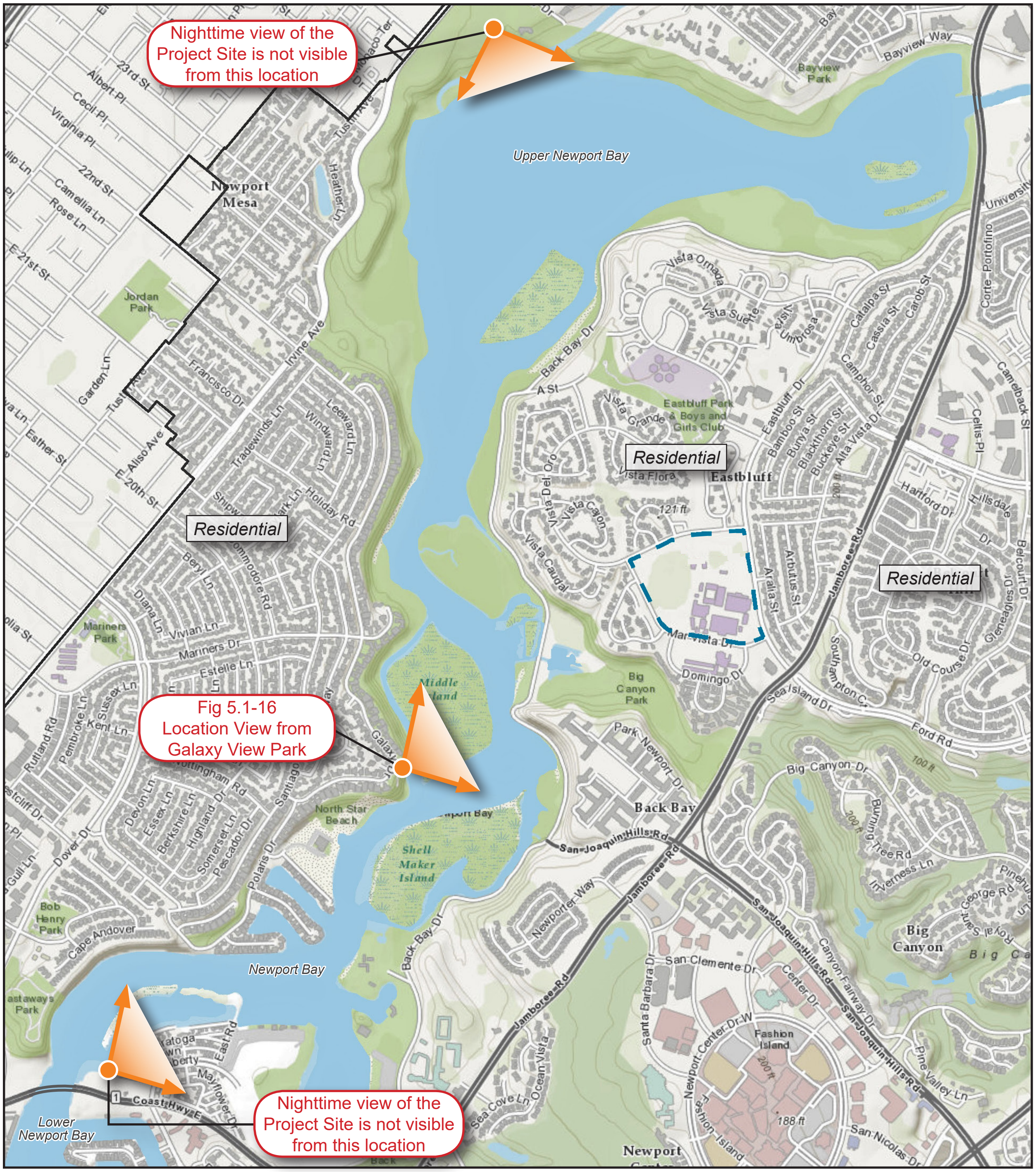
Figure 5.1-22 - Nighttime Visual Simulation Location Map, Scenic Views



School Boundary

Base Map Source: USGS, FAO, NPS, NRCAN, 2016

0 2,000
Scale (Feet)

5. Environmental Analysis
AESTHETICS

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Figure 5.1-23 - Option A: Nighttime Visual Simulation from Galaxy View Park

Existing View

Simulated View

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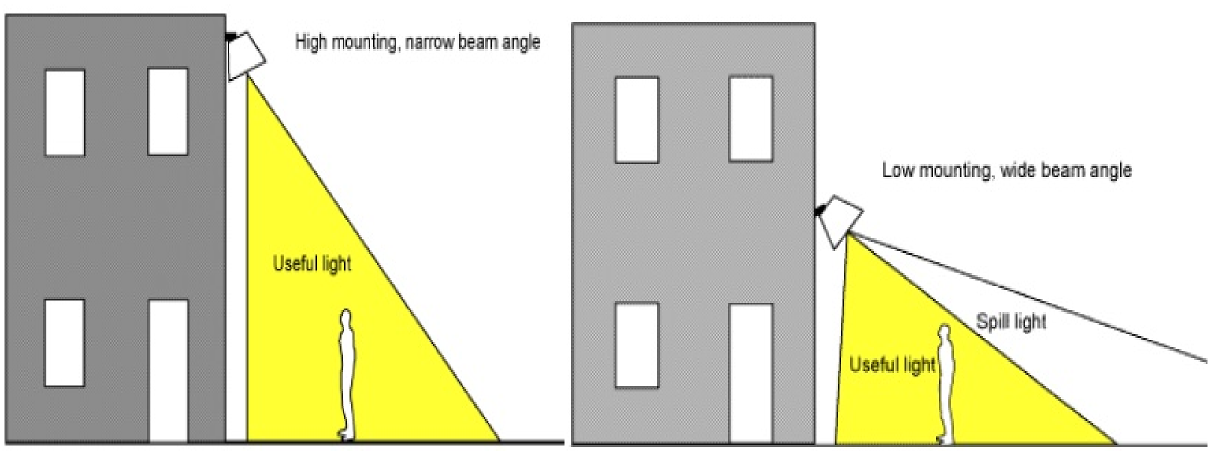
Figure 5.1-24, *Option A: Nighttime Visual Simulation Location Map, Community Views,* shows the locations of three nighttime community view locations and the view angles to the lights.

As shown on Figure 5.1-25, *Option A: Nighttime Visual Simulation from the West View*, the proposed 80-foot metal halide lights would not create adverse nighttime glare impacts from the West View location because the distance and viewing location of luminaires reduce direct glare impact.

Figure 5.1-26, *Option A: Nighttime Visual Simulation from the North View*, provides a simulated view from the North View. The existing major sources of light are the swimming pool and the building lights from Fashion Island. As shown, swimming pool lights are partially shielded by the perimeter fencing for the tennis courts. Viewers from the north would be able to look up to the luminaires on the southern poles, which could create glare impacts.

Figure 5.1-27, *Option A: Nighttime Visual Simulation from the Northeast View*, shows the Northeast View from Eastbluff Drive. As with the North View simulation (i.e., Figure 5.1-26), viewers from the northeast would be able to look up to the luminaires on the southern poles and could experience glare. However, the luminaires would be affixed at 80 feet and directed downward, so the luminaires are not at eye height of sensitive viewers. Typically, lower mounting heights give the luminaire a wider angle and make the bright parts of the lights more visible from positions outside the intended lighted area, which increases spill light and glare. This point is also illustrated on Illustration AE-5, *Mounting Height*. As shown, at high mounting heights, the luminaire could be directed downward to make a narrow beam angle for reduced glare impact.

Illustration AE-5. Mounting Height



5. Environmental Analysis
AESTHETICS

Nighttime Visual Simulations, Option B

The scenic view that may be impacted by the project is from Galaxy View Park. As illustrated in Figure 5.1-23, the lights from Option A are barely visible. Although Option B would add four additional lights, the impact would remain negligible.

Figure 5.1-28, *Option B: Nighttime Visual Simulation Location Map, Community Views,* shows the locations of three nighttime community view locations and the view angles to the lights.

Nighttime views from the west would be impacted to a greater extent under Option B because the four lights on Field 2 would be closer to residences along Mar Vista Drive and Vista Del Oro. Figure 5.1-29, *Option B: Nighttime Visual Simulation from the West View*, provides simulated view of the eight lights from the west. While Option B moves lights closer to this location and pole heights are lower, there is still sufficient distance between this location and the lights such that the visual impact is not significant.

The views of the sports fields from the north are shown in Figures 5.1-30a (Field 1, looking south) and 5.1-30b (Field 1 and Field 2, looking southwest). These views from the north along Vista Del Oro are nearest the lights on the main field and therefore receive the greatest nighttime visual impact. As shown on Figure 5.1-30b, Field 2 is set in from the adjoining streets and therefore has less impact. Because of the lighting technology proposed, the light and glare impact is considered less than significant. A comparison with the existing pool lights in these views demonstrates how far the technology has reduced lighting impacts from sports facilities.

Views from the intersection of Easbluff Drive and Vista Del Oro (the Northeast View) are shown in Figures 5.1-31a (looking southwest) and 5.1-31b (looking west). These views show the proposed lights in the context of existing street lights, pool lights, and parking lot lights. It demonstrates that spill light on the street from the field lights is less than that of the street lights.

The proposed sports field lighting system would be different from the existing swimming pool lights—shown in all "before" views of the nighttime simulation locations as a major source of light—because the sports field lights would be a less intrusive source of light or glare. The swimming pool lighting system uses a 1,000-Watt BT37 metal halide lamp type with 110,000 design lumens. The swimming pool lights have three lamps affixed on top of northern and southern poles and one lamp affixed on the eastern and western poles. Therefore, 330,000 lumens per pole is anticipated for four poles on the north and south, and 110,000 lumens for the four poles on the east and west. These lamps do not have visors or louvers to shield and control spill or upward light beams as with the proposed sports field lighting. In comparison, each pole for the proposed project would have a design lumen of 134,000, with visors and reflectors to shield and control direct spill light and glare impact. Since the proposed lighting would be designed to meet the spill light levels to 0.8 fc (vertical) at the residential unit façades, it also illustrates that the source of lighting has been adequately shielded and angled downward to minimize glare, to the extent practicable, and ensures that direct view of the bright parts of the luminaire is prevented from areas outside the field. Though aesthetic impacts are subjective, Figures 5.1-18, 5.1-19, and 5.1-21 show in foot-candle levels that spill light levels would not result in a significant impact, and the associated glare impacts would also be less than significant.

Figure 5.1-24 - Option A: Nighttime Visual Simulation Location Map, Community Views

5. Environmental Analysis

View Shown in Figures 5.1-26, 5.1-27, and 5.1-28

1 Viewing Direction
Light Pole Location
View Limits
Sight Line

0 450
Scale (Feet)

Base Map Source: Google Earth, 2017

5. Environmental Analysis
AESTHETICS

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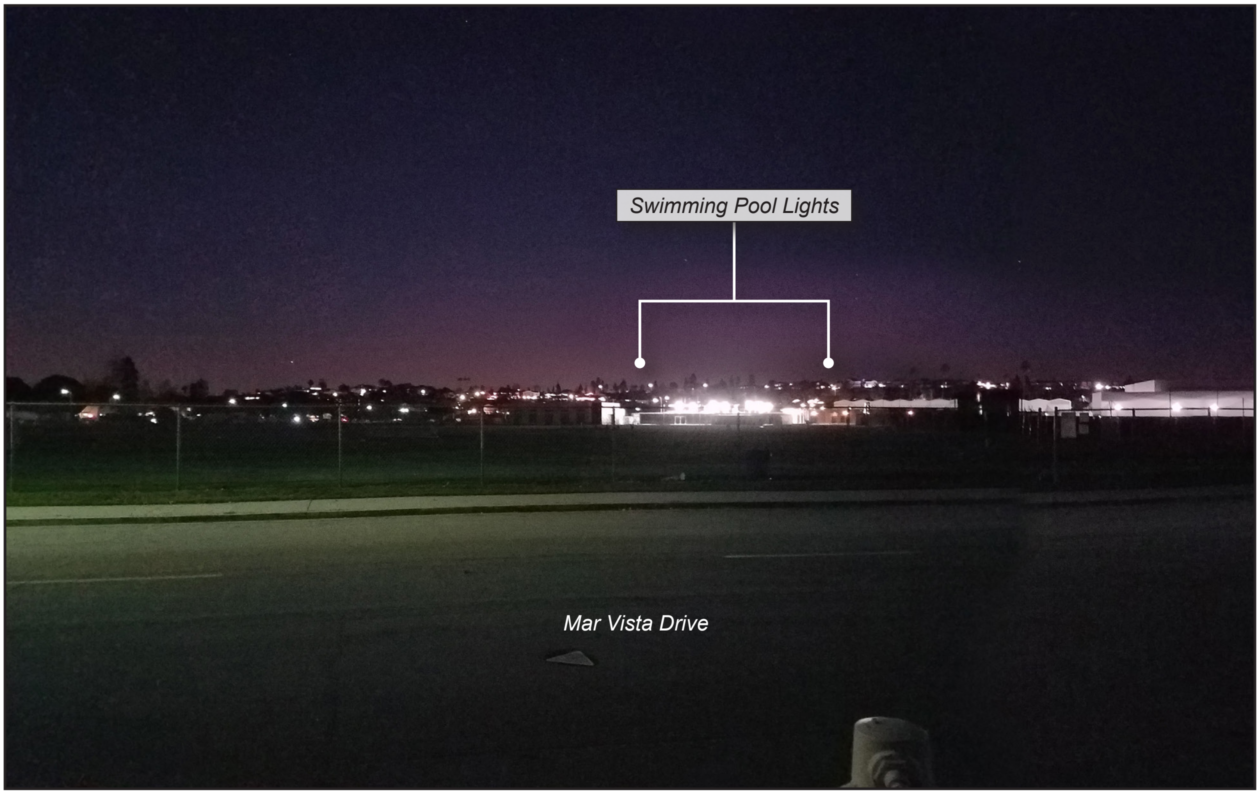
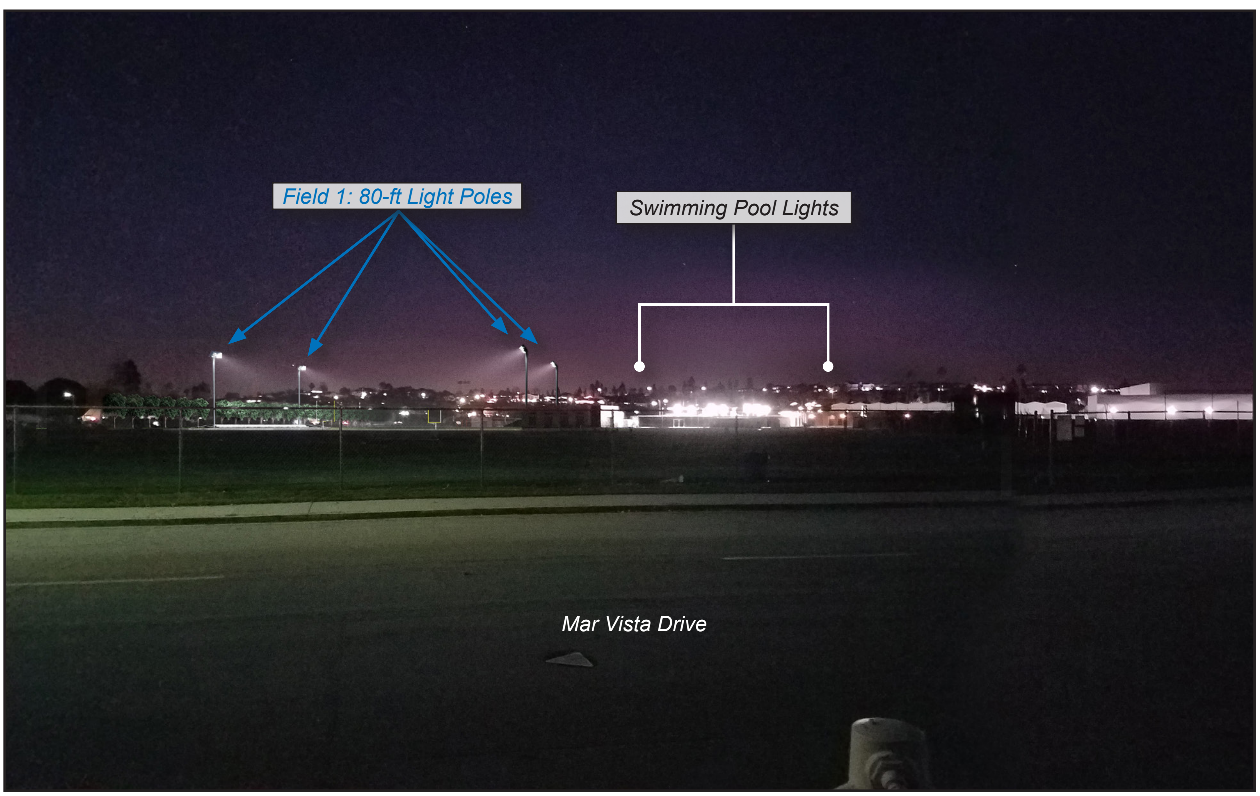
Figure 5.1-25 - Option A: Nighttime Visual Simulation from the West View



Existing View



Simulated View

5. Environmental Analysis
AESTHETICS

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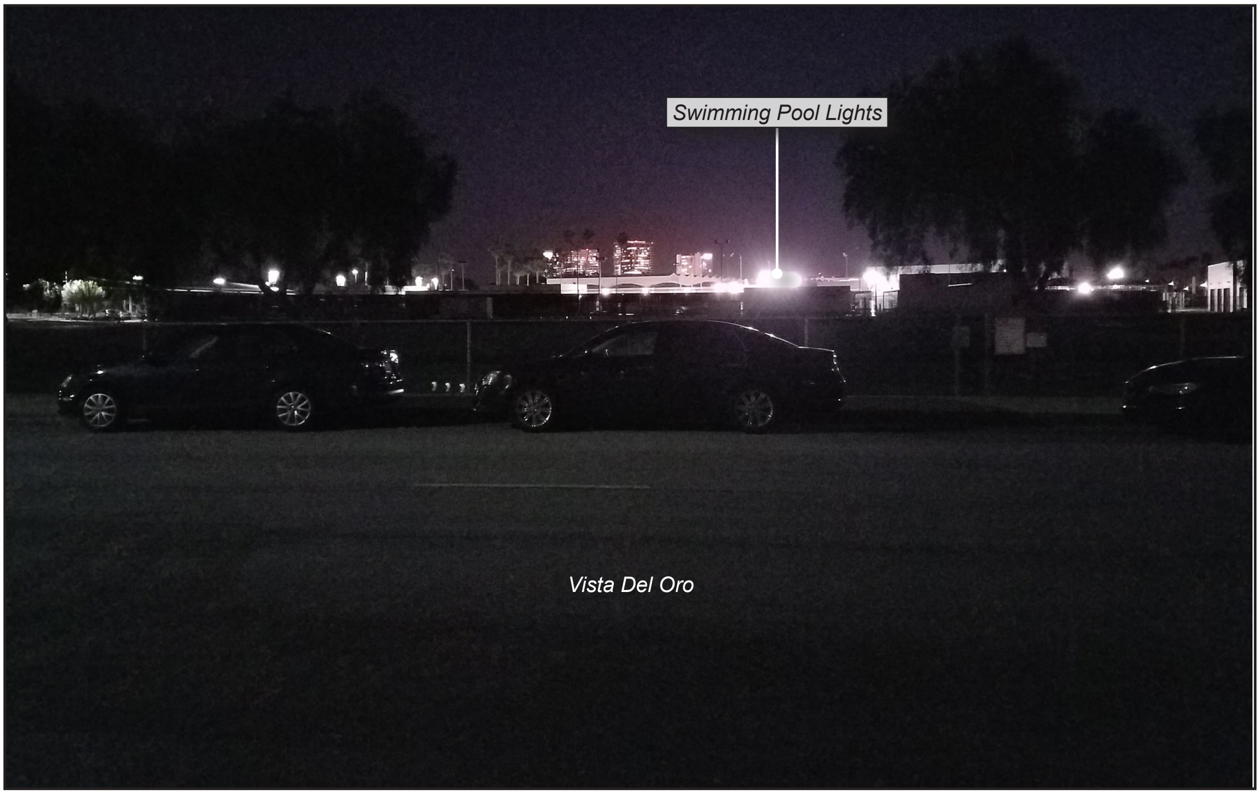
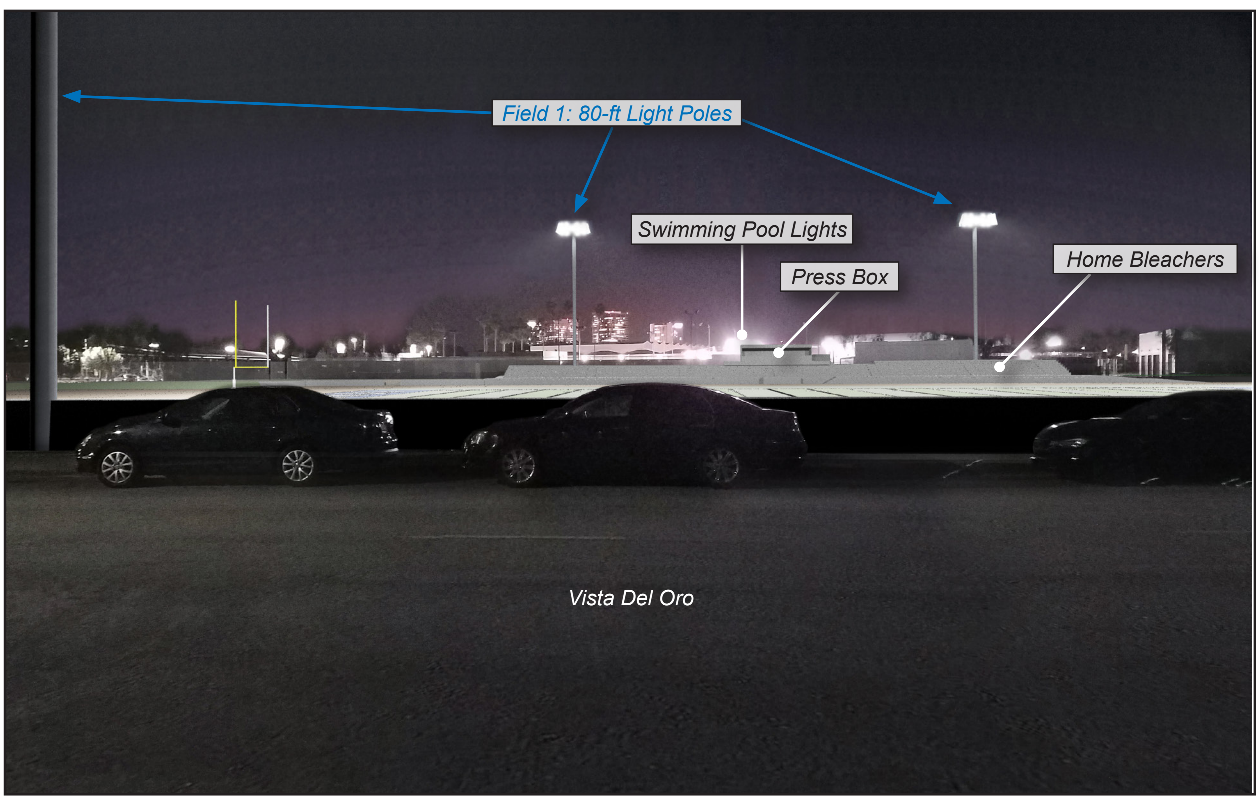
Figure 5.1-26 - Option A: Nighttime Visual Simulation from the North View



Existing View



Simulated View

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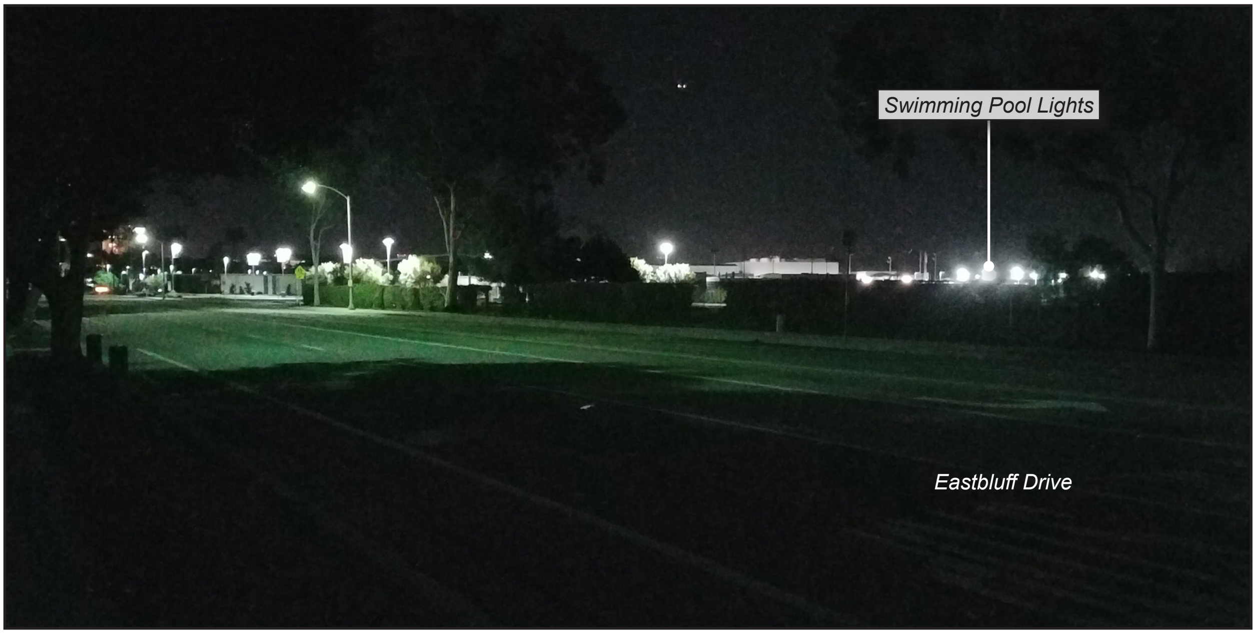
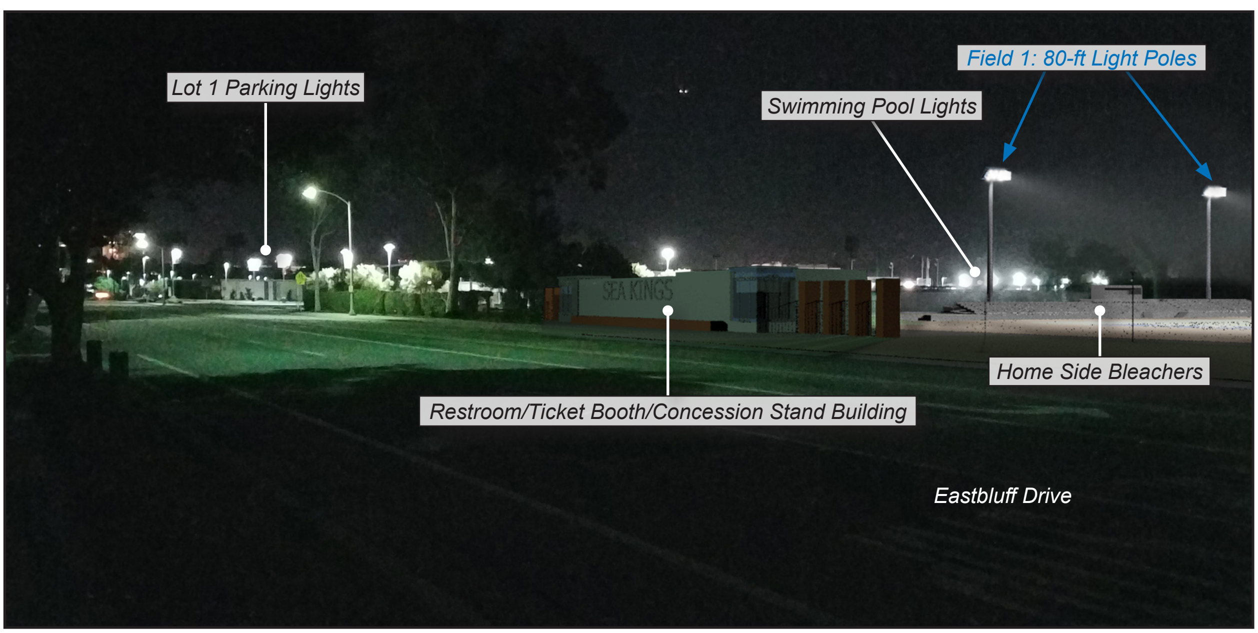
Figure 5.1-27 - Option A: Nighttime Visual Simulation from the Northeast View



Existing View



Simulated View

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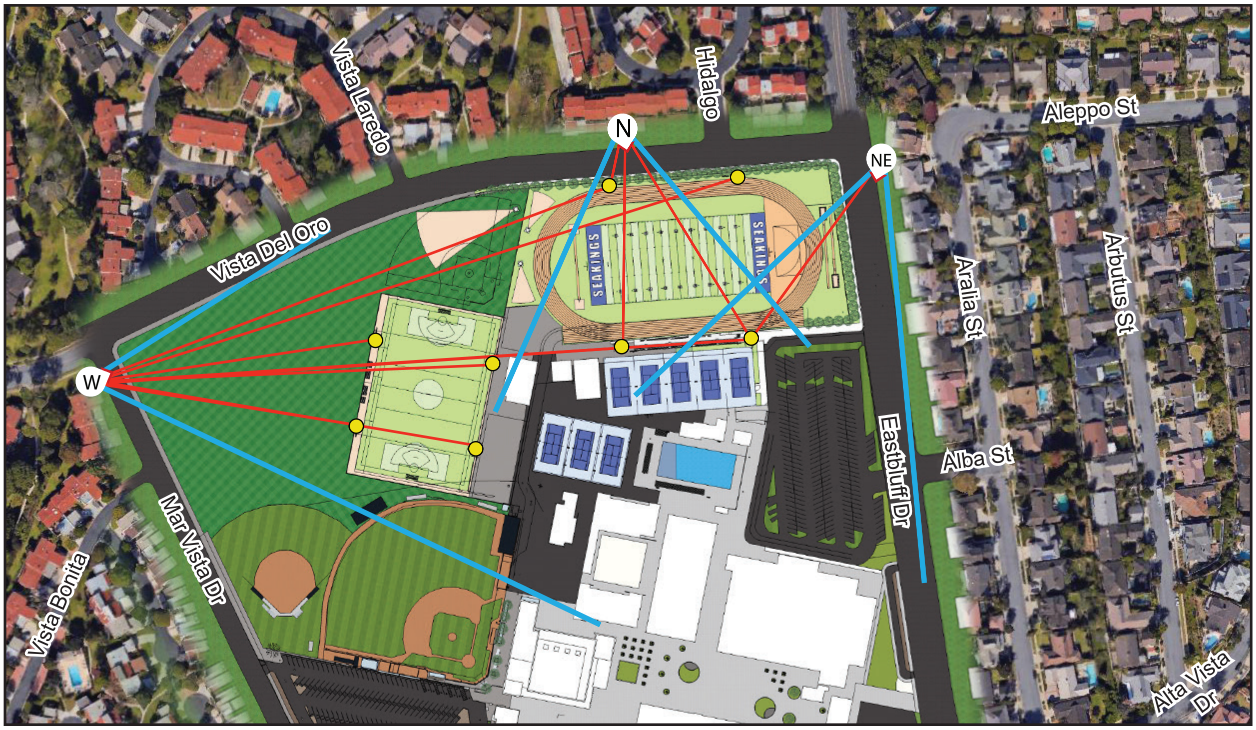
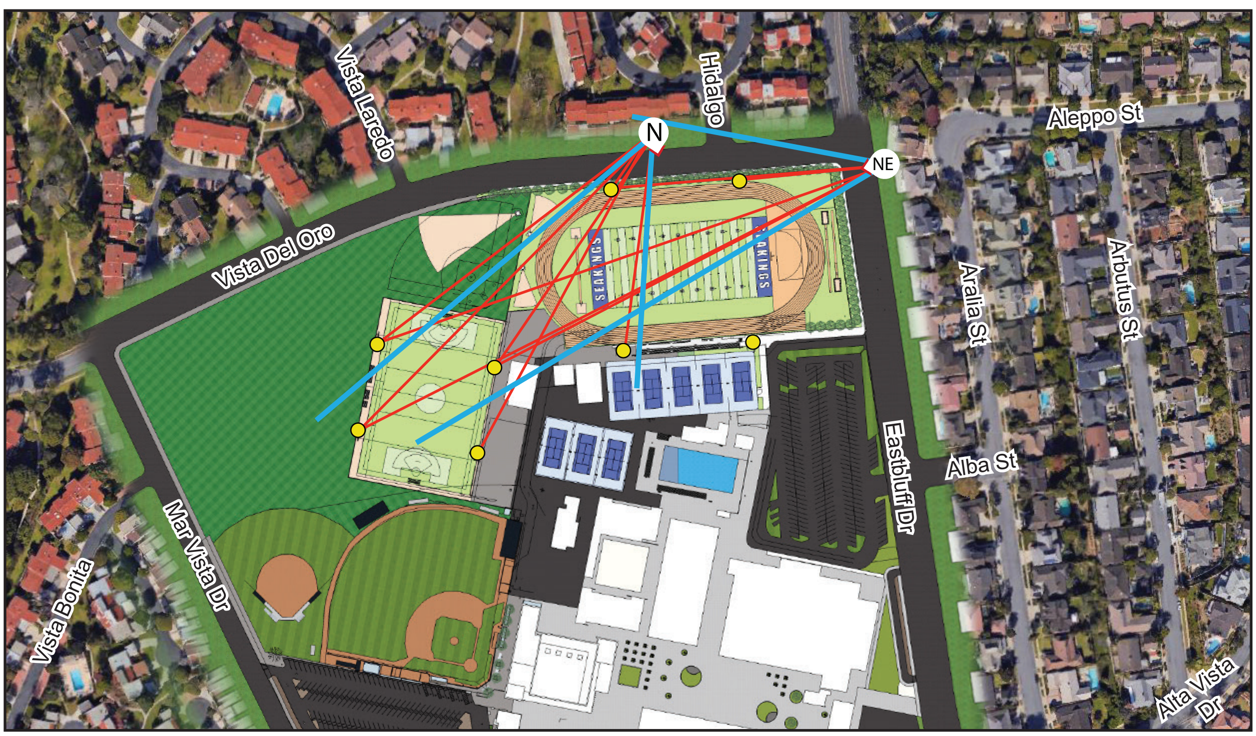
Figure 5.1-28 - Option B: Nighttime Visual Simulation Location Map - Community Views



View Shown in Figures 5.1-30, 5.1-31a, and 5.1-32a



View Shown in Figures 5.1-31b and 5.1-32b

1 Viewing Direction
Light Pole Location
View Limits
Sight Line

0 450
Scale (Feet)

Base Map Source: Google Earth, 2017

5. Environmental Analysis
AESTHETICS

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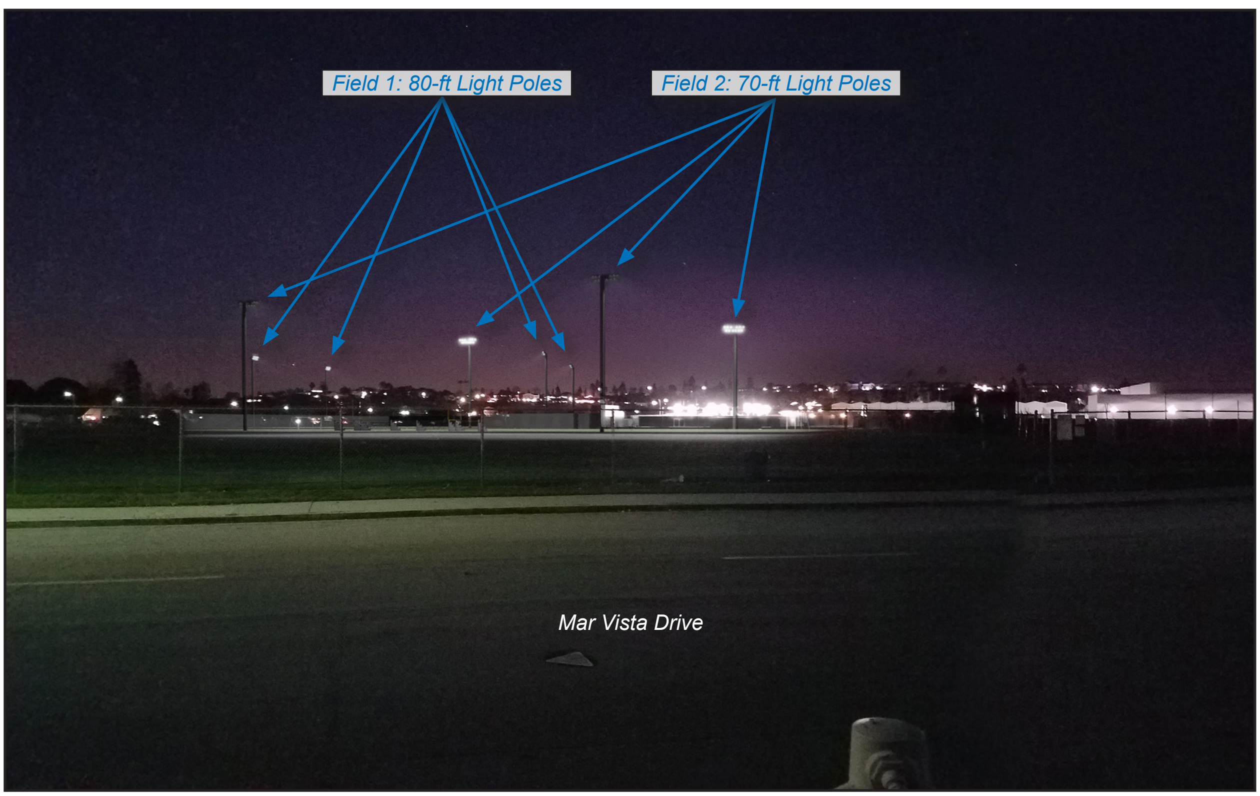
Figure 5.1-29 - Option B: Nighttime Visual Simulation from the West View

Existing View



Simulated View

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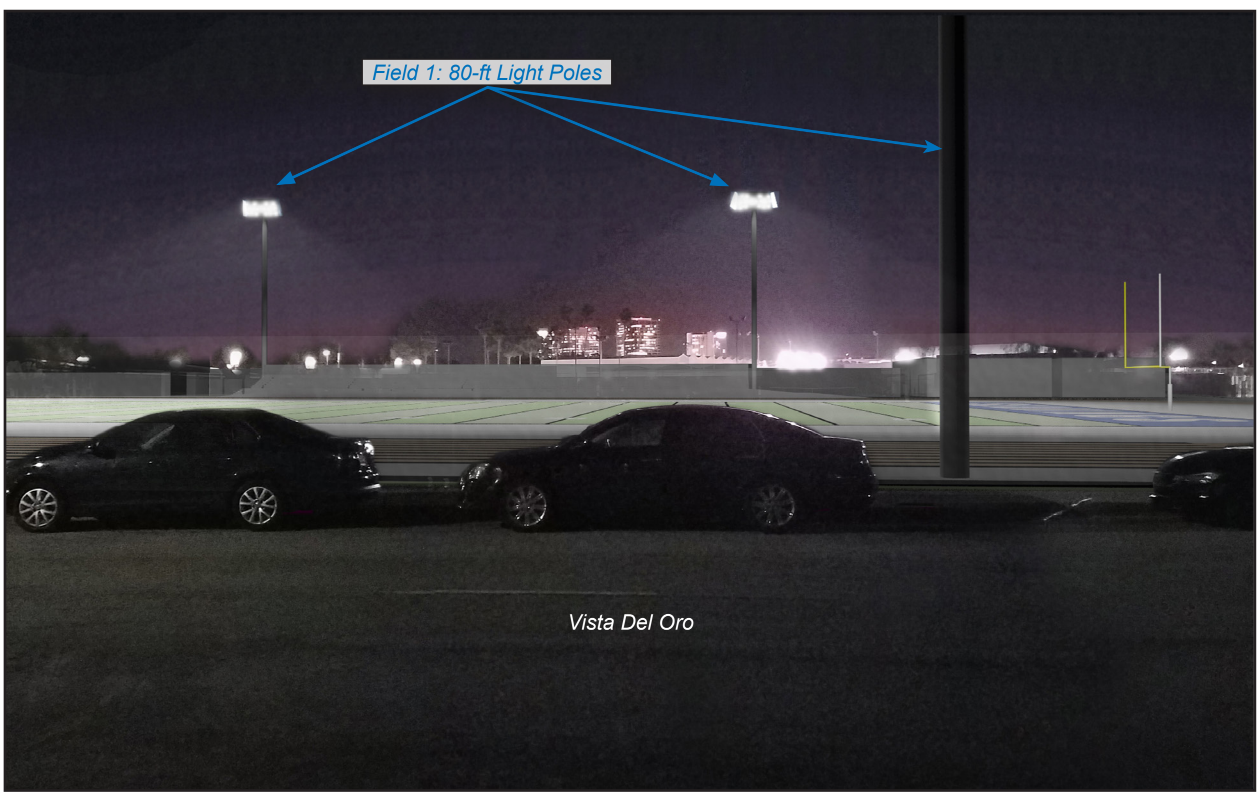
Figure 5.1-30a - Option B: Nighttime Visual Simulation from North View

Existing View



Simulated View

5. Environmental Analysis
AESTHETICS

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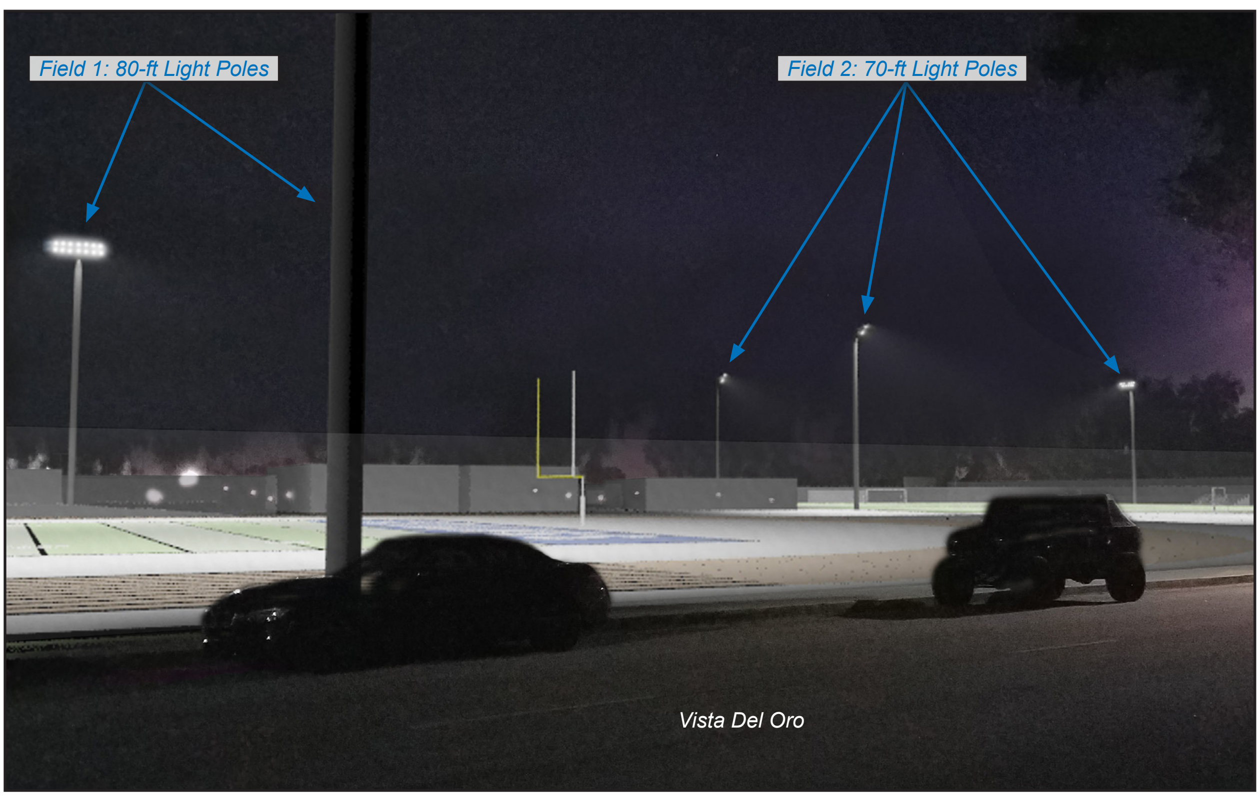
Figure 5.1-30b - Option B - Nighttime Visual Simulation from North View

Existing View



Simulated View

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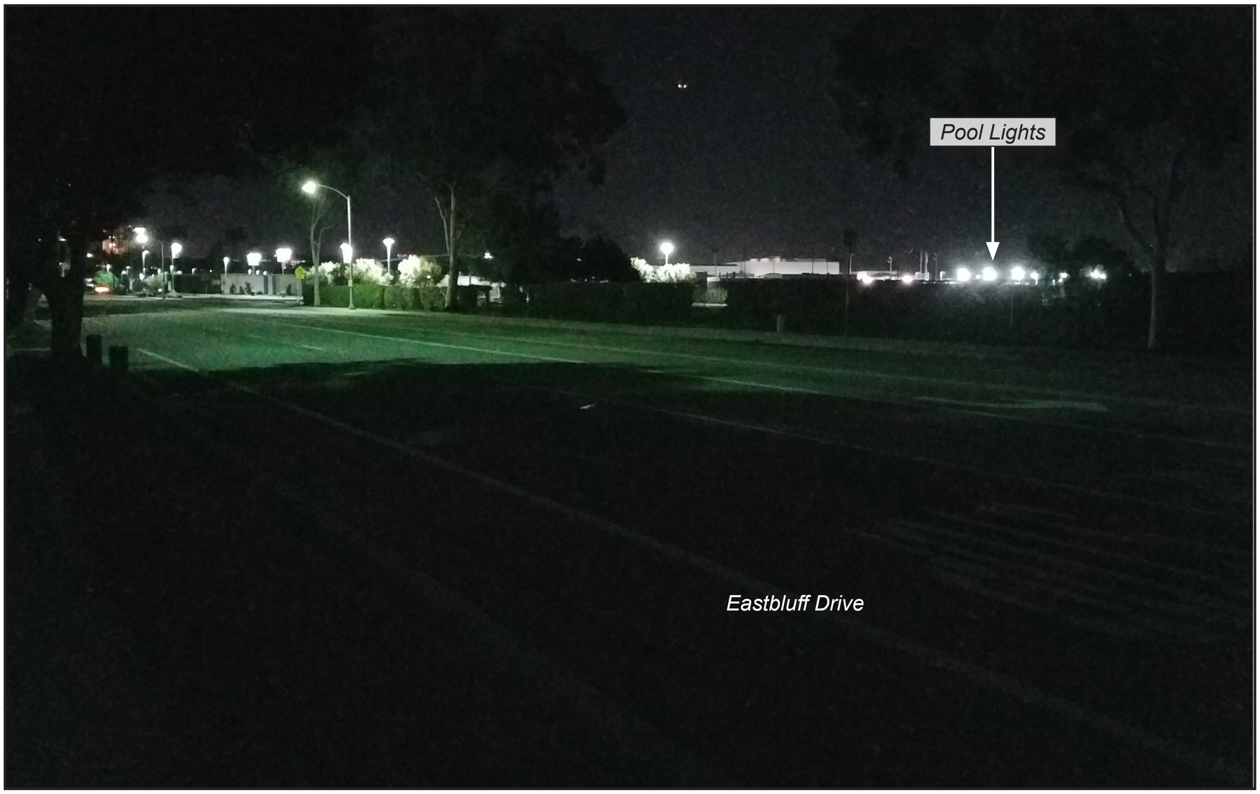
Figure 5.1-31a - Option B - Nighttime Visual Simulation from Northeast View



Existing View

Simulated View

5. Environmental Analysis
AESTHETICS

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Figure 5.1-31b - Option B - Nighttime Visual Simulation from Northeast View

Existing View

Simulated View

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Sky Glow, Options A and B

Sky glow refers to the brightening of the night sky by human-created sources of light. Light that is either emitted directly upward by luminaires or reflected from the ground is scattered by dust and gas molecules in the atmosphere, producing a luminous background. It should be noted that actual measurement of sky glow is very challenging due to the many factors that play a role in sky glow. Sky glow depends on the lighting design (e.g., type of light, height, angular distribution of the light emitted), the light reflected from the ground and its angular distribution, and the atmospheric conditions (e.g., humidity, aerosols, clouds, haze, atmospheric pollution). And these reflection and atmospheric conditions can change from moment to moment (NLPIP 2016). Therefore, the current practice is to reduce sky glow by implementing the following measures: 1) using full-cutoff luminaires to minimize the amount of light emitted upward directly from the luminaire; 2) reducing light levels; 3) turning off unneeded lights; 4) limiting lighted hours of outdoor sales areas, parking areas, and signs around important observing sights; 5) limiting lighting installations; and 6) mandating low-pressure sodium light sources, which allow astronomers to filter the line spectra from telescopic images. The proposed project incorporates and is consistent with these practices, where applicable.

- **Using full-cutoff luminaires:** The proposed lighting system uses full-cutoff luminaires, which means there is no direct uplighting. Direct upward light is shown in Illustration AE-2.

- **Reducing light levels, turning off unneeded lights, and limiting lighted hours:** The proposed lighting system would allow different lighting levels to accommodate different activities and would not be lighted at average 50 fc for all activities. Unneeded light would be turned off, and the District's artificial turf light use policy would be followed, where the light use for practice will be permitted until 8:00 PM from Monday through Friday and for games until 10:00 PM under Option A and 9:00 PM under Option B.

- **Limiting lighting installations:** The number of light poles were reduced from 6 poles during the Notice of Preparation period to 4 poles during the EIR preparation period under Option A. Under Option B, where the number of light poles increased from 4 to 8, efforts to limit the sky glow impact was made by only using 12 luminaires per pole for Field 2. While 80-foot-tall light poles with 14 luminaires per pole were necessary to provide adequate lighting for Field 1, adequate lighting for Field 2 was provided with a reduced pole height at 70 feet and with 12 luminaires per pole.

- **Mandating low-pressure sodium light sources:** LPS lights are used mostly used for street lighting and provide the worst color rendering of any lamp type. Therefore, LPS is not suitable for sports field lighting, where color perception is an important factor in sporting events. Also, sodium is a hazardous material that can combust when exposed to air, such as if the bulb is broken in the trash.

Since the proposed project incorporates various practices to reduce sky glow, impacts would be considered less than significant.

5.1.4 Cumulative Impacts

Option A

The cumulative projects list location map is shown on Figure 4-8, *Cumulative Project Location*. The nearest development project is at the southwest corner of Jamboree Road and San Joaquin Hills Road. Development of cumulative projects combined with the proposed project would intensify the overall urbanized character of the surrounding area, but the CdM campus is not visible from the nearest cumulative project location. Although some parts of the proposed improvements, such as the 80-foot lights poles, could be visible from other parts of the city, the visibility would be limited and would not change the visual character of the scenic viewsheds, of which the proposed project is part. Daytime and nighttime visual simulations from various scenic viewpoints (i.e., Figure 5.1-4, *Visual Simulation from PCH*, Figure 5.1-5, *Visual Simulation from Galaxy View Park*, Figure 5.1-6, *Visual Simulation from Interpretative Center*, and Figure 5.1-23, *Nighttime Visual Simulations from Galaxy View Park)* demonstrate that the 80-foot poles do not change the general aesthetic quality of any scenic views. There are no cumulative projects that would be in the same viewshed as the proposed field lights.

The proposed project and the cumulative projects in the city would likely increase the overall light impacts in the city. However, although the proposed project would use the metal halide system for the nighttime sports lighting, other cumulative projects would likely use technology such as LED lighting systems to reduce lighting impacts. The city's municipal code Section 20.30.070 requires all outdoor lighting fixtures to be designed, shielded, aimed, located, and maintained to shield adjacent properties and to not produce glare on adjacent properties or roadways. The municipal code also requires parking lot light fixtures and light fixtures on buildings to be full-cutoff fixtures. The proposed project individually would not cause substantial light trespass, glare, and sky glow impacts outside the sports field, as discussed under Impact 5.1-3. Note that Figure 4-8, *Cumulative Project Location Map*, shows that none of the cumulative projects are in the immediate vicinity of the proposed project and would not add to lighting levels around the campus. Therefore, the anticipated cumulative light level increase in the city as a whole would not be considered a significant adverse impact.

While the lighting at the CdM swimming pool is an existing condition, the glare from these lights was identified as a concern by community members. Therefore, while the proposed sports field lighting does not represent a significant individual impact and no mitigation is required other than to validate lighting specifications, the District may consider modifying the swimming pool lighting to provide shielding to the existing light fixtures. Modifications to the swimming pool lighting would improve the existing nighttime lighting conditions and reduce overall light and glare emanating from the CdM campus.

Option B

Option B would double the number of lights at on the CdM campus to eight, but these lights are either not visible or their impact is negligible from scenic locations in the surrounding area. No cumulative scenic resource impact would occur.

Option B would increase the amount of area lit for sports field activities, but there are no cumulative projects in the immediate vicinity of the project site that would impact cumulative visual or lighting impacts.

5.1.5 Regulatory Requirements

There are no applicable regulatory requirements.

5.1.6 Level of Significance Before Mitigation

Upon implementation of project design features, the following impacts would be less than significant:

- **Impact 5.1-1:** The proposed project (Options A and B) would not adversely affect any scenic vista or alter scenic resources within a state scenic highway.
- **Impact 5.1-2**: The proposed project (Options A and B) would alter, but would not degrade the visual appearance of the project site.

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.1-3** The proposed project (Options A and B) would create new sources of light and glare impacts.

5.1.7 Mitigation Measures

Options A and B

Impact 5.1-3: The proposed project (Options A and B) would generate new sources of light and glare

AE-1 Newport-Mesa Unified School District shall perform field light measurements after the lighting pole installation to demonstrate that actual spill light levels near the adjacent residential units to the north are a close match to the levels indicated in the light levels plan shown in Figures 5.1-16, *Option A: Spill Light Levels (Horizontal)*, and 5.1-20, *Option A: Spill Light Levels (Vertical),* for Option A or Figures 5.1-18, *Option B: Spill Light Levels (Vertical)*, and 5.1-21, *Spill Light Levels (Vertical),* for Option B. The vertical light levels at the vertical surface of any residential unit shall not exceed 0.8 foot-candle, and each luminaire affixed on the pole shall be fully shielded and adjusted so that no direct upward beam is permitted.

5.1.8 Level of Significance After Mitigation

Impact 5.1-3, Options A and B

The light and glare impact analysis is based on the spill light levels presented in Appendix D, *Lighting Plans*, and implementation of mitigation measure AE-1 provides a performance-based threshold level to ensure that modeled spill light levels are a close match to the actual field measurements. Therefore, less than significant light and glare impacts are anticipated. The proposed project under Options A and B would not have significant, unavoidable, adverse light and glare impacts.

5.1.9 References

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5.2 AIR QUALITY

This section of the Recirculated Draft Environmental Impact Report (RDEIR) evaluates the potential for the proposed project to impact air quality in a local and regional context. This evaluation is based on the methodology recommended by the South Coast Air Quality Management District (SCAQMD). The analysis in this section is based on buildout of the proposed project, as modeled using the California Emissions Estimator Model (CalEEMod) and trip generation provided by IBI Group (see Appendix H to this RDEIR). The criteria air pollutant emissions modeling for construction and operational phases are included in Appendix E of this DEIR.

5.2.1 Environmental Setting

5.2.1.1 REGULATORY FRAMEWORK

Ambient air quality standards (AAQS) have been adopted and are periodically updated at state and federal levels for criteria air pollutants. In addition, both the state and federal governments regulate the release of toxic air contaminants (TACs). The project site is within the South Coast Air Basin (SoCAB). Land use is subject to the rules and regulations imposed by SCAQMD, the California AAQS adopted by the California Air Resources Board (CARB), and National AAQS adopted by the United States Environmental Protection Agency (EPA). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

Federal and State Laws

Ambient Air Quality Standards

The Clean Air Act was passed in 1963 by the US Congress and has been amended several times. The 1970 Clean Air Act amendments strengthened previous legislation and laid the foundation for the regulatory scheme of the 1970s and 1980s. In 1977, Congress again added several provisions, including nonattainment requirements for areas not meeting National AAQS and the Prevention of Significant Deterioration program. The 1990 amendments represent the latest in a series of federal efforts to regulate the protection of air quality in the United States. The Clean Air Act allows states to adopt more stringent standards or to include other pollutants. The California Clean Air Act, signed into law in 1988, requires all areas of the state to achieve and maintain the California AAQS by the earliest practical date. The California AAQS tend to be more restrictive than the National AAQS.

The National and California AAQS are the levels of air quality considered to provide a margin of safety in the protection of the public health and welfare. They are designed to protect "sensitive receptors" most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

5. Environmental Analysis
AIR QUALITY

Both California and the federal government have established health-based AAQS for seven air pollutants, which are shown in Table 5.2-1, *Ambient Air Quality Standards for Criteria Pollutants*. These pollutants are ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb). In addition, the state has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles.

Table 5.2-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Ozone (O_3)[3]	1 hour	0.09 ppm	*	Motor vehicles, paints, coatings, and solvents.
	8 hours	0.070 ppm	0.070 ppm	
Carbon Monoxide (CO)	1 hour	20 ppm	35 ppm	Internal combustion engines, primarily gasoline-powered motor vehicles.
	8 hours	9.0 ppm	9 ppm	
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.030 ppm	0.053 ppm	Motor vehicles, petroleum-refining operations, industrial sources, aircraft, ships, and railroads.
	1 hour	0.18 ppm	0.100 ppm	
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	*	0.030 ppm	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
	1 hour	0.25 ppm	0.075 ppm	
	24 hours	0.04 ppm	0.14 ppm[2]	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 $\mu g/m^3$	*	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	50 $\mu g/m^3$	150 $\mu g/m^3$	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 $\mu g/m^3$	12 $\mu g/m^3$	Dust and fume-producing construction, industrial, and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
	24 hours	*	35 $\mu g/m^3$	
Lead (Pb)	30-Day Average	1.5 $\mu g/m^3$	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 $\mu g/m^3$	
	Rolling 3-Month Average	*	0.15 $\mu g/m^3$	
Sulfates (SO_4)[5]	24 hours	25 $\mu g/m^3$	*	Industrial processes.

Table 5.2-1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	*	Visibility-reducing particles consist of suspended particulate matter, which is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, dust, and salt.
Hydrogen Sulfide	1 hour	0.03 ppm	*	Hydrogen sulfide (H_2S) is a colorless gas with the odor of rotten eggs. It is formed during bacterial decomposition of sulfur-containing organic substances. Also, it can be present in sewer gas and some natural gas, and can be emitted as the result of geothermal energy exploitation.
Vinyl Chloride	24 hour	0.01 ppm	*	Vinyl chloride (chloroethene), a chlorinated hydrocarbon, is a colorless gas with a mild, sweet odor. Most vinyl chloride is used to make polyvinyl chloride (PVC) plastic and vinyl products. Vinyl chloride has been detected near landfills, sewage plants, and hazardous waste sites, due to microbial breakdown of chlorinated solvents.

Source: CARB 2016a.
Notes: ppm = parts per million; μg/m^3 = micrograms per cubic meter
* Standard has not been established for this pollutant/duration by this entity.
1 California standards for O_3, CO (except 8-hour Lake Tahoe), SO_2 (1 and 24 hour), NO_2, and 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. California AAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.
2 National standards (other than O_3, PM, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth-highest 8-hour concentration measured at each site in a year, averaged over three 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 μg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
3 On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.
4 On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 μg/m^3 to 12.0 μg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were maintained at 35 μg/m^3, as was the annual secondary standard of 15 μg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 μg/m^{3}also were maintained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.
5 On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. The 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

California has also adopted a host of other regulations that reduce criteria pollutant emissions, including:

- AB 1493: Pavley Fuel Efficiency Standards
- Title 20 California Code of Regulations (CCR): Appliance Energy Efficiency Standards
- Title 24, Part 6, CCR: Building Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

5. Environmental Analysis
AIR QUALITY

Tanner Air Toxics Act and Air Toxics "Hot Spot" Information and Assessment Act

Public exposure to TACs is a significant environmental health issue in California. In 1983, the California legislature enacted a program to identify the health effects of TACs and to reduce exposure to them. The California Health and Safety Code defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health" (17 CCR § 93000). A substance that is listed as a hazardous air pollutant pursuant to Section 112(b) of the federal Clean Air Act (42 U.S. Code § 7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency, acting through CARB, is authorized to identify a substance as a TAC if it is an air pollutant that may cause or contribute to an increase in mortality or serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through AB 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act set up a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an "airborne toxics control measure" for sources that emit that TAC. If there is a safe threshold for a substance (i.e., a point below which there is no toxic effect), the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate "toxics best available control technology" to minimize emissions. To date, CARB has established formal control measures for 11 TACs that are identified as having no safe threshold.

Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public through notices and public meetings.

CARB has promulgated the following specific rules to limit TAC emissions:

- **13 CCR Chapter 10, § 2485**, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling
- **13 CCR Chapter 10, § 2480**, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools
- **13 CCR § 2477 and Article 8**, Airborne Toxic Control Measure for In-Use Diesel-Fueled Transport Refrigeration Units (TRU) and TRU Generator Sets and Facilities Where TRUs Operate

Air Pollutants of Concern

Criteria Air Pollutants

The pollutants emitted into the ambient air by stationary and mobile sources are categorized as primary and/or secondary pollutants. Primary air pollutants are emitted directly from sources. Carbon monoxide (CO), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur dioxide (SO_2), coarse inhalable particulate matter (PM_{10}), fine inhalable particulate matter ($PM_{2.5}$), and lead (Pb) are primary air pollutants. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that AAQS have been established for them. VOC and NO_x are criteria pollutant precursors that form secondary criteria air pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and nitrogen dioxide (NO_2) are the principal secondary pollutants.

Each of the primary and secondary criteria air pollutants and its known health effects is described here.

- **Carbon Monoxide** is a colorless, odorless gas produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. CO is a primary criteria air pollutant. CO concentrations tend to be the highest during winter mornings with little to no wind, when surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near traffic-congested corridors and intersections. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation (SCAQMD 2005; USEPA 2017). The SoCAB is designated in attainment of CO criteria levels under the California and National AAQS (CARB 2016b).

- **Volatile Organic Compounds** are composed primarily of hydrogen and carbon atoms. Internal combustion associated with motor vehicle usage is the major source of VOCs. Other sources include evaporative emissions from paints and solvents, asphalt paving, and household consumer products such as aerosols (SCAQMD 2005). There are no AAQS for VOCs. However, because they contribute to the formation of O_3, SCAQMD has established a significance threshold (see Section 5.2.2.1, *South Coast Air Quality Management District Thresholds*).

- **Nitrogen Oxides** are a by-product of fuel combustion and contribute to the formation of ground-level O_3, PM_{10}, and $PM_{2.5}$. The two major forms of NO_X are nitric oxide (NO) and nitrogen dioxide (NO_2). NO is a colorless, odorless gas formed from atmospheric nitrogen and oxygen when combustion takes place under high temperature and/or high pressure. The principal form of NO_X produced by combustion is NO, but NO reacts quickly with oxygen to form NO_2, creating the mixture of NO and NO_2 commonly called NO_X. NO_2 is an acute irritant and more injurious than NO in equal concentrations. At atmospheric concentrations, however, NO_2 is only potentially irritating. NO_2 absorbs blue light; the result is a brownish-red cast to the atmosphere and reduced visibility. NO_2 exposure concentrations near roadways are of particular concern for susceptible individuals, including asthmatics, children, and the elderly. Current scientific evidence links short-term NO_2 exposures, ranging from 30 minutes to 24 hours, with adverse respiratory effects, including airway inflammation in healthy people and increased respiratory symptoms in people with asthma. Also, studies show a connection between elevated short-term NO_2 concentrations and increased visits to emergency departments and hospital admissions for respiratory issues, especially asthma (SCAQMD 2005; USEPA 2017). The SoCAB is designated an attainment area for NO_2 under the National and California AAQS (CARB 2016b).

- **Sulfur Dioxide** is a colorless, pungent, irritating gas formed by the combustion of sulfurous fossil fuels. It enters the atmosphere as a result of burning high-sulfur-content fuel oils and coal and chemical

5. Environmental Analysis
AIR QUALITY

processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release significant quantities of SO_2. When sulfur dioxide forms sulfates (SO_4) in the atmosphere, together these pollutants are referred to as sulfur oxides (SO_X). Thus, SO_2 is both a primary and secondary criteria air pollutant. At sufficiently high concentrations, SO_2 may irritate the upper respiratory tract. Current scientific evidence links short-term exposures to SO_2, ranging from 5 minutes to 24 hours, with an array of adverse respiratory effects, including bronchoconstriction and increased asthma symptoms. These effects are particularly adverse for asthmatics at elevated ventilation rates (e.g., while exercising or playing.) At lower concentrations and when combined with particulates, SO_2 may do greater harm by injuring lung tissue. Studies also show a connection between short-term exposure and increased visits to emergency facilities and hospital admissions for respiratory illnesses, particularly in at-risk populations such as children, the elderly, and asthmatics (SCAQMD 2005; USEPA 2017). The SoCAB is designated attainment for SO_2 under the California and National AAQS (CARB 2016b).

- **Suspended Particulate Matter** consists of finely divided solids or liquids such as soot, dust, aerosols, fumes, and mists. Two forms of fine particulates are now recognized and regulated. Inhalable coarse particles, or PM_{10}, include particulate matter with an aerodynamic diameter of 10 microns or less (i.e., ≤10 millionths of a meter or 0.0004 inch). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤2.5 millionths of a meter or 0.0001 inch). Particulate discharge into the atmosphere results primarily from industrial, agricultural, construction, and transportation activities. Both PM_{10} and $PM_{2.5}$ may adversely affect the human respiratory system, especially in people who are naturally sensitive or susceptible to breathing problems. The EPA's scientific review concluded that $PM_{2.5}$, which penetrates deeply into the lungs, is more likely than PM_{10} to contribute to health effects and at far lower concentrations. These health effects include premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms (e.g., irritation of the airways, coughing, or difficulty breathing) (SCAQMD 2005). There has been emerging evidence that ultrafine particulates, which are even smaller particulates with an aerodynamic diameter of <0.1 microns or less (i.e., ≤0.1 millionths of a meter or <0.000004 inch), have human health implications, because ultrafine particulates' toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (SCAQMD 2013). However, the EPA or CARB has yet to adopt AAQS to regulate these particulates. Diesel particulate matter (DPM) is classified by CARB as a carcinogen (CARB 1998). Particulate matter can also cause environmental effects such as visibility impairment,[1] environmental damage,[2] and aesthetic damage[3] (SCAQMD 2005; USEPA 2017). The SoCAB is a nonattainment area for $PM_{2.5}$ under California and National AAQS and a nonattainment area for PM_{10} under the California AAQS (CARB 2016b).[4]

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1 $PM_{2.5}$ is the main cause of reduced visibility (haze) in parts of the United States.

2 Particulate matter can be carried over long distances by wind and settle on ground or water, making lakes and streams acidic, changing the nutrient balance in coastal waters and large river basins, depleting the nutrients in soil, damaging sensitive forests and farm crops, and affecting the diversity of ecosystems.

3 Particulate matter can stain and damage stone and other materials, including culturally important objects such as statues and monuments.

4 CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS on March 25, 2010, because the SoCAB did not violate federal 24-hour PM_{10} standards from 2004 to

- **Ozone** is commonly referred to as "smog" and is a gas that is formed when VOCs and NO_X, both by-products of internal combustion engine exhaust, undergo photochemical reactions in sunlight. O_3 is a secondary criteria air pollutant. O_3 concentrations are generally highest during the summer months when direct sunlight, light winds, and warm temperatures create favorable conditions for its formation. O_3 poses a health threat to those who already suffer from respiratory diseases as well as to healthy people. Breathing O_3 can trigger a variety of health problems, including chest pain, coughing, throat irritation, and congestion. It can worsen bronchitis, emphysema, and asthma. Ground-level O_3 also can reduce lung function and inflame the linings of the lungs. Repeated exposure may permanently scar lung tissue. O_3 also affects sensitive vegetation and ecosystems, including forests, parks, wildlife refuges, and wilderness areas. In particular, O_3 harms sensitive vegetation during the growing season (SCAQMD 2005; USEPA 2017). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2016b).

- **Lead** is a metal found naturally in the environment as well as in manufactured products. Once taken into the body, lead distributes throughout the body in the blood and accumulates in the bones. Depending on the level of exposure, lead can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and the cardiovascular system. Lead exposure also affects the oxygen-carrying capacity of the blood. The effects of lead most commonly encountered in current populations are neurological effects in children and cardiovascular effects in adults (e.g., high blood pressure and heart disease). Infants and young children are especially sensitive to even low levels of lead, which may contribute to behavioral problems, learning deficits, and lowered IQ (SCAMQD 2005; USEPA 2017). The major sources of lead emissions have historically been mobile and industrial sources. As a result of the EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. However, in 2008 the EPA and CARB adopted stricter lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.[5] As a result of these violations, the Los Angeles County portion of the SoCAB is designated nonattainment under the National AAQS for lead (SCAQMD 2012; CARB 2016b). Because emissions of lead are found only in projects that are permitted by SCAQMD, lead is not a pollutant of concern for the project.

Toxic Air Contaminants

By the last update to the TAC list in December 1999, CARB had designated 244 compounds as TACs (CARB 1999). Additionally, CARB has implemented control measures for a number of compounds that pose high

2007. The EPA approved the State of California's request to redesignate the South Coast PM_{10} nonattainment area to attainment of the PM_{10} National AAQS, effective on July 26, 2013.

[5] Source-oriented monitors record concentrations of lead at lead-related industrial facilities in the SoCAB, which include Exide Technologies in the City of Commerce; Quemetco, Inc., in the City of Industry; Trojan Battery Company in Santa Fe Springs; and Exide Technologies in Vernon. Monitoring conducted between 2004 through 2007 showed that the Trojan Battery Company and Exide Technologies exceed the federal standards (SCAQMD 2012).

risks and show potential for effective control. The majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being particulate matter from diesel-fueled engines.

Diesel Particulate Matter

In 1998, CARB identified DPM as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particles are 10 microns or less in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs.

Community Risk

To reduce exposure to TACs, CARB developed and approved the *Air Quality and Land Use Handbook: A Community Health Perspective* (2005) to provide guidance regarding the siting of sensitive land uses in the vicinity of freeways, distribution centers, rail yards, ports, refineries, chrome-plating facilities, dry cleaners, and gasoline-dispensing facilities. This guidance document was developed to assess compatibility and associated health risks when siting sensitive receptors near existing pollution sources. CARB's recommendations were based on a compilation of recent studies that evaluated data on the adverse health effects from proximity to air pollution sources. The key observation in these studies is that proximity substantially increases exposure and the potential for adverse health effects. Three carcinogenic TACs constitute the majority of the known health risks from motor vehicle traffic—DPM from trucks and benzene and 1,3 butadiene from passenger vehicles. CARB recommendations are based on data that show that localized air pollution exposures can be reduced by as much as 80 percent by following CARB minimum distance separations.

Air Quality Management Planning

SCAQMD is the agency responsible for improving air quality in the SoCAB and assuring that the National and California AAQS are attained and maintained. SCAQMD is responsible for preparing the air quality management plan (AQMP) for the SoCAB in coordination with the Southern California Association of Governments (SCAG). Since 1979, a number of AQMPs have been prepared.

2016 AQMP

On March 3, 2017, SCAQMD adopted the 2016 AQMP, which serves as an update to the 2012 AQMP. The 2016 AQMP addresses strategies and measures to attain the 2008 federal 8-hour ozone standard by 2031, the 2012 federal annual $PM_{2.5}$ standard by 2025, the 2006 federal 24-hour $PM_{2.5}$ standard by 2019, the 1997 federal 8-hour ozone standard by 2023, and the 1979 federal 1-hour ozone standard by year 2022. It is projected that total NO_X emissions in the SoCAB would need to be reduced to 150 tons per day by year 2023 and to 100 tons per day in year 2031 to meet the 1997 and 2008 federal 8-hour ozone standards. The strategy to meet the 1997 federal 8-hour ozone standard would also lead to attaining the 1979 federal 1-hour ozone standard by year 2022 (SCAQMD 2017), which requires reducing NO_X emissions in the SoCAB to 250 tons per day. Reducing NO_X emissions would also reduce $PM_{2.5}$ concentrations. However, since the goal is to meet the 2012 federal annual $PM_{2.5}$ standard no later than year 2025, SCAQMD is seeking to reclassify the SoCAB from "moderate" to "serious" nonattainment under this federal standard. A "moderate" nonattainment would require meeting the 2012 federal standard no later than 2021. Overall, the 2016 AQMP is composed of stationary and mobile-source emission reductions from regulatory control measures and incentive-based programs; co-benefits from climate programs and mobile-source strategies; and reductions from federal sources such as aircrafts, locomotives, and ocean-going vessels. Strategies outlined in the 2016 AQMP will be implemented in collaboration between CARB and the EPA (SCAQMD 2017).

Lead State Implementation Plan

In 2008, the EPA designated the Los Angeles County portion of the SoCAB as a nonattainment area under the federal lead classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in the City of Vernon and the City of Industry that exceeded the new standard in the 2007-to-2009 period. The remainder of the SoCAB, outside the Los Angeles County nonattainment area, remains in attainment of the new 2008 lead standard. On May 24, 2012, CARB approved the State Implementation Plan (SIP) revision for the federal lead standard, which the EPA revised in 2008. Lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011. The SIP revision was submitted to the EPA for approval.

SCAQMD Rules and Regulations

All projects are subject to SCAQMD rules and regulations in effect at the time of activity, including:

- **Rule 401, Visible Emissions.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in visible emissions. Specifically, the rule prohibits the discharge of any air contaminant into the atmosphere by a person from any single source of emission for a period or periods aggregating more than three minutes in any one hour that is as dark as or darker than designated No. 1 on the Ringelmann Chart, as published by the U.S. Bureau of Mines.

- **Rule 402, Nuisance.** This rule is intended to prevent the discharge of pollutant emissions from an emissions source that results in a public nuisance. Specifically, this rule prohibits any person from discharging quantities of air contaminants or other material from any source such that it would result in an injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public. Additionally, the discharge of air contaminants would also be prohibited where it would endanger the comfort, repose, health, or safety of any number of persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

- **Rule 403, Fugitive Dust.** This rule is intended to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. Rule 403 applies to any activity or human-made condition capable of generating fugitive dust, and requires best available control measures to be applied to earth moving and grading activities.

- **Rule 1113, Architectural Coatings.** This rule limits the VOC content of architectural coatings used on projects in the SCAQMD. Any person who supplies, sells, offers for sale, or manufactures any architectural coating for use on projects in the SCAQMD must comply with the current VOC standards set in this rule.

5.2.1.2 EXISTING CONDITIONS

South Coast Air Basin

The project site is in the SoCAB, which includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills; it is bounded by the Pacific Ocean in the southwest quadrant, and high mountains form the remainder of the perimeter. The general region lies in the semipermanent high-pressure zone of the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds (SCAQMD 2005).

Temperature and Precipitation

The annual average temperature varies little throughout the SoCAB, ranging from the low to middle 60s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas. The climatological station nearest to the project site is the Newport Beach Harbor Monitoring Station (ID 046175). The average low is reported at 46.9°F in January, and the average high is 73.4°F in August (WRCC 2017).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from November through April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains. Rainfall averages 11.00 inches per year in the project area (WRCC 2017).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent. Low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 2005).

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is somewhat greater during the dry summer months than during the rainy winter season.

Between periods of wind, periods of air stagnation may occur in both the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall months, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the transport and diffusion of pollutants by inhibiting their eastward transport. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 2005).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, there are two similarly distinct types of temperature inversions that control the vertical depth through which pollutants are mixed. These are the marine/subsidence inversion and the radiation inversion. The combination of winds and inversions are critical determinants in leading to the highly degraded air quality in summer and the generally good air quality in the winter in the project area (SCAQMD 2005).

SoCAB Nonattainment Designations

The AQMP provides the framework for air quality basins to achieve attainment of the California and National AAQS through the SIP. Areas are classified as attainment or nonattainment areas for particular pollutants depending on whether they meet the ambient air quality standards. Severity classifications for ozone nonattainment are marginal, moderate, serious, severe, and extreme.

- **Unclassified:** A pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.
- **Attainment:** A pollutant is in attainment if the AAQS for that pollutant was not violated at any site in the area during a three-year period.
- **Nonattainment:** A pollutant is in nonattainment if there was at least one violation of an AAQS for that pollutant in the area.
- **Nonattainment/Transitional:** A subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining the AAQS for that pollutant.

The attainment status for the SoCAB is shown in Table 5.2-2, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*. The SoCAB is designated in attainment of the California AAQS for sulfates and designated a nonattainment area for lead (Los Angeles County only) under the National AAQS.

5. Environmental Analysis
AIR QUALITY

Table 5.2-2 Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State	Federal
Ozone – 1-hour	Extreme Nonattainment	No Federal Standard
Ozone – 8-hour	Extreme Nonattainment	Extreme Nonattainment
PM_{10}	Serious Nonattainment	Attainment/Maintenance
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Attainment
NO_2	Attainment	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only)[1]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2016b.
[1] In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new federal and existing state AAQS as a result of large industrial emitters. Remaining areas within the SoCAB are unclassified.

SoCAB Multiple Air Toxics Exposure Study IV

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on ambient concentrations of TACs and the potential health risks from air toxics in the SoCAB. In 2008, SCAQMD conducted its third update to the MATES study (MATES III) based on the Office of Environmental Health Hazards Assessment (OEHHA) 2003 Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments (2003 HRA Guidance Manual). The results showed that the overall risk for excess cancer from a lifetime exposure to ambient levels of air toxics was about 1,200 in a million. The largest contributor to this risk was diesel exhaust, which accounted for 84 percent of the cancer risk (SCAQMD 2008a).

SCAQMD recently released the fourth update (MATES IV), which was also based on OEHHA's 2003 HRA Guidance Manual. The results showed that the overall monitored risk for excess cancer from a lifetime exposure to ambient levels of air toxics decreased to approximately 418 in one million. Compared to the 2008 MATES III, monitored excess cancer risks decreased by approximately 65 percent. Approximately 90 percent of the risk is attributed to mobile sources, and 10 percent is attributed to TACs from stationary sources, such as refineries, metal processing facilities, gas stations, and chrome plating facilities. The largest contributor to this risk was diesel exhaust, which accounted for approximately 68 percent of the air toxics risk. Compared to MATES III, MATES IV found substantial improvement in air quality and associated decrease in air toxics exposure. As a result, the estimated basinwide population-weighted risk decreased by approximately 57 percent since MATES III (SCAQMD 2015a).

OEHHA updated the guidelines for estimating cancer risks on March 6, 2015 (OEHHA 2015). The new method uses higher estimates of cancer potency during early life exposures, which result in a higher calculation of risk. There are also differences in the assumptions on breathing rates and length of residential exposures. When combined together, SCAQMD estimates that risks for a given inhalation exposure level will be about 2.7 times higher than the risk identified in MATES IV using the 2015 OEHHA guidance methodology (e.g., 2.7 times higher than 418 in one million overall excess cancer risk) (SCAQMD 2015a).

Existing Ambient Air Quality

Existing ambient air quality, historical trends, and projections in the vicinity of the project site are best documented by measurements made by SCAQMD. The project site is in Source Receptor Area (SRA) 18 – North Orange County Coastal. The air quality monitoring station closest to the project site is the Costa Mesa-Mesa Verde Drive Monitoring Station. This station monitors O_3, CO, NO_2, and SO_2. Data for PM_{10} and $PM_{2.5}$ is supplemented by the Anaheim-Pampas Lane Monitoring Station. The most current five years of data monitored at these stations are in Table 5.2-3, *Ambient Air Quality Monitoring Summary*. The data show recurring violations of state PM_{10}, federal $PM_{2.5}$, and state and federal O_3 standards. The CO, NO_2, and SO_2 standards have not been violated in the last five years in the project vicinity.

Table 5.2-3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations				
	2012	2013	2014	2015	2016
Ozone (O_3)[1]					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	1	1	1	0
State 8-hour ≥ 0.07 ppm (days exceed threshold)	1	2	6	2	0
Federal 8-Hour > 0.075 ppm (days exceed threshold)	1	1	4	1	0
Max. 1-Hour Conc. (ppm)	0.090	0.095	0.096	0.099	0.90
Max. 8-Hour Conc. (ppm)	0.076	0.084	0.080	0.080	0.069
Carbon Monoxide (CO)[1]					
State 8-Hour > 9.0 ppm (days exceed threshold)	0	*	*	*	*
Federal 8-Hour ≥ 9.0 ppm (days exceed threshold)	0	*	*	*	*
Max. 8-Hour Conc. (ppm)	1.71	*	*	*	*
Nitrogen Dioxide (NO_2)[1]					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Federal 1-Hour ≥ 0.100 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppb)	0.074	0.075	0.060	0.052	0.059
Sulfur Dioxide (SO_2)[1]					
State 24-Hour ≥ 0.04 ppm (days exceed threshold)	0	0	*	*	*
Federal 24-Hour ≥ 0.14 ppm (days exceed threshold)	0	0	*	*	*
Max 24-Hour Conc. (ppm)	0.001	0.001	*	*	*
Coarse Particulates (PM_{10})[2]					
State 24-Hour > 50 μg/m^3 (days exceed threshold)	0	1	2	2	*
Federal 24-Hour > 150 μg/m^3 (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (μg/m^3)	48.0	77.0	84.0	59.0	74.0
Fine Particulates ($PM_{2.5}$)[2]					
Federal 24-Hour > 35 μg/m^3 (days exceed threshold)	4	1	6	3	1
Max. 24-Hour Conc. (μg/m^3)	50.1	37.8	56.2	45.8	44.4

Source: CARB 2017.
Notes: ppm = parts per million; ppb = parts per billion, μg/m^3 = micrograms per cubic meter
* Data not available.
[1] Data from the Costa Mesa-Mesa Verde Drive Monitoring Station.
[2] Data from the Anaheim-Pampas Lane Monitoring Station.

Existing Emissions

The project site currently generates emissions from operation of CdM MS/HS. Emission sources include transportation (e.g., vehicle emissions associated with student trips), area (e.g., paints, consumer cleaning products), and energy (e.g., natural gas usage for heating).

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Sensitive population groups include children, the elderly, the acutely ill, and the chronically ill, especially those with cardiorespiratory diseases.

Residential areas are also considered sensitive to air pollution because residents (including children and the elderly) tend to be at home for extended periods of time, resulting in sustained exposure to any pollutants present. Other sensitive receptors include retirement facilities, hospitals, and schools. Recreational land uses are considered moderately sensitive to air pollution. Although exposure periods are generally short, exercise places a high demand on respiratory functions, which can be impaired by air pollution. In addition, noticeable air pollution can detract from the enjoyment of recreation. Industrial, commercial, retail, and office areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, because the majority of the workers tend to stay indoors most of the time. In addition, the workforce is generally the healthiest segment of the population.

The nearest sensitive receptors to the project site are the residential land uses to the north across Vista del Oro and to the east across Eastbluff Drive.

5.2.2 Thresholds of Significance

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

AQ-1 Conflict with or obstruct implementation of the applicable air quality plan.

AQ-2 Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

AQ-3 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors).

AQ-4 Expose sensitive receptors to substantial pollutant concentrations.

AQ-5 Create objectionable odors affecting a substantial number of people.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold AQ-5

This impact will not be addressed in the following analysis.

5.2.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT THRESHOLDS

The analysis of the project's air quality impacts follows the guidance and methodologies recommended in SCAQMD's *CEQA Air Quality Handbook* and the significance thresholds on SCAQMD's website.[6] CEQA allows the significance criteria established by the applicable air quality management or air pollution control district to be used to assess impacts of a project on air quality. SCAQMD has established regional thresholds of significance. In addition to the regional thresholds, projects are subject to the AAQS.

Regional Significance Thresholds

SCAQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 5.2-4, *SCAQMD Significance Thresholds*, lists thresholds that are applicable for all projects uniformly regardless of size or scope. There is growing evidence that although ultrafine particulates contribute a very small portion of the overall atmospheric mass concentration, they represent a greater proportion of the health risk from PM. However, the EPA and CARB have not yet adopted AAQS to regulate ultrafine particulates; therefore, SCAQMD has not developed thresholds for them.

Table 5.2-4 SCAQMD Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROG)	75 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day

Source: SCAQMD 2015b.

Projects that exceed the regional significance threshold contribute to the nonattainment designation of the SoCAB. The attainment designations are based on the AAQS, which are set at levels of exposure that are determined to not result in adverse health. Exposure to fine particulate pollution and ozone causes myriad health impacts, particularly to the respiratory and cardiovascular systems.

- Linked to increased cancer risk ($PM_{2.5}$, TACs)
- Aggravates respiratory disease (O_3, $PM_{2.5}$)
- Increases bronchitis (O_3, $PM_{2.5}$)
- Causes chest discomfort, throat irritation, and increased effort to take a deep breath (O_3)
- Reduces resistance to infections and increases fatigue (O_3)

[6] SCAQMD's air quality significance thresholds are current as of March 2015 and can be found at: http://www.aqmd.gov/ceqa/hdbk.html.

5. Environmental Analysis
AIR QUALITY

- Reduces lung growth in children ($PM_{2.5}$)
- Contributes to heart disease and heart attacks ($PM_{2.5}$)
- Contributes to premature death (O_3, $PM_{2.5}$)
- Linked to lower birth weight in newborns ($PM_{2.5}$) (SCAQMD 2015c)

Exposure to fine particulates and ozone aggravates asthma attacks and can amplify other lung ailments such as emphysema and chronic obstructive pulmonary disease. Exposure to current levels of $PM_{2.5}$ is responsible for an estimated 4,300 cardiopulmonary-related deaths per year in the SoCAB. In addition, University of Southern California scientists' landmark children's health study found that lung growth improved as air pollution declined for children aged 11 to 15 in five communities in the SoCAB (SCAQMD 2015d).

Mass emissions in Table 5.2-4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. Therefore, regional emissions from a single project do not trigger a regional health impact, and it is speculative to identify how many more individuals in the air basin would be affected by the health effects listed above. SCAQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals to elevated concentrations of air quality in the SoCAB. To achieve the health-based standards established by the EPA, SCAQMD prepares an AQMP that details regional programs to attain the AAQS.

Localized Significance Thresholds

SCAQMD identifies localized significance thresholds (LSTs), shown in Table 5.2-5, *SCAQMD Localized Significance Thresholds*. Emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at a project site (offsite mobile-source emissions are not included in the LST analysis) could expose sensitive receptors to substantial concentrations of criteria air pollutants. A project that generates emissions that trigger a violation of the AAQS when added to the local background concentrations would generate a significant impact.

Table 5.2-5 SCAQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)[1]	20 ppm
8-Hour CO Standard (CAAQS/NAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
Annual Average NO_2 Standard (CAAQS)[1]	0.03 ppm
24-Hour PM_{10} Standard – Construction (SCAQMD)[2]	10.4 $\mu g/m^3$
24-Hour $PM_{2.5}$ Standard – Construction (SCAQMD)[2]	10.4 $\mu g/m^3$
24-Hour PM_{10} Standard – Operation (SCAQMD)[2]	2.5 $\mu g/m^3$
24-Hour $PM_{2.5}$ Standard – Operation (SCAQMD)[2]	2.5 $\mu g/m^3$
Annual Average PM_{10} Standard (SCAQMD)[2]	1.0 $\mu g/m^3$

Source: SCAQMD 2015b.
ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter
[1] Based on the more restrictive California AAQS for CO and NO_2.
[2] Threshold is based on SCAQMD Rule 403. Since the SoCAB is in nonattainment for PM_{10} and $PM_{2.5}$, the threshold is established as an allowable change in concentration. Therefore, background concentration is not relevant.

To assist lead agencies, SCAQMD developed screening-level LSTs to back-calculate the mass amount (pounds per day) of emissions generated onsite that would trigger the hourly levels shown in Table 5.2-5 for projects under five acres. LSTs are based on the ambient concentrations of that pollutant within the project SRA and the distance to the nearest sensitive receptor. Screening-level LST analyses are the localized significance thresholds for all projects of five acres and less; however, they can be used as screening criteria for larger projects to determine whether or not dispersion modeling may be required to compare concentrations of air pollutants generated by the project to the localized concentrations shown in Table 5.2-5.

The construction LSTs in SRA 18 are shown in Table 5.2-6, *SCAQMD Construction Localized Significance Screening Thresholds*. For construction activities, LSTs are based on the acreage disturbed per day according to equipment use. The different types of construction activities would require different equipment mixes, resulting in multiple LSTs.

Table 5.2-6 SCAQMD Construction Localized Significance Screening Thresholds

Acreage Disturbed	Threshold (lbs/day)			
	Nitrogen Oxides (NO_X)	Carbon Monoxide (CO)	Coarse Particulates (PM_{10})	Fine Particulates ($PM_{2.5}$)
≤1.00 Acre Disturbed Per Day	92	647	4.00	3.00
1.63 Acres Disturbed Per Day	116	844	5.87	4.25
2.00 Acres Disturbed Per Day	131	962	7.00	5.00
2.63 Acres Disturbed Per Day	145	1,118	8.45	5.83
3.00 Acres Disturbed Per Day	153	1,212	9.33	6.33

Source: SCAQMD 2008a; SCAQMD 2011. Based on receptors in SRA 18.
[1] LSTs are based on sensitive receptors within 82 feet (25 meters).

The operational LSTs in SRA 18 are shown in Table 5.2-7, *SCAQMD Screening-Level Operational Localized Significance Thresholds*.

Table 5.2-7 SCAQMD Screening-Level Operational Localized Significance Thresholds

Air Pollutant	Threshold (lbs/day) Operational[1]
Nitrogen Oxides (NO_X)	197
Carbon Monoxide (CO)	1,711
Coarse Particulates (PM_{10})	4.00
Fine Particulates ($PM_{2.5}$)	2.00

Source: SCAQMD 2008a.
[1] LSTs are based on sensitive receptors within 82 feet (25 meters) of a 5-acre site in SRA 18.

5.2.2.2 CO HOTSPOTS

Areas of vehicle congestion have the potential to create pockets of CO called hotspots. These pockets have the potential to exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to AAQS is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds. With the turnover of older vehicles and introduction of cleaner fuels, as well as implementation of control technology on industrial facilities, CO concentrations in the SoCAB and the state have steadily declined.

5.2.2.3 HEALTH RISK ANALYSIS

Whenever a project would require use of chemical compounds that have been identified in SCAQMD Rule 1401; placed on CARB's air toxics list pursuant to AB 1807, the Air Contaminant Identification and Control Act (1983); or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by SCAQMD. Table 5.2-8, *SCAQMD Toxic Air Contaminants Incremental Risk Thresholds*, lists SCAQMD's TAC incremental risk thresholds for operation of a project. The purpose of this environmental evaluation is to identify the significant effects of the proposed project on the environment, not the significant effects of the environment on the proposed project. (*California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369 (Case No. S213478)). However, the environmental document must analyze the impacts of environmental hazards on future users when a proposed project exacerbates an existing environmental hazard or condition. Residential, commercial, and office uses do not use substantial quantities of TACs, and these thresholds are typically applied to new industrial projects.

Table 5.2-8 SCAQMD Toxic Air Contaminants Incremental Risk Thresholds

Maximum Individual Cancer Risk	≥ 10 in 1 million
Cancer Burden (in areas ≥ 1 in 1 million)	> 0.5 excess cancer cases
Hazard Index (project increment)	≥ 1.0

Source: SCAQMD 2015b.

5.2.3 Environmental Impacts

5.2.3.1 METHODOLOGY

This air quality evaluation was prepared in accordance with the requirements of CEQA to determine if significant air quality impacts are likely to occur in conjunction with implementation of the proposed project. SCAQMD has published guidelines that are intended to provide local governments with guidance for analyzing and mitigating air quality impacts and that were used in this analysis (SCAQMD 1993; SCAQMD 2008a; SCAQMD 2015b; SCAQMD 2015e). The analysis also makes use of CalEEMod 2016.3.1 for determination of daily construction and operational emissions. Option A construction emissions are based on the construction information provided by the District. For purposes of this analysis, Option B construction emissions are based on the construction information (construction activities, equipment, etc.) provided and assumed for Option A. Additionally, it is assumed that Option B would be constructed in two general phases and would generally require the same construction activities, construction equipment, and construction activity durations. Where specific information was not available, construction assumptions were based on CalEEMod defaults and similar past projects (see Appendix E). Operational emissions impacts are based on the trip generation provided by IBI Group (see Appendix H).

5.2.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.2-1: The proposed project (Options A and B) would be consistent with the South Coast Air Quality Management District's Air Quality Management Plan. [Threshold AQ-1]

Impact Analysis:

Options A and B

SCAQMD is directly responsible for reducing emissions from area, stationary, and mobile sources in the SoCAB to achieve National and California AAQS. SCAQMD has responded to this requirement by preparing an AQMP. On March 3, 2017, the SCAQMD Governing Board adopted the 2016 AQMP, which is a regional and multiagency effort (SCAQMD, CARB, SCAG, and EPA).

A consistency determination with the AQMP plays an important role in local agency project review by linking local planning and individual projects to the AQMP. It fulfills the CEQA goal of informing decision makers of the environmental efforts of the project under consideration early enough to ensure that air quality concerns are fully addressed. It also provides the local agency with ongoing information as to whether they are contributing to the clean air goals in the AQMP.

The two principal criteria for conformance to an AQMP are:

- Whether the project would exceed the assumptions in the AQMP.
- Whether the project would result in an increase in the frequency or severity of existing air quality violations; cause or contribute to new violations; or delay timely attainment of air quality standards.

SCAG is SCAQMD's partner in the preparation of the AQMP, providing the latest economic and demographic forecasts and developing transportation measures. The regional emissions inventory for the SoCAB is compiled by SCAQMD using demographic projections compiled by SCAG. The regional population, housing, and employment projections developed by SCAG are based, in part, on the underlying general plan land use designations. These projections form the foundation for the emissions inventory of the AQMP. These demographic trends are incorporated into the regional transportation plan/sustainable communities strategy, compiled by SCAG to determine priority transportation projects and vehicle miles traveled within the SCAG region. Because the AQMP strategy is based on projections from local general plans, projects that are consistent with the local general plan are considered consistent with the air quality-related regional plan.

5. Environmental Analysis
AIR QUALITY

Changes in population, housing, or employment growth projections have the potential to affect SCAG's demographic projections and therefore the assumptions in SCAQMD's AQMP. Additionally, only large projects typically have the potential to substantially effect the demographic forecasts in the AQMP.

The proposed project involves improvement to an existing MS/HS campus and would not affect regional population or employment forecasts. Furthermore, long-term emissions generated by events under Option A and the Option B would not exceed SCAQMD's regional operational thresholds, as discussed under Impact 5.2-3. Criteria air pollutants generated during operation of the proposed project are compared to SCAQMD's regional significance thresholds (see Impact 5.2-3), which were established to determine whether a project has the potential to cumulatively contribute to the SoCAB's nonattainment designations. As a result, the proposed project would not affect the regional emissions inventory or conflict with the AQMP. Impacts are less than significant.

Impact 5.2-2: Construction activities associated with implementation of the proposed project (Options A and B) would not generate short-term emissions that exceed the South Coast Air Quality Management District's regional thresholds. [Thresholds AQ-2 and AQ-3]

Impact Analysis: A project would normally have a significant effect on the environment if it violates any air quality standard or contributes substantially to an existing or projected air quality violation. Construction activities produce combustion emissions from various sources, such as onsite heavy-duty construction vehicles, vehicles hauling materials to and from the site, and motor vehicles transporting the construction crew. Site preparation activities produce fugitive dust emissions (PM_{10} and $PM_{2.5}$) from grading and excavation and from demolition. Air pollutant emissions from construction activities onsite would vary daily as construction activity levels change. The following analyzes potential construction-related impacts associated with the proposed Option A and Option B configurations.

Option A

Construction activities for the proposed project would temporarily increase PM_{10}, $PM_{2.5}$, VOC, NO_X, SO_X, and CO regional emissions in the SoCAB. Activities would include demolition, site preparation, grading, utility trenching, structure and ancillary building construction, field light installation, and paving. Construction emissions were estimated using CalEEMod 2016.3.1 based on the project's preliminary construction schedule, phasing, and equipment list provided by the District. The construction schedule and equipment mix is based on preliminary engineering and is subject to changes during final design and as dictated by field conditions. Estimates of maximum daily construction emissions are provided in Table 5.2-9, *Maximum Daily Regional Construction Emissions – Option A*. As shown in the table, air pollutant emissions from construction-related activities would be less than their respective SCAQMD regional significance threshold values. Therefore, air quality impacts from project-related construction activities would be less than significant.

Table 5.2-9 Maximum Daily Regional Construction Emissions – Option A

Source	Criteria Air Pollutants (pounds per day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
2018 Asphalt Demolition	2	24	20	<1	2	1
2018 Asphalt Demolition + Asphalt Demo Debris Haul + Structure Demolition + Structure Demo Debris Haul	7	81	48	<1	10	4
2018 Structure Demolition + Structure Demo Debris Haul	4	39	23	<1	2	2
2018 Site Preparation	2	20	15	<1	3	2
2018 Rough Grading	2	20	15	<1	3	2
2018 Rough Grading + Utility Trenching	3	26	20	<1	4	2
2018 Utility Trenching	1	6	5	<1	<1	<1
2018 Utility Trenching + Fine Grading	3	26	20	<1	4	2
2018 Fine Grading	2	20	15	<1	3	2
2018 Building Construction	1	7	7	<1	<1	<1
2018 Building Construction + Asphalt Paving	2	17	16	<1	1	1
2019 Building Construction	1	6	6	<1	<1	<1
2019 Building Construction + Asphalt Paving	2	15	15	<1	1	1
2019 Building Construction + Asphalt Paving + Finishing/Landscaping	3	20	17	<1	1	1
2019 Building Construction + Finishing/Landscaping	2	11	8	<1	1	1
2019 Building Construction + Finishing/Landscaping + Field Light Installation	3	17	11	<1	1	1
2019 Building Construction + Field Light Installation	2	12	9	<1	1	1
2019 Building Construction + Architectural Coating	2	6	6	<1	<1	<1
Maximum Daily Emissions	7	81	48	<1	10	4
SCAQMD Regional Construction Threshold	75	100	550	150	150	55
Significant?	No	No	No	No	No	No

Source: CalEEMod 2016.3.1.
Note: Totals may not add up to 100 percent due to rounding.
1 Based on the preliminary information provided by the District. Where specific information regarding project-related construction activities was not available, construction assumptions were based on past similar projects or CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.
2 Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers. Modeling also assumes a VOC content of 100 grams per liter for exterior paints and 100 VOC content interior paints.

Option B

For purposes of this analysis, it is assumed that Field 1 proposed under Option B would be completed within the same time frame as the proposed Option A configuration, and completion of Field 2 and remaining areas would initiate immediately afterwards (see Appendix E for further construction details). Estimates of maximum daily construction emissions associated with Option B are provided in Table 5.2-10, *Maximum Daily Regional Construction Emissions – Option B*. As shown in the table, air pollutant emissions from construction-related activities would be less than their respective SCAQMD regional significance threshold values. Therefore, air quality impacts from project-related construction activities would be less than significant.

5. Environmental Analysis
AIR QUALITY

Table 5.2-10 Maximum Daily Regional Construction Emissions – Option B

Source	Criteria Air Pollutants (pounds per day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Phase 1 (Field 1 Area)						
2018 Asphalt Demolition	2	24	20	<1	2	1
2018 Asphalt Demolition + Asphalt Demo Debris Haul + Structure Demolition + Structure Demo Debris Haul	7	81	48	<1	10	4
2018 Structure Demolition + Structure Demo Debris Haul	4	39	23	<1	2	2
2018 Site Preparation	2	20	15	<1	3	2
2018 Rough Grading	2	20	15	<1	3	2
2018 Rough Grading + Utility Trenching	3	26	20	<1	4	2
2018 Utility Trenching	1	6	5	<1	<1	<1
2018 Utility Trenching + Fine Grading	3	26	20	<1	4	2
2018 Fine Grading	2	20	15	<1	3	2
2018 Sports Field Construction	1	7	7	<1	<1	<1
2018 Sports Field Construction + Asphalt Paving	2	18	16	<1	1	1
2019 Sports Field Construction	1	6	6	<1	<1	<1
2019 Sports Field Construction + Asphalt Paving	2	16	16	<1	1	1
2019 Sports Field Construction + Asphalt Paving + Finishing/Landscaping	3	26	20	<1	2	1
2019 Sports Field Construction + Finishing/Landscaping	2	16	10	<1	1	1
2019 Sports Field Construction + Finishing/Landscaping + Field Light Installation	3	22	13	<1	1	1
2019 Sports Field Construction + Field Light Installation	2	12	9	<1	1	1
2019 Sports Field Construction + Architectural Coating	2	6	6	<1	<1	<1
Phase 2 (Field 2 Area)						
2019 Site Preparation	2	19	14	<1	3	2
2019 Rough Grading	2	19	14	<1	3	2
2019 Rough Grading + Utility Trenching	2	24	19	<1	4	2
2019 Utility Trenching	1	5	5	<1	<1	<1
2019 Utility Trenching + Fine Grading	3	26	23	<1	4	2
2019 Fine Grading	2	21	18	<1	3	2
2019 Sports Field Construction	1	6	6	<1	<1	<1
2019 Sports Field Construction + Asphalt Paving	2	15	15	<1	1	1
2019 Sports Field Construction + Asphalt Paving + Finishing/Landscaping	3	25	19	<1	2	1
2019 Sports Field Construction + Finishing/Landscaping	2	16	10	<1	1	1
2019 Sports Field Construction + Finishing/Landscaping + Field Light Installation	3	22	13	<1	1	1
2019 Building Construction + Field Light Installation	2	12	9	<1	1	1
Maximum Daily Emissions	7	81	48	<1	10	4
SCAQMD Regional Construction Threshold	75	100	550	150	150	55
Significant?	No	No	No	No	No	No

Source: CalEEMod 2016.3.1.
Note: Totals may not add up to 100 percent due to rounding.
1 Based on the preliminary information provided by the District. Completion of the Field 1 area is based on the same timeframe as for completion of Option A. Where

Table 5.2-10 Maximum Daily Regional Construction Emissions – Option B

Source	Criteria Air Pollutants (pounds per day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$

specific information regarding project-related construction activities was not available, construction assumptions were based on past similar projects or CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.
2 Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers. Modeling also assumes a VOC content of 100 grams per liter for exterior paints and 100 VOC content interior paints.

Impact 5.2-3: Long-term criteria air pollutant emissions associated with the proposed project (Options A and B) would not exceed the South Coast Air Quality Management District's regional operational significance thresholds. [Thresholds AQ-2 and AQ-3]

Impact Analysis: Operation of the proposed improvements would generate criteria air pollutant emissions from area sources (e.g., landscape fuel use and architectural coatings), energy use (natural gas), and vehicle trips. The following analyzes potential regional operation-phase air quality impacts of the proposed Option A and Option B.

Option A

Impacts are based on criteria air pollutant emissions generated by a worst-case, peak-capacity event at the 664-seat sports field, which would generate a total of 432 average daily trips according to the traffic impact report (see Appendix H). Table 5.2-11, *Maximum Daily Regional Operational Emission – Option A*, shows criteria air pollutant emissions from the proposed project. Project-related long-term air pollutant emissions would not exceed SCAQMD's regional significance thresholds. Therefore, impacts to the regional air quality from project-related operational-phase emissions would be less than significant.

Table 5.2-11 Maximum Daily Regional Operational Emissions – Option A

Source	Criteria Air Pollutants (lbs/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	<1	<1	<1	0	0	0
Energy	<1	<1	<1	<1	<1	<1
Mobile Sources	1	1	7	<1	2	1
Total Emissions	1	1	7	<1	2	1
SCAQMD Regional Threshold	55	55	550	150	150	55
Exceeds Regional Threshold?	No	No	No	No	No	No

Source: CalEEMod 2016.3.1.
Notes: Highest winter or summer emissions are reported.
Totals may not add up to 100 percent due to rounding.

Option B

Impacts are based on criteria air pollutant emissions generated for a worst-case day. For purposes of this analysis, the worst-case day under the proposed Option B is assumed to be peak-capacity events held

5. Environmental Analysis
AIR QUALITY

concurrently at Field 1 (664 spectators) and Field 2 (200 spectators), which would generate a total of 562 vehicle trips (see Appendix H). Table 5.2-12, *Maximum Daily Regional Operational Emission – Option B*, shows criteria air pollutant emissions from the proposed project. Project-related long-term air pollutant emissions would not exceed SCAQMD's regional significance thresholds. Therefore, impacts to the regional air quality from project-related operational phase emissions would be less than significant.

Table 5.2-12 Maximum Daily Regional Operational Emissions – Option B

Source	Criteria Air Pollutants (lbs/day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	<1	<1	<1	0	0	0
Energy	<1	<1	<1	<1	<1	<1
Mobile Sources	1	1	9	<1	3	1
Total Emissions	1	1	9	<1	3	1
SCAQMD Regional Threshold	55	55	550	150	150	55
Exceeds Regional Threshold?	No	No	No	No	No	No

Source: CalEEMod 2016.3.1.
Notes: Highest winter or summer emissions are reported.
Totals may not add up to 100 percent due to rounding.

Impact 5.2-4: Construction of the proposed project (Options A and B) would not expose sensitive receptors to substantial pollutant concentrations. [Threshold AQ-4]

Impact Analysis: The proposed project could expose sensitive receptors to elevated pollutant concentrations if it would cause or contribute significantly to elevated pollutant concentration levels. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects.

Construction LSTs

Localized significance thresholds are based on the California AAQS, which are the most stringent AAQS that have been established to provide a margin of safety in the protection of public health and welfare. They are designed to protect sensitive receptors most susceptible to further respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. Construction LSTs are based on the size of the project site, distance to the nearest sensitive receptor, and Source Receptor Area. The nearest sensitive receptors to the project site are the residential land uses to the north across Vista del Oro and to the east across Eastbluff Drive. The following analyzes potential localized construction-related air quality impacts associated with Option A and Option B.

Option A

Air pollutant emissions generated by construction activities are anticipated to cause increases in air pollutant concentrations. Table 5.2-13, *Localized Construction Emissions – Option A,* shows the maximum daily construction emissions (pounds per day) onsite compared with the SCAQMD's LSTs. As shown in the table, construction activities would not exceed the LSTs. Therefore, localized impacts would be less than significant, and no mitigation measures are required.

Table 5.2-13 Localized Construction Emissions – Option A

Source	Pollutants (pounds per day)[1, 2]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
2018 Structure Demolition + Structure Demo Debris Haul	38	22	2.00	1.81
2018 Utility Trenching	5	5	0.37	0.34
2018 Building Construction	7	7	0.47	0.46
2019 Building Construction	6	6	0.41	0.40
2018 Building Construction + Asphalt Paving	17	15	1.06	1.01
2019 Building Construction + Asphalt Paving	15	15	0.91	0.87
2019 Building Construction + Asphalt Paving + Finishing/Landscaping	20	17	1.07	1.01
2019 Building Construction + Finishing/Landscaping	11	8	0.57	0.55
2019 Building Construction + Finishing/Landscaping + Field Light Installation	17	11	0.74	0.80
2019 Building Construction + Field Light Installation	12	9	0.68	0.65
2019 Building Construction + Architectural Coating	6	6	0.41	0.40
SCAQMD ≤1.00-acre LST	**92**	**647**	**4.00**	**3.00**
Exceeds LST?	No	No	No	No
2018 Site Preparation	20	14	3.18	2.07
2018 Rough Grading	20	14	318	2.07
2018 Fine Grading	20	14	3.18	2.07
SCAQMD 1.63-acre LST	**116**	**844**	**5.87**	**4.25**
Exceeds LST?	No	No	No	No
2018 Asphalt Demolition	24	20	1.37	1.28
SCAQMD 2.00-acre LST	**131**	**962**	**7.00**	**5.00**
Exceeds LST?	No	No	No	No
2018 Rough Grading + Utility Trenching	25	19	3.56	2.42
2018 Utility Trenching + Fine Grading	25	19	3.55	2.42
SCAQMD 2.63-acre LST	**145**	**1,118**	**8.45**	**5.83**
Exceeds LST?	No	No	No	No
2018 Asphalt Demolition + Asphalt Demo Debris Haul + Structure Demolition + Structure Demo Debris Haul	62	42	8.53	3.87
SCAQMD 3.00-acre LST	**153**	**1,212**	**9.33**	**6.33**
Exceeds LST?	No	No	No	No

Source: CalEEMod 2016.3.1; SCAQMD 2008a; SCAQMD 2011.
Note: In accordance with SCAQMD methodology, only onsite stationary sources and mobile equipment are included in the analysis.
1 Based on the preliminary information provided by the District. Where specific, project-related information was not available, construction assumptions were based on past similar projects or CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.
2 Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers. Modeling also assumes a VOC content of 100 grams per liter for exterior paints and 100 VOC content interior paints.
3 LSTs are based on sensitive receptors within 82 feet (25 meters) in SRA 18.

5. Environmental Analysis
AIR QUALITY

Option B

Air pollutant emissions generated by construction activities are anticipated to cause increases in air pollutant concentrations. Table 5.2-14, *Localized Construction Emissions – Option B,* shows the maximum daily construction emissions (pounds per day) onsite compared with the SCAQMD's LSTs. As shown in the table, construction activities would not exceed the LSTs. Therefore, localized impacts would be less than significant, and no mitigation measures are required.

Table 5.2-14 Localized Construction Emissions – Option B

Source	Pollutants (pounds per day)[1, 2]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Phase 1 (Field 1 Area)				
2018 Structure Demolition + Structure Demo Debris Haul	38	22	2.00	1.81
2018 Utility Trenching	5	5	0.37	0.34
2018 Building Construction	7	7	0.47	0.46
2019 Building Construction	6	6	0.41	0.40
2018 Building Construction + Asphalt Paving	17	15	1.06	1.01
2019 Building Construction + Asphalt Paving	15	15	0.91	0.87
2019 Building Construction + Asphalt Paving + Finishing/Landscaping	20	17	1.07	1.01
2019 Building Construction + Finishing/Landscaping	11	8	0.57	0.55
2019 Building Construction + Finishing/Landscaping + Field Light Installation	17	11	0.74	0.80
2019 Building Construction + Field Light Installation	12	9	0.68	0.65
2019 Building Construction + Architectural Coating	6	6	0.41	0.40
SCAQMD ≤1.00-acre LST	**92**	**647**	**4.00**	**3.00**
Exceeds LST?	No	No	No	No
2018 Site Preparation	20	14	3.18	2.07
2018 Rough Grading	20	14	3.18	2.07
2018 Fine Grading	20	14	3.18	2.07
SCAQMD 1.63-acre LST	**116**	**844**	**5.87**	**4.25**
Exceeds LST?	No	No	No	No
2018 Asphalt Demolition	24	20	1.37	1.28
SCAQMD 2.00-acre LST	**131**	**962**	**7.00**	**5.00**
Exceeds LST?	No	No	No	No
2018 Rough Grading + Utility Trenching	25	19	3.56	2.42
2018 Utility Trenching + Fine Grading	25	19	3.55	2.42
SCAQMD 2.63-acre LST	**145**	**1,118**	**8.45**	**5.83**
Exceeds LST?	No	No	No	No
2018 Asphalt Demolition + Asphalt Demo Debris Haul + Structure Demolition + Structure Demo Debris Haul	62	42	8.53	3.87
SCAQMD 3.00-acre LST	**153**	**1,212**	**9.33**	**6.33**
Exceeds LST?	No	No	No	No
Phase 2 (Field 2 Area)				

Table 5.2-14 Localized Construction Emissions – Option B

Source	Pollutants (pounds per day)[1, 2]			
	NO_X	CO	PM_{10}	$PM_{2.5}$
2019 Utility Trenching	23	18	3.39	2.26
2019 Building Construction	6	6	0.41	0.40
2019 Building Construction + Asphalt Paving	15	15	0.91	0.87
2019 Building Construction + Asphalt Paving + Finishing/Landscaping	25	18	1.39	1.30
2019 Building Construction + Finishing/Landscaping	16	10	0.88	0.84
2019 Building Construction + Finishing/Landscaping + Field Light Installation	22	12	1.15	1.09
2019 Building Construction + Field Light Installation	12	9	0.68	0.65
SCAQMD ≤1.00-acre LST	**92**	**647**	**4.00**	**3.00**
Exceeds LST?	No	No	No	No
2018 Site Preparation	18	14	3.07	1.97
2018 Rough Grading	18	14	3.07	1.97
2018 Fine Grading	21	17	3.20	2.09
SCAQMD 1.63-acre LST	**116**	**844**	**5.87**	**4.25**
Exceeds LST?	No	No	No	No
2018 Rough Grading + Utility Trenching	23	18	3.39	2.26
2018 Utility Trenching + Fine Grading	25	22	3.51	2.38
SCAQMD 2.63-acre LST	**145**	**1,118**	**8.45**	**5.83**
Exceeds LST?	No	No	No	No

Source: CalEEMod 2016.3.1; SCAQMD 2008a; SCAQMD 2011.
Note: In accordance with SCAQMD methodology, only onsite stationary sources and mobile equipment are included in the analysis.
1 Based on the preliminary information provided by the District. Where specific, project-related information was not available, construction assumptions were based on past similar projects or CalEEMod defaults, which are based on construction surveys conducted by SCAQMD of construction equipment and phasing for comparable projects.
2 Includes implementation of fugitive dust control measures required by SCAQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 15 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers. Modeling also assumes a VOC content of 100 grams per liter for exterior paints and 100 VOC content interior paints.
3 LSTs are based on sensitive receptors within 82 feet (25 meters) in SRA 18.

Health Risk Assessment

Options A and B

SCAQMD currently does not require health risk assessments for short-term emissions from construction equipment, which primarily consist of DPM. The state OEHHA adopted new guidance for preparing health risk assessments in March 2015 and developed a cancer risk factor and noncancer chronic reference exposure level for DPM. However, these factors are based on continuous exposure over a 30-year time frame; no short-term acute exposure levels have been developed for DPM. The proposed project would be developed in approximately 8 months, which is less than the 30-year exposure period for DPM or risk accumulated over a 70-year lifetime and would limit the exposure of onsite and offsite receptors. SCAQMD uses the construction LST analysis as an indicator of potential health risk. As shown in Tables 5.2-13 and 5.2-14, construction activities would not exceed LST significance thresholds. Therefore, construction emissions are not anticipated to pose a threat to onsite and offsite receptors. Project-related construction health impacts would be less than significant, and no mitigation measures are required.

Impact 5.2-5: Operation of the proposed project (Options A and B) would not expose offsite sensitive receptors to substantial concentrations of air pollutants. [Threshold AQ-5]

Impact Analysis: Project operation would expose sensitive receptors to elevated pollutant concentrations if it causes or significantly contributes to elevated pollutant concentration levels. Unlike regional emissions, localized emissions are typically evaluated in terms of air concentration rather than mass so they can be more readily correlated to potential health effects.

Operation LSTs

Options A and B

Operation of the proposed project would not generate substantial emissions from onsite, stationary sources. Land uses that have the potential to generate substantial stationary-source emissions would require a permit from SCAQMD and include industrial land uses such as chemical processing and warehousing operations where substantial truck idling could occur onsite. The proposed project does not fall within this category of uses. Operation of the proposed project would entail the use of standard mechanical equipment—such as heating, ventilation, and air conditioning units—and the occasional use of landscaping equipment for project site maintenance. However, air pollutant emissions generated from these activities would be below the SCAQMD LST threshold, as shown in Table 5.2-15, *Localized Operation Emissions – Options A and B*. Therefore, localized air quality impacts related to stationary-source emissions would be less than significant.

Table 5.2-15 Localized Operation Emissions – Options A and B

Source	Pollutants (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Option A				
Area	<1	<1	0	0
Energy	<1	<1	<0.01	<0.01
Maximum Daily Onsite Operation Emissions	<1	<1	<0.01	<0.01
SCAQMD LST	**197**	**1,711**	**4.00**	**2.00**
Exceeds LST?	No	No	No	No
Option B				
Area	<1	<1	0	0
Energy	<1	<1	<0.01	<0.01
Maximum Daily Onsite Operation Emissions	<1	<1	<0.01	<0.01
SCAQMD LST	**197**	**1,711**	**4.00**	**2.00**
Exceeds LST?	No	No	No	No

Source: CalEEMod 2016.3.1; SCAQMD 2008a, Appendix E.
In accordance with SCAQMD methodology, only onsite stationary sources and mobile equipment occurring on the proposed project site are included in the analysis. LSTs are based on sensitive receptors within 82 feet (25 meters) of a 5-acre site in SRA 18.

Carbon Monoxide Hotspots

Options A and B

Areas of vehicle congestion have the potential to create CO hotspots that exceed the state one-hour standard of 20 ppm or the eight-hour standard of 9.0 ppm. Because CO is produced in greatest quantities from vehicle combustion and does not readily disperse into the atmosphere, adherence to ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles queue for longer periods and are subject to reduced speeds.

Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited—in order to generate a significant CO impact (BAAQMD 2017). Trip generation for the proposed project would be significantly less than these volumes—i.e., up to 562 average daily trips on the worst-case, full-capacity events held concurrently at the 664 and 200 seat fields that could occur under Option B. Furthermore, the SoCAB is designated as attainment under both the National and California AAQS for CO. The project would not have the potential to substantially increase CO hotspots at intersections in the vicinity of the project site. Localized air quality impacts related to mobile-source emissions would be less than significant, and no mitigation measures are required.

5.2.4 Cumulative Impacts

Options A and B

In accordance with SCAQMD's methodology, any project that produces a significant project-level regional air quality impact in an area that is in nonattainment contributes to the cumulative impact. Cumulative projects within the local area include new development and general growth within the project area. The greatest source of emissions in the SoCAB is mobile sources. Due to the extent of the area potentially impacted by cumulative project emissions (i.e., the SoCAB), SCAQMD considers a project cumulatively significant when project-related emissions exceed the SCAQMD regional emissions thresholds shown in Table 5.2-4.

The SoCAB is designated nonattainment for O_3 and $PM_{2.5}$ under the California and National AAQS, and nonattainment for PM_{10} under the California AAQS (CARB 2016b).[7] Construction of cumulative projects would further degrade the regional and local air quality. However, implementation of SCAQMD regulations and mitigation for related projects would reduce cumulative impacts. Construction of the project would not result in emissions in excess of the SCAQMD regional emissions thresholds.

For operational air quality emissions, any project that does not exceed or can be mitigated to less than the daily regional threshold values is not considered by SCAQMD to be a substantial source of air pollution and does not add significantly to a cumulative impact. Operation of the project would not result in emissions in

[7] CARB approved the SCAQMD's request to redesignate the SoCAB from serious nonattainment for PM_{10} to attainment for PM_{10} under the National AAQS, because the SoCAB did not violate federal 24-hour PM_{10} standards from 2004 to 2007. In June 2013, the EPA approved the State of California's request, effective on July 26, 2013.

excess of the SCAQMD regional emissions thresholds. No significant cumulative impacts were identified with regard to CO hotspots.

In consideration of the preceding factors, the project's contribution to cumulative air quality impacts would be less than significant, and project impacts would not be cumulatively considerable.

5.2.5 Regulatory Requirements

State

- Clean Car Standards: Pavley (AB 1493)
- California Advanced Clean Cars CARB (13 CCR 1960)
- Low-Emission Vehicle Program: LEV III (13 CCR 1961.2, 1961.3)
- Statewide Retail Provider Emissions Performance Standards (SB 1368)
- Airborne Toxics Control Measure to Limit School Bus Idling and Idling at Schools (13 CCR 2480)
- Airborne Toxic Control Measure to Limit Diesel-Fuel Commercial Vehicle Idling (13 CCR 2485)
- In-Use Off-Road Diesel Idling Restriction (13 CCR 2449)
- Building Energy Efficiency Standards (Title 24, Part 6)
- California Green Building Code (Title 24, Part 11)
- Appliance Energy Efficiency Standards (Title 20)

SCAQMD

- SCAQMD Rule 201: Permit to Construct
- SCAQMD Rule 402: Nuisance Odors
- SCAQMD Rule 403: Fugitive Dust
- SCAQMD Rule 1113: Architectural Coatings
- SCAQMD Rule 1186: Street Sweeping
- SCAQMD Rule 1403: Asbestos Emissions from Demolition/Renovation Activities

5.2.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impacts would be less than significant:

- **Impact 5.2-1:** The proposed project would be consistent with the South Coast Air Quality Management District's Air Quality Management Plan.

- **Impact 5.2-2:** Construction activities associated with implementation of the proposed project (Options A and B) would not generate short-term emissions that exceed the South Coast Air Quality Management District's regional thresholds.

- **Impact 5.2-3:** Long-term criteria air pollutant emissions associated with the proposed project (Options A and B) would not exceed the South Coast Air Quality Management District's regional operational significance thresholds.

- **Impact 5.2-4:** Construction of the proposed project (Options A and B) would not expose sensitive receptors to substantial pollutant concentrations.

- **Impact 5.2-5:** Operation of the proposed project (Options A and B) would not expose offsite sensitive receptors to substantial concentrations of air pollutants.

5.2.7 Mitigation Measures

No mitigation measures are required.

5.2.8 Level of Significance After Mitigation

Impacts would be less than significant without mitigation.

5.2.9 References

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5. Environmental Analysis
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5.3 CULTURAL RESOURCES

Cultural resources comprise paleontological, archaeological, and historical resources. Paleontological resources are the fossilized remains of plants and animals. Archaeology is the branch of paleontology that studies human artifacts, such as places, objects, and settlements that reflect group or individual religious, cultural, or everyday activities. Historical resources include sites, structures, objects, or places that are at least 50 years old and are significant for their engineering, architecture, cultural use or association, etc. This section of the Recirculated Draft Environmental Impact Report (RDEIR) evaluates the potential for implementation of the proposed project to impact cultural resources in the City of Newport Beach. The analysis in this section is based, in part, upon the following information:

- *Paleontological Records Search for the Proposed Corona del Mar High School Sports Field Project, in the City of Newport Beach, Orange County*, Natural History Museum, December 4, 2015.
- *Archaeological Records Search, Corona del Mar High School, Orange County*, McKenna et al., July 10, 2010.

Complete copies of these records search results are included in Appendix F, *Cultural Records Search Result*, to this RDEIR.

5.3.1 Environmental Setting

5.3.1.1 REGULATORY FRAMEWORK

Archaeological Resources Protection Act

The Archaeological Resources Protection Act of 1979 regulates the protection of archaeological resources and sites on federal and Indian lands.

Native American Graves Protection and Repatriation Act

NAGPRA is a federal law passed in 1990 that mandates museums and federal agencies to return certain Native American cultural items—such as human remains, funerary objects, sacred objects, or objects of cultural patrimony—to lineal descendants or culturally affiliated Indian tribes.

California Public Resources Code

Archaeological, paleontological, and historical sites are protected under a wide variety of state policies and regulations in the California Public Resources Code (PRC). In addition, cultural and paleontological resources are recognized as nonrenewable resources and receive protection under the PRC and CEQA.

PRC Section 5097.5 states that no person shall knowingly and willfully excavate upon or remove, destroy, injure, or deface any historic or prehistoric ruins; burial grounds; archaeological or vertebrate paleontological site, including fossilized footprints; inscriptions made by human agency; rock art; or any other archaeological, paleontological or historical feature situated on public lands, except with the express permission of the public agency having jurisdiction over the lands. Violation of this section is a misdemeanor.

PRC Sections 5097.9 to 5097.991 provide protection to Native American historical and cultural resources and sacred sites; identify the powers and duties of the Native American Heritage Commission; require that descendants be notified when Native American human remains are discovered; and provide for treatment and disposition of human remains and associated grave goods.

Assembly Bill 52

Assembly Bill 52 (AB 52), the Native American Historic Resource Protection Act, is applicable to CEQA projects where either the Notice of Preparation or Notice of Intent is filed after July 1, 2015. AB 52 requires meaningful consultation with California Native American tribes on potential impacts to tribal cultural resources, as defined in PRC Section 21074. A tribe must submit a written request to the relevant lead agency if it wishes to be notified of projects within its traditionally and culturally affiliated area. The lead agency must provide written, formal notification to the tribes that have requested it within 14 days of determining that a project application is complete, or deciding to undertake a project. The tribe must respond to the lead agency within 30 days of receipt of the notification if it wishes to engage in consultation on the project, and the lead agency must begin the consultation process within 30 days of receiving the request for consultation. Consultation concludes when either 1) the parties agree to mitigation measures to avoid a significant effect, if one exists, on a tribal cultural resource, or 2) a party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. AB 52 also addresses confidentiality during tribal consultation per PRC Section 21082.3(c).

The District received a request from Juaneño Band of Mission Indians – Acjachemen Nation to be notified of projects in which the District is the lead agency under CEQA. The Juaneño Band of Mission Indians – Acjachemen Nation was notified of the proposed project on October 22, 2015, and they responded by stating that they have no comments at this point (Perry 2015). Therefore, the District is in compliance with AB 52.

In response to the initially circulated Draft EIR, Gabrieleno Band of Missions Indians – Kizh Nation submitted a letter stating that the project site lies in an area within the ancestral and traditional territories of Kizh (Kitc) Gabrieleno and that a tribal monitor should be present during ground disturbance.

California Health and Safety Code Section 7050.5

California Health and Safety Code (CHSC) Section 7050.5 requires that in the event that human remains are discovered within a project site, disturbance of the site shall halt and remain halted until the coroner has conducted an investigation into the circumstances, manner, and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative. If the coroner determines that the remains are not subject to his or her authority and if the coroner has reason to believe the human remains are those of a Native American, he or she shall contact the Native American Heritage Commission by telephone within 24 hours.

5.3.1.2 NATURAL SETTING

An archaeological records search was conducted through the South Central Coastal Information Center for the project site and a 0.5-mile radius. The search includes a review of all recorded archaeological and built-environment resources as well as a review of cultural resource reports on file.

Archaeological Resources

Archaeological resources are the physical remains of past human activities and can be either prehistoric or historic. Archaeological sites contain significant evidence of human activity. Generally a site is defined by a significant accumulation or presence of food remains, tools and waste from their manufacture, concentrations or alignments of stones, modification of rock surfaces, unusual discoloration or accumulation of soil, and/or human skeletal remains. A total of 13 archaeological sites were identified within 0.5 mile of the CdM campus. These sites are all prehistoric sites dominated by the presence of midden[1] deposits, as described below:

- **CA-ORA-53** was recorded by Briggs in 1949 and identified as a shell midden with evidence of disturbances.
- **CA-ORA-63** was recorded by Nelson as a prehistoric campsite (two loci). No formal recording was completed.
- **CA-ORA-95** was recorded by Chartkoff in 1966 and identified as a shell midden with some lithic flakes. Nelson also reported that grading for a residence destroyed the majority of the site.
- **CA-ORA-96** was also recorded by Chartkoff in 1966 and identified as a midden deposit with evidence of flakes. This site was also mostly destroyed by the time it was recorded.
- **CA-ORA-97** was recorded by Chartkoff (1966) and defined as a midden with scattered flakes. The development of an apartment complex destroyed much of this site.
- **CA-ORA-102** was recorded by Waldeck in 1948 and identified as a village site on a terrace/bluff. The site was cross-referenced as Site OR-11 and on Irvine Company property.
- **CA-ORA-150** was recorded by Hafner on behalf of the Pacific Coast Archaeological Survey (1965) and described as a shell midden deposit with an extensive scatter of artifacts. Hafner emphasized that this site is one of six located on the bluff above Big Canyon.
- **CA-ORA-151** was also recorded by Hafner (1965) for the Pacific Coast Archaeological Survey. As noted above, this shell midden is one of six sites on the bluff above Big Canyon.

[1] Also known as kitchen midden or shell heap, a midden is a mound or deposit containing shells, animal bones, and other refuse that indicates the site of a human settlement (Wikipedia).

- **CA-ORA-152**, also recorded by Hafner (1965) is a third midden deposit site on the bluff above Big Canyon.
- **CA-ORA-153**, recorded by Hafner (1965) is the fourth midden deposit above Big Canyon.
- **CA-ORA-154**, recorded by Hafner (1965) as the fifth midden deposit identified on the bluff above Big Canyon.
- **CA-ORA-155**, recorded by Hafner (1965), was identified as a small midden deposit on the Back Bay bluff.
- **CA-ORA-256** was recorded by Chace in 1965 and described as a small scatter of shell at the mouth of Big Canyon. No artifacts were observed.

Paleontological Resources

Paleontological resources are the fossilized remains of vertebrate and invertebrate organisms from prehistoric environments found in geologic strata. These are valued for the information they yield about the history of the earth and its past ecological settings. These resources are found in geologic strata conducive to their preservation, typically sedimentary formations. Paleontological sites are areas that show evidence of prehuman activity. Often they are simply small outcroppings visible on the surface or sites encountered during grading. While the sites are important indications, it is the geologic formations that are the most important, since they may contain important fossils. Areas are considered potentially sensitive for the presence of paleontological resources based on the underlying geologic formation.

The project site is not included in the Newport Beach General Plan's paleontological resources site. The project site and its vicinity have surface deposits that consist of older Quaternary Alluvium and terrace deposits. Paleontological resources that have been found in these deposits are described below.

- LACM 4422 and 6475: Vertebrate fossil localities that produced marine and terrestrial fossil specimens of dusky shark, *Carcharhinus obscurus*; hammerhead sharks, *Sphyrna lewini* and *Sphyrna zygaena*; eagle ray, *Myliobatiformes*; Pacific hake, *Merluccius productus*; frog, *Anura*; pond turtle, *Clemmys*; mammoth, *Mammuthus*; seal lion, *Otariidae*; pocket gopher, *Thomomys*; kangaroo rat, *Dipodomys*; toothed whale, *Odontoceti*; horse, *Equus*; and birds.
- LACM 6801: Vertebrate fossil locality that produced a specimen of fossil tapir, *Tapirus merriami*.
- LACM 1066: Vertebrate fossil locality that produced extensive fossil fauna.

Deposits that could occur at depth on the slopes around the margins of the bluff are older sedimentary deposits, the marine Pliocene Niguel Formation, the marine late Miocene Capistrano Formation, and the marine middle to late Miocene Monterey Formation. Paleontological resources that have been found in these deposits are described below.

- LACM 3802: The Niguel Formation produced fossil specimens of white shark, *Carcharodon sulcidens*, and bonito shark, *Isurus oxyrhynchus*, from beds exposed by bulldozer activities.
- LACM 580: The younger marine late Miocene Capistrano Formation produced a specimen of a fossil sperm whale, *Physeteridae*.
- LACM 1160 and 7139: The Miocene Monterey Formation produced fossil bony fish, *Osteichthyes*, and baleen whales, *Mysticeti*.

In addition, a number of vertebrate fossil localities were found in Monterey Formation, primarily from farther east in the hills south of I-405 and on both sides of I-5.

5.3.2 Thresholds of Significance

CEQA Guidelines Section 15064.5 provides direction on determining significance of impacts to archaeological and historical resources. Generally, a resource shall be considered "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated the with lives of persons important in our past;
- 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; or
- Has yielded, or may be likely to yield, information important in prehistory or history. (PRC § 5024.1; 14 CCR § 4852)

The fact that a resource is not listed in the California Register of Historical Resources, not determined to be eligible for listing, or not included in a local register of historical resources does not preclude a lead agency from determining that it may be a historical resource.

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

C-1 Cause a substantial adverse change in the significance of an historical resource pursuant to Section 15064.5.

C-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.

C-3 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

C-4 Disturb any human remains, including those interred outside of formal cemeteries.

C-5 Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074 (regarding AB 52 compliance).

The Recirculated Initial Study, included as Appendix A2, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold C-1
- Threshold C-4
- Threshold C-5

These impacts will not be addressed in the following analysis.

5.3.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Recirculated Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.3-1: Development of the proposed project (Options A and B) could adversely impact archaeological and tribal resources. [Threshold C-2]

Impact Analysis:

Options A and B

Thirteen archaeological sites have been identified within one-half mile of the CdM campus boundaries, and therefore the project area could be considered sensitive for archaeological resources. Although areas to be disturbed under both Option A and Option B are part of an existing CdM campus, considering the sensitive nature of the project area, disturbance of previously undisturbed soils within the CdM campus could result in discovery of new archaeological resources. Therefore, a mitigation measure has been incorporated to ensure that proper procedures are followed during grading and that discovery of archaeological resources is handled in accordance with the CEQA Statute, Section 21083.2.

> "[U]nique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
>
> (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
>
> (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

> …"[N]onunique archaeological resource" means an archaeological artifact, object, or site which does not meet the criteria [listed above]. A nonunique archaeological resource need be given no further consideration, other than the simple recording of its existence by the lead agency if it so elects. (PRC §§ 21083.2g–h)

In accordance with CCR Title 14, Chapter 3 15126.4(b)(3)(A), the District acknowledges that preservation in place is the preferred manner of mitigating impacts to archaeological sites. It is also noted that although no known tribal resources exists within the project site boundaries, there is a potential for discovery of buried tribal cultural resources. Therefore, monitoring of ground-disturbing construction by a qualified traditionally and culturally affiliated Native American monitor (i.e., Gabrieleno Band of Mission Indians) will be implemented as part of mitigation.

Both Option A and Option B sites are considered sensitive for subsurface archaeological and tribal resources, and archaeological and tribal resources monitoring during grading would be necessary to ensure that impacts are minimized.

Impact 5.3-2: The proposed project (Options A and B) could adversely impact paleontological resources. [Threshold C-3]

Impact Analysis:

Options A and B

According to the paleontological records search conducted for the CdM campus, the areas to be disturbed under both Option A and Option B are in the area of older Quaternary Alluvium and terrace deposits, and older sedimentary deposits could occur at depth. A number of vertebrate fossils have been identified from these deposits in the project vicinity. Therefore, excavation beyond fill materials into the underlying older Quaternary Alluvium and terrace deposits and older sedimentary deposits could uncover fossil vertebrate remains. A mitigation measure has been incorporated to ensure that impacts to subsurface paleontological resources are reduced to a less than significant level.

5.3.4 Cumulative Impacts

Options A and B

The area considered for cumulative impacts to cultural resources is the City of Newport Beach. A list of cumulative projects is in Table 4-1, *Cumulative Projects*. These projects could involve actions that damage archaeological and/or paleontological resources specific to those project sites. However, they would also be subject to CEQA review and regulatory requirements, including archaeological, paleontological, and tribal resources assessments. Where significant or potentially significant impacts are identified, implementation of feasible mitigation measures as with the proposed project would reduce impacts to a less than significant level. Pursuant to CCR Title 14, Chapter 3 15126.4(b), various feasible mitigation measures would be considered, including, but not limited to the "preserve in place" measure. The project site is already developed as a MS/HS campus, and other cumulative projects in the list have also been previously developed. However, because ground disturbance could potentially unearth previously unidentified cultural resources, site-specific impacts would require mitigation measures to minimized to a less than significant level. Provided that site-specific impacts are reduced to a less than significant level, no cumulatively significant impacts are anticipated. No additional mitigation would be necessary in both options.

5.3.5 Regulatory Requirements

- CCR Title 14, Chapter 3 15126.4(b)(3) – Consideration and discussion of mitigation measures proposed to minimize significant effects.

5.3.6 Level of Significance Before Mitigation

Without mitigation, these impacts would be **potentially significant**:

- **Impact 5.3-1** The proposed project (Options A and B) could adversely impact archaeological and tribal resources.

- **Impact 5.3-2** The proposed project (Options A and B) could adversely impact paleontological resources.

5.3.7 Mitigation Measures

Options A and B

Impact 5.3-1: The proposed project (Options A and B) could adversely impact archaeological and tribal resources.

CUL-1 Prior to the issuance of the first grading permit and/or action that would permit disturbance to the project site, the Newport-Mesa Unified School District shall retain a qualified archaeological and Native American monitor(s) to observe grading activities and identify opportunities to avoid and preserve archaeological and/or tribal resources. The qualified monitor(s) shall be invited to be present at the pregrading conference; shall establish procedures for archaeological and/or tribal resource surveillance; and shall establish, in coordination with the construction contractor, procedures for temporary halting or redirecting work to permit the sampling, identification, and evaluation of the artifacts, as appropriate. The qualified Native American monitor shall be determined in consultation with the affected Native American tribe (i.e., Gabrieleno) representative, and could also be the same as archaeological monitor.

Should archaeological resources, including tribal resources, be found during ground-disturbing activities, the qualified monitor shall first determine whether the resource is a "unique archaeological resource" pursuant to Section 21083.2(g) of the California Public Resources Code or a "historical resource" pursuant to Section 15064.5(a) of the State CEQA Guidelines (14 California Code of Regulations [CCR]), or "tribal cultural resources" pursuant to Public Resources Code Section 21074. Once the determination is made pursuant to CEQA Guidelines Section 21083.2, the appropriate actions shall be taken in appropriate sections of the regulations (e.g., 14 CCR §15126.4) to ensure that impacts are reduced to a less than significant level.

Impact 5.3-2: The proposed project (Options A and B) could adversely impact paleontological resources.

CUL-2 Prior to the beginning of ground disturbances, the Newport-Mesa Unified School District shall retain a qualified paleontologist to monitor ground-disturbing activities that occur in older Quaternary Alluvium and terrace deposits and older sedimentary deposits. Before ground-disturbing activities begin, a qualified paleontologist shall prepare a monitoring plan specifying the frequency, duration, and methods of monitoring. Sediment samples shall be collected in the deposits and processed to determine the small-fossil potential in the project site, and any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution.

5.3.8 Level of Significance After Mitigation

Mitigation measures CUL-1 and CUL-2 would reduce potential impacts to cultural resources to a level that is less than significant. Therefore, no significant unavoidable adverse impacts to cultural resources have been identified.

5.3.9 References

Natural History Museum. 2015, December 4. Paleontological Records Search for the Proposed Corona del Mar High School Sports Field Project, in the City of Newport Beach, Orange County.

McKenna et al. 2010, July 10. Archaeological Records Search, Corona del Mar High School, Orange County.

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5.4 GREENHOUSE GAS EMISSIONS

This section of the Recirculated Draft Environmental Impact Report (RDEIR) evaluates the potential for the implementation of the proposed project to cumulatively contribute to greenhouse gas (GHG) emissions. Because no single project is large enough to result in a measurable increase in global concentrations of GHG emissions, climate change impacts of a project are considered on a cumulative basis. The analysis in this section is based on buildout of the proposed project, as modeled using the California Emissions Estimator Model (CalEEMod) and trip generation provided by IBI Group (see Appendix H to this DEIR). The GHG emissions modeling for construction and operational phases are included in Appendix E of this DEIR.

5.4.1 Environmental Setting

5.4.1.1 GREENHOUSE GASES AND CLIMATE CHANGE

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHGs, to the atmosphere. The primary source of these GHGs is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO_2), methane (CH_4), and ozone (O_3)—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHGs identified by the IPCC that contribute to global warming to a lesser extent are nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[1,2] The major GHGs are briefly described below.

- **Carbon dioxide (CO_2)** enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and respiration, and also as a result of other chemical reactions (e.g., manufacture of cement). Carbon dioxide is removed from the atmosphere (sequestered) when it is absorbed by plants as part of the biological carbon cycle.

- **Methane (CH_4)** is emitted during the production and transport of coal, natural gas, and oil. Methane emissions also result from livestock and other agricultural practices and from the decay of organic waste in municipal landfills and water treatment facilities.

- **Nitrous oxide (N_2O)** is emitted during agricultural and industrial activities as well as during the combustion of fossil fuels and solid waste.

[1] Water vapor (H_2O) is the strongest GHG and the most variable in its phases (vapor, cloud droplets, ice crystals). However, water vapor is not considered a pollutant, because it is considered part of the feedback loop rather than a primary cause of change.

[2] Black carbon contributes to climate change both directly, by absorbing sunlight, and indirectly, by depositing on snow (making it melt faster) and by interacting with clouds and affecting cloud formation. Black carbon is the most strongly light-absorbing component of particulate matter (PM) emitted from burning fuels such as coal, diesel, and biomass. Reducing black carbon emissions globally can have immediate economic, climate, and public health benefits. California has been an international leader in reducing emissions of black carbon, with close to 95 percent control expected by 2020 due to existing programs that target reducing PM from diesel engines and burning activities (CARB 2017b). However, state and national GHG inventories do not include black carbon yet due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

- **Fluorinated gases** are synthetic, strong GHGs that are emitted from a variety of industrial processes. Fluorinated gases are sometimes used as substitutes for ozone-depleting substances. These gases are typically emitted in smaller quantities, but because they are potent GHGs, they are sometimes referred to as high global-warming-potential (GWP) gases.
  - ***Chlorofluorocarbons (CFCs)*** are GHGs covered under the 1987 Montreal Protocol and used for refrigeration, air conditioning, packaging, insulation, solvents, or aerosol propellants. Since they are not destroyed in the lower atmosphere (troposphere, stratosphere), CFCs drift into the upper atmosphere where, given suitable conditions, they break down the ozone layer. These gases are therefore being replaced by other compounds that are GHGs covered under the Kyoto Protocol.
  - ***Perfluorocarbons (PFCs)*** are a group of human-made chemicals composed of carbon and fluorine only. These chemicals (predominantly perfluoromethane [CF_4] and perfluoroethane [C_2F_6]) were introduced as alternatives, along with hydrofluorocarbons (HFCs), to ozone-depleting substances. In addition, PFCs are emitted as by-products of industrial processes and are used in manufacturing. PFCs do not harm the stratospheric ozone layer, but they have a high GWP.
  - ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, and slightly soluble in water. SF_6 is a strong GHG used primarily in electrical transmission and distribution systems as an insulator.
  - ***Hydrochlorofluorocarbons (HCFCs)*** contain hydrogen, fluorine, chlorine, and carbon atoms. Although they are ozone-depleting substances, they are less potent than CFCs. They have been introduced as temporary replacements for CFCs.
  - ***Hydrofluorocarbons (HFCs)*** contain only hydrogen, fluorine, and carbon atoms. They were introduced as alternatives to ozone-depleting substances to serve many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are also used in manufacturing. They do not significantly deplete the stratospheric ozone layer, but they are strong GHGs. (IPCC 1995; USEPA 2017)

GHGs are dependent on the lifetime, or persistence, of the gas molecule in the atmosphere. Some GHGs have a stronger greenhouse effect than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 5.4-1, *GHG Emissions and Their Relative Global Warming Potential Compared to CO_2*. The GWP is used to convert GHGs to CO_2-equivalence (CO_2e) to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. For example, under IPCC's Fourth Assessment Report (AR4) GWP values for CH_4, a project that generates 10 metric tons (MT) of CH_4 would be equivalent to 210 MT of CO_2.[3]

[3] CO_2-equivalence is used to show the relative potential that different GHGs have to retain infrared radiation in the atmosphere and contribute to the greenhouse effect. The global warming potential of a GHG is also dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

Table 5.4-1 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report Atmospheric Lifetime (Years)	Fourth Assessment Report Atmospheric Lifetime (Years)	Second Assessment Report Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	50 to 200	50 to 200	1	1
Methane[2] (CH_4)	12 (±3)	12	21	25
Nitrous Oxide (N_2O)	120	114	310	298
Hydrofluorocarbons:				
HFC-23	264	270	11,700	14,800
HFC-32	5.6	4.9	650	675
HFC-125	32.6	29	2,800	3,500
HFC-134a	14.6	14	1,300	1,430
HFC-143a	48.3	52	3,800	4,470
HFC-152a	1.5	1.4	140	124
HFC-227ea	36.5	34.2	2,900	3,220
HFC-236fa	209	240	6,300	9,810
HFC-4310mee	17.1	15.9	1,300	1,030
Perfluoromethane: CF_4	50,000	50,000	6,500	7,390
Perfluoroethane: C_2F_6	10,000	10,000	9,200	12,200
Perfluorobutane: C_4F_{10}	2,600	NA	7,000	8,860
Perfluoro-2-methylpentane: C_6F_{14}	3,200	NA	7,400	9,300
Sulfur Hexafluoride (SF_6)	3,200	NA	23,900	22,800

Source: IPCC 1995; IPCC 2007.
Note: The IPCC has published updated GWP values in its Fifth Assessment Report (2013) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. (Radiative forcing is the difference of energy from sunlight received by the earth and radiated back into space.) However, AR4 GWP values are used by the South Coast Air Quality Management District to maintain consistency with statewide GHG emissions modeling. In addition, the 2014 Scoping Plan Update was based on AR4 GWP values.
1 Based on 100-year time horizon of the GWP of the air pollutant compared to CO_2.
2 The methane GWP includes direct effects and indirect effects due to the production of tropospheric ozone and stratospheric water vapor. The indirect effect due to the production of CO_2 is not included.

California's GHG Sources and Relative Contribution

California is the 20th largest GHG emitter in the world and the 2nd largest emitter of GHG emissions in the United States, surpassed only by Texas (CARB 2014a). However, California also has over 12 million more people than Texas. Because of more stringent air emission regulations, in 2001, California ranked fourth lowest in carbon emissions per capita and fifth lowest among states in CO_2 emissions from fossil fuel consumption per unit of Gross State Product (total economic output of goods and services)(CEC 2006a).

In 2016, the statewide GHG emissions inventory was updated for 2000-to-2014 emissions using the AR4 GWPs.[4] Based on these GWPs, California produced 442 million metric tons (MMT) of CO_2e GHG emissions in 2014. California's transportation sector remains the single largest generator of GHG emissions,

[4] Methodology for determining the statewide GHG inventory is not the same as the methodology used to determine statewide GHG emissions under Assembly Bill 32 (2006).

producing 36.1 percent of the state's total emissions; industrial sector emissions made up 21.1 percent, and electric power generation made up 20.0 percent. Other major sectors of GHG emissions include commercial and residential (8.7 percent), agriculture (8.2 percent), high-GWP GHGs (3.9 percent), and recycling and waste (2.0 percent) (CARB 2016).

Human Influence on Climate Change

For approximately 1,000 years before the Industrial Revolution, the amount of GHGs in the atmosphere remained relatively constant. During the 20th century, however, scientists observed a rapid change in the climate and the quantity of climate change pollutants in the Earth's atmosphere that is attributable to human activities. The amount of CO_2 in the atmosphere has increased by more than 35 percent since preindustrial times and has increased at an average rate of 1.4 parts per million per year since 1960, mainly due to combustion of fossil fuels and deforestation (IPCC 2007). These recent changes in the quantity and concentration of climate change pollutants far exceed the extremes of the ice ages, and the global mean temperature is warming at a rate that cannot be explained by natural causes alone. Human activities are directly altering the chemical composition of the atmosphere through the buildup of climate change pollutants (CAT 2006). In the past, gradual changes in the earth's temperature changed the distribution of species, availability of water, etc. However, human activities are accelerating this process so that environmental impacts associated with climate change no longer occur in a geologic time frame but within a human lifetime (IPCC 2007).

The projections of the expected increase in global surface temperatures vary; the environmental consequences of gradual changes in the Earth's temperature are similarly hard to predict. Projections of climate change depend heavily upon future human activity. Therefore, climate models are based on different emission scenarios that account for historical trends in emissions and on observations of the climate record that assess the human influence of the trend and projections for extreme weather events. Climate-change scenarios are affected by varying degrees of uncertainty—for example, on the magnitude of the trends for:

- Warmer and fewer cold days and nights over most land areas.
- Warmer and more frequent hot days and nights over most land areas.
- An increase in frequency of warm spells/heat waves over most land areas.
- An increase in frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) over most areas.
- Areas affected by drought increases.
- Intense tropical cyclone activity increases.
- Increased incidence of extreme high sea level (excluding tsunamis).

Potential Climate Change Impacts for California

Observed changes over the last several decades across the western United States reveal clear signs of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada. By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase from 4.1 to 8.6°F, depending on emissions levels (CCCC 2012).

In California and western North America, observations of the climate have shown: 1) a trend toward warmer winter and spring temperatures; 2) a smaller fraction of precipitation falling as snow; 3) a decrease in the amount of spring snow accumulation in the lower and middle elevation mountain zones; 4) a shift in the timing of snowmelt of 5 to 30 days earlier in the spring; and 5) a similar shift (5 to 30 days earlier) in the timing of spring flower blooms (CAT 2006). According to the California Climate Action Team—a committee of state agency secretaries and the heads of agencies, boards, and departments led by the Secretary of the California Environmental Protection Agency—even if actions could be taken to immediately curtail climate change emissions, the potency of emissions that have already built up, their long atmospheric lifetimes (see Table 5.4-1), and the inertia of the Earth's climate system could produce as much as 0.6°C (1.1°F) of additional warming. Consequently, some impacts from climate change are now considered unavoidable. Global climate change risks to California are shown in Table 5.4-2, *Summary of GHG Emissions Risks to California,* and include impacts to public health, water resources, agriculture, coastal sea level, forest and biological resources, and energy. Specific climate change impacts that could affect the project include:

Water Resources Impacts. By late this century, all projections show drying, and half of the projections suggest 30-year average precipitation will decline by more than 10 percent below the historical average. This drying trend is caused by an apparent decline in the frequency of rain and snowfall. Even in projections with relatively small or no declines in precipitation, central and southern parts of the state can be expected to be drier from the warming effects alone—the spring snowpack will melt sooner, and the moisture in soils will evaporate during long dry summer months (CCCC 2012).

Wildfire Risks. Earlier snowmelt, higher temperatures, and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. The number of large fires statewide is estimated to increase from 58 percent to 128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57 percent to 169 percent, depending on location (CCCC 2012).

Health Impacts. Many of the gravest threats to public health in California stem from the increase of extreme conditions, principally more frequent, more intense, and longer heat waves. Particular concern centers on the increasing tendency for multiple hot days in succession and heat waves occurring simultaneously in several regions throughout the state. Public health could also be affected by climate change impacts on air quality, food production, the amount and quality of water supplies, energy pricing and availability, and the spread of infectious diseases. Higher temperatures also increase ground-level ozone levels.

5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

Furthermore, wildfires can increase particulate air pollution in the major air basins of California (CCCC 2012).

Increased Energy Demand. Increases in average temperature and higher frequency of extreme heat events combined with new residential development across the state will drive up the demand for cooling in the longer, hotter summer season and decrease demand for heating in the cooler season. Warmer, drier summers also increase system losses at natural gas plants (reduced efficiency in the electricity generation process at higher temperatures) and hydropower plants (lower reservoir levels). Transmission of electricity will also be affected by climate change. Transmission lines lose 7 percent to 8 percent of transmitting capacity in high temperatures while needing to transport greater loads. This means that more electricity needs to be produced to make up for the loss in capacity and the growing demand (CCCC 2012).

Table 5.4-2 Summary of GHG Emissions Risks to California

Impact Category	Potential Risk
Public Health Impacts	• Heat waves will be more frequent, hotter, and longer • Fewer extremely cold nights • Poor air quality made worse • Higher temperatures increase ground-level ozone levels
Water Resources Impacts	• Decreasing Sierra Nevada snow pack • Challenges in securing adequate water supply • Potential reduction in hydropower • Loss of winter recreation
Agricultural Impacts	• Increasing temperature • Increasing threats from pests and pathogens • Expanded ranges of agricultural weeds • Declining productivity • Irregular blooms and harvests
Coastal Sea Level Impacts	• Accelerated sea level rise • Increasing coastal floods • Shrinking beaches • Worsened impacts on infrastructure
Forest and Biological Resource Impacts	• Increased risk and severity of wildfires • Lengthening of the wildfire season • Movement of forest areas • Conversion of forest to grassland • Declining forest productivity • Increasing threats from pest and pathogens • Shifting vegetation and species distribution • Altered timing of migration and mating habits • Loss of sensitive or slow-moving species
Energy Demand Impacts	• Potential reduction in hydropower • Increased energy demand

Sources: CEC 2006b; CEC 2009; CCCC 2012; CNRA 2014.

5.4.1.2 REGULATORY FRAMEWORK

This section describes the federal, state, and local regulations applicable to GHG emissions.

Federal Laws

The U.S. Environmental Protection Agency (EPA) announced on December 7, 2009, that GHG emissions threaten the public health and welfare of the American people and that GHG emissions from on-road vehicles contribute to that threat. The EPA's final findings respond to the 2007 U.S. Supreme Court decision that GHG emissions fit within the Clean Air Act definition of air pollutants. The findings did not themselves impose any emission reduction requirements, but allowed the EPA to finalize the GHG standards proposed in 2009 for new light-duty vehicles as part of the joint rulemaking with the Department of Transportation (USEPA 2009).

To regulate GHGs from passenger vehicles, EPA was required to issue an endangerment finding. The finding identifies emissions of six key GHGs—CO_2, CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and SF_6—that have been the subject of scrutiny and intense analysis for decades by scientists in the United States and around the world. The first three are applicable to the project's GHG emissions inventory because they constitute the majority of GHG emissions and, per South Coast Air Quality Management District (SCAQMD) guidance, are the GHG emissions that should be evaluated as part of a project's GHG emissions inventory.

US Mandatory Report Rule for GHGs (2009)

In response to the endangerment finding, the EPA issued the Mandatory Reporting of GHG Rule that requires substantial emitters of GHG emissions (large stationary sources, etc.) to report GHG emissions data. Facilities that emit 25,000 MT or more of CO_2e per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2010/2012)

The current Corporate Average Fuel Economy standards (for model years 2011 to 2016) incorporate stricter fuel economy requirements promulgated by the federal government and California into one uniform standard. Additionally, automakers were required to cut GHG emissions in new vehicles by roughly 25 percent by 2016 (resulting in a fleet average of 35.5 miles per gallon by 2016). Rulemaking to adopt these new standards was completed in 2010. California agreed to allow automakers who show compliance with the national program to also be deemed in compliance with state requirements. The federal government issued new standards in 2012 for model years 2017–2025 that require a fleet average of 54.5 miles per gallon in 2025.

EPA Regulation of Stationary Sources under the Clean Air Act (Ongoing)

Pursuant to its authority under the Clean Air Act, the EPA has been developing regulations for new stationary sources such as power plants, refineries, and other large sources of emissions. Pursuant to former President Obama's 2013 Climate Action Plan, the EPA was directed to also develop regulations for existing stationary

5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

sources. However, the EPA is reviewing the Clean Power Plan under President Trump's Energy Independence Executive Order.

State Laws

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in Executive Order S-03-05, Executive Order B-30-15, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), and SB 375.

Executive Order S-03-05

Executive Order S-03-05, signed June 1, 2005, set the following GHG reduction targets for the state:

- 2000 levels by 2010
- 1990 levels by 2020
- 80 percent below 1990 levels by 2050

Assembly Bill 32, the Global Warming Solutions Act (2006)

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in AB 32, the Global Warming Solutions Act. AB 32 was passed by the California state legislature on August 31, 2006, to place the state on a course toward reducing its contribution of GHG emissions. AB 32 follows the 2020 tier of emissions reduction targets established in Executive Order S-03-05.

CARB 2008 Scoping Plan

The final Scoping Plan was adopted by CARB on December 11, 2008. The 2008 Scoping Plan identified that GHG emissions in California are anticipated to be approximately 596 $MMTCO_2e$ in 2020. In December 2007, CARB approved a 2020 emissions limit of 427 $MMTCO_2e$ (471 million tons) for the state (CARB 2008). In order to effectively implement the emissions cap, AB 32 directed CARB to establish a mandatory reporting system to track and monitor GHG emissions levels for large stationary sources that generate more than 25,000 $MTCO_2e$ per year, prepare a plan demonstrating how the 2020 deadline can be met, and develop appropriate regulations and programs to implement the plan by 2012.

First Update to the Scoping Plan

CARB completed a five-year update to the 2008 Scoping Plan, as required by AB 32. The First Update to the Scoping Plan was adopted at the May 22, 2014, board hearing. The update highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals defined in the original 2008 Scoping Plan. As part of the update, CARB recalculated the 1990 GHG emission levels with the updated AR4 GWPs, and the 427 $MMTCO_2e$ 1990 emissions level and 2020 GHG emissions limit, established in response to AB 32, is slightly higher at 431 $MMTCO_2e$ (CARB 2014b).

As identified in the Update to the Scoping Plan, California is on track for meeting the goals of AB 32. However, the update also addresses the state's longer-term GHG goals within a post-2020 element. The post-2020 element provides an overview of a long-term strategy for meeting the 2050 GHG goals, including a recommendation for the state to adopt a midterm target. According to the Update to the Scoping Plan, local government reduction targets should chart a reduction trajectory that is consistent with or exceeds the trajectory created by statewide goals (CARB 2014b). CARB identified that reducing emissions to 80 percent below 1990 levels will require a fundamental shift to efficient, clean energy in every sector of the economy. Progressing toward California's 2050 climate targets will require significant acceleration of GHG reduction rates. Emissions from 2020 to 2050 will have to decline several times faster than the rate needed to reach the 2020 emissions limit (CARB 2014b).

Executive Order B-30-15

Executive Order B-30-15, signed April 29, 2015, sets a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. Executive Order B-30-15 also directs CARB to update the Scoping Plan to quantify the 2030 GHG reduction goal for the state and requires state agencies to implement measures to meet the interim 2030 goal as well as the long-term goal for 2050 in Executive Order S-03-05. It also requires the Natural Resources Agency to conduct triennial updates of the California adaption strategy, Safeguarding California, in order to ensure climate change is accounted for in state planning and investment decisions.

Senate Bill 32 and Assembly Bill 197

In September 2016, Governor Brown signed Senate Bill 32 and Assembly Bill 197 into law, making the Executive Order goal for year 2030 into a statewide mandated legislative target. AB 197 established a joint legislative committee on climate change policies and requires CARB to prioritize direct emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

2017 Climate Change Scoping Plan Update

Executive Order B-30-15 and SB 32 required CARB to prepare another update to the Scoping Plan to address the 2030 target for the state. On January 20, 2017, CARB released the Draft 2017 Climate Change Scoping Plan Update with adoption hearings planned for June of 2017. The Draft 2017 Climate Change Scoping Plan Update includes the potential regulations and programs, including strategies consistent with AB 197 requirements to achieve the 2030 target. The 2017 Scoping Plan establishes a new emissions limit of 260 $MMTCO_2e$ for the year 2030, which corresponds to a 40 percent decrease in 1990 levels by 2030 (CARB 2017a).

California's climate strategy will require contributions from all sectors of the economy, including the land base, and will include enhanced focus on zero- and near-zero emission (ZE/NZE) vehicle technologies; continued investment in renewables, including solar roofs, wind, and other distributed generation; greater use of low carbon fuels; integrated land conservation and development strategies; coordinated efforts to reduce emissions of short-lived climate pollutants (methane, black carbon, and fluorinated gases); and an increased focus on integrated land use planning to support livable, transit-connected communities and conserve agricultural and other lands. Requirements for direct GHG reductions at refineries will further support air quality co-benefits in neighborhoods—including in disadvantaged communities historically located adjacent to these large stationary sources—and support California's local air pollution control and air quality

5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

management districts' efforts to tighten emission limits on a broad spectrum of industrial sources. Major elements of the 2017 Scoping Plan framework include:

- Implementation of and/or increases in the standards of the Mobile Source Strategy, which include increasing ZE buses and trucks.
- Low Carbon Fuel Standard, with an increased stringency (18 percent by 2030).
- Implementation of SB 350, which expands the Renewables Portfolio Standard (RPS) to 50 percent RPS and doubles energy efficiency savings by 2030.
- California Sustainable Freight Action Plan, which improves freight system efficiency, utilizes near-zero emissions technology, and deployment of ZE trucks.
- Implementation of the proposed Short-Lived Climate Pollutant Strategy, which focuses on reducing methane and hydroflurocarbon emissions by 40 percent and anthropogenic black carbon emissions by 50 percent by year 2030.
- Continued implementation of SB 375.
- Post-2020 Cap-and-Trade Program that includes declining caps.
- 20 percent reduction in GHG emissions from refineries by 2030.[5]
- Development of a Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

In addition to these statewide strategies, the 2017 Climate Change Scoping Plan identified local governments as essential partners in achieving the state's long-term GHG reduction goals and identified local actions to reduce GHG emissions. CARB recommends that local governments achieve a community-wide goal to achieve emissions of no more than 6 $MTCO_2e$ or less per capita by 2030 and 2 $MTCO_2e$ or less per capita by 2050. For CEQA projects, CARB states that lead agencies may develop evidenced-based bright-line numeric thresholds—consistent with the Scoping Plan and the state's long-term GHG goals—and projects with emissions exceeding that amount may be required to incorporate on-site design features and mitigation measures that avoid or minimize project emissions to the degree feasible, or a performance-based metric using a climate action plan or other plan to reduce GHG emissions as appropriate (CARB 2017a).

The Scoping Plan scenario is set against what is called the business-as-usual (BAU) yardstick—that is, what GHG emissions would look like if the state did nothing at all beyond the policies that are required and already in place to achieve the 2020 limit, as shown in Table 5.5-3, *2017 Climate Change Scoping Plan Emissions*

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[5] The plan includes policies to require direct GHG reductions at some of the state's largest stationary sources and mobile sources in accordance with AB 197. These policies include the use of lower GHG fuels, efficiency regulations, and the Cap-and-Trade Program, which constrains and reduces emissions at covered sources.

Reductions Gap to Achieve the 2030 GHG Target. It includes the existing renewables requirements, advanced clean cars, the "10 percent" Low Carbon Fuel Standard, and the SB 375 program for more vibrant communities, among others. However, it does not include a range of new policies or measures that have been developed or put into statute over the past two years, Also shown in the table, the known commitments are expected to result in emissions that are 50 $MMTCO_2e$ above the target in 2030. In order to make up the difference, a new Post- 2020 Cap-and-Trade Program and refinery measure are key components of the 2017 Scoping Plan.

Table 5.4-3 2017 Climate Change Scoping Plan Emissions Reductions Gap to Achieve the 2030 GHG Target

Modeling Scenario	2030 GHG Emissions $MMTCO_2e$
Reference Scenario (Business-as-Usual)	392.4
With Known Commitments	310
2030 GHG Target	**260**

Source: CARB 2017a.

Table 5.5-4, *2017 Climate Change Scoping Plan Emissions Change by Sector to Achieve the 2030 Target*, provides estimated GHG emissions by sector at 1990 levels and the range of emissions for each sector estimated for 2030.

Table 5.4-4 2017 Climate Change Scoping Plan Emissions Change by Sector to Achieve the 2030 Target

Scoping Plan Sector	1990 $MMTCO_2e$	2030 Proposed Plan Ranges $MMTCO_2e$	% Change from 1990
Agricultural	26	24–25	-4% to -8%
Residential and Commercial	44	38–40	-9% to -14%
Electric Power	108	42–62	-43% to -61%
High GWP	3	8–11	167% to 267%
Industrial	98	77–87	-11% to -21%
Recycling and Waste	7	8–9	14% to 29%
Transportation (including TCU)	152	103–111	-27% to -32%
Net Sink[1]	-7	TBD	TBD
Sub Total	431	300–345	-20% to -30%
Cap-and-Trade Program	NA	40–85	NA
Total	431	260	-40%

Source: CARB 2017a.
Notes: TCU = Transportation, Communications, and Utilities; TBD: To Be Determined.
1 Work is underway through 2017 to estimate the range of potential sequestration benefits from the natural and working lands sector.

Senate Bill 1383

On September 19, 2016, the Governor signed SB 1383 to supplement the GHG reduction strategies in the Scoping Plan to consider short-lived climate pollutants, including black carbon and CH_4. Black carbon is the light-absorbing component of fine particulate matter produced during incomplete combustion of fuels. SB 1383 requires the state board, no later than January 1, 2018, to approve and begin implementing that comprehensive strategy to reduce emissions of short-lived climate pollutants. The requirement is to achieve a reduction in methane by 40 percent, hydrofluorocarbon gases by 40 percent, and anthropogenic black carbon by 50 percent below 2013 levels by 2030, as specified. The bill also establishes targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the "Final Proposed Short-Lived Climate Pollutant Strategy," which identifies the state's approach to reducing anthropogenic and biogenic sources of short-lived climate pollutants. Anthropogenic sources of black carbon include on- and off-road transportation, residential wood burning, fuel combustion (charbroiling), and industrial processes. According to CARB, ambient levels of black carbon in California are 90 percent lower than in the early 1960s, despite the tripling of diesel fuel use (CARB 2017b). In-use on-road rules are expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. SCAQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, reducing particulate emissions from these broilers by over 80 percent (CARB 2017b). Additionally, SCAQMD Rule 445 limits installation of new fireplaces in the SoCAB.

Senate Bill 375

In 2008, SB 375, the Sustainable Communities and Climate Protection Act, was adopted to connect the GHG emissions reductions targets established in the 2008 Scoping Plan for the transportation sector to local land use decisions that affect travel behavior. Its intent is to reduce GHG emissions from light-duty trucks and automobiles (excludes emissions associated with goods movement) by aligning regional long-range transportation plans, investments, and housing allocations to local land use planning to reduce vehicle miles traveled (VMT) and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPOs). SCAG is the MPO for the Southern California region, which includes the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial.

Pursuant to the recommendations of the Regional Transportation Advisory Committee, CARB adopted per capita reduction targets for each of the MPOs rather than a total magnitude reduction target. SCAG's targets are an 8 percent per capita reduction from 2005 GHG emission levels by 2020 and a 13 percent per capita reduction from 2005 GHG emission levels by 2035 (CARB 2010).

The 2020 targets are smaller than the 2035 targets because a significant portion of the built environment in 2020 has been defined by decisions that have already been made. In general, the 2020 scenarios reflect that more time is needed for large land use and transportation infrastructure changes. Most of the reductions in the interim are anticipated to come from improving the efficiency of the region's transportation network. The targets would result in 3 $MMTCO_2e$ of reductions by 2020 and 15 $MMTCO_2e$ of reductions by 2035. Based on these reductions, the passenger vehicle target in CARB's Scoping Plan (for AB 32) would be met (CARB 2010).

CARB is currently in the process of updating the next round of targets and methodology to comply with the requirement for updates every eight years. Considerations for the next round of targets include whether to change the nature or magnitude of the emissions reduction targets for each of the MPOs, and whether the target-setting methodology should account for advances in technologies that reduce emissions. Such changes in methodology would permit cities to account for emissions reductions from advances in cleaner fuels and vehicles and not only from land use and transportation planning strategies. In March 2017, CARB held a series of workshops regarding the SB 375 target update process, and updated targets adopted in 2017 are intended to become effective in 2018. Sustainable communities strategies (SCSs) adopted in 2018 would be subject to the updated targets (CARB 2015).

SCAG's 2016-2040 RTP/SCS

SB 375 requires the MPOs to prepare a sustainable communities strategy in their regional transportation plan. For the SCAG region, the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) was adopted on April 7, 2016, and is an update to the 2012 RTP/SCS (SCAG 2016). In general, the SCS outlines a development pattern for the region, which, when integrated with the transportation network and other transportation measures and policies, would reduce vehicle miles traveled from automobiles and light duty trucks and thereby reduce GHG emissions from these sources.

The 2016-2040 RTP/SCS projects that the SCAG region will meet or exceed the passenger per capita targets set in 2010 by CARB. It is projected that VMT per capita in the region for year 2040 would be reduced by 7.4 percent with implementation of the 2016-2040 RTP/SCS compared to a no-plan year 2040 scenario. Under the 2016-2040 RTP/SCS, SCAG anticipates lowering GHG emissions 8 percent below 2005 levels by 2020, 18 percent by 2035, and 21 percent by 2040. The 18 percent reduction by 2035 over 2005 levels represents a 2 percent increase in reduction compared to the 2012 RTP/SCS projection. Overall, the SCS is meant to provide growth strategies that will achieve the aforementioned regional GHG emissions reduction targets. Land use strategies to achieve the region's targets include planning for new growth around high quality transit areas and livable corridors and creating neighborhood mobility areas to integrate land use and transportation and plan for more active lifestyles (SCAG 2016). However, the SCS does not require that local general plans, specific plans, or zoning be consistent with the SCS; instead, it provides incentives to governments and developers for consistency.

Assembly Bill 1493

California vehicle GHG emission standards were enacted under AB 1493 (Pavley I). Pavley I is a clean-car standard that reduces GHG emissions from new passenger vehicles (light-duty auto to medium-duty vehicles) from 2009 through 2016 and is anticipated to reduce GHG emissions from new passenger vehicles by 30 percent in 2016. California implements the Pavley I standards through a waiver granted to California by the EPA. In 2012, the EPA issued a Final Rulemaking that sets even more stringent fuel economy and GHG emissions standards for model year 2017 through 2025 light-duty vehicles (see also the discussion on the update to the Corporate Average Fuel Economy standards under *Federal Laws*, above). In January 2012, CARB approved the Advanced Clean Cars program (formerly known as Pavley II) for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of ZE vehicles into a single package of standards. Under California's Advanced Clean Car program, by 2025, new automobiles will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions.

5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

Executive Order S-01-07

On January 18, 2007, the state set a new low carbon fuel standard (LCFS) for transportation fuels sold within the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in carbon dioxide equivalent gram per unit of fuel energy sold in California. The LCFS requires a reduction of 2.5 percent in the carbon intensity of California's transportation fuels by 2015 and a reduction of at least 10 percent by 2020. The standard applies to refiners, blenders, producers, and importers of transportation fuels, and would use market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

Senate Bills 1078, 107, X1-2, and Executive Order S-14-08

A major component of California's Renewable Energy Program is the RPS established under Senate Bills 1078 (Sher) and 107 (Simitian). Under the RPS, certain retail sellers of electricity were required to increase the amount of renewable energy each year by at least 1 percent in order to reach at least 20 percent by December 30, 2010. Executive Order S-14-08 was signed in November 2008, which expanded the state's Renewable Energy Standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SBX1-2). Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. The increase in renewable sources for electricity production will decrease indirect GHG emissions from development projects, because electricity production from renewable sources is generally considered carbon neutral.

Senate Bill 350

Senate Bill 350 (de Leon), was signed into law September 2015. SB 350 establishes tiered increases to the RPS of 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. SB 350 also set a new goal to double the energy efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

Executive Order B-16-2012

On March 23, 2012, the state identified that CARB, the California Energy Commission (CEC), the Public Utilities Commission, and other relevant agencies worked with the Plug-in Electric Vehicle Collaborative and the California Fuel Cell Partnership to establish benchmarks to accommodate ZE vehicles in major metropolitan areas, including infrastructure to support them (e.g., electric vehicle charging stations). The executive order also directs the number of ZE vehicles in California's state vehicle fleet to increase through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles are ZE by 2015 and at least 25 percent by 2020. The executive order also establishes a target for the transportation sector of reducing GHG emissions from the transportation sector 80 percent below 1990 levels.

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and non-residential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 and most recently revised in 2013 (Title 24, Part 6, of the California Code of Regulations [CCR]). Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow for consideration and possible incorporation of new energy efficiency technologies and methods. On June 10, 2015, the CEC adopted the 2016 Building Energy Efficiency Standards, which went into effect on January 1, 2017.

The 2016 Standards continues to improve upon the current 2013 Standards for new construction of and additions and alterations to residential and nonresidential buildings. Under the 2016 Standards, residential and nonresidential buildings are 28 and 5 percent more energy efficient than the 2013 Standards, respectively (CEC 2015a). Buildings that are constructed in accordance with the 2013 Building Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the prior 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features. While the 2016 standards will not achieve zero net energy, they do get very close to the state's goal and make important steps toward changing residential building practices in California. The 2019 standards will take the final step to achieve zero net energy for newly constructed residential buildings throughout California (CEC 2015b).

California Building Code: CALGreen

On July 17, 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (24 CCR, Part 11, known as "CALGreen") was adopted as part of the California Building Standards Code. CALGreen established planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants.[6] The mandatory provisions of the California Green Building Code Standards became effective January 1, 2011, and were updated most recently in 2016. The 2016 Standards became effective on January 1, 2017.

2006 Appliance Efficiency Regulations

The 2006 Appliance Efficiency Regulations (20 CCR §§ 1601–1608) were adopted by the CEC on October 11, 2006, and approved by the California Office of Administrative Law on December 14, 2006. The regulations include standards for both federally regulated appliances and non–federally regulated appliances. Though these regulations are now often viewed as "business as usual," they exceed the standards imposed by all other states, and they reduce GHG emissions by reducing energy demand.

Solid Waste Regulations

California's Integrated Waste Management Act of 1989 (AB 939, Public Resources Code §§ 40050 et seq.) set a requirement for cities and counties throughout the state to divert 50 percent of all solid waste from landfills by January 1, 2000, through source reduction, recycling, and composting. In 2008, the requirements were modified to reflect a per capita requirement rather than tonnage. To help achieve this, the act requires that each city and county prepare and submit a source reduction and recycling element. AB 939 also established the goal for all California counties to provide at least 15 years of ongoing landfill capacity.

AB 341 (Chapter 476, Statutes of 2011) increased the statewide goal for waste diversion to 75 percent by 2020 and requires recycling of waste from commercial and multifamily residential land uses.

[6] The green building standards became mandatory in the 2010 edition of the code.

5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

The California Solid Waste Reuse and Recycling Access Act (AB 1327, Public Resources Code §§ 42900 et seq.) requires areas to be set aside for collecting and loading recyclable materials in development projects. The act required the California Integrated Waste Management Board to develop a model ordinance for adoption by any local agency requiring adequate areas for collection and loading of recyclable materials as part of development projects. Local agencies are required to adopt the model or an ordinance of their own.

Section 5.408 of the 2016 California Green Building Standards Code also requires that at least 65 percent of the nonhazardous construction and demolition waste from nonresidential construction operations be recycled and/or salvaged for reuse.

In October of 2014 Governor Brown signed AB 1826, requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also requires that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units. Organic waste means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste.

Water Efficiency Regulations

The 20x2020 Water Conservation Plan was issued by the Department of Water Resources (DWR) in 2010 pursuant to Senate Bill 7, which was adopted during the 7th Extraordinary Session of 2009–2010 and therefore dubbed "SBX7-7." SBX7-7 mandated urban water conservation and authorized the DWR to prepare a plan implementing urban water conservation requirements (20x2020 Water Conservation Plan). In addition, it required agricultural water providers to prepare agricultural water management plans, measure water deliveries to customers, and implement other efficiency measures. SBX7-7 requires urban water providers to adopt a water conservation target of 20 percent reduction in urban per capita water use by 2020 compared to 2005 baseline use.

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or equivalent. AB 1881 also requires the CEC to consult with the DWR to adopt, by regulation, performance standards and labeling requirements for landscape irrigation equipment, including irrigation controllers, moisture sensors, emission devices, and valves to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy or water.

5.4.1.3 EXISTING EMISSIONS

The project site currently generates GHG emissions from operation of the existing Corona Del Mar MS/HS. Emission sources include transportation (e.g., vehicle emissions associated with student trips), area (e.g., paints buildings, consumer cleaning products), energy (e.g., natural gas usage for heating), water usage, and waste.

5.4.2 Thresholds of Significance

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

GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.

GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

5.4.2.1 SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

To provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents, SCAQMD has convened a GHG CEQA Significance Threshold Working Group (Working Group). Based on the last Working Group meeting (Meeting No. 15) in September 2010, the SCAQMD Working Group identified a tiered approach for evaluating GHG emissions for development projects where SCAQMD is not the lead agency (SCAQMD 2010):

- **Tier 1.** If a project is exempt from CEQA, project-level and cumulative GHG emissions are less than significant.

- **Tier 2.** If the project complies with a GHG emissions reduction plan or mitigation program that avoids or substantially reduces GHG emissions in the project's geographic area (i.e., city or county), project-level and cumulative GHG emissions are less than significant.

For projects that are not exempt or where no qualifying GHG reduction plans are directly applicable, SCAQMD requires an assessment of GHG emissions. SCAQMD has identified a "bright-line" screening-level threshold of 3,000 $MTCO_2e$ annually for all land use types or the following land-use-specific thresholds: 1,400 $MTCO_2e$ for commercial projects, 3,500 $MTCO_2e$ for residential projects, or 3,000 $MTCO_2e$ for mixed-use projects. This bright-line threshold is based on a review of the Governor's Office of Planning and Research database of CEQA projects. Based on their review of 711 CEQA projects, 90 percent of CEQA projects would exceed the bright-line thresholds identified above. Therefore, projects that do not exceed the bright-line threshold would have a nominal, and therefore, less than cumulatively considerable impact on GHG emissions:

- **Tier 3.** If GHG emissions are less than the screening-level threshold, project-level and cumulative GHG emissions are less than significant.

- **Tier 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

SCAQMD has identified an efficiency target for projects that exceed the bright-line threshold: a 2020 efficiency target of 4.8 $MTCO_2e$ per year per service population ($MTCO_2e$/year/SP) for project-level analyses and 6.6 $MTCO_2e$/year/SP for plan-level analyses (e.g., general plans). Service population is defined as the sum of the residential and employment population of a project. The per capita efficiency targets are based on the AB 32 GHG reduction target and 2020 GHG emissions inventory prepared for CARB's 2008 Scoping Plan.[7]

The buildout year of the project is 2020. For the purpose of this project, if project-related emissions exceed the screening threshold of 3,000 $MTCO_2e$ per year, project emissions would be compared to the per capita target of 4.8 $MTCO_2e$ per year per service population.[8] If the per capita efficiency target is exceeded, GHG emissions would be considered potentially significant in the absence of mitigation measures.

5.4.3 Environmental Impacts

5.4.3.1 METHODOLOGY

The analysis in this section is based on buildout of the proposed project as modeled using CalEEMod, version 2016.3.1, for the following sectors:

- **Transportation.** GHG emissions are based on the trip generation provided by IBI Group (Appendix H).
- **Solid Waste Disposal.** Indirect emissions from waste generation during stadium events are based on the solid waste generation rate for an arena in the CalEEMod User's Guide Appendix D.
- **Water/Wastewater.** GHG emissions from this sector are associated with the embodied energy used to supply water, treat water, distribute water, and then treat wastewater and fugitive GHG emissions from wastewater treatment. Emissions are based on water consumption rates from the California Uniform Building Code and irrigation water use from past similar projects.
- **Area Sources.** GHG emissions from this sector are from use of landscaping equipment used for property maintenance.
- **Energy.** GHG emissions from this sector are from use of electricity and natural. New buildings are assumed to comply with the 2016 Building and Energy Efficiency Standards, which are 5 percent more energy efficient for nonresidential buildings than the 2013 standards.
- **Construction.** GHG emissions are from construction-related vehicle and equipment use provided by the District. Emissions are amortized over a 30-year period and included as part of the overall inventory.

7 SCAQMD took the 2020 statewide GHG reduction target for land use only GHG emissions sectors and divided it by the 2020 statewide employment for the land use sectors to derive a per capita GHG efficiency metric that coincides with the GHG reduction targets of AB 32 for year 2020.

8 Although SCAQMD's guidance identifies a threshold of 3,500 $MTCO_2e$ for residential projects, the 3,000 $MTCO_2e$ threshold applicable to mixed-use projects was applied to be conservative. Because the project's GHG emissions would be below the lower threshold, as discussed below, they would also be below the higher threshold applicable to residential projects.

Life cycle emissions are not included in this analysis because not enough information is available for the proposed project, and therefore life cycle GHG emissions would be speculative.[9] Black carbon emissions are not included in the GHG analysis because CARB does not include this pollutant in the state's AB 32 inventory and treats this short-lived climate pollutant separately.[10] GHG modeling is included in Appendix E of this Draft EIR.

5.4.3.2 IMPACT ANALYSIS

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.4-1: Development of the proposed project (Options A and B) would not result in a substantial increase of GHG emissions that would exceed the South Coast Air Quality Management District's significance criteria. [Threshold GHG-1]

Impact Analysis: Global climate change is not confined to a particular project area and is generally accepted as the consequence of global industrialization over the last 200 years. A typical project, even a very large one, does not generate enough greenhouse gas emissions on its own to influence global climate change significantly; hence, the issue of global climate change is, by definition, a cumulative environmental impact. The following discusses the potential GHG emissions impacts associated with the proposed Option A and Option B scenarios.

Option A and Option B

The proposed project would generate GHG emissions from vehicle trips generated by the project, energy use (indirectly from purchased electricity use and directly through fuel consumed for building heating), area sources (e.g., equipment used on-site, consumer products, coatings), water/wastewater generation, and waste disposal. Annual GHG emissions were calculated for construction and operation of the project. Total construction emissions were amortized over 30 years and included in the emissions inventory to account for the short-term GHG emissions from the construction phase of the project. Project-related GHG emissions associated with Options A and B are shown in Table 5.4-5, *Project-Related GHG Emissions*. As shown in the table, the proposed project at buildout for Option A and Option B would generate a net of 154 $MTCO_2e$ and 178 $MTCO_2e$ of emissions per year, respectively. The total net increase of GHG emissions on-site from the

[9] Life cycle emissions include indirect emissions associated with materials manufacture. However, these indirect emissions involve numerous parties, each of which is responsible for GHG emissions of their particular activity. The California Resources Agency, in adopting the CEQA Guidelines Amendments on GHG emissions found that lifecycle analyses was not warranted for project-specific CEQA analysis in most situations, for a variety of reasons, including lack of control over some sources, and the possibility of double-counting emissions (see Final Statement of Reasons for Regulatory Action, December 2009). Because the amount of materials consumed during the operation or construction of the Proposed Project is not known, the origin of the raw materials purchased is not known, and manufacturing information for those raw materials are also not known, calculation of life cycle emissions would be speculative. A life-cycle analysis is not warranted (OPR 2008).

[10] Particulate matter emissions, which include black carbon, are analyzed in Section 5.2, *Air Quality*. Black carbon emissions have sharply declined due to efforts to reduce on-road and off-road vehicle emissions, especially diesel particulate matter. The State's existing air quality policies will virtually eliminate black carbon emissions from on-road diesel engines within 10 years (CARB 2017b).

5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

project would not exceed the SCAQMD's bright-line threshold of 3,000 $MTCO_2e$, and the proposed project's cumulative contribution to GHG emissions is less than significant.

Table 5.4-5 Project-Related GHG Emissions

Source	$MTCO_2e$/year[1]	Percent of Project Total
Option A		
Area	<1	<1%
Energy[1]	8	5%
Mobile	103	67%
Lighting[2]	11	7%
Waste	15	10%
Water	13	8%
Amortized Construction Emissions[3]	5	3%
Total Emissions	154	100%
Option B		
Area	<1	<1%
Energy[1]	2	1%
Mobile	104	58%
Lighting[2]	16	9%
Waste	15	8%
Water	33	19%
Amortized Construction Emissions[3]	9	5%
Total Emissions	178	100%
SCAQMD's Bright-Line Threshold	3,000	NA
Exceeds Bright-Line Threshold	No	NA

Source: CalEEMod 2016.3.1.
$MTCO_2e$ = metric tons of carbon dioxide-equivalent
Note: Percentage points may not total 100 due to rounding.
1 Assumes implementation of the 2013 California Green Building Standards Code (CALGreen) and 2016 Building and Energy Efficiency Standards. The 2016 Building and Energy Efficiency Standards are 5 percent more energy efficient than the 2013 Standards for non-residential buildings.
2 Stadium lighting information is based on the lighting information as provided by the District and using default CalEEMod 2016.3.1 carbon intensity for Southern California Edison. Parking lot lighting information is based on the lighting information provided by the District and using default CalEEMod 2016.3.1 carbon intensity for Southern California Edison.
3 Construction emissions are amortized over a 30-year project lifetime per recommended SCAQMD methodology.

Impact 5.4-2: The proposed project (Options A and B) would not conflict with the California Air Resources Board's Scoping Plan or the Southern California Association of Governments' 2016-2040 Regional Transportation Plan / Sustainable Communities Strategy. [Threshold GHG-2]

Impact Analysis: Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan and SCAG's 2016-2040 RTP/SCS. The consistency analysis with these plans as discussed below is applicable to both Options A and B.

CARB Scoping Plan

Option A and Option B

In accordance with AB 32, CARB developed the 2008 Scoping Plan to outline the state's strategy to achieve 1990 level emissions by year 2020. The CARB Scoping Plan is applicable to state agencies and is not directly applicable to cities/counties and individual projects. Nonetheless, the Scoping Plan has been the primary tool that is used to develop performance-based and efficiency-based CEQA criteria and GHG reduction targets for climate action planning efforts.

Since adoption of the 2008 Scoping Plan, state agencies have adopted programs identified in the plan, and the legislature has passed additional legislation to achieve the GHG reduction targets. Statewide strategies to reduce GHG emissions include the LCFS, California Appliance Energy Efficiency regulations, California Building Standards (i.e., CALGreen and the Building and Energy Efficiency Standards), RPS, and changes in the Corporate Average Fuel Economy standards (e.g., Pavley I and California Advanced Clean Cars [Pavley II]). The project GHG emissions shown in Table 5.4-5 include reductions associated with statewide strategies that have been adopted since AB 32. The proposed project would comply with these GHG emissions reduction measures as they are statewide strategies. However, the Scoping Plan itself is not directly applicable to the proposed project. Therefore, the proposed project would not obstruct implementation of the CARB Scoping Plan, and impacts would be less than significant.

SCAG's 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy

Option A and Option B

SCAG's RTP/SCS identifies that land use strategies that focus on new housing and job growth in areas served by high quality transit and other opportunity areas would be consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategies in the 2016 RTP/SCS are to 1) allow the southern California region to grow in more compact communities in existing urban areas; 2) provide neighborhoods with efficient and plentiful public transit and abundant and safe opportunities to walk, bike, and pursue other forms of active transportation; and 3) preserve more of the region's remaining natural lands (SCAG 2016). The 2016 RTP/SCS contains transportation projects to help more efficiently distribute population, housing, and employment growth, as well as a forecast development that is generally consistent with regional-level general plan data. The projected regional development pattern—when integrated with the proposed regional transportation network identified in the RTP/SCS—would reduce per capita vehicular travel-related GHG emissions and achieve the GHG reduction per capita targets for the SCAG region. The RTP/SCS does not require that local general plans, specific plans, or zoning be consistent with the RTP/SCS, but provides incentives for consistency for governments and developers. Table 5.4-6, *SCAG 2016 RTP/SCS Consistency*, evaluates the project in comparison to the three primary transportation-land use strategies in the RTP/SCS. The proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the 2016-2040 RTP/SCS. No impact would occur and no mitigation measures are required.

5. Environmental Analysis
GREENHOUSE GAS EMISSIONS

Table 5.4-6 SCAG 2016 RTP/SCS Consistency

SCAG Transportation-Land Use Strategies	Implementing Policies/Strategies	Consistency
Focus new growth around High Quality Transit Areas (HQTA). The 2016 RTP/SCS overall land use pattern reinforces the trend of focusing new housing and employment in the region's high quality transit areas (HQTA). The 2016 RTP/SCS assumes that 46 percent of new housing and 55 percent of new employment locations developed between 2012 and 2040 will be located within HQTAs, which comprise only three percent of the total land area in the SCAG region (SCAG 2016).	Additional local policies that ensure that development in HQTAs achieve the intended reductions in VMT and GHG emissions include: ▪ Affordable housing requirements ▪ Reduced parking requirements ▪ Adaptive reuse of existing structures ▪ Density bonuses tied to family housing units such as three- and four bedroom units ▪ Mixed-use development standards that include local serving retail ▪ Increased Complete Streets investments around HQTAs.	**Not Applicable:** The proposed project is not in a HQTA. However, the proposed project would accommodate various sporting practices and events that currently take place at other facilities, reducing VMT and GHG emissions.
Plan for growth around Livable Corridors. SCAG's livable corridors strategy seeks to revitalize commercial strips through integrated transportation and land use planning that results in increased economic activity and improved mobility options.	Additional livable corridors strategies include: ▪ Transit improvements, including dedicated lane Bus Rapid Transit (BRT) or semi-dedicated BRT-light. The remaining corridors have the potential to support other features that improve bus performance (enhanced bus shelters, real-time travel information, off-bus ticketing, all door boarding and longer distances between stops to improve speed and reliability). ▪ Active transportation improvements: Livable corridors include increased investments in complete streets to make these corridors and the intersecting arterials safe for biking and walking. ▪ Land use policies: Livable Corridor strategies include the development of mixed-use retail centers at key nodes along the corridors, increasing neighborhood-oriented retail at more intersections and zoning that allows for the replacement of under-performing auto-oriented strip retail between nodes with higher density residential and employment.	**Not Applicable:** The proposed project is not in a transportation corridor. However, the project site is near existing bus routes.
Provide more options for short trips in Neighborhood Mobility Areas and Complete Communities: Neighborhood mobility areas have a high intersection density, low to moderate traffic speeds and robust residential retail connections. These areas are suburban in nature, but can support slightly higher density in targeted locations. The land use strategies include shifting retail growth from large centralized retail strip malls to smaller distributed centers throughout a neighborhood mobility area.	▪ Neighborhood mobility area land use strategies include pursuing local policies that encourage replacing motor vehicle use with Neighborhood Electric Vehicle (NEV) use. NEVs are a federally designated class of passenger vehicle rated for use on roads with posted speed limits of 35 miles per hour or less. Steps needed to support NEV use include providing state and regional incentives for purchases, local planning for charging stations, designating a local network of low speed roadways and adopting local regulations that allow smaller NEV parking stalls ▪ Complete communities strategies include creation of mixed-use districts through a concentration of activities with housing, employment, and a mix of retail and services, located in close proximity to each other.	**Consistent:** The proposed project would accommodate various sporting practices and events that currently take place at other facilities. This would contribute to reducing VMT and GHG emissions.

Table 5.4-6 SCAG 2016 RTP/SCS Consistency

SCAG Transportation-Land Use Strategies	Implementing Policies/Strategies	Consistency
	Focusing a mix of land uses in strategic growth areas creates complete communities wherein most daily needs can be met within a short distance of home, providing residents with the opportunity to patronize their local area and run daily errands by walking or cycling rather than traveling by automobile.	

Source: SCAG 2016.

5.4.4 Cumulative Impacts

Project-related GHG emissions are not confined to a particular air basin but are dispersed worldwide. Therefore, impacts under Impact 5.4-1 are not project-specific impacts, but the proposed project's contribution to the cumulative impact of global warming. Implementation of the proposed project would result in a nominal increase in GHG emissions. Thus, the proposed project's GHG emissions and contribution to global climate change impacts are not considered cumulatively considerable, and therefore are less than significant.

5.4.5 Regulatory Requirements

Existing Regulations

State

- AB 32: California Global Warming Solutions Act
- SB 32: California Global Warming Solutions Act, Target Year 2030
- Sustainable Communities and Climate Protection Act (SB 375)
- Executive Order S-03-05 and Executive Order B-30-15: Greenhouse Gas Emission Reduction Targets
- Pavley Fuel Efficiency Standards (AB 1493)
- California Integrated Waste Management Act of 1989 (AB 939)
- California Mandatory Commercial Recycling Law (AB 341)
- California Advanced Clean Cars CARB/ Low-Emission Vehicle Program – LEV III (Title 13 CCR)
- Heavy-Duty Vehicle Greenhouse Gas Emissions Reduction Measure (Title 17 CCR)
- In-Use Off-Road Diesel Idling Restriction (13 CCR 2449)
- Low Carbon Fuel Standard (Title 17 CCR)
- Title 24 California Code of Regulations, Part 6 (Building and Energy Efficiency Standards)
- Title 24 California Code of Regulations, Part 11 (California Green Building Code)
- Title 20 California Code of Regulations (Appliance Energy Efficiency Standards)

- Title 17 California Code of Regulations (Low Carbon Fuel Standard)
- California Water Conservation in Landscaping Act of 2006 (AB 1881)
- California Water Conservation Act of 2009 (SBX7-7)
- Statewide Retail Provider Emissions Performance Standards (SB 1368)
- Renewable Portfolio Standards (SB 1078, 701, and X1-2)

5.4.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impact would be less than significant:

- **Impact 5.4-1:** Development of the proposed project would not result in a substantial increase of GHG emissions that would exceed the South Coast Air Quality Management District's significance criteria.

- **Impact 5.4-2:** The proposed project would not conflict with the California Air Resources Board's Scoping Plan or the Southern California Association of Governments' 2016-2040 Regional Transportation Plan / Sustainable Communities Strategy.

5.4.7 Mitigation Measures

No mitigation measures are required.

5.4.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.4.9 References

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5.5 HYDROLOGY AND WATER QUALITY

This section of the Draft Environmental Impact Report (Draft EIR) evaluates the potential for the proposed project to impact hydrology and water quality. This section discusses regulatory framework, existing conditions, and the significance analysis of potential impacts. Hydrology deals with the distribution and circulation of water, both on land and underground, and water quality deals with the quality of surface and groundwater resources.

5.5.1 Environmental Setting

5.5.1.1 REGULATORY FRAMEWORK

Local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized in this section. They are designed to achieve regional water quality objectives and thereby protect the beneficial uses of the region's surface and groundwater.

Federal

United States Code, Title 33, Sections 1251 et seq. (1972)

The Clean Water Act (CWA) (also known as the federal Water Pollution Control Act) is the principal statute governing water quality. Under the CWA of 1977, the United States Environmental Protection Agency (EPA) seeks to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The statute employs a variety of regulatory and non-regulatory tools to reduce direct pollutant discharges into waterways, finance municipal wastewater treatment facilities, and manage polluted runoff. The CWA authorizes the EPA to implement water quality regulations. The National Pollutant Discharge Elimination System (NPDES) permit program under Section 402(p) of the CWA controls water pollution by regulating stormwater discharges into the waters of the United States. California has an approved state NPDES program. The EPA has delegated authority for water permitting to the State Water Resources Control Board (SWRCB), which has nine regional boards. The Santa Ana Regional Water Quality Control Board (RWQCB) (Region 8) regulates water quality at the project site.

Section 303(d) of the CWA requires that each state identify water bodies or segments of water bodies that are "impaired" (i.e., do not meet one or more of the water quality standards established by the state). These waters are identified in the Section 303(d) list as waters that are polluted and need further attention to support their beneficial uses. Once the water body or segment is listed, the state is required to establish a total maximum daily load (TMDL) for the pollutant causing the impairment. Typically, TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources. The intent of the 303(d) list is to identify water bodies that require a TMDL to maintain water quality. In accordance with Section 303(d), the RWQCB identifies impaired water bodies in its jurisdiction and the pollutant or stressor responsible. The project site is approximately 0.4 mile east of Upper Newport Bay, which is designated as a 303(d) impaired water body.

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

Sections 401 and 404 of the CWA—administered by the US Army Corps of Engineers—regulate the water quality of all discharges of fill or dredged material into waters of the United States, including wetlands and intermittent stream channels. Because the existing site is currently developed and there are no ephemeral drainages and/or wetlands within the site boundaries, permits from the Army Corps of Engineers under Section 404 of the CWA and/or water quality certification from the Santa Ana RWQCB under Section 401 of the CWA would not be required.

United States Code, Title 42, Sections 4001 et seq.

The National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973 mandate the Federal Emergency Management Agency (FEMA) to evaluate flood hazards. FEMA administers the National Flood Insurance Program to provide subsidized flood insurance to communities that comply with FEMA regulations limiting development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. The design standard for flood protection established by FEMA is the 100-year flood event, also described as a flood that has a 1 percent chance of occurring in any given year. According to the most recent FIRM that covers the project site (FIRM No. 06059C0269J, dated December 3, 2009), it is not within a 100-year or 500-year floodplain.

State

California Government Code, Section 53097

Section 53097 requires school districts to comply with any city or county ordinance regulating drainage improvements. It also requires school districts to comply with ordinances requiring review and approval of grading plans as they relate to design and construction of onsite improvements that affect drainage.

California Water Code, Sections 13000 et seq.

The Porter-Cologne Water Quality Act is the basic water quality control law for California. Under this act, the SWRCB has ultimate control over state water rights and water quality policy. In California, the EPA has delegated authority to issue NPDES permits to the SWRCB. The SWRCB, through its nine RWQCBs, carries out the regulation, protection, and administration of water quality in each region. Each regional board is required to adopt a water quality control plan (or Basin Plan) that designates beneficial uses and water quality objectives for the region's surface water and groundwater basins.

The project site is in the jurisdiction of the Santa Ana RWQCB, Region 8, which encompasses the Santa Ana River watershed. The Basin Plan for Region 8 was adopted in 1995 and updated in 2008 and 2011. It gives direction on the beneficial uses of state waters in Region 8; describes the water quality that must be maintained to support such uses; and provides programs, projects, and other actions necessary to achieve the standards in the Basin Plan. The Basin Plan also provides all relevant information necessary to carry out the state's antidegradation policy for surface waters and groundwater, 303(d) listing of impaired waters, and related TMDLs.

State Regulatory Agencies

State Water Resources Control Board

NPDES Permit No. CAS 618030 (Municipal Separate Storm Sewer System [MS4] Permit)

The project area is under the jurisdiction of the Santa Ana RWQCB (Region 8), which has issued three municipal stormwater permits to its three counties (Orange, Riverside, and San Bernardino). The project site is in Orange County and subject to the waste discharge requirements of Orange County MS4 permit, Order No. R8-2009-0030, NPDES Permit No. CAS618030 as amended by Order No. R8-2010-0062. The permit is currently in the process of being updated, and the Santa Ana RWQCB is soliciting comments on the draft MS4 permit.

The County of Orange, the Orange County Flood Control District, and 26 incorporated cities in Orange County, including Newport Beach, are permittees under the MS4 Permit. The permit covers approximately 789 square miles and regulates the discharge of pollutants in urban runoff from nonagricultural, man-made sources. The County of Orange is the principal permittee and submits drainage area management plans (DAMPs) to the RWQCB that identify programs and policies, including best management practices (BMPs), to achieve water quality standards in the receiving waters. The latest DAMP is dated July 2003 and describes the program elements necessary to comply with the MS4 permit. The DAMP is periodically updated using a consensus building process that involves public- and private-sector input and public review through the California Environmental Quality Act (CEQA) process.

New development projects that create 10,000 square feet or more of impervious surface and redevelopment projects that add or replace 5,000 square feet of impervious surface are required by Orange County's MS4 permit to retain onsite a specified volume of stormwater runoff from a design storm event and prepare a water quality management plan (WQMP) for submittal and approval by the permitting agency. The County of Orange prepared a 2011 Model WQMP to assist with project development in north and central Orange County, which was approved by the Santa Ana RWQCB on May 19, 2011.

Construction General Permit Order No. 2009-0009-DWQ

Pursuant to the CWA, in 2001, the SWRCB issued a statewide NPDES permit for stormwater discharges from construction sites (Order No. 2009-0009-DWQ, as amended by Order No. 2010-0014-DWQ and 2012-0006-DWQ; NPDES No. CAS000002). Under this Construction General Permit (CGP), discharges of stormwater from construction sites with a disturbed area of one or more acres are required to either obtain individual NPDES permits for stormwater discharges or be covered by the CGP. Coverage by the CGP is accomplished by completing and filing permit registration documents with the SWRCB, which include a notice of intent, risk assessment, site map, Storm Water Pollution Prevention Plan (SWPPP), postconstruction control requirements, annual fee, and signed certification statement. These are submitted electronically to the SWRCB via the SMARTS website. Each applicant under the CGP must ensure that a SWPPP is prepared prior to the start of grading, and provisions in the SWPPP must be implemented throughout the construction period. The SWPPP must list BMPs implemented on the construction site to protect stormwater runoff and must contain a visual monitoring program; a chemical monitoring program for "non-visible" pollutants to be implemented based on the risk level of the site; and inspection, reporting, training, and recordkeeping requirements. The SWRCB is the permitting agency, and the Santa Ana RWQCB provides local oversight and enforcement.

Local

City of Newport Beach

The City of Newport Beach has developed a local implementation plan, which provides a written account of the activities that the City has undertaken and is undertaking to meet the requirements of the MS4 permit (Order No. R8-2002-0010, NPDES No. CAS618030) and make a meaningful improvement in urban water quality. The local implementation plan is intended to serve as the basis for city compliance during the five-year life of the MS4 permit (Order No. R8-2002-0010, NPDES No. CAS618030), but is subject to updating and modification as the City determines necessary or as directed by the RWQCB. The City of Newport Beach requires all new development and significant redevelopment projects in its jurisdiction to prepare and submit a WQMP in compliance with the Orange County DAMP to the City for review and approval.

5.5.1.2 EXISTING CONDITIONS

Regional Setting

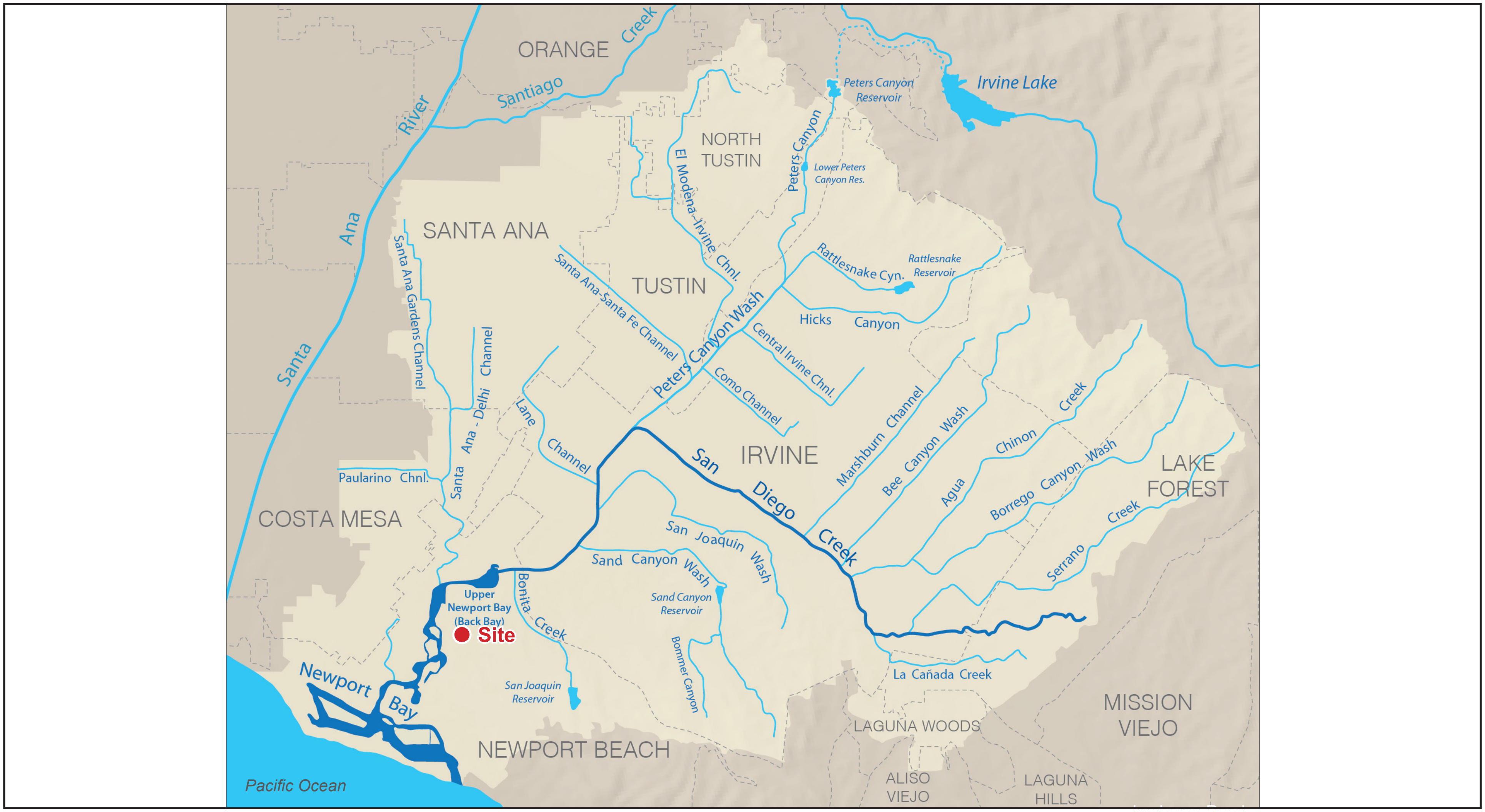
The project site is within the Newport Bay Watershed, which spans about 154 square miles of central Orange County. It extends from the foothills of the Santa Ana Mountains in the east to the San Joaquin Hills in the west and southwest and encompasses all waters that drain into Newport Bay. San Diego Creek is the main river that drains into Upper Newport Bay. Figure 5.5-1 shows the boundaries of the Newport Bay Watershed.

The Newport Bay Watershed is part of the Central Orange County Watershed Management Area, and the Central Orange County Watershed Management Area Integrated Regional Watershed Management Plan was finalized in 2012. The watershed contains three Critical Coastal Areas, two Areas of Special Biological Significance, nine miles of coastline, and a functioning estuary designated as a State Ecological Reserve.

Local Surface Waters and Drainage

The nearest surface water body to the project site is Upper Newport Bay, which is about 1,400 feet to the southwest. The topographic gradient in the vicinity of the project site is primarily to the west. Stormwater runoff from the CdM campus is collected in an internal storm drain system that discharges to catch basins at the southern boundary of the site (i.e., near the intersection of East Bluff Drive and Mar Vista Drive and the intersection of Mar Vista Drive and Domingo Drive). The catch basins are connected to a 36-inch city storm drain that is aligned beneath Mar Vista Drive and eventually discharges into Upper Newport Bay. Stormwater from the site also discharges to a catch basin at the northwest corner of the school site (i.e., near the intersection of Vista del Oro and Mar Vista Drive) that connects to a 24-inch city storm drain. Runoff in this storm drain flows to the southwest in an open space/green area between houses; the drain eventually increases to 36 inches prior to discharge into Upper Newport Bay.

Figure 5.5-1 - Newport Bay Watershed
5. Environmental Analysis



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Scale (Miles)

Photo Source: Wikipedia, 2016

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Surface Water Quality

Stormwater runoff from the project site would be directed to the City's storm drain system with ultimate discharge into Upper Newport Bay. The Santa Ana RWQCB monitors surface water quality through implementation of the Basin Plan and designates beneficial uses for surface water bodies and groundwater within the region. The designated beneficial uses for water bodies and groundwater in the vicinity of the project site are listed in Table 5.5-1.

Table 5.5-1 Designated Beneficial Uses of Water Bodies in Vicinity of Project Site

Water Body	Designated Beneficial Use
Surface Water	
Upper Newport Bay	REC-1, REC-2, COMM, BIOL, WILD, RARE, SPWN, MAR, SHEL, EST
Lower Newport Bay	NAV, REC-1, REC-2, COMM, WILD, RARE, SPWN, MAR, SHEL
Groundwater	
Coastal Plain of Orange County	MUN, PROC, IND, AGR

Source: SARWQCB 1995.
Notes: Municipal and Domestic Water Supply (MUN), Industrial Process Water Supply (PROC), Industrial Service Water Supply (IND), Agricultural Supply (AGR), Water Contact Recreation (REC-1), Noncontact Water Recreation (REC-2), Commercial and Sport Fishing (COMM), Preservation of Biological Habitats of Special Significance (BIOL), Wildlife Habitat (WILD), Rare, Threatened or Endangers Species (RARE), Spawning, Reproduction and Development (SPWN), Marine Habitat (MAR), Shellfish Harvesting (SHEL), Estuarine Habitat (EST), Navigation (NAV).

In addition to the establishment of beneficial uses and water quality objectives, another approach to improving water quality is a watershed-based methodology that focuses on all potential pollution sources and not just those associated with point sources. If a body of water does not meet established water quality standards under traditional point source controls, it is listed as an impaired water body under Section 303(d) of the CWA. For 303(d) listed water bodies, a limit is established that defines the maximum amount of pollutants (or TMDL) that can be received by that water body. Upper Newport Bay and Lower Newport Bay are listed as impaired water bodies. The pollutants of concern and the status of TMDL implementation are listed in Table 5.5-2.

Table 5.5-2 Newport Bay Water Quality Impairments

Contaminant	Total Maximum Daily Load (TMDL) Status; Completion Date for Proposed TMDLs
Upper Newport Bay	
Chlordane (organochlorine pesticide)	Proposed 2019
Copper	Proposed 2007
DDT (organochlorine pesticide)	Proposed 2019
Indicator bacteria	Approved 2000
Metals	Proposed 2019
Nutrients	Approved 1999
PCBs (polychlorinated biphenyls)	Proposed 2019
Pesticides	Approved 2004

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

Table 5.5-2 Newport Bay Water Quality Impairments

Contaminant	Total Maximum Daily Load (TMDL) Status; Completion Date for Proposed TMDLs
Sediment Toxicity	Proposed 2019
Sedimentation/Siltation	Approved 1999
Lower Newport Bay	
Chlordane (organochlorine pesticide)	Proposed 2019
Copper	Proposed 2007
DDT (organochlorine pesticide)	Proposed 2019
Indicator Bacteria	Approved 2000
Nutrients	Approved 2009
PCBs (polychlorinated biphenyls)	Proposed 2019
Pesticides	Approved 2004
Sediment Toxicity	Proposed 2019

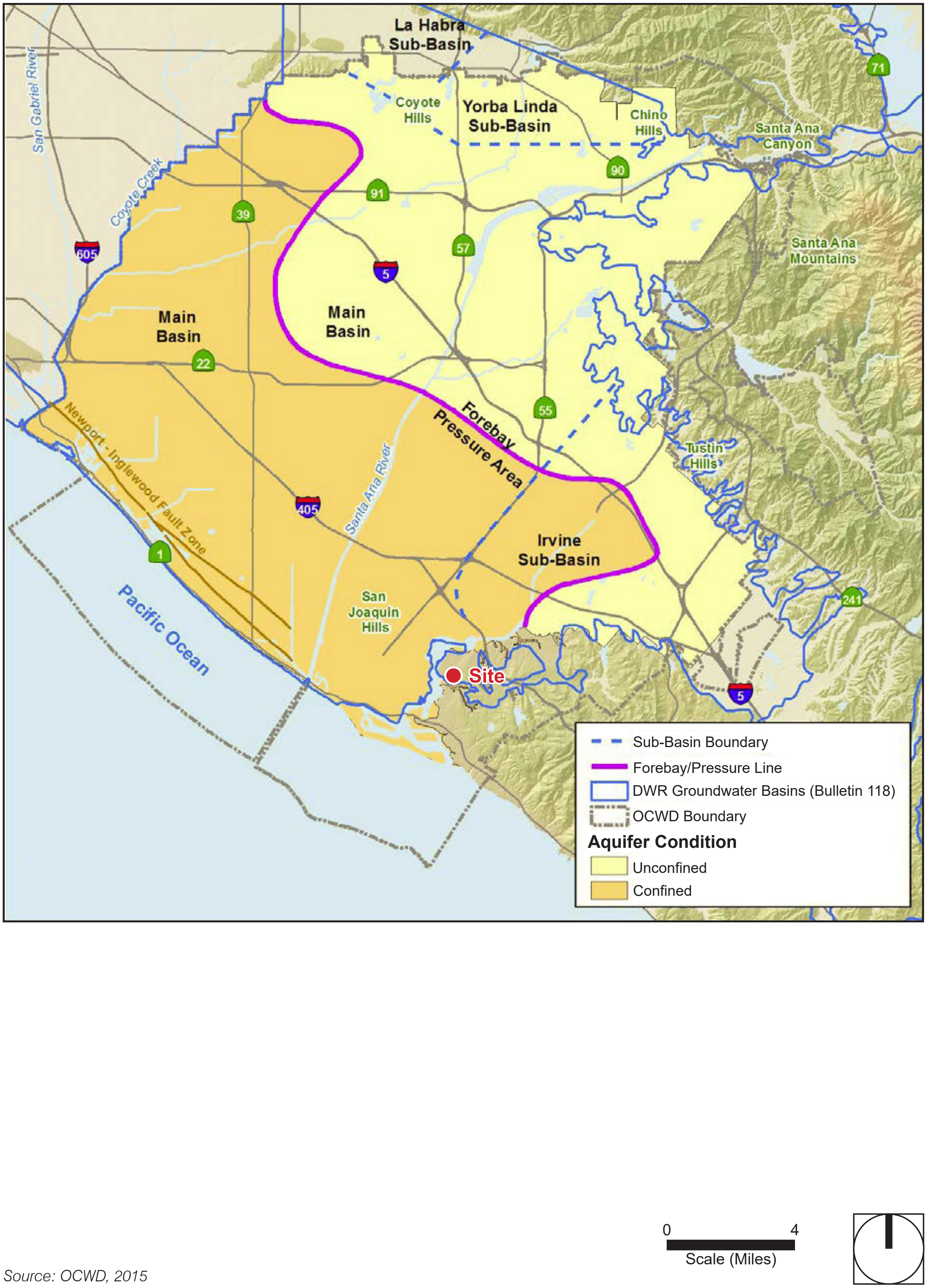
Source: SWRCB 2013.

Groundwater

The project site is in the Coastal Plain of the Orange County Groundwater Basin (OCWD 2015), as shown on Figure 5.5-2. The basin underlies the northern and central portions of Orange County, covering an area of approximately 350 square miles. It is bordered by the Coyote and Chino Hills to the north, the Santa Ana Mountains to the northeast, and the Pacific Ocean to the southwest. The basin boundary extends to the Orange County-Los Angeles line to the northwest, where groundwater flow is unrestricted across the county line into the Central Basin of Los Angeles County, and the Newport-Inglewood fault forms the southwestern boundary. Recharge to the basin occurs from percolation of Santa Ana River flow, infiltration of precipitation, injection into wells, and recharge basins. The Department of Water Resources divided the basin into two primary hydrologic divisions, the Forebay and Pressure areas (DWR 2015). The Forebay refers to the area of intake or recharge where most of the groundwater recharge occurs. The Pressure Area is generally defined as the area of the basin where large quantities of surface water and near-surface groundwater are impeded from percolating into the major producible aquifers by clay and silt layers at shallow depths (upper 50 feet).

The Orange County Water District (OCWD) is a special district that was formed to manage the Orange County Groundwater Basin. Groundwater provides approximately 70 percent of the water supply to residents in northern and central Orange County. The project site is within the pressure area of the basin, which means that surface water is impeded from percolation to the deeper aquifers by clay and silt layers. The basin has about 66 million acre-feet of water storage. The OCWD manages basin storage within a safe operating range by balancing production and recharge and regulating the annual amount of pumping. It also operates surface-water recharge facilities and a groundwater replenishment system using recycled water that is injected into groundwater wells for recharge and prevention of seawater intrusion.

Figure 5.5-2 - Coastal Plain of Orange County Groundwater Basin



Source: OCWD, 2015

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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The City of Newport Beach receives its water from two main sources: groundwater from the basin, which is managed by OCWD, and imported water purchased from the Municipal Water District of Orange County (MWDOC). The MWDOC is the regional wholesale water supplier for Orange County and purchases imported water from northern California and the Colorado River. The City also purchases recycled water from OCWD. The City meets up to 75 percent of its demand through groundwater, which is pumped from four wells in Fountain Valley. The groundwater is obtained primarily from the principal aquifer, which is between 200 and 1,300 feet below ground surface (bgs).

According to the 2015 Draft Urban Water Management Plan, the City has sufficient water available to meet the demand for normal years, single-dry years, and multiple-dry years (Newport Beach 2016a). Therefore, implementation of the proposed project would not adversely impact groundwater supply or recharge. In addition, the project would result in a net decrease in water demand since the field would be replaced with artificial turf, which does not require irrigation. The water demand for the new restrooms would be minimal because of the installation of water-conserving fixtures—per the Cal Green Building Code—and their use would be intermittent. As a result, the net water demand would be less than under existing conditions.

According to information obtained at a SWRCB Geotracker remediation site that is approximately 1,700 feet southwest from the project site, shallow groundwater is reported at depths between 11 and 52 feet bgs, with most groundwater measurements at greater than 20 feet bgs (SWRCB 2016). Therefore, grading and excavation activities for the proposed project would not intersect shallow groundwater, and construction dewatering would not be necessary.

Groundwater Quality

The groundwater in the Coastal Plain of the Orange County Groundwater Basin is classified as sodium-calcium bicarbonate (DWR 2003). Historically, it has been characterized as of good quality for domestic, irrigation, and industrial purposes. However, high total dissolved solids (TDS) and nitrate concentrations have been reported in some areas of the groundwater basin. Other pollutants include methyl tertiary butyl ether from underground fuel tank releases and volatile organic compounds from various industrial sources that have formed shallow groundwater plumes in some areas of Orange County. However, there are no regional groundwater plumes in the vicinity of the project site. OCWD collects and analyzes up to 1,700 groundwater samples per month to ensure that the extracted groundwater meets all federal and state water quality standards.

The Santa Ana RWQCB's Basin Plan also contains water quality criteria for groundwater. TDS and nitrate have specific water quality objectives based on the management zone. At the state level, the SWRCB and RWQCBs have authority to manage TDS in water supplies. There are two groundwater management zones in Orange County: Irvine Groundwater Management Zone and Orange County Groundwater Management Zone. The project site is in the Irvine Groundwater Management Zone. The water quality objectives for the Irvine Groundwater Management Zone are a TDS concentration of 910 mg/l (milligrams/liter) and nitrate as nitrogen concentration of 5.9 mg/l. According to the latest 2015 City of Newport Beach Groundwater Quality report, TDS concentrations were reported at 142 to 490 mg/l, and nitrate concentrations ranged from undetectable to 3.18 mg/l. Therefore, the TDS and nitrate concentrations in groundwater were less than the established water quality objectives. Nitrate was also less than the maximum contaminant level for drinking water of 10 mg/l; TDS have no maximum contaminant level.

5.5.2 Thresholds of Significance

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

HYD-1 Violate any water quality standards or waste discharge requirements.

HYD-2 Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted.

HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site.

HYD-4 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

HYD-5 Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff.

HYD-6 Otherwise substantially degrade water quality.

HYD-7 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map.

HYD-8 Place within a 100-year flood hazard area structures which would impede or redirect flood flows.

HYD-9 Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.

HYD-10 Be subject to inundation by seiche, tsunami, or mudflow.

The Initial Study, included as Appendix A, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold HYD-1
- Threshold HYD-2
- Threshold HYD-3

- Threshold HYD-6
- Threshold HYD-7
- Threshold HYD-8
- Threshold HYD-9
- Threshold HYD-10

These impacts will not be addressed in the following analysis.

5.5.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.5-1: Development of the proposed project (Options A and B) could alter the existing drainage pattern or contribute runoff water that could exceed the capacity of the existing or planned stormwater drainage system. [Thresholds HYD-4 and HYD-5]

Impact Analysis:

Options A and B

Options A and B of the proposed project would take place within the boundaries of an already developed CdM MS/HS campus, which is currently connected to the City's storm drain system. However, under Option A, approximately 6 acres of the natural turf field would be converted to synthetic turf field, and under Option B, approximately 9 acres of the natural turf fields would be converted to synthetic turf field area. The existing natural turf fields are currently not connected to the existing municipal storm drainage system.

The proposed project under both options is considered a "significant redevelopment project" because it would add or create 5,000 square feet or more of impervious surface on an existing developed site. Therefore, the District is required to implement stormwater treatment measures, including infiltration. However, because the increase is less than 50 percent of the existing impervious surfaces, the treatment measures apply only to the redevelopment portion of the project site and not the entire campus.

The underdrain system for the synthetic sports fields (i.e., Fields 1 and 2) would consist of 12-inch flat drains installed at a 45-degree angle with a spacing of 20 feet between the drains. The drains would discharge to 12-inch perforated pipes that collect the runoff from the fields and connect to a 12-inch to 18-inch storm drain system that would border the sports field. Drainage from the bleachers and from the sand pits used for track and field events would also discharge to this storm drain system.

The collected stormwater in the drainage system would be directed to a "continuous deflection system" that screens, separates, and filters debris, sediment, and hydrocarbons from the runoff prior to entering the underground infiltration system. Overflows from the underground infiltration system would then discharge to the existing internal storm drain system with eventual discharge to the municipal storm drain system. Roof runoff from the proposed 3,000-square-foot building under Option A would be directed to bioretention planters. No buildings would be constructed under Option B. Proposed drainage system for Option A is shown in Figures 5.5-3a and 5.5-3b, *Preliminary Storm Drainage Plan (Option A)*, and for Option B is shown in Figures 5.5-4a through 5.5-4c, *Preliminary Storm Drainage Plan (Option B)*.

The Orange County MS4 permit and the Orange County Technical Guidance Document for the preparation of WQMPs require the capture and temporary detention of a design volume based on the runoff produced from the 85th percentile, 24-hour storm event, or design flow rate from the 0.2-inch/hour rainfall event. This would reduce peak flows and infiltrate some of the stormwater into the ground. In addition, site design BMPs would be implemented, including but not limited to:

- Preserve existing drainage patterns and time of concentration
- Minimize impervious area
- Disconnect impervious areas
- Native and/or drought-tolerant landscaping

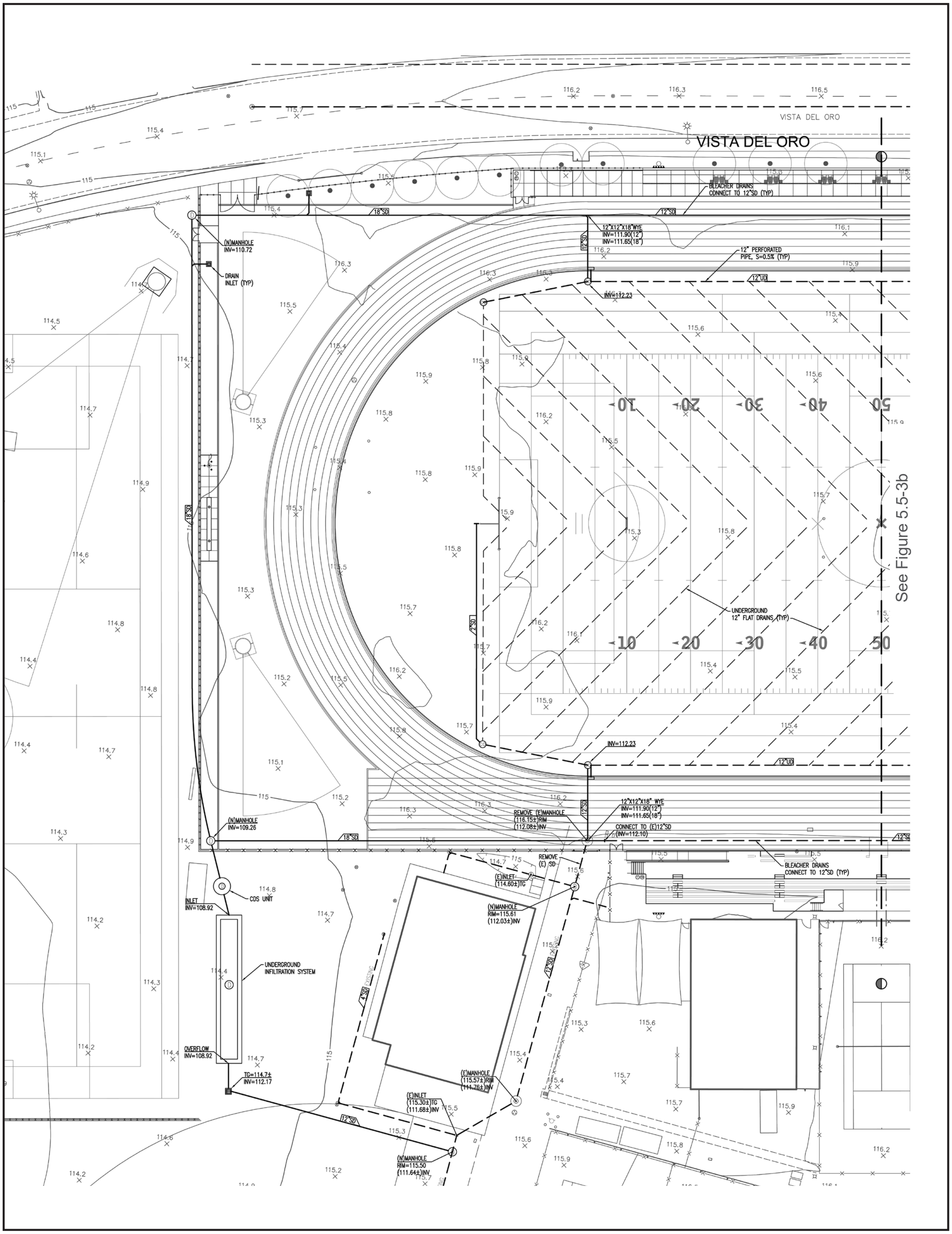
Structural control BMPs would include the following:

- Provide storm drain system stenciling and signage.
- Design trash and waste storage areas to reduce the potential for pollutant introduction.
- Use efficient irrigation systems and landscape design, water conservation, smart controllers, and source control, as applicable.
- Maintain and inspect the structural BMP facilities, as specified in the WQMP.

It does not appear that the project would create hydrologic conditions of concern, per Map XVI-3d in the Orange County Technical Guidance Document. Prior to the start of construction, a WQMP will be prepared that describes site conditions, pollutants of concern, LID and treatment control BMPs, calculations for the design capture volume based on final site design, source control BMPs, and an Operations and Maintenance (O&M) Plan that outlines the inspection and maintenance responsibilities for the treatment control BMPs (Mitigation Measure HYD-1).

With the installation of site design, source control, and treatment control BMPs and preparation and implementation of the WQMP per the Mitigation Measure HYD-1, the proposed project would convey stormwater safely through the school site and would not result in flooding at the school site or any downstream areas.

Figure 5.5-3a - Preliminary Storm Drainage Plan (Option A)



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Source: LPA, 2015

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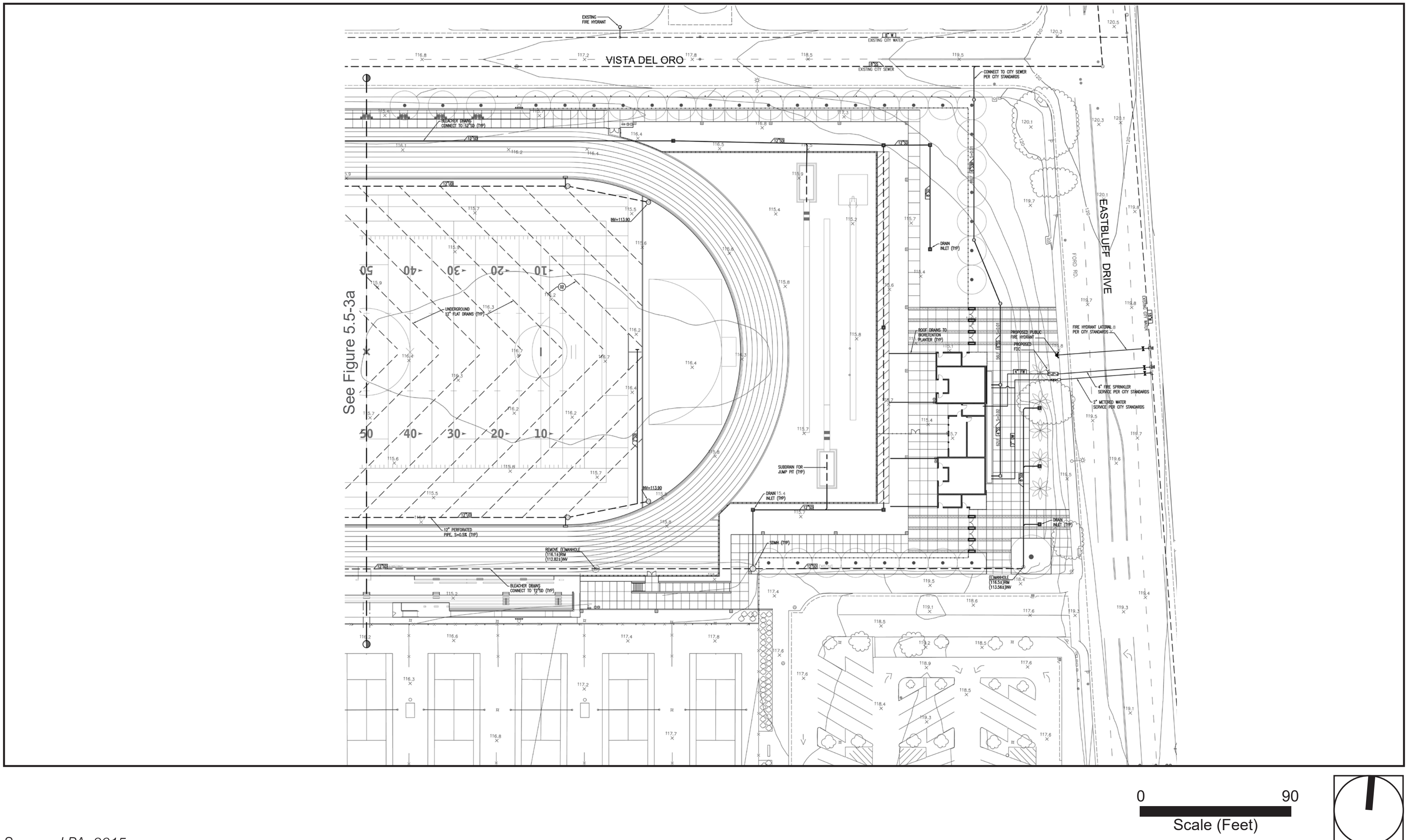
Figure 5.5-3b - Preliminary Storm Drainage Plan (Option A)



Source: LPA, 2015

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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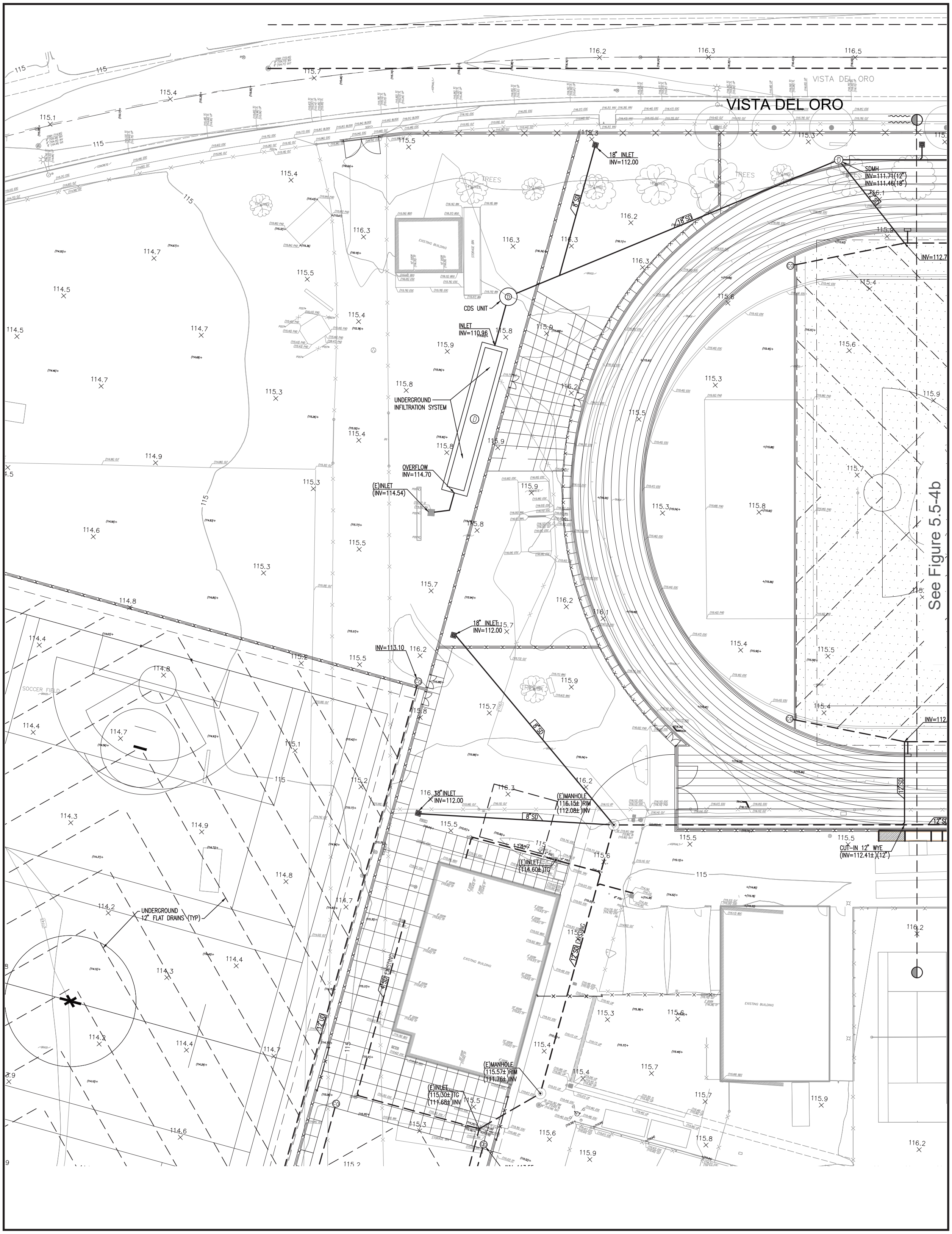
Figure 5.5-4a - Preliminary Storm Drainage Plan (Option B)



Source: LPA, 2017

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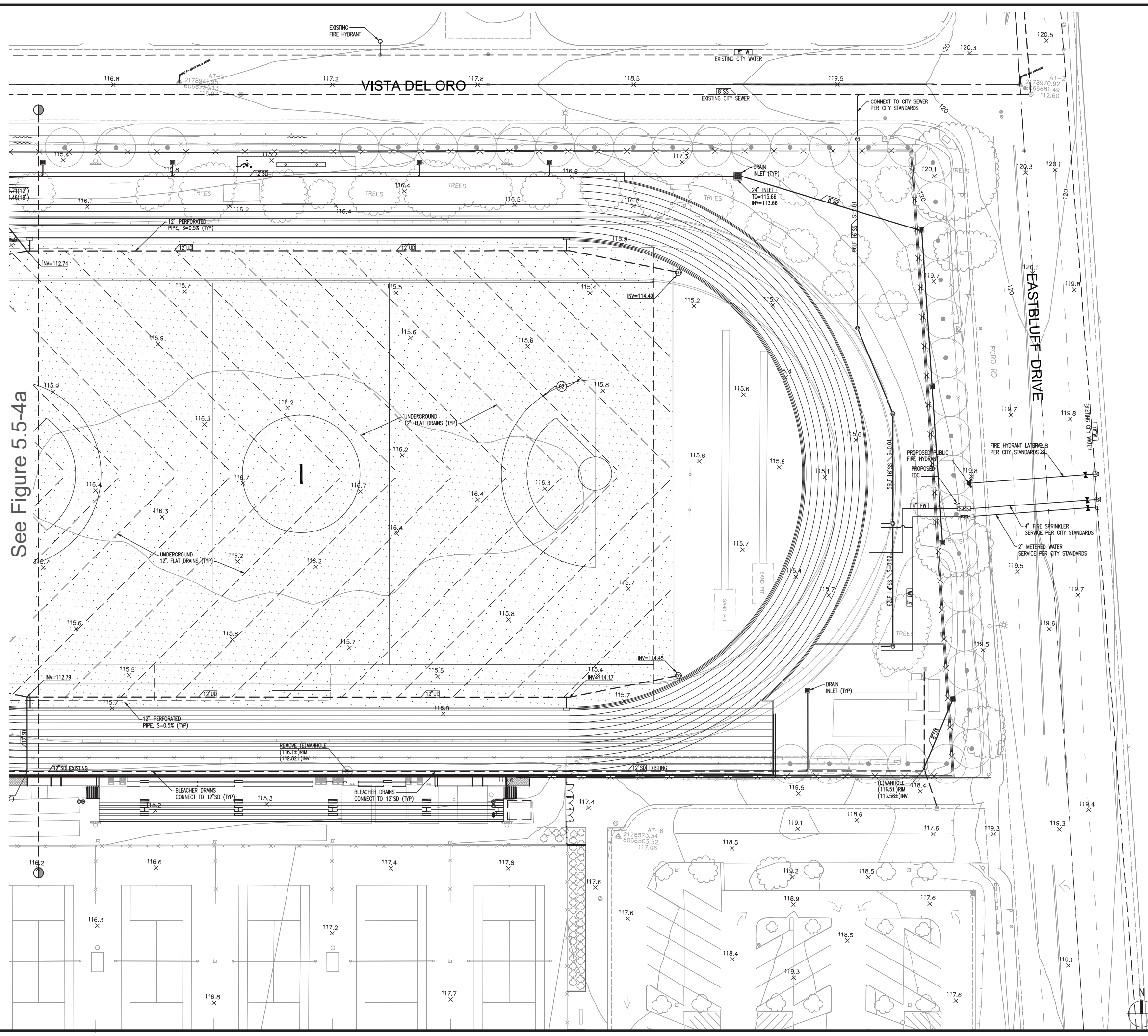
Figure 5.5-4b - Preliminary Storm Drainage Plan (Option B)

5. Environmental Analysis



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Source: LPA, 2017

5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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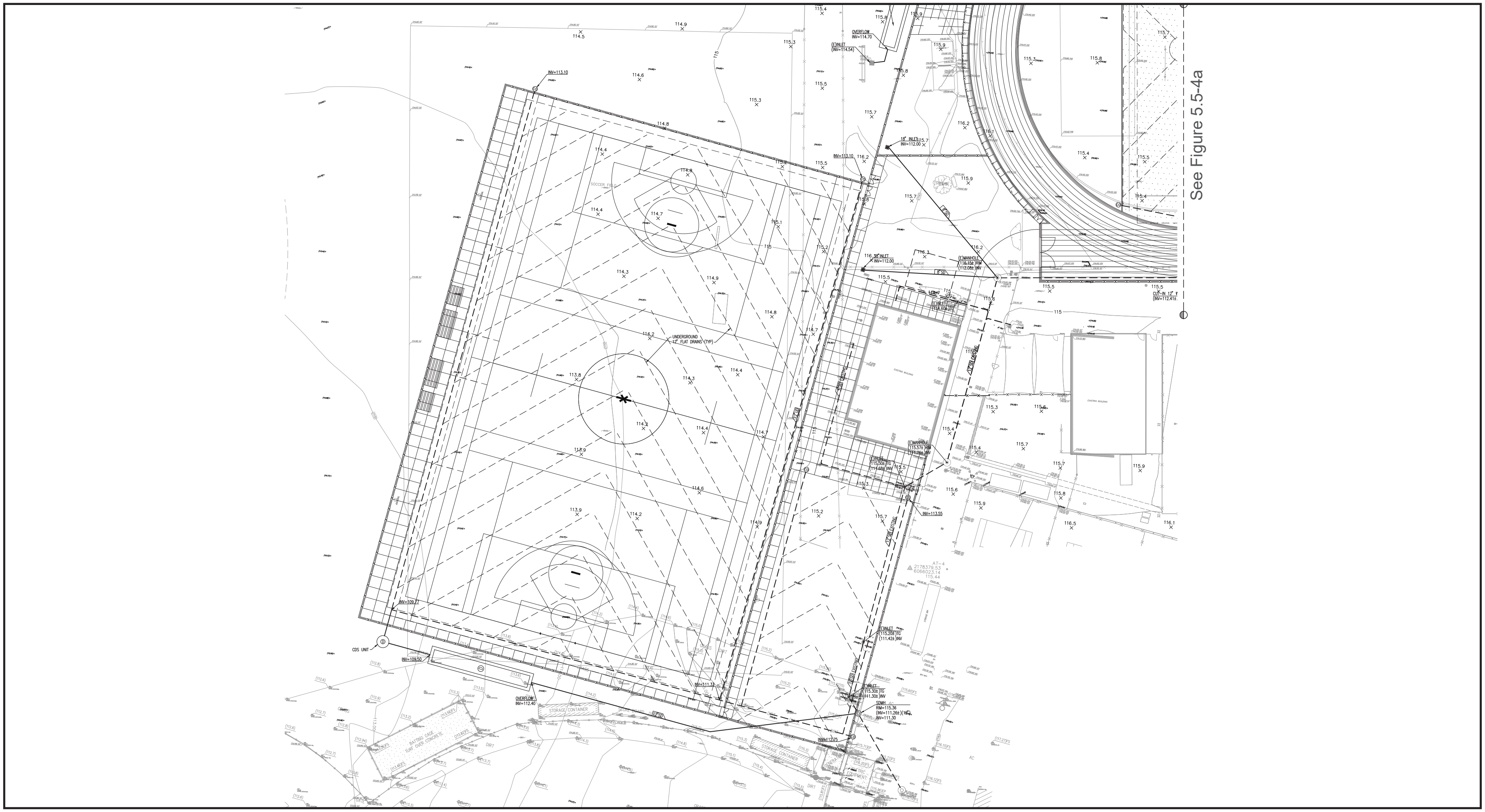
Figure 5.5-4c - Preliminary Storm Drainage Plan (Option B)



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Scale (Feet)

Source: LPA, 2017

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Under Option A, an increase in impervious surfaces with construction of a synthetic turf field, bleachers, and a 3,000-square-foot building could result in increases in stormwater runoff, which in turn could exceed the capacity of the existing or planned storm drain systems. Under Option B, increased impervious surfaces due to two synthetic turf fields and concrete paving for bleachers could result in increases in stormwater runoff.

The CdM campus is currently connected to the City's storm drain system, which eventually drains into Upper Newport Bay. Implementation of the proposed project under both options would include the construction of a new internal storm drain system and connections, as shown on Figure 5.5-3 or Figure 5.5-4, depending on the adopted option. The preliminary plan is to connect drainage from the field, bleachers, and roof runoff from the building (after discharge into bioretention planters) into 12-inch storm drain pipes that connect to the existing storm drain system. The construction of the underground infiltration system would temporarily detain and reduce peak flows from the project site. As a result, there would not be a significant change in the volume of stormwater runoff in a manner that would exceed the capacity of the City's storm drain system.

The new storm drain facilities and connections would be designed in accordance with the procedures specified in the Orange County Hydrology Manual and the City's Standard Design Requirements as required by Mitigation Measure HYD-2. Hydrologic and hydraulic design calculations would be provided to the City that describe the anticipated stormwater runoff volume from the site and evaluation of the capacity of the existing storm drain system to accept these flows. Prior to grading, the District would coordinate with the City of Newport Beach to have them review the proposed drainage system to ensure that additional stormwater runoff from the project would not exceed the capacity of its storm drain system. With the implementation of stormwater treatment control measures pursuant to Mitigation Measure HYD-1 that temporarily detain stormwater flows on-site in accordance with the Orange County MS4 Permit requirements and Orange County DAMP, the project would not exceed the capacity of the existing storm drain system, and impacts would be less than significant.

Impact 5.5-2: Compliance with the required Construction General Permit would ensure that development of the proposed project (Options A and B) would not result in substantial additional sources of polluted runoff. [Threshold HYD-5]

Impact Analysis:

Options A and B

Increases in impervious surfaces with development of the proposed project under both options could result in increased stormwater runoff. Converting the natural turf field areas to synthetic fields consisting of cryogenic styrene-butadiene rubber (SBR) and sand infill system could also change the quality of the runoff generated from the project site and result in introduction of pollutants into the stormwater runoff. Specifically, concerns have been raised by the public about the safety of artificial turf fields.

An artificial turf fields consists of a top layer of polyethylene or polypropylene grass fibers, with a crumb-rubber and sand infill layer, underlain by crushed stone/gravel and an underground drainage system. The supplier of the artificial turf for this project is FieldTurf, which uses an infill layer composed of a mixture of cryogenic SBR granules intermixed with sand. Rainfall lands on the surface of the artificial field, flows downward through the infill layer and rock/gravel layer, collects in the subsurface drainage system, and ultimately is discharged into the storm drain system. The concern is that stormwater in contact with the crumb rubber layer would result in the release of contaminants, such as volatile organic compounds and/or metals into the storm drain system.

One study specifically evaluated stormwater drainage water quality from synthetic turf athletic fields manufactured by FieldTurf (Milone & MacBroom 2008). Grab samples of stormwater that infiltrated the field surface and migrated downward through the infill material, polyethylene fiber backing, and into the underlying stone were obtained prior to discharge into the storm drain system. Aquatic toxicity testing showed 100 percent survival (i.e., the drainage water was nontoxic to aquatic organisms). Results from the metals analysis showed no lead, selenium, or cadmium were present in the drainage water. Zinc was present at a maximum concentration of 0.031 mg/l, which is much less than the maximum contaminant level for drinking water of 5.0 mg/l. Metals were also analyzed using the Synthetic Precipitation Leaching Procedure to simulate materials exposed to acidic rainfall. The results indicated that metals could theoretically leach from the crumb rubber but the concentrations in the leachate are within the range that is expected to leach from native soil.

Another study of water quality and artificial turf fields showed no volatile or semi-volatile organic compound concentrations from stormwater samples collected after drainage through the turf layers (DEC 2009). In addition, potential water quality impacts would be reduced through the dilution of the runoff as it mingles with other runoff from the site. Also, toxicity and the leaching potential of the turf layers decline through weathering and extended exposure to the environment. The stormwater runoff at the project site would also undergo treatment with a continuous deflection system unit and underground infiltration system prior to discharge to the City's storm drain system. In summary, the results of the water quality studies and the design of storm drain system to include on-site treatment prior to discharge to the City's storm drain system would ensure that no adverse water quality impacts would occur with the discharge of stormwater runoff from the synthetic turf field's subdrain system.

During the construction phase, the proposed project, under both options, would be required to prepare a SWPPP and implement erosion and sediment control measures, thus limiting the discharge of pollutants from the site (Mitigation Measure HYD-3). During operation, the proposed project would implement LID and BMP measures that minimize the amount of stormwater runoff and associated pollutants. Studies of drainage from FieldTurf synthetic fields did not indicate any pollutants of concern in the stormwater runoff. Therefore, development of the proposed project would not result in substantial additional sources of polluted runoff and impacts would be less than significant.

5.5.4 Cumulative Impacts

Options A and B

The geographic area for addressing cumulative hydrology impacts is the drainage area for the Newport Bay Watershed. Other planned and future projects in the Newport Bay Watershed could result in increased amounts of impervious surfaces, thereby increasing the runoff volume in the Newport Bay Watershed.

Contents of the runoff could also be altered due to various development projects, contributing to pollutant loadings in the storm drain system that eventually discharge to Newport Bay and the Pacific Ocean.

However, as is the case for the proposed project under both options, future cumulative projects would be required to prepare SWPPPs and WQMPs and implement appropriate BMPs and LID features that would minimize runoff from those sites. New development and redevelopment projects would also be required to demonstrate that stormwater volumes could be managed by downstream conveyance facilities and would not induce flooding. New projects are required to comply with the City's standard conditions of approval, regulations, and ordinances regarding water quality and MS4 permit requirements. Each project that disturbs more than one acre of land would be required to develop a SWPPP and all regulated projects would be required to develop a WQMP. Potential changes related to water quality, stormwater flows, drainage, impervious surfaces, and flooding would be minimized by implementation of stormwater control measures, retention, infiltration, and LID measures. All projects would be subject to review and approval by the City to ensure that appropriate BMPs and treatment measures are implemented to avoid adverse impacts to surface water quality. In consideration of the preceding factors, cumulative hydrology and water quality impacts would be rendered less than considerable, and therefore not cumulatively significant.

5.5.5 Regulatory Requirements

Federal

- United States Code, Title 33, Sections 1251 et seq.: Clean Water Act
- Code of Federal Regulations Title 40 Parts 122 et seq.: National Pollutant Discharge Elimination System (NPDES)

State

- California Water Code Sections 13000 et seq.: Porter-Cologne Water Quality Act
- Order No. 2009-0009-DWQ, Statewide Construction General Permit, State Water Resources Control Board, as amended by 2010-0014-DWQ and 2012-0006-DWQ
- Title 24 Green Building Standards Code

Regional

- Orange County Municipal NPDES Storm Water Permit (Order No. R8-2009-0030, Amended by Order No. R8-2010-0062)
- 2003 Drainage Area Management Plan (DAMP)
- 2011 Model Water Quality Management Plan

5.5.6 Level of Significance Before Mitigation

Without mitigation, these impacts would be potentially significant:

- **Impact 5.5-1** Development of the proposed project (Options A and B) could alter the existing drainage pattern or contribute runoff water that could exceed the capacity of the existing or planned stormwater drainage system.

- **Impact 5.5-2** Compliance with the required Construction General Permit would ensure that development of the proposed project (Options A and B) would not result in substantial additional sources of polluted runoff.

5.5.7 Mitigation Measures

Options A and B

Impact 5.5-1: Development of the proposed project (Options A and B) could alter the existing drainage pattern or contribute runoff water that could exceed the capacity of the existing or planned stormwater drainage system.

HYD-1 Prior to grading, the Newport-Mesa Unified School District shall prepare a water quality management plan (WQMP) for the proposed project. The WQMP shall be submitted and approved by the City of Newport Beach Community Development Department, Building Division. The WQMP shall include appropriate best management practices and low impact development measures to ensure that project runoff is treated and temporarily detained in accordance with the requirements of the Orange County MS4 Permit and the Orange County Drainage Area Master Plan.

HYD-2 Future site grading and construction activities shall comply with drainage controls imposed by the applicable municipal code requirements for the City of Newport Beach.

Impact 5.5-2: Compliance with the required Construction General Permit would ensure that development of the proposed project (Options A and B) would not result in substantial additional sources of polluted runoff.

HYD-3 Prior to grading, a Storm Water Pollution Prevention Plan (SWPPP) and Notice of Intent to comply with the Construction General Permit shall be prepared, submitted to the State Water Resources Control Board, and made part of the construction program. The SWPPP shall detail measures and practices that will be in effect during construction to minimize the project's impact on water quality and minimize the potential for erosion and sedimentation.

5.5.8 Level of Significance After Mitigation

Implementation of the regulatory requirements and mitigation measures HYD-1, HYD-2, and HYD-3 would ensure that impacts to water quality and hydrology are reduced to a less than significant level. No significant and unavoidable impact would remain.

5.5.9 References

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5. Environmental Analysis
HYDROLOGY AND WATER QUALITY

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5.6 NOISE

This section of the Recirculated Draft Environmental Impact Report (RDEIR) evaluates the potential for implementation of the Corona del Mar Middle and High School (CdM MS/HS) Sports Field Project to result in noise impacts. This section also presents the fundamentals of sound; examines federal, state, and local noise guidelines, policies, and standards; reviews noise levels at existing receptor locations; evaluates potential noise impacts associated with the proposed project; and provides mitigation to reduce noise impacts at sensitive residential locations. The evaluations use procedures and methodologies as specified by the California Department of Transportation (Caltrans), the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), and the District. The pertinent noise calculation/modeling summary sheets are in Appendix G of this RDEIR.

5.6.1 Environmental Setting

5.6.1.1 CHARACTERISTICS OF SOUND

When an object vibrates, it radiates part of its energy in the form of a pressure wave. Sound is that pressure wave transmitted through the air. Technically, airborne sound is a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure that creates sound waves. Sound is described in terms of amplitude or loudness, frequency or pitch, and time variations or duration.

Amplitude: The range of pressures that causes airborne vibrations (i.e., sound) is quite large and would be cumbersome to measure lineally. Therefore, noise is measured on a logarithmic scale, which has a more manageable range of numbers, and a decibel (dB) is the standard unit for measuring sound pressure amplitude.[1]

On a logarithmic scale, 10 dB is 10 times more intense than 0 dB, 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system makes a rough connection between the physical intensity of sound and its perceived loudness to the human ear. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud). Changes of 1 to 3 dB are detectable under quiet, controlled conditions, and changes of less than 1 dB are usually not discernible (even under ideal conditions). A 3 dB change in noise levels is considered the minimum change that is detectable by human hearing in outside environments. A change of 5 dB is readily discernible to most people in an exterior environment, and a 10 dB change is perceived as a doubling (or halving) of the sound. These relationships are summarized in Table 5.6-1.

[1] The commonly held threshold of audibility is 20 micropascals, and the threshold of pain is around 200 million micropascals, a ratio of one to 10 million. By converting these pressures to a logarithmic scale (i.e., decibels), the range becomes a more convenient 0 dB to 140 dB.

5. Environmental Analysis
NOISE

Table 5.6-1 Noise Perceptibility

± 3 dB	Threshold of human perceptibility
± 5 dB	Clearly noticeable change in noise level
± 10 dB	Half or twice as loud
± 20 dB	Much quieter or louder

Source: Bies and Hansen 2009.

Frequency: The human ear is not equally sensitive to all frequencies. Sound waves below 16 Hertz (Hz) are not heard at all, but are "felt" more as a vibration. Similarly, though people with extremely sensitive hearing can hear sounds as high as 20,000 Hz, most people cannot hear above 15,000 Hz. In all cases, hearing acuity falls off rapidly above about 10,000 Hz and below about 200 Hz.

When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to approximate the response of the human ear. The term "A-weighted" refers to a filtering of the noise signal in a manner corresponding to the way the human ear perceives sound. The A-weighted noise level has been found to correlate well with people's judgments of the "noisiness" of different sounds and has been used for many years as a measure of community and industrial noise. For particularly high noise levels, there are additional weighting scales used to approximate the response of the human hear; the A-weighted scale is the most applicable scale to the noise sources related to the proposed project.

Since most people do not routinely work with decibels or A-weighted sound levels, it is often difficult to appreciate what a given sound pressure level number means. To help relate noise level values to common experience, Table 5.6-2 shows typical noise levels from familiar noise sources.

5. Environmental Analysis
NOISE

Table 5.6-2 Typical Noise Levels

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
Onset of physical discomfort	120+	
	110	Rock Band (near amplification system)
Jet Flyover at 1,000 feet		
	100	
Gas Lawn Mower at three feet		
	90	
Diesel Truck at 50 feet, at 50 mph		Food Blender at 3 feet
	80	Garbage Disposal at 3 feet
Noisy Urban Area, Daytime		
	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 2009.

Although the A-weighted scale and the energy-equivalent metric are commonly used to quantify the range of human response to individual events or general community sound levels, the degree of annoyance or other response also depends on several other perceptibility factors, including:

- Ambient (background) sound level
- General nature of the existing conditions (e.g., quiet rural or busy urban)
- Difference between the magnitude of the sound event level and the ambient condition
- Duration of the sound event
- Number of events and their repetitiveness
- Time of day

5. Environmental Analysis
NOISE

Time Variation: Time variation in noise exposure is typically expressed in terms of a steady-state energy level equal to the energy content of the time varying period (called L_{eq}), or alternately, as a statistical description of the sound level that is exceeded over some fraction of a given observation period. For example, the L_{50} noise level represents the noise level that is exceeded 50 percent of the time; half the time the noise level exceeds this level and half the time the noise level is less than this level. This level is also representative of the level that is exceeded 30 minutes in an hour. Similarly, the L_2, L_8 and L_{25} values represent the noise levels that are exceeded 2, 8, and 25 percent of the time or 1, 5, and 15 minutes per hour, respectively. These "n" values are typically used to demonstrate compliance for stationary noise sources with many cities' noise ordinances. Other values typically noted during a noise survey are the L_{min} and L_{max}. These values represent the minimum and maximum root-mean-square noise levels obtained over the measurement period, respectively.

Because community receptors are more sensitive to unwanted noise intrusion during the evening and at night, state law and many local jurisdictions use an adjusted 24-hour noise descriptor called the Community Noise Equivalent Level (CNEL) or Day-Night Noise Level (L_{dn}). The CNEL descriptor requires that an artificial increment (or "penalty") of 5 dBA be added to the actual noise level for the hours from 7:00 PM to 10:00 PM and 10 dBA for the hours from 10:00 PM to 7:00 AM. The L_{dn} descriptor uses the same methodology except that there is no artificial increment added to the hours between 7:00 PM and 10:00 PM. Both descriptors give roughly the same 24-hour level, with the CNEL being only slightly more restrictive (i.e., higher). The CNEL or L_{dn} metrics are commonly applied to the assessment of roadway and airport-related noise sources.

Propagation: Sound dissipates exponentially with distance from the noise source. This phenomenon is known as "spreading loss." For a single-point source, sound levels decrease by approximately 6 dB for each doubling of distance from the source (conservatively neglecting ground attenuation effects, air absorption factors, and barrier shielding). For example, if a backhoe at 50 feet generates 84 dBA, at 100 feet the noise level would be 79 dBA, and at 200 feet it would be 73 dBA. This drop-off rate is appropriate for noise generated by on-site operations from stationary equipment or activity at a project site. If noise is produced by a line source, such as highway traffic, the sound decreases by 3 dB for each doubling of distance over a reflective ("hard site") surface such as concrete or asphalt. Line source noise in a relatively flat environment with ground-level absorptive vegetation decreases by 4.5 dB for each doubling of distance.

Psychological and Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects the entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. Extended periods of noise exposure above 90 dBA would result in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. When the noise level reaches 120 dBA, an unpleasant "tickling" sensation occurs in the human ear; even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA will result in dizziness or loss of equilibrium. In comparison, for community environments, the ambient or background noise problem is widespread, though generally worse in urban areas than in outlying, less-developed areas. Elevated ambient noise levels can result in noise interference (e.g., speech interruption/masking, sleep disturbance, disturbance of concentration) and cause annoyance.

Loud noise can be annoying and it can have negative health effects (EPA, 1978). The effects of noise on people can be listed in three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction.
- Interference with activities such as speech, sleep, learning.
- Physiological effects such as startling and hearing loss (both temporary and permanent).

In most cases, environmental noise produces effects in the first two categories only. However, unprotected workers in some industrial work settings may experience noise effects in the last category.

5.6.1.2 CHARACTERISTICS OF VIBRATION

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration is normally associated with activities stemming from operations of railroads or vibration-intensive stationary sources, but can also be associated with construction equipment such as jackhammers, pile drivers, and hydraulic hammers.

Like noise, vibration is transmitted in waves, but through the earth or solid objects. Unlike noise, vibration is typically of a frequency that is felt, rather than heard. As with noise, vibration can be described by both its amplitude and frequency.

Amplitude: Amplitude may be characterized in three ways: displacement, velocity, and acceleration. Vibration displacement is the distance that a point on a surface moves away from its original static position. The instantaneous speed that a point on a surface moves is the velocity, and the rate of change of the speed is the acceleration. Each of these descriptors can be used to correlate vibration to human response, building damage, and acceptable equipment vibration levels. During construction, the operation of construction equipment can cause groundborne vibration. During the operational phase of a project, receptors may be subject to levels of vibration that can cause annoyance due to noise generated from vibration of a structure or items within a structure.

Vibration amplitudes are usually described in terms of either the peak particle velocity (PPV) or the root mean square (RMS) velocity. PPV is the maximum instantaneous peak of the vibration signal, and RMS is the square root of the average of the squared amplitude of the signal. PPV is more appropriate for evaluating potential building damage, and RMS is typically more suitable for evaluating human response.

The units for PPV and RMS velocity are normally inches per second (in/sec). However, vibration is often presented and discussed in dB units in order to compress the range of numbers. In this analysis, PPV and RMS velocities are in in/sec, and vibration levels are in dB relative to 1 micro-inch per second (abbreviated as VdB). Typically, groundborne vibration generated by human activities attenuates rapidly with distance from the source of the vibration. Man-made vibration problems are therefore usually confined to relatively short distances from the source (500 to 600 feet or less).

Frequency: Vibrations also vary in frequency and this affects perception. Typical construction vibrations fall in the 10 to 30 Hz range and usually occur around 15 Hz. Traffic vibrations exhibit a similar range of frequencies; however, due to their suspension systems, buses often generate frequencies around 3 Hz at high vehicle speeds. It is less common, but possible, to measure traffic frequencies above 30 Hz.

Propagation: The way in which vibration is transmitted through the earth is called propagation. Propagation of groundborne vibrations is complicated and difficult to predict because of the endless variations in the soil and rock through which waves travel. There are three main types of vibration propagation: surface, compression and shear waves. Surface waves, or Raleigh waves, travel along the ground's surface. These waves carry most of their energy along an expanding circular wave front, similar to ripples produced by throwing a rock into a pool of water. Compression waves, or P-waves, are body waves that carry their energy along an expanding spherical wave front. The particle motion in these waves is longitudinal (i.e., in a "push-pull" fashion). P-waves are analogous to airborne sound waves. Shear waves, or S-waves, are also body waves that carry energy along an expanding spherical wave front. However, unlike P-waves, the particle motion is transverse or "side-to-side and perpendicular to the direction of propagation." As vibration waves propagate from a source, the energy is spread over an ever-increasing area such that the energy level striking a given point is reduced with the distance from the energy source. This geometric spreading loss is inversely proportional to the square of the distance. Wave energy is also reduced with distance as a result of material damping in the form of internal friction, soil layering, and void spaces. The amount of attenuation provided by material damping varies with soil type and condition as well as the frequency of the wave.

Psychological and Physiological Effects of Vibration

As with airborne sound, annoyance with vibrational energy is a subjective measure, depending on the level of activity and the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Persons accustomed to elevated ambient vibration levels, such as in an urban environment, may tolerate higher vibration levels. Table 5.6-3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 5.6-3 Human Reaction to Typical Vibration Levels

Vibration Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.006–0.019	Threshold of perception, possibility of intrusion	Vibrations unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibration begins to annoy people	Virtually no risk of “architectural” (i.e. not structural) damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk to “architectural” damage to normal dwelling – houses with plastered walls and ceilings
0.4–0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause “architectural” damage and possibly minor structural damage

Source: Caltrans 2013b.

Human response to ground vibration has been correlated best with the velocity of the ground, typically expressed in terms of the vibration decibel of VdB.[2] The FTA has developed rational vibration limits that can be used to evaluate human annoyance to groundborne vibration. These criteria are primarily based on experience with rapid transit and commuter rail systems (FTA 2006). Railroad and transit operations are potential sources of substantial ground vibration depending on distance, the type and the speed of trains, and the type of track. Trains generate substantial vibration due to their engines, steel wheels, heavy loads, and wheel-rail interactions.

Similarly, construction operations generally include a wide range of activities that can generate groundborne vibration, which varies in intensity. In general, blasting and demolition as well as pile driving and vibratory compaction equipment generate the highest vibrations. Because of the impulsive nature of such activities, PPV is used to measure and assess groundborne vibration and assess the potential of vibration to induce structural damage and annoyance for humans. Vibratory compactors or rollers, pile drivers, and pavement breakers can generate perceptible amounts of vibration at up to 200 feet. Heavy trucks can also generate groundborne vibrations, which can vary depending on vehicle type, weight, and pavement conditions. Potholes, pavement joints, discontinuities, and differential settlement of pavement all increase the vibration levels from vehicles passing over a road surface. Construction vibration is normally of greater concern than vibration from normal traffic flows on streets and freeways with smooth pavement (Caltrans 2004).

5.6.1.3 REGULATORY FRAMEWORK

To limit population exposure to physically and/or psychologically damaging as well as intrusive noise levels, the federal government, the State of California, various county governments, and most municipalities in the state have established standards and ordinances to control noise.

2 The reference velocity is 1 x 10^{-6} in/sec RMS, which equals 0 VdB, and 1 in/sec equals 120 VdB.

5. Environmental Analysis
NOISE

Federal

US Federal Transit Administration

Many local jurisdictions do not have specific limits or thresholds for groundborne vibration. The FTA provides criteria for acceptable levels of ground-borne vibration for various types of special buildings that are sensitive to vibration and these guidelines are often used to evaluate vibration impacts during construction. The construction-focused guidelines identify that an impact would occur if construction activities generate vibration that is strong enough to (a) physically damage buildings or (b) cause undue annoyance at sensitive receptors.

Vibration-Related Human Annoyance

The human reaction to various levels of vibration is highly subjective and varies from person to person. Table 5.6-4 shows the FTA's vibration criteria to evaluate vibration-related annoyance due to resonances of the structural components of a building. These criteria are based on extensive research that suggests humans are sensitive to vibration velocities in the range of 8 to 80 Hz. For construction activities—presumed to occur only during daytime hours—the threshold would be 78 VdB at residential land uses.

Table 5.6-4 Groundborne Vibration Criteria: Human Annoyance

Land Use Category	Maximum Vibration Level (VdB)	Description
Workshop	90	Distinctly felt vibration. Appropriate to workshops and non-sensitive areas
Office	84	Felt vibration. Appropriate to offices and non-sensitive areas.
Residential – Daytime	78	Barely felt vibration. Adequate for computer equipment.
Residential – Nighttime	72	Vibration not felt, but groundborne noise may be audible inside quiet rooms.

Source: FTA 2006.
Note: Maximum Vibration Level (in VdB) is the RMS velocity level in decibels, as measured in 1/3-octave bands of frequency over the frequency ranges of 8 to 80 Hz. RMS is the abbreviation for root-mean-square.

Vibration-Related Architectural Damage

The level at which groundborne vibration is strong enough to cause architectural damage has not been determined conclusively. However, structures amplify groundborne vibration, and wood-frame buildings such as typical residential structures are more affected by ground vibration than heavier buildings. The most conservative estimates are reflected in the FTA standards, shown in Table 5.6-5. The threshold of 0.2 inches/second PPV will be applied to typical residential structures surrounding the project site.

Table 5.6-5 Groundborne Vibration Criteria: Architectural Damage

Building Category	PPV (in/sec)	VdB
I. Reinforced concrete, steel, or timber (no plaster)	0.5	102
II. Engineered concrete and masonry (no plaster)	0.3	98
III. Non-engineered timber and masonry buildings	0.2	94
IV. Buildings extremely susceptible to vibration damage	0.12	90

Source: FTA 2006.
Note: Lv (VdB): Lv is the velocity level in decibels, as measured in 1/3-octave bands of frequency over the frequency ranges of 8 to 80 Hz.

State

The California Department of Health Services' Office of Noise Control has studied the effects of noise levels on various land uses. The State of California Interior and Exterior Noise Standards are shown in Table 5.6-6.

Table 5.6-6 State of California Interior and Exterior Noise Standards

Categories	Land Use	CNEL (dBA)	
		Interior[1]	Exterior[2]
Residential	Single and multi-family, duplex	45[3]	65
	Mobile homes	–	65[4]
Commercial	Hotel, motel, transient housing	45	–
	Commercial retail, bank, restaurant	55	–
	Office building, research and development, professional offices	50	–
	Amphitheater, concert hall, auditorium, movie theater	45	–
	Gymnasium (Multi-purpose)	50	–
	Sports Club	55	–
	Manufacturing, warehouse, wholesale, utilities	65	–
	Movie Theaters	45	–
Institutional/ Public	Hospital, school classrooms/playground	45	65
	Church, library	45	–
Open Space	Parks	–	65

1 Indoor environment excluding: bathrooms, kitchens, toilets, closets, and corridors
2 Outdoor environment limited to:
- Private yard of single-family dwellings • Multi-family private patios or balconies accessed from within the dwelling (Balconies 6 feet deep or less are exempt) • Mobile home parks • Park picnic areas • School playgrounds • Hospital patios

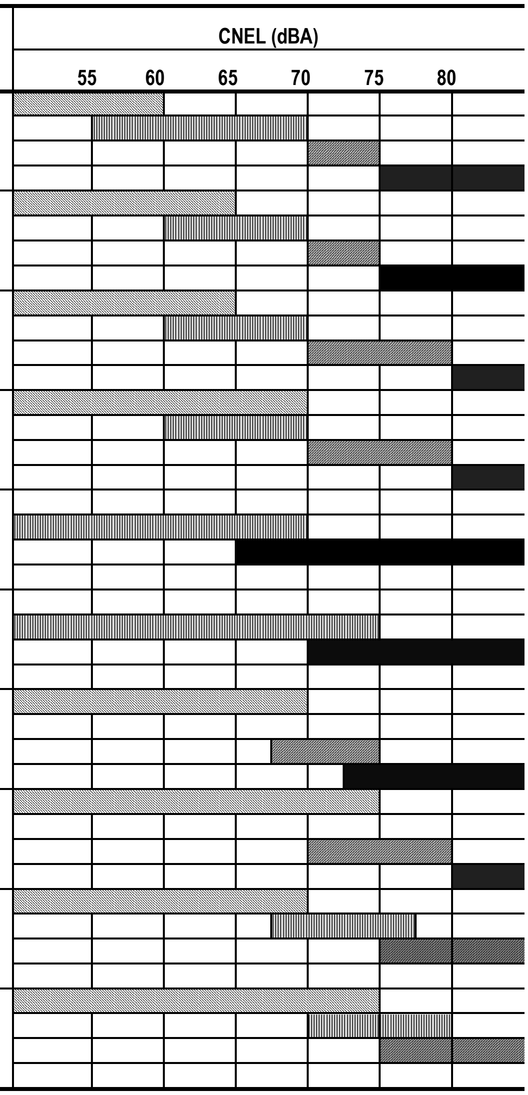
3 Noise level requirement with closed windows, mechanical ventilation, or other means of natural ventilation shall be provided as per Chapter 12, Section 1205 of the Uniform Building Code.
4 Exterior noise levels should be such that interior noise levels will not exceed 45 dBA CNEL.

The California Office of Noise Control has generated a "land use versus noise level" compatibility table as a tool for urban planners to gauge the compatibility of land uses in terms of existing and future noise levels. Table 5.6-7 reproduces this compatibility chart for community noise. This table identifies "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable" categories of noise levels for various land uses. A conditionally acceptable or a normally unacceptable designation implies new construction or development should be undertaken only after a detailed analysis of the noise reduction requirements for each land use is made and needed noise insulation features are incorporated in the design. By comparison, a normally acceptable designation indicates that standard construction can occur with no special noise reduction requirements.

5. Environmental Analysis
NOISE

Table 5.6-7 Community Noise and Land Use Compatibility

Land Uses
Residential-Low Density Single Family, Duplex, Mobile Homes
Residential- Multiple Family
Transient Lodging: Hotels and Motels
Schools, Libraries, Churches, Hospitals, Nursing Homes
Auditoriums, Concert Halls, Amphitheaters
Sports Arena, Outdoor Spectator Sports
Playground, Neighborhood Parks
Golf Courses, Riding Stables, Water Recreation, Cemeteries
Office Buildings, Businesses, Commercial and Professional
Industrial, Manufacturing, Utilities, Agricultural



Explanatory Notes

(Normally Acceptable shading)	**Normally Acceptable:** With no special noise reduction requirements assuming standard construction.	(Normally Unacceptable shading)	**Normally Unacceptable:** New construction is discouraged. If new construction does not proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
(Conditionally Acceptable shading)	**Conditionally Acceptable:** New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design.	(Clearly Unacceptable shading)	**Clearly Unacceptable:** New construction or development should generally not be undertaken.

Source: California Office of Noise Control 1976.

City of Newport Beach Noise Standards

Noise Element

The City of Newport Beach General Plan Noise Element discusses the effects of noise exposure on the population and sets goals designed to protect residents and businesses from excessive and persistent noise intrusions. The City applies a Land Use Noise Compatibility Matrix (consistent with Table 5.6-8)[3] to assess the compatibility of new development with ambient noise.

Table 5.6-8 Newport Beach Noise Element: Land Use Noise Compatibility Matrix

	CNEL (dBA)						
Land Uses	55	60	65	70	75	80	
Residential: Single Family, Two Family, Multiple Family	A	A	B	C	C	D	D
Residential: Mixed Use	A	A	A	C	C	C	D
Residential: Mobile Home	A	A	B	C	C	D	D
Commercial: Retail, Bank, Restaurant, Movie Theater	A	A	A	A	B	B	C
Commercial Industrial: Office Building, R&D, Professional Offices, City Buildings	A	A	A	B	B	C	D
Commercial: Amphitheatre, Concert Hall Auditorium, Meeting Hall	B	B	C	C	D	D	D
Commercial Recreation: Amusement Park, Mini-golf, Sports Arena	A	A	A	B	B	D	D
Commercial: Auto Service, Auto Dealership, Manufacturing, Warehousing, etc.	A	A	A	A	B	B	B
Institutional: Hospital, Church, Library, Schools' Classroom	A	A	B	C	C	D	D
Open Space: Parks	A	A	A	B	C	D	D
Open Space: Golf Course, Cemeteries, Nature Centers, Wildlife Reserves	A	A	A	A	B	C	C
Agriculture	A	A	A	A	A	A	A

Source: Newport Beach Noise Element, 2006
Zone A: Clearly Compatible—Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction without any special noise insulation requirements.
Zone B: Normally Compatible**—New construction or development should be undertaken only after detailed analysis of the noise reduction requirements and are made and needed noise insulation features in the design are determined. Conventional construction, with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Zone C: Normally Incompatible—New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of noise reduction requirements must be made and needed noise insulation features included in the design.
Zone D: Clearly Incompatible—New construction or development should generally not be undertaken.

As with the state's guidelines, the land use noise compatibility matrix of the noise element identifies clearly acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable noise levels for various land uses (with the associated requirement for a detailed analysis of the noise reduction requirements and needed noise insulation features) for projects proposed within conditionally acceptable or normally unacceptable noise zones. In no case would it be desirable for any land use to have noise exceeding the highest normally unacceptable noise level shown in Table 5.6-8. Thus, for residential uses, the highest exterior noise level is 65 dBA CNEL. It should be noted that California requires that interior noise levels in multifamily residential uses not exceed 45 L_{dn}. This is commonly used as an interior standard for all residential uses and is required under the California Administrative Code, Title 24, Part 2.

[3] This set of compatibility standards is summarized in Table N2 of the City's noise element.

5. Environmental Analysis
NOISE

In addition to the land use noise compatibility guidelines in the noise element, the City has adopted community noise control goals and policies in order to incorporate noise considerations into future developments within the City. The following noise element goals and policies apply to the proposed project:

- **Goal N1, Noise Compatibility.** Minimized land use conflicts between various noise sources and other human activities.
  - **Policy N 1.1, Noise Compatibility of New Development.** Require that all proposed projects are compatible with the noise environment through use of Table N2 [Table 5.6-8], and enforce the exterior noise standards shown in Table N3 [see Tables 5.6-10 and 5.6-11].
  - **Policy N 1.2, Noise Exposure Verification for New Development.** Applicants for proposed projects that require environmental review and are located in areas projected to be exposed to a CNEL of 60 dBA and higher—as shown on Figure N4, Figure N5, and Figure N6 of the noise element—may conduct a noise measurement field survey or other modeling in a manner acceptable to the City to provide evidence that the depicted noise contours do not adequately account for local noise exposure circumstances due to such factors as topography, variation in traffic speeds, and other applicable conditions. These findings shall be used to determine the level of exterior or interior noise attenuation needed to attain an acceptable noise exposure level and the feasibility of such mitigation when other planning considerations are taken into account.
  - **Policy N 1.8, Significant Noise Impacts.** Require the employment of noise mitigation measures when a significant noise impact is identified for new development impacting existing sensitive uses, as presented in [Table 5.6-9].

Table 5.6-9 City of Newport Beach Incremental Noise Impact Criteria for Noise-Sensitive Uses

Existing Noise Exposure (dBA CNEL)	Allowable Combined Noise Exposure (dBA CNEL)	Allowable Noise Exposure Increment (dB)
55	58	3
60	62	2
65	66	1
70	71	1
75	75	0

Source: City of Newport Beach General Plan and General Plan EIR. Adopted November 2006.

- **Goal N4, Minimization of Non-transportation-Related Noise.** Minimize non-transportation-related noise impacts on sensitive noise receptors.
  - **Policy N 4.1, Stationary Noise Sources.** Enforce interior and exterior noise standards outlined in Table N3 [Tables 5.6-10 and 5.6-11] and in the municipal code to ensure that sensitive noise receptors are not exposed to excessive noise levels from stationary noise sources, such as HVAC equipment.

- **Policy N 4.6, Maintenance or Construction Activities.** Require the enforcement of the Noise Ordinance noise limits and limit hours of maintenance or construction activity in or adjacent to residential areas, including noise that results from in-home hobby or work related activities.

- **Goal N5,** Minimize excessive construction-related noise.
  - **Policy N 5.1, Limiting Hours of Activity.** Enforce the limits on hours of construction activity.

It is important to note that with the California Supreme Court decision regarding the assessment of the environment's impacts on proposed projects (*CBIA v BAAQMD*, issued December 17, 2015),[4] it is generally no longer the purview of the CEQA process to evaluate the impact of existing environmental conditions on any given project. Therefore, exterior noise effects from nearby noise sources relative to land use compatibility of the project is no longer a topic for impact evaluation under CEQA, and no statement of impact significance is germane. For reference, applicable portions of the City of Newport Beach General Plan Noise Element will be included in the appendix.

The noise element also includes noise level standards to limit community noise within the city. These standards coincide with the municipal code noise standards presented in Table 5.6-10 and Table 5.6-11, which will apply to long-term operational noise.

Municipal Code (Noise Ordinance)

The City's Noise Ordinance (Newport Beach Municipal Code Chapter 10.26) is designed to protect people from objectionable non-transportation noise sources such as music, machinery, pumps, and air conditioners. These standards do not gauge the compatibility of developments in the noise environment, but provide restrictions on the amount and duration of noise generated at a (source) property, as measured at the receiving property.

Stationary (Non-transportation) Noise

The City applies the noise ordinance standards (Section 10.26.025, Exterior Noise Standards) to non-transportation, stationary noise sources. These standards are presented in Table 5.6-10 (and are consistent with exterior noise standards of the General Plan Noise Element). These standards are not applicable to mobile noise sources (such as heavy trucks) that are traveling on public roadways. Section 10.26.025 also states "if the ambient noise level exceeds the resulting standard, the ambient shall be the standard."

[4] California Supreme Court. *California Building Industry Association v. Bay Area Air Quality Management District* (2015) [Case No. S213478]

5. Environmental Analysis
NOISE

Table 5.6-10 City of Newport Beach Exterior Noise Standards

Noise Zone	Time Interval	Equivalent Noise Level, L_{eq} (dBA)	
		L_{eq}	L_{max}
Zone I – Single-, two-, or multiple-family residential	7 AM to 10 PM	55	75
	10 PM to 7 AM	50	70
Zone II – Commercial	7 AM to 10 PM	65	85
	10 PM to 7 AM	60	80
Zone III – Residential portions of mixed use properties	7 AM to 10 PM	60	80
	10 PM to 7 AM	50	70
Zone IV – Industrial or manufacturing	7 AM to 10 PM	70	90
	10 PM to 7 AM	70	90
Institutional	7 AM to 10 PM	55	75
	10 PM to 7 AM	50	70

Sources: Newport Beach Municipal Code, Section 10.26.025, Exterior Noise Standards; Newport Beach General Plan Noise Element, Table N3, Noise Standards.
Notes: These noise standards do not apply to HVAC systems or construction pursuant to Section 10.26.035 of the municipal code.
In the event the ambient noise level exceeds the noise standard, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.
The Noise Zone III standard shall apply to that portion of residential property falling within 100 feet of a commercial property, if the intruding noise originates from that commercial property.
If the measurement location is on boundary between two different noise zones, the lower noise level standard applicable to the noise zone shall apply.

Municipal Code Section 10.26.030 also includes interior noise standards for residential properties, as shown in Table 5.6-11. Similar to the exterior standards, if the (interior) ambient noise level exceeds the resulting standard, the ambient shall be the standard.

Table 5.6-11 City of Newport Beach Interior Noise Standards

Noise Zone	Time Interval	Equivalent Noise Level, L_{eq} (dBA)	
		L_{eq}	L_{max}
Residential	7 AM to 10 PM	45	65
	10 PM to 7 AM	40	60
Residential portions of mixed use properties	7 AM to 10 PM	45	65
	10 PM to 7 AM	40	60

Sources: Newport Beach Municipal Code, Section 10.26.025, Exterior Noise Standards; Newport Beach General Plan Noise Element, Table N3, Noise Standards.
Notes: In the event the ambient noise level exceeds the noise standard, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Sound ratings of new HVAC equipment installed in Newport Beach are covered in Code Section 10.26.045, are reviewed during plan check, and are tested in the field after installation. According to Section 10.26.045, new permits for HVAC equipment in or adjacent to residential areas shall be issued only where the sound rating of the proposed equipment does not exceed 55 dBA and it is installed with a timing device that will deactivate the equipment between 10 PM and 7 AM.

Exemptions – Construction Noise

The city realizes that the control of construction noise is difficult and therefore provides an exemption for this type of noise. According to Section 10.26.035, Exemptions, noise sources associated with construction, repair, remodeling, demolition, or grading of any real property are exempt from the noise level limits shown in Table 5.6-10, above. Such activities shall instead be subject to the provisions of Section 10.28.040, Construction Activity, Noise Regulations. Construction is permitted on weekdays between 7:00 AM and 6:30 PM and on Saturdays between 8:00 AM and 6:00 PM. Construction is not permitted on Sundays or any federal holiday. Exceptions to these hours can be made when the maintenance, repair, or improvement cannot feasibly be conducted during normal business hours, as outlined in Section 10.28.040.

Exemptions – Other

While Section 10.26.035(A) of the City's Noise Ordinance also exempts sporting and recreational activities sponsored or co-sponsored by the City of Newport Beach or the Newport-Mesa Unified School District (including the use of sound-amplifying equipment[5]), the District, as lead agency, is required to establish and substantiate a reasonable noise threshold for purposes of a CEQA-related evaluation. This EIR applies the City's standards identified above as its significance threshold for this project.

City of Newport Beach Vibration Standards

Structures amplify groundborne vibration, and wood-frame buildings, such as typical residential structures, are more affected by ground vibration than heavier buildings. There are no nearby land uses other than residential that would be expected to be under consideration for vibration effects (see also Section 5.6.1.4, below, for additional information). While the City's municipal code includes a definition for vibration, it does not have specific limits or thresholds for vibration. Likewise, the City's noise element does not have specific vibration thresholds. The EIR for the 2006 City of Newport Beach General Plan Update established a limit for vibration annoyance levels at residential uses, but no standards or thresholds were established for architectural damage from vibrational energy.

Vibration-Related Annoyance

The 2006 General Plan EIR established a limit of 72 VdB for vibration annoyance levels at residential uses, which will be used as the significance threshold in this analysis. For comparison purposes, the FTA's annoyance criteria are shown in Table 5.6-4, as they are frequently used as significance thresholds. Although the FTA residential-daytime threshold is 78 VdB for vibrational annoyance, it should be noted that the Newport Beach General Plan EIR conservatively applied the residential-nighttime threshold of 72 VdB for all circumstances of vibrational energy, including construction activities, which would almost never occur during the nighttime period (10 PM to 7 AM), with the possible exception of emergency repair work.

Vibration-Related Architectural Damage

In lieu of damage standards in either the City's municipal code or noise element, FTA provides criteria for acceptable levels of groundborne vibration for various types of special buildings that are sensitive to vibration (FTA 2006). The level at which groundborne vibration is strong enough to cause architectural damage has not been determined conclusively. The most conservative estimates are reflected in the FTA standards in Table 5.6-5. The nearest vibration-sensitive receptors would be the Plaza residential community to the north and the residential community to the east; both of which should not be exposed to vibration greater than 0.02 PPV (per the FTA criterion for non-engineered timber and masonry buildings).

[5] Per Municipal Code Chapter 10.32.

5.6.1.4 EXISTING NOISE ENVIRONMENT

Existing Land Uses

On Campus

The project site is in a predominantly residential area and is subject to noise from transportation and stationary sources. The existing turf field and synthetic rubber track currently uses portable bleachers (capacity of approximately 664 seats), and the athletic field is used for occasional football, soccer, and lacrosse games with low attendance (and do not produce notable crowd noise) as well as by other athletic organizations in the community.

The main sports field is at the northeast corner of the CdM campus and is bordered by student parking, tennis courts, a weight room building to the south, and a turf multi-purpose athletic field to the west. The second field under Option B would be surrounded by natural turf baseball fields on to the south and west, grass field to the north, and tennis courts and weight room to the east.

Off Campus

Beyond the project area's northern boundary across Vista del Oro are two-story residential units in the Plaza community. West across Mar Vista Drive are residential units in the Bluffs community, and across Eastbluff Drive to the east are single-family residential homes in the Eastbluff community. Eastbluff is on an elevated area of land, and this elevated slope continues eastward to Jamboree Road. Our Lady Queen of Angels Catholic Church and School are to the south of Mar Vista Drive—the main church building is approximately 1,600 feet from the center of the CdM sports field, and the school is approximately 1,300 feet from it. The nearest commercial/retail uses are at the Eastbluff Village Center, approximately 1,600 feet to the north of the sports field. Approximately 2,000 feet to the south and west is open space, and Upper Newport Bay is beyond the open space to the west. Other uses in the area include a country club near the southeast corner of Eastbluff Drive and Jamboree Road (nearly half a mile from the project site), Eastbluff Elementary School (approximately 2,000 feet from the project site), and Eastbluff Park (approximately 1,500 feet north of the project site).

Of these nearby land uses, Eastbluff Elementary School would be considered primarily a daytime sensitive noise receptor, since few evening events would be expected to coincide with events at the proposed CdM sports field facility. On occasion, however, some evening events may occur at the church complex at the same time as sports field events, but such overlap would be expected to be seasonal and rare.

Ambient Noise Measurement

To ascertain the existing noise at and adjacent to the sports field, noise monitoring was conducted by PlaceWorks staff in September of 2016.[6] School was in normal session during this time period. The

[6] The measurements at one location were repeated in late November of 2016, due to equipment malfunction during the original survey.

measurement sessions also focused on the weekday periods that would coincide with the most likely usage times for the project's expected events.

Short-term measurements were taken at four locations for a minimum period of 15 minutes on September 16, 2016, between the hours of 3:00 PM and 6:00 PM. Long-term measurements were taken at five locations from Thursday, September 15, to Saturday, September 17, 2016, and at one location from Wednesday, November 30, to Friday, December 2, 2016 (six total long-term locations). The field work was conducted during normal school days, with a focus on evening noise environments (such as during a typical football game at the proposed sports field). The general noise environment around the school is a combination of local and distant roadway noise, aircraft noise, general urban noise, chirping birds and barking dogs, rustling vegetation, activities at the school (such as student voices), and various activities in the neighborhood (e.g., people talking, lawnmowers).

Noise monitoring was performed using Larson-Davis Model 814 and 820 integrating/logging sound level meters, all of which satisfy the American National Standards Institute (ANSI) standard for Type 1 general environmental noise measurement instrumentation. The meters were programmed to record noise levels with the "slow" time constant and using the "A" weighting filter network. The meters were field calibrated immediately prior to the first set of readings. The calibration was rechecked immediately after the conclusion of the readings and no notable meter "drift" was noted (i.e., less than ½ dB deviation). This work effort included five short-term samples (of 15-minute duration) and five 24-hour, long-term noise readings. For all short-term measurements, the sound level meter and microphone were mounted on a tripod five feet above the ground and equipped with a windscreen. For long-term measurements, the microphone and windscreen were attached to a fence or other solid support. Noise measurement locations are described below and shown in Figure 5.6-1, *Ambient Noise Measurement Locations*.

Short-Term Monitoring Results

Daytime energy-average noise levels in the areas surrounding the project site during the short-term noise measurements ranged from 39 to 78 dBA L_{eq}. Short-term noise measurement locations are shown in Figure 5.6-1, and the readings are summarized in Table 5.6-12.

The large range of noise levels is due to the low ambient noise levels—which one would expect of a residential community with little or no commercial/industrial development—and the relatively high noise levels of frequent, close-proximity aircraft flyovers.

Table 5.6-12 Short-Term Noise Measurements Summary

Short-Term Measurement Location	Description	15-min L_{min}	15-min L_{eq}	15-min L_{max}
N-1	West of Eastbluff Elementary School	39	60	78
N-2	West side of The Bluffs Residential Community	39	61	76
N-4	Park area in Res. Community NE of project site	44	53	66
N-10	Residential Community South of the project site	49	64	82

Note: Noise sampling conducted by PlaceWorks staff on Friday, September 16, 2016, for a minimum of 15 minutes at each site with a Larson Davis 820 sound level meter.

5. Environmental Analysis
NOISE

N-1 (short-term). Location 1 was approximately 2,500 feet directly northwest of the project site, in a park area between two sections of residential buildings, approximately 150 feet west of the Eastbluff Elementary School boundary. A 15-minute noise measurement began at 4:41 PM on Friday, September 16, 2016. The air temperature was 76°F with 58 percent relative humidity (RH), and winds were between 1 and 2 miles per hour (mph).

Nearby land uses include residential communities to the north and south of the monitoring location, Eastbluff Elementary School to the east, and the Upper Newport Bay Nature Preserve to the west. The noise environment of this site was characterized primarily by operations in the residential community and by aircraft flyovers directly above the Upper Newport Bay Nature Preserve. As shown in Table 5.6-12, the noise level throughout this 15-minute measurement ranged from 39 to 78 dBA.[7] The L_{max} in this case (78 dBA) represents the sound level during an aircraft flyover, and the L_{min} (39 dBA) represents the typical ambient noise levels without aircraft noise.

N-2 (short-term). Location 2 was approximately 2,250 feet west-northwest of the project site on a bridge on Vista del Oro between Vista Caudal and Vista Dorado. A 15-minute noise measurement began at 4:08 PM on Friday September 16, 2016; the air temperature was 83°F with 46 percent RH, and winds were about 1 mph.

The monitoring location was surrounded by residential developments, with the Upper Newport Bay Nature Preserve approximately 750 feet to the west, beyond the farthest residences. The noise environment of this site was characterized primarily by operations in the residential community, including property maintenance; by more distant traffic along Vista del Oro, and by aircraft flyovers directly above the Upper Newport Bay Nature Preserve. As shown in Table 5.6-12, the noise level ranged from 39 to 78 dBA. The L_{max} in this case (76 dBA) represents the sound level during an aircraft flyover, and the L_{min} (39 dBA) represents the ambient noise levels without aircraft or other intermittent sources (i.e., car drive-bys).

N-4 (short-term). Location 4 was approximately 2,000 feet directly northeast of the project site, at the south end of a park area near the edge of a residential community (bordered by Jamboree Road), about 300 feet west of Jamboree Road. A 15-minute noise measurement began at 5:13 PM on Friday September 16, 2016; the air temperature was 76°F with 61 percent RH, and winds were between 1 and 2 miles per hour.

Nearby land uses include the park area directly to the north of the monitoring location and the residential community directly to the south and also surrounding the park area. The noise environment was characterized primarily by operations in the park area (dogs barking, kids playing), by operations in the residential community, by vehicle noise along Jamboree Road and other thoroughfares (including Alta Vista Drive), and by aircraft fly-over noise.

N-10 (short-term). Location 10 was at the south end of a residential community, approximately 2,000 feet south of the project site, and in a parking area serving the residential community that overlooks a nature park and Jamboree Road. A 15-minute noise measurement began at 3:47 PM on Friday, September 16, 2016; the air temperature was 81°F with 50 percent RH, and winds were between 1 and 2 mph.

[7] Decibel referenced to 20 micropascals.

Figure 5.6-1 - Ambient Noise Measurement Locations

Base Map Source: Google Earth Pro, 2016

5. Environmental Analysis
NOISE

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The monitoring location is surrounded by residential developments to the north and by a nature area and Jamboree Road to the south. The noise environment of this site was characterized primarily by traffic along Jamboree Road, by operations in the residential community including property maintenance, and by aircraft fly-overs.

Long-Term Monitoring Results

Long-term noise measurement locations are also shown in Figure 5.6-1 (above), and the results of the long-term noise monitoring are summarized in Table 5.6-13. To show the range of noise conditions experienced around the measurement area, this table includes the noisiest hour and the quietest hour throughout the 24-hour monitoring period. Additionally, this table includes the lowest 1-hour noise level measurement between 3 PM and 10 PM, which represents the lowest hourly noise level over the time period when an evening sporting event is anticipated to occur. The graphical depictions of the hourly noise level records for each long-term monitoring location are in Appendix G of this RDEIR.

Table 5.6-13 Long-Term Noise Measurements Summary

Long-Term Monitoring Location	Description	Noise Level (dBA CNEL)	Lowest Noise Level 3 PM – 10 PM (dBA L_{eq-1hr})	Noisiest Hour		Quietest Hour	
				L_{eq}	Start Time	L_{eq}	Start Time
N-3	On Vista del Oro, south of Eastbluff Elementary	67	53	60	7 AM	36	3 AM
N-5	On Vista del Oro, west of the project site	56	52	59	3 PM	36	12 AM
N-6	Directly north of west-most field goal	58	53	64	1 PM	35	4 AM
N-7	Directly east of east-most field goal	62	59	65	1 PM	41	3 AM
N-8	Residential community east of project site	57	40	68	8 AM	33	10 PM
N-9	Residential community southwest of the project site	58	52	61	10 AM	37	3 AM

Note: Conducted by PlaceWorks staff from Thursday, September 15, to Saturday, September 17, 2016.

N-3 (Long-term). Noise monitoring Location 3 was a long-term measurement of 45 hours that provided data for 24-hour noise metrics.[8] Location 3 was approximately 1,000 feet north of the project site and approximately 1,000 feet south of Eastbluff Elementary School. The noise monitor was on the south side of Vista del Oro between Vista Flora and Hacienda in a wooded drainage area. A 45-hour noise measurement commenced at 4:17 PM on Thursday September 15, 2016, at which time the air temperature was 83°F with 43 percent RH, and winds were less than 1 mph. The noise monitor was picked up at 2:21 PM on Saturday, September 17, at which time the air temperature was 83°F with 67 percent RH, and winds were approximately 1 mph.

Location 3 was surrounded by Bluffs Residential Community, with Eastbluff Elementary School and adjacent play fields about 400 feet to the north. The noise environment of this site was characterized primarily by

[8] Hour intervals with 2 days of measurement data were averaged, to maintain 24 values to be used in the 24-hour noise metrics.

operations in the residential community, by vehicle noise along Vista del Oro and more distant thoroughfares like Eastbluff Drive, and by aircraft noise due to flyovers.

N-5 (long-term). Location 5 was surrounded by a residential community and approximately 1,500 feet west of the proposed project site. The noise monitor was at a tree just north of the intersection of Vista del Oro and Vista Caudal. A 45-hour noise measurement began at 3:59 PM on Thursday September 15, 2016; the air temperature was 76°F with 48 percent RH, and winds between 1 and 2 mph. The noise monitor was picked up at 2:02 PM on Saturday, September 17, and the air temperature was 84°F with 51 percent RH, and winds were approximately 1 mph.

Nearby land uses are primarily residential, except for the CdM campus and athletic fields about 400 feet east of the monitoring location. The noise environment of this site was characterized primarily by operations at the school (children playing, athletic events), by operations in the residential community, by vehicle noise along Vista del Oro, and by aircraft noise.

N-6 (long-term). Location 6 was surrounded by a residential community to the north and the CdM campus to the south. It was at a tree approximately 250 feet north of the westernmost field goal (beyond Vista del Oro). A 45-hour noise measurement began at 3:41 PM on Thursday September 15, 2016; the air temperature was 77°F with 55 percent RH, and winds between 2 and 3 mph. The noise monitor was picked up at 1:24 PM on Saturday, September 17, and the air temperature was 79°F with 54 percent RH, and winds between 2 to 4 mph.

The monitoring location is surrounded by residential and educational developments. The noise environment was characterized primarily by operations at the school (children playing, athletic events), by operations in the residential community, by vehicle noise along Vista del Oro, and by aircraft noise.

N-7 (long-term). Location 7 was surrounded by a residential community to the east and the CdM campus to the west and attached to a fence along the east side of Eastbluff Drive. The noise monitor was on top of the steep grade along Eastbluff Drive (elevated about 20 feet above street), approximately 200 feet directly east of the easternmost field goal. A 45-hour noise measurement began at 3:25 PM on Thursday September 15, 2016; the air temperature was 78°F with 54 percent RH, and winds between 2 and 3 mph. The noise monitor was picked up at 1:11 PM on Saturday, September 17; the air temperature was 78°F with 65 percent RH, and winds were approximately 3 mph.

The monitoring location is surrounded by residential and educational developments. The noise environment of this site was characterized primarily by vehicle noise along Eastbluff Drive as well as by operations at the school (children playing, athletic events) and in the nearby residential community. Aircraft noise was also a contributor at this location.

N-8 (long-term). Location 8 is at the edge of a residential community (bordered by Jamboree Road) about 1,400 feet directly east of the project site. The noise monitor was attached to a light pole at the end of Alder Place. A 45-hour noise measurement began at 4:55 PM on Thursday September 15, 2016; the air temperature was 79°F with 46 percent RH, and winds approximately 1 mph. The noise monitor was picked up at 2:36 PM on Saturday, September 17; the air temperature was 81°F with 56 percent RH, and winds were approximately 1 mph.

The monitoring location is surrounded by a residential community. The noise environment of this site was characterized primarily by operations in the residential community, by vehicle noise along Jamboree Road, and by aircraft fly-over noise.

N-9 (long-term). Location 9 was surrounded by a residential community and about 200 feet from the border of the CdM campus, attached to a tree between two cul-de-sacs, Barranca and San Bruno. Due to equipment failure during the September survey, a 48-hour noise measurement was repeated from Wednesday, November 30, to Friday, December 2, 2016. The monitor was started at 4:26 PM, and the air temperature was 66°F with 48 percent RH, and winds calm. The noise monitor was picked up at 6:18 PM on Friday, and the air temperature was 67°F with 29 percent RH, and winds were approximately 2 mph.

The monitoring location is surrounded by a residential community, and the CdM campus and athletic facilities are nearby. The noise environment was characterized primarily by operations in the residential community, by aircraft noise due to flyovers, and by operations at the school (children playing, athletic events).

Ambient Noise Environment

Surrounding Area

The noise environment around the project site is generally typical for a medium-density residential area. In the residential areas that are accessed from roadways branching off of Eastbluff Drive, the typical noise environments are generally controlled by local traffic flows and general suburban din. However, because of the take-off track from John Wayne Airport, this relatively low ambient environment is often raised considerably for a few moments during over-flights.

During the daytime, the time-averaged sound level in the vicinity of the project site is 56 to 62 dBA. For receivers that are directly exposed to roadway noise (i.e., N-7 and N-10), the L_{eq} is 64 to 65 dBA. For the evening period, when major sports field events would take place (i.e., 7 PM to 10 PM), community noise levels at the nearest residential receptors—locations N-6 and N-7—were generally in the range of 54 to 61 dBA L_{eq}. The "residual noise level" (the nominal minimum community noise level, represented by the L_{90} statistical sound level metric) was between 39 and 51 dBA at N-6 and N-7.

On-Road Vehicles

Noise from motor vehicles is generated by engine vibrations, the interaction between tires and the road, and the exhaust system. In order to assess the potential for mobile-source noise impacts, it is necessary to determine the noise currently generated by vehicles traveling through the project area. According to the field observations and noise monitoring analysis, noise levels measured 50 feet from the centerline of Eastbluff Road were between 48 and 57 dBA L_{eq}, and noise levels measured 50 feet from Vista del Oro were between

39 and 53 dBA L_{eq}[9]. Calculated noise levels in the community and near other roadways are presented in Table 5.6-14. Peak period traffic volumes were based on the existing daily traffic volumes provided by IBI Group. These traffic increases were used to calculate roadway noise increases at intersections near the project site (analysis under Impact 5.6-1, below).

Aircraft Noise

The project site is near multiple airports and heliports, which produce noise during take-offs, landings, and normal airport operations. These aircraft noise sources are expected to be audible at times at the project site. Airport and heliport facilities in the area include the Newport Beach Police Heliport, approximately 0.4 mile to the south; Costa Mesa Police Heliport, approximately 2.4 miles to the northwest; Atrium Heliport, approximately 2.5 miles to the north; John Wayne Airport, approximately 2.8 miles to the north; and Hoag Hospital Heliport, approximately 3 miles to the west. The most notable of these in terms of community noise is John Wayne Airport due to the number, size, and flight patterns of aircraft flying into and out of that facility.

The project site is outside of the 60 dBA CNEL noise contour for John Wayne Airport (JWA 2008) and experiences aircraft-generated noise levels less than this value. While fly-over events are typically noticeable, the aircraft approaching and departing JWA would not generate adverse noise conditions at the campus (since the campus is well outside of the 65 dBA CNEL contour which is the pertinent aircraft noise threshold per both the FAA and Caltrans).

Stationary Source Noise

All types of land uses have stationary sources of noise. Residential uses generate noise from landscaping, maintenance activities, and air conditioning systems. Commercial uses generate noise from HVAC systems, loading docks, and other sources. Noise generated by residential and commercial uses are generally short and intermittent. In Newport Beach, land uses are primarily residential, with retail and commercial uses along major roadways and in other specific areas.

5.6.2 Thresholds of Significance

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

N-1 Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

N-2 Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

[9] These measured noise levels reflect roadway noise and other noise sources in the community—property maintenance, normal operations at CdM MS/HS, aircraft noise, etc.

N-3 A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

N-4 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

N-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, expose people residing or working in the project area to excessive noise levels.

N-6 For a project within the vicinity of a private airstrip, expose people residing or working the project area to excessive noise levels.

The Recirculated Initial Study, included in Appendix A2, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold N-5
- Threshold N-6

These impacts will not be addressed in the following analysis.

5.6.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Recirculated Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.6-1 The proposed project (Options A and B) would not result in long-term, operation-related, roadway noise impacts. [Thresholds N-1 and N-3]

Impact Analysis:

Options A and B

The proposed project would generate additional vehicle trips along the traveled roadway segments around the project site. To determine if a project would cause a substantial noise increase from project-related traffic, consideration must be given to the magnitude of the increase and the affected receptors. It is assumed that the greatest traffic increase would likely occur during concurrent varsity lacrosse, soccer, and/or JV football games at both project fields between 4:00 and 6:00 PM (i.e., during the weekday evening peak hour), when spectators are traveling to the sports field prior to the beginning of an event. Note that varsity football games are not part of the proposed project. Approximately the same level of traffic would be generated at the end of an event when spectators are exiting, but this would be well after the evening peak traffic period. This level of project-related traffic would also be expected for other major sporting events.

5. Environmental Analysis
NOISE

The sports field(s) may generate traffic at other times of the day (or evening) for practices, but it would be minor compared to a worst-case concurrent athletic games and would be spread out over longer time periods. Other events, such as lower-grade (JV) lacrosse and soccer matches and practices, would have much lower attendance (approximately 100 expected). Other athletic facilities on CdM campus, such as the baseball, softball, and practice field(s) and tennis courts, would not change their usage, timing, or associated traffic generation as a result of the project's implementation.

A traffic study was prepared by IBI Group (Appendix H to the RDEIR) that analyzed increases in traffic flow at intersections around the proposed project site during the peak period. The proposed project is not expected to generate a significant number of vehicle trips during the AM peak hour because sports field events would take place during weekday afternoons or evenings. Therefore, the time period selected for analysis in this study is the weekday PM peak period (4:00 PM to 6:00 PM) as worst-case scenario. The traffic noise analysis derived average daily segment traffic from PM peak hour intersection turning movements. A total of 70 different roadway segments were evaluated for traffic noise as shown in Table 5.6-14. The proposed project includes two options, but Option B, with the maximum total seating capacity of 864,[10] is expected to result in the worst-case traffic increase. Therefore, Option B is the scenario presented in this traffic noise analysis. Existing Without Project and Future With Project traffic noise estimates are shown in Table 5.6-14. A noise level increase of 3 dB or more would signify a potential impact.

Table 5.6-14 Existing and Future Roadway Noise Level Estimates

#	Roadway	Segment	CNEL at 50 feet from Roadway (dBA)		Overall Increase (dB)	Potential Impact?
			Existing (2017)	Future (2020)		
1	Eastbluff Drive	North of Vista del Oro	55.0	55.1	0.1	No
2	Eastbluff Drive	South of Vista del Oro	55.1	55.2	0.1	No
3	Vista del Oro	West of Eastbluff Drive	45.7	45.8	0.1	No
4	Eastbluff Drive	North of Mar Vista Drive	55.3	55.5	0.2	No
5	Eastbluff Drive	South of Mar Vista Drive	56.3	56.5	0.2	No
6	Mar Vista Drive	West of Eastbluff Drive	48.3	48.4	0.1	No
7	Eastbluff Drive	North of Alba Street	55.1	55.2	0.1	No
8	Eastbluff Drive	South of Alba Street	55.3	55.4	0.1	No
9	Alba Street	East of Eastbluff Drive	41.8	41.9	0.1	No
10	Jamboree Road	North of Eastbluff Drive	66.2	66.7	0.5	No
11	Jamboree Road	South of Eastbluff Drive	67.2	67.6	0.4	No
12	Ford Road	East of Jamboree Road	58.9	59.1	0.2	No
13	Eastbluff Drive	West of Jamboree Road	56.4	56.5	0.1	No
14	Jamboree Road	North of Eastbluff Road	66.6	67.1	0.5	No
15	Jamboree Road	South of Eastbluff Road	66.3	66.8	0.5	No
16	University Drive	East of Jamboree Road	59.9	60.1	0.2	No
17	Eastbluff Road	West of Jamboree Road	55.5	55.7	0.2	No
18	MacArthur Boulevard	North of Ford Road	68.0	68.2	0.2	No
19	MacArthur Boulevard	South of Ford Road	67.6	67.9	0.3	No
20	Bonita Canyon Drive	East of MacArthur Boulevard	64.1	64.2	0.1	No
21	Ford Road	West of MacArthur Boulevard	58.9	59.1	0.2	No
22	Macarthur Boulevard	North of Bison Avenue	68.1	68.3	0.2	No
23	Macarthur Boulevard	South of Bison Avenue	68.1	68.3	0.2	No

[10] That it, 664 total capacity at the main field's bleachers, plus 200 additional attendees at the secondary field.

Table 5.6-14 Existing and Future Roadway Noise Level Estimates

#	Roadway	Segment	CNEL at 50 feet from Roadway (dBA)		Overall Increase (dB)	Potential Impact?
			Existing (2017)	Future (2020)		
24	Bison Avenue	East of MacArthur Boulevard	59.5	59.8	0.3	No
25	Bison Avenue	West of MacArthur Boulevard	60.3	60.5	0.2	No
26	Jamboree Road	North of MacArthur Boulevard	66.2	67.0	0.8	No
27	Jamboree Road	South of MacArthur Boulevard	65.8	66.5	0.7	No
28	MacArthur Boulevard	East of Jamboree Road	65.7	66.1	0.4	No
29	MacArthur Boulevard	West of Jamboree Road	65.3	65.7	0.4	No
30	Jamboree Road	North of Bristol Street (North)	65.7	66.5	0.8	No
31	Jamboree Road	South of Bristol Street (North)	66.6	67.2	0.6	No
32	Bristol Street (North)	East of Jamboree Road	57.9	58.2	0.3	No
33	Bristol Street (North)	West of Jamboree Road	59.6	60.1	0.5	No
34	Jamboree Road	North of Bristol Street (South)	66.6	67.2	0.6	No
35	Jamboree Road	South of Bristol Street (South)	66.7	67.2	0.5	No
36	Bristol Street (South)	East of Jamboree Road	57.3	57.5	0.2	No
37	Bristol Street (South)	West of Jamboree Road	62.5	63.1	0.6	No
38	Jamboree Road	North of Bayview Way	66.6	67.0	0.4	No
39	Jamboree Road	South of Bayview Way	66.5	66.9	0.4	No
40	Bayview Way	East of Jamboree Road	48.9	49.0	0.1	No
41	Bayview Way	West of Jamboree Road	49.3	49.5	0.2	No
42	Jamboree Road	North of Bison Avenue	66.2	66.6	0.4	No
43	Jamboree Road	South of Bison Avenue	66.2	66.7	0.5	No
45	Bison Avenue	East of Jamboree Road	58.0	58.4	0.4	No
46	Bison Avenue	West of Jamboree Road	49.9	50.1	0.2	No
47	Jamboree Road	North of San Joaquin Hills Road	66.3	66.7	0.4	No
48	Jamboree Road	South of San Joaquin Hills Road	65.8	66.2	0.4	No
49	San Joaquin Hills Road	East of Jamboree Road	55.8	56.6	0.8	No
50	San Joaquin Hills Road	West of Jamboree Road	52.4	52.5	0.1	No
51	Jamboree Road	North of Santa Barbara Drive	65.7	66.1	0.4	No
52	Jamboree Road	South of Santa Barbara Drive	65.2	65.6	0.4	No
53	Santa Barbara Drive	East of Jamboree Road	58.9	59.1	0.2	No
54	Santa Barbara Drive	West of Jamboree Road	49.1	49.2	0.1	No
55	Jamboree Road	North of Pacific Coast Highway	65.1	65.5	0.4	No
56	Jamboree Road	South of Pacific Coast Highway	60.2	60.4	0.2	No
57	Pacific Coast Highway	East of Jamboree Road	65.1	65.4	0.3	No
58	Pacific Coast Highway	West of Jamboree Road	66.6	67.0	0.4	No
59	Santa Cruz Drive	North of San Joaquin Hills Road	48.1	48.2	0.1	No
60	Santa Cruz Drive	South of San Joaquin Hills Road	54.7	55.1	0.4	No
61	San Joaquin Hills Road	East of Santa Cruz Drive	56.3	56.7	0.4	No
62	San Joaquin Hills Road	West of Santa Cruz Drive	58.0	58.4	0.4	No
63	Santa Rosa Drive	North of San Joaquin Hills Road	50.8	50.9	0.1	No
64	Santa Rosa Drive	South of San Joaquin Hills Road	55.2	55.8	0.6	No
65	San Joaquin Hills Road	East of Santa Rosa Drive	57.8	58.1	0.3	No
66	San Joaquin Hills Road	West of Santa Rosa Drive	57.0	57.4	0.4	No
67	MacArthur Boulevard	North of San Joaquin Hills Road	67.5	67.5	0	No
68	MacArthur Boulevard	South of San Joaquin Hills Road	65.5	65.7	0.2	No
69	San Joaquin Hills Road	East of MacArthur Boulevard	57.9	57.3	-0.6	No
70	San Joaquin Hills Road	West of MacArthur Boulevard	58.3	58.7	0.4	No

Data from IBI Traffic Study, August 2017.
Levels calculated by FHWA Traffic Noise Modeling methodologies

5. Environmental Analysis
NOISE

A doubling of the existing roadway volumes along the surrounding roadways would be required to generate an audible increase of 3 dB or more (FHWA 2006; FTA 2006). Even the worst-case event expected at the project site (with Option B), the project-generated vehicle trips would not come close to doubling the peak period roadway volumes for the intersections in proximity to the project site. Rather, the worst-case roadway noise increase would result from traffic increases along Jamboree Road, with a projected noise level increase of 0.8 dB (along Jamboree Road segments #26, #30, and #49). Therefore, this traffic increase would fall under the threshold of audibility. Thus, implementation of the proposed project would not result in audible increases in traffic-related noise along the surrounding roadways.

It should be noted that although uses along the study area roadway segments would not experience significant daily (24-hour averaged) noise increases, receptors along roadways in the immediate vicinity of the project site may be exposed to short-term increased traffic noise when cars arrive prior to and depart after a major event or game at the sports field(s). Existing residences along some study area roadways would experience short-term increases in noise due to traffic pass-bys on these streets and ingress/egress movements at the school parking lots,[11] but these occurrences would be limited to a relatively small number of major events/games per year that had attendance near or at full capacity. Also, there would not be a notable difference in these ingress/egress and parking lot noises in comparison to existing conditions (with the exception of the timing related to occasional, future evening occurrences that do not currently take place). Other minor events, with anticipated attendance below 500 persons, would not generate substantial traffic, and therefore would not cause perceptible noise increases at nearby homes. Because the noise exposure due to event traffic in the immediate vicinity of the project site would be (a) limited to a relatively small number of events/games per year, (b) limited to a few minutes for each such event, and (c) comparable to existing ingress/egress and parking lot noises, localized project vehicle activity would be considered less than significant. Thus, implementation of the proposed project would also not result in substantial increases in vehicle-movement noise at adjacent receptor locations.

In summary, neither Option A nor Option B will result in substantial segment traffic noise and neither Option A nor Option B will result in substantial vehicle-movement noise (from ingress/egress and parking lot travel) at adjacent receptor locations.

Impact 5.6-2: Option A: Sports field events would result in significant temporary and periodic increases in ambient noise levels.

Option B: Sports field events would not result in significant temporary and periodic increases in ambient noise levels. [Thresholds N-1 and N-4]

[11] Parking lots typically generate noise from car horns, car engines, brakes and tires, automatic lock beeps, car alarms, car radios, and people talking.

Impact Analysis:

General Sports Field Noise

The project site is in an area that is generally flat, with a steep drop-off in elevation beyond the residential community to the west (to the Upper Newport Bay) and a gradual, but pronounced increase in elevation beyond Eastbluff Drive to the east. Elevation changes throughout the project area were included in the modeling process, since these notable topographical characteristics will affect noise propagation. The modeling accounted for the relatively tightly spaced house rows surrounding the CdM campus. These house rows, consisting of primarily two-story single-family and multi-family residences, would generally provide considerable sound attenuation (due to barrier effects) for receptors beyond the first set of residential buildings. However, in certain situations, sound would be able to propagate through "canyons" between residential structures (such as drainage areas or parkland walkways between groups of housing).[12] The first row of residential structures, which have a direct line of site to the athletic field, are expected to be the most effected by the proposed project.

To characterize noise sources and obtain future noise levels for the proposed spectator areas, sporting events, PA systems, and other noise sources related to the proposed project, applicable reference noise levels were taken from the SoundPLAN (global) Emissions Library. The noise model created for this project used an aggregate of individual source noise reference levels at precise locations to estimate the total project-related noise.

The event-noise analysis assumed the full capacity of the sports field, which is a worst-case scenario and would occur relatively rarely. For crowds of approximately 464 people, the overall sound levels from sports field events are projected to be 1 to 2 dB less than the analyzed 664-attendee worst case for Field 1. Likewise, for crowds of 164 to 264 people, the overall sound levels from sports field events are projected to be 4 to 6 dB less than the analyzed 664-attendee worst case for Field 1. Sounds emanating from the Field 2 bleachers (with a 200-seat maximum capacity) would be expected to be consistent with this latter projection.

Event noise is highly variable, depending on the type and level of activities; both in the bleachers and on the field. These variables include:

- PA systems create higher sound levels than typical crowd reactions. PA noise (commentary, announcements, etc.) occurs far more often than crowd cheers.
- Cheering is highly variable depending on the moment-to-moment activity, the number of home or visitor team attendees, and, in particular, the occurrence of "cheer worthy" events (e.g., touchdowns).
- Foot-stomping on aluminum bleachers can generate substantial noise.
- Other noise sources during a special event include referee whistles and, occasionally, horns and bells.[13]

[12] An example of this situation is the parkland area between monitoring locations N-6 and N-3.
[13] Extraneous, attendee-activated sound sources, such as horns and bells, are not permitted at CIF-sanctioned football games.

The noise sources included in the noise model are expected to conservatively account for a worst-case situation, including the variables listed above.

Project-Specific Sports Field Characteristics

Option A

Option A includes 664-seat bleachers consisting of six rows of seats (approximately 9 feet tall and 210 feet wide). No bleachers would be provided on the north side of the field, and the south-side bleachers would be shared by home and visitor team spectators. No varsity football games would be held at the proposed CdM facility. The aluminum bleachers would include noise-reduction features such as vertical paneling to enclose the foot-wells. Option A would also include a PA system, nighttime lighting, an approximately 3,000-square-foot building with two ticket booths, two restroom areas, a main concession area, and storage building(s). Two PA speakers would be mounted on the light poles on south side of the bleachers, slightly above bleacher level. It was assumed that the loudspeakers would be directional for precise focusing of sound energy into the bleachers. For modeling purposes, a "partially localized" PA system was used. For a conservative worst-case analysis, it was assumed that both loudspeakers would be used when the PA system is on and that the full capacity (664 seats) would be occupied during an event. This is conservative since the historical trend has been noted as closer to 400 attendees (see Table 3-2 in Chapter 3).

Option B

Option B includes two separate fields: Field 1 would be in approximately the same location as the existing natural turf field and rubber track, in an E-W configuration; Field 2 would be to the southwest of the Field 1 in a N-S configuration. Field 1 includes 664-seat bleachers with four light poles, as with Option A. For Field 2, the existing six portable bleachers (which can be placed anywhere near the CdM campus athletic facilities and which have a total seating capacity of 200 spectators) will continue to be primarily deployed at the (existing) Field 2 area. Thus, no changes to the 200-seat portable bleachers would occur.

Option B eliminates the PA system, press box, and ticket booth/concession/restroom building; all near Field 1. Under Option B, the school at times may use a portable loudspeaker system for warm-up music during daytime hours; the portable loudspeaker system is expected to be considerably quieter than the PA system under Option A. As with Option A, no varsity football games would be held at the proposed CdM facility (i.e., based on the updated project description, varsity football games would continue to be played offsite). Therefore, varsity lacrosse games with highest attendance levels represent the worst-case, highest capacity events that are expected at the CdM campus sports fields.

The lacrosse season generally extends from late-February to mid-May, and games are expected to draw a maximum of 400 attendees. Games are typically played on weekday evenings with starting times between 3 PM and 7 PM, depending on the level of the team. Other occasional sporting or special events (e.g., marching band practice, matches, recreation league activities, Foundation Events, clinics) are expected to generally attract from 100 to 400 spectators, but can occasionally approach bleacher capacity (see Table 3-2).

It should be noted that noise levels associated with the PA system for Option A would primarily consist of speech noise (i.e., announcements). PA announcements are sporadic and generally consist of specific frequency bands related to speech. PA system sounds are expected to be more noticeable than, for example, spectator noise, which would be more 'broadband'[14] than PA announcements.

Project-Related Sports Field Noise Analysis

Project-Related Traffic for Sports Field Usage

Roadway segment flow noise and near-site vehicle movement noise impacts, resulting from sports field operations, are discussed under Impact 5.6-1.

Sports Field Event Noise, Exterior

The future athletic field event noise was modeled using SoundPLAN sound propagation analysis software.[15] The modeling calculations account for classical sound wave divergence (spherical spreading loss with adjustments for source directivity from point sources) and reflections, plus attenuation factors due to air absorption, ground effects, and barrier/shielding. The noise models created for the proposed project present numerical noise level estimates for 21 locations around the project site, as shown on Figure 5.6-2, *Noise Modeling Locations*. The results of the event noise modeling were used to create noise contour maps for both field options to depict the project sound emissions into the surrounding areas.

The estimated noise levels produced by the proposed project under Option A and Option B were compared to the general sound level standards of the Newport Beach Municipal Code (which were used as an impact threshold for purposes of this CEQA evaluation as the foundation for the additional criterion of a +3 dB increase). Based on Code Section 10.26.025, for single-, two-, or multiple-family residential land uses, the allowable exterior noise level ($L_{eq\text{-}15\text{-}min}$) is 55 dBA from 7 AM to 10 PM. Section 10.26.025 also includes a limit for the maximum instantaneous noise level, which is the noise standard mentioned above plus 20 dB.

With respect to project-related increases, audible increases in general community noise levels generally refer to a change of 3 dB or more, since this level has been found to be the threshold of perceptibility in exterior environments. Only "audible" changes in noise levels at sensitive receptor locations (i.e., 3 dB or more) are considered potentially significant.

Municipal Code Section 10.26.025 states that "if the ambient noise level exceeds the resulting standard, the ambient shall be the standard." To estimate the ambient noise environment at each modeling location, this analysis conservatively used the lowest 1-hour noise level from 3 PM to 10 PM from the nearest respective long-term measurement, as presented in Table 5.6-13. For locations where the ambient noise level exceeds 55 dBA L_{eq}, the respective ambient noise level will become the municipal code standard.

A significant impact determination is made if the project causes a noise increase of 3 dB or more and the project causes the total noise environment (project-related noise plus ambient noise) to exceed the municipal code standard for residential properties.

[14] Broadband (or wideband) noise is a source whose energy is distributed over a wide section of the audible range.
[15] SoundPLAN uses industry-accepted propagation algorithms based on International Organization for Standardization and ÖAL-28 standards for outdoor sound propagation.

5. Environmental Analysis
NOISE

Project Sports Field Modeling Results

Option A

The noise model includes a 664-spectator sporting event; loudspeaker noise with a mounted PA system; and sports-field noise that accounts for noise due to players, referee whistles, etc. The model also includes noise due to a swimming event at the CdM swimming pool, which could potentially occur at the same time (details on the source noise reference levels and modeling procedures are in Appendix G to the RDEIR). The analysis assumed that the full-capacity event is a worst-case scenario and not a regular occurrence. Therefore, for smaller-crowd events on typical days, the noise level would be much less than the modeling results (as discussed in the previous sub-section).

The numerical results of the predictive modeling process for Option A are shown in Table 5.6-15. The table provides the predicted L_{eq} noise levels produced by a full-capacity sports field event, including event-long, averaged combinations of spectator noise (with contributions for screaming), athletic activities (e.g. referee whistles, player noise), and PA announcements.

Table 5.6-15 Full-Capacity Event, Predicted Community Noise Levels (Option A)

Modeling Receiver Location	Predicted Sound Level Contributions	Quietest Ambient Sound Level b/t 3PM to 10PM		Project-related Sound Level + Ambient Sound Level[1]	Applicable Noise Limit[2]	Calculated Change due to Project
	dBA L_{eq}	dBA $L_{eq\text{-}1\,hr}$	Location[2]	dBA L_{eq}	dBA $L_{eq\text{-}15\,min}$	dB
A	**56.8**	53	N-6	**58.3**	55	**5.3**
B	44.4	53	N-6	53.6	55	0.6
C	53.3	59	N-7	**60.0**	59	1.0
D	40.2	59	N-7	59.1	59	0.1
E	40.5	59	N-7	59.1	59	0.1
F	48.0	59	N-7	59.3	59	0.3
G	26.2	47	N-8	47.0	55	0.0
H	41.0	47	N-8	48.0	55	1.0
I	38.5	59	N-7	59.0	59	0.0
J	33.1	52	N-9	52.1	55	0.1
K	39.0	52	N-9	52.2	55	0.2
L	45.6	52	N-9	52.9	55	0.9
M	29.8	52	N-9	52.0	55	0.0
N	50.0	52	N-5	54.1	55	2.1
O	45.9	52	N-5	53.0	55	1.0
P	31.6	52	N-5	52.0	55	0.0
Q	36.2	52	N-5	52.1	55	0.1
R	35.2	52	N-5	52.1	55	0.1
S	52.6	53	N-6	**55.8**	55	**2.8**
T	45.2	53	N-3	53.7	55	0.7
U	37.1	53	N-3	53.1	55	0.1

Source: SoundPLAN 7.1
Notes: Municipal Code Exterior Noise Limits: 55 dBA $L_{eq\text{-}15min}$ at residential receptors (until 10 PM).
Numbers in **bold** and shaded indicate sound levels that exceed the Newport Beach Municipal Code limits for the L_{eq} noise level metric (also refer to the main text for additional context), or that are greater than +3 over the existing ambient (which are considered to be readily discernible changes).
1 This is the predicted sound level contribution from the sports field added to the measured ambient sound levels in logarithmic function.
2 The municipal code limit all modeling locations is 55 dBA; at locations where the ambient exceeds 55 dBA, the ambient level becomes the applicable limit.
3 Represents the Nearest Long-term Measurement Location

Figure 5.6-2 - Noise Modeling Locations

5. Environmental Analysis

Base Map Source: Google Earth Pro, 2016

5. Environmental Analysis
NOISE

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Table 5.6-15 shows that, for Option A, the existing noise environment plus project-related noise would result in exceedances of the municipal code at three modeling receiver locations (i.e., A, C, and S). However, only two of these locations would also experience a noise increase of 3 dB (i.e., A and S [which was rounded up to +3 dB]). The noise level modeling results for the sports-field contribution only (i.e., the second columns under "Predicted Sound Level Contributions" in Table 5.6-15) are shown graphically in Figure 5.6-3 for the Option A configuration, which depicts lines of constant L_{eq} sound level (in 5 dB divisions) for a full-capacity event.

Based on the predicted community noise levels in Table 5.6-15, additional modeling was performed to evaluate localized noise exposure at *specific* residential building façades near the impacted Modeling Receiver Locations A and S. These specific, real-world receptor locations are depicted in Figure 5.6-4, *Building Façade Analysis Location Map*. The results of this additional, localized modeling are provided in Table 5.6-16.

Table 5.6-16 Option A Noise Modeling Results, Localized Building Façade Analysis (Locations A and S)

Model Receiver Location	Option A (dBA L_{eq})	Option A + Ambient (dBA L_{eq})	Lowest $L_{eq\text{-}1hr}$ (3 PM – 10 PM)	Option A Related Increase (dB)
Location A1 – 1st Floor	39.8	53.2	53	0.2
Location A1 – 2nd Floor	53.2	**56.1**	53	**3.1**
Location A2 – 1st Floor	40.8	53.3	53	0.3
Location A2 – 2nd Floor	50.5	54.9	53	1.9
Location A3 – 1st Floor	46.7	53.9	53	0.9
Location A3 – 2nd Floor	48.3	54.3	53	1.3
Location A4 – 1st Floor	42.5	53.4	53	0.4
Location A4 – 2nd Floor	48.2	54.2	53	1.2
Location A5 – 1st Floor	48.5	54.3	53	1.3
Location A5 – 2nd Floor	46.8	53.9	53	0.9
Location S6 – 1st Floor	50.6	**55.0**	53	2.0
Location S6 – 2nd Floor	50.4	**54.9**	53	1.9
Location S7 – 1st Floor	54.5	**56.8**	53	**3.8**
Location S7 – 2nd Floor	54.5	**56.8**	53	**3.8**

Note: Numbers in bold and shaded indicate sound levels that exceed municipal code standards or greater than +3 over the existing ambient , which are considered to be readily discernible changes.

As shown in Table 5.6-16, building façade analysis for the residential buildings in Model Receiver Locations A and S indicated that discernable noise increases over 3 dB would occur in two building clusters: the second floor of Location A1 and both the first and second floors of Location A7.

The street addresses for these impacted buildings are:

- Location A1 second floor: 2201, 2203, 2205, 2207, 2209, 2211, 2215, 2217, 2219, 2221, 2223, and 2225 Vista Huerta
- Location S7 first and second floors: 501, 503, 505, 507 Avenida Lucia

Therefore, impacts at these locations are considered significant for the Option A configuration.

5. Environmental Analysis
NOISE

Option A Summary

Summary for the L_{eq} Metric

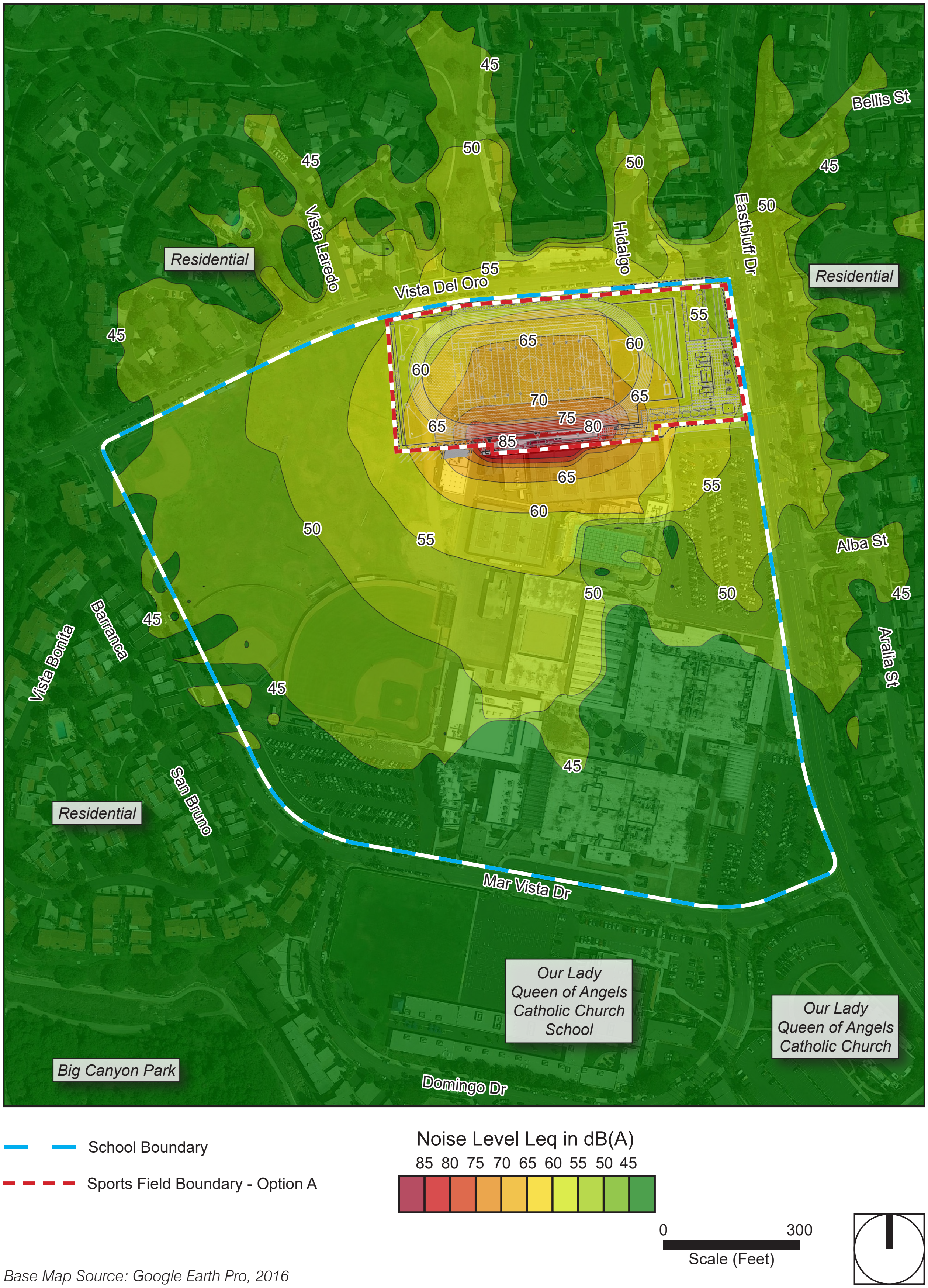
In general, the residential buildings to the north (across Vista Del Oro) that have a direct line of sight to the proposed field are expected to experience increased project-related noise impacts. During a full-capacity event at these locations, the total project-related noise environment would result in levels of up to approximately 58 dBA L_{eq} for locations that experienced primarily the event noise contribution (as demonstrated by Modeling Receiver Location A). Other locations that were primarily experiencing traffic flow noise with secondary contributions from event could experience aggregate noise conditions up to approximately 60 dBA L_{eq}. It should be noted that all these results depend on distance, orientation to the source, and shielding from other buildings. Increases in the L_{eq} noise metric at these affected receptors (residences just north of Vista Del Oro) could be as high as 5.3 dB (above the existing evening ambient level). Since several residential buildings would experience noise levels above the municipal code limits and would experience increases greater than 3 dB during full-capacity events, these nearby residential receptors would experience significant noise impacts. Future community sound levels during sports field events would be less than significant for homes to the north beyond the first row of buildings that do not have a direct line of sight and have some amount of intervening barrier benefit. The estimated future noise levels during a sports field event would be similar to the existing community noise level in these locations. Although event noise may be readily audible at many of the receptor areas, the increase level would not be greater than 3 dB. Therefore, these receptors would not experience a substantial noise increase, and noise impacts would be considered less than significant. Moreover, use of the sports field is not allowed past 10:00 PM.

The residential receptors to the west (across Mar Vista Drive) have a direct line of sight to the proposed field, but these residences are not expected to experience total project-related noise levels in excess of the municipal code standards (due to the distances and orientation to the project-related noise sources).

Further, the residential receptors to the east (across Eastbluff Drive) are expected to experience project-related noise contributions of around 53 dBA during a full-capacity event. Note, though, that the noise environment around these receptors closest to the sports fields is already in excess of 59 dBA due to traffic flow noise (alone) on Eastbluff Drive. Additionally, there is a pronounced elevation increase east of Eastbluff Drive, which would provide substantial attenuation, absorbing and/or reflecting sound away from the residential community to the east. The homes with a direct line of sight to the sports field would, at times, experience high levels of sports field noise, and homes beyond the first row of buildings would experience increasingly less noise with increasing distance from the sports field. Given that the noise environment around these eastern receptors closest to the project site is already in excess of 59 dBA due to traffic flow noise, project-related noise contribution at the residences to the east would be less than significant because the calculated change due to the project would be 1 dB (which is under the 3 dB threshold).

Most receptor buildings to the south and southwest would experience substantially less noise than buildings to the north. Not only would sound traveling in this direction be attenuated by large distances, but the tall and wide campus buildings would act as barriers, relative to receptors south and southwest of the campus.

Figure 5.6-3 - Predictive Noise Modeling Level Contour Map (Option A)



Base Map Source: Google Earth Pro, 2016

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Figure 5.6-4 - Building Facade Analysis Location Map

5. Environmental Analysis

Base Map Source: Google Earth Pro, 2017

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For the vast majority of areas around the project site, the community noise environment is currently—and would remain—principally dominated by traffic-related noise. For example, the existing ambient at Modeling Receiver Location D is approximately 59 dBA L_{eq}, 4 dB over the standard (without the sports field). The sports field's predicted contribution is 40.9 dBA L_{eq} (14 dB below the standard), but the combined future conditions would still be 4 dB over the standard (at 59 dBA L_{eq}), with no incremental addition due to sports field sources. The noise model analysis represents worst-case conditions during a maximum-capacity event, and the sensitive receptors would be exposed to lower levels of noise during a regular event or practices with much less spectators. Nonetheless, full-capacity sports field events would cause significant noise increases at several residential buildings to the north with direct line of sight to the sports field.

Summary for the L_{max} Metric

In addition to the L_{eq} metric, the L_{max} noise level is important for variable sound sources, such as a worst-case full-capacity spectator game. Based on measurement data from several reference full-capacity football events, the maximum noise levels are generally 12 to 13 dB higher than the L_{eq}. It should be noted that the worst-case spectator event at CdM campus would be a lacrosse game, since no varsity football game would be played at the CdM campus. Therefore, the actual increase for the proposed project under both options would be less than the assumed full-capacity football event.

The maximum noise threshold in the Newport Beach Municipal Code is 20 dB higher than the L_{eq} threshold, which is 55 dBA during the daytime. Thus, the L_{max} threshold is 75 dBA prior to 10:00 PM. Receivers closest to the proposed field location (i.e., Modeling Receiver Location A) may experience maximum noise levels of up to 71 dBA for short periods. Therefore, the maximum noise thresholds would not be exceeded, and impacts with respect to the L_{max} noise metric would not be significant.

Option B

Under this option, the noise model includes a sporting event with 664 spectators in Field 1 and 200 spectators in Field 2 occurring concurrently. Table 5.6-17 provides the predicted L_{eq} noise levels produced under this scenario, which includes an event-long, averaged combination of spectator noise (with contributions for screaming), athletic activities (e.g. referee whistles, player noise), and a portable speaker system. Recall that Option B eliminates the PA system, press box, and ticket booth/concession/restroom building; all near Field 1. Option B modeling also included the swimming pool event noise.

5. Environmental Analysis
NOISE

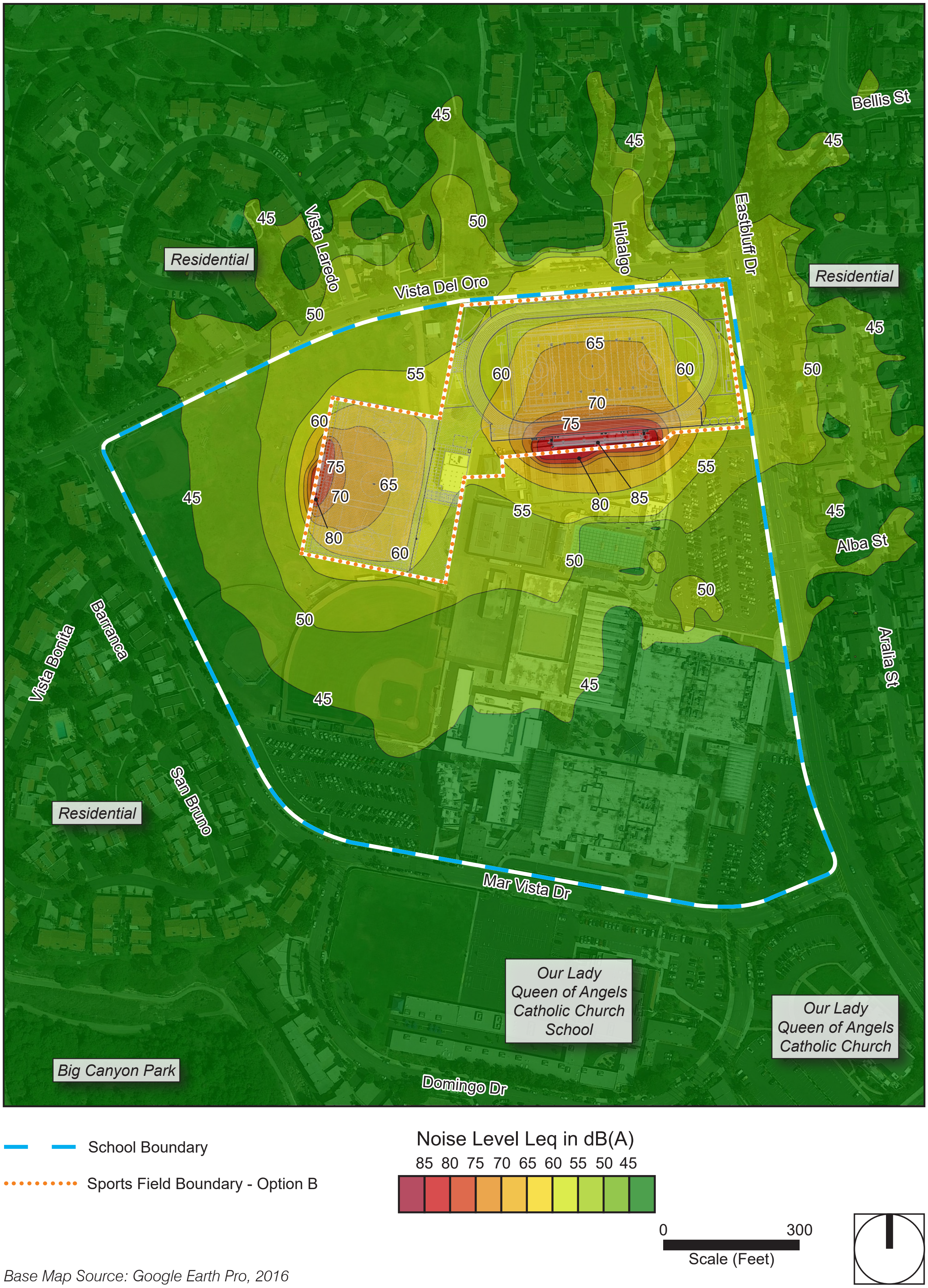
Table 5.6-17 Full-Capacity Event Predicted Community Noise Levels (Option B)

Modeling Receiver Location	Predicted Sound Level Contributions	Quietest Ambient Sound Level between 3 PM- 10 PM		Project-related Sound Level + Ambient Sound Level[1]	Applicable Noise Limit3	Calculated Change due to Project
	dBA L_{eq}	dBA $L_{eq\text{-}1\ hr}$	Location[2]	dBA L_{eq}	dBA $L_{eq\text{-}15\ min}$	dB
A	**55.3**	53	N-6	**57.3**	55	**4.3**
B	44.2	53	N-6	53.5	55	0.5
C	53.2	59	N-7	**60.0**	59	1.0
D	40.9	59	N-7	59.1	59	0.1
E	43.2	59	N-7	59.1	59	0.1
F	43.8	59	N-7	59.1	59	0.1
G	28.4	47	N-8	47.1	55	0.1
H	41.0	47	N-8	48.0	55	1.0
I	38.2	59	N-7	59.0	59	0.0
J	35.5	52	N-9	52.1	55	0.1
K	38.3	52	N-9	52.2	55	0.2
L	43.5	52	N-9	52.6	55	0.6
M	28.3	52	N-9	52.0	55	0.0
N	48.4	52	N-5	53.6	55	1.6
O	43.4	52	N-5	52.6	55	0.6
P	32.6	52	N-5	52.0	55	0.0
Q	33.7	52	N-5	52.1	55	0.1
R	35.4	52	N-5	52.1	55	0.1
S	49.9	53	N-6	54.7	55	1.7
T	41.3	53	N-3	53.3	55	0.3
U	36.2	53	N-3	53.1	55	0.1

Source: SoundPLAN 7.1
Notes: Municipal Code Exterior Noise Limits: 55 dBA $L_{eq\text{-}15min}$ at residential receptors (until 10 PM).
Numbers in **bold** and shaded indicate sound levels that exceed the Newport Beach Municipal Code limits for the Leq noise level metric (also refer to the main text for additional context), or that are greater than +3 over the existing ambient (which are considered to be readily discernible changes).
1 This is the predicted sound level contribution from the sports field added to the measured ambient sound levels in logarithmic function.
2 Represents the Nearest Long-term Measurement Location
3 The municipal code limit all modeling locations is 55 dBA; at locations where the ambient exceeds 55 dBA, the ambient level becomes the applicable limit

Table 5.6-17 shows that the existing noise environment plus project-related noise would result in exceedances of the municipal code at two Modeling Receiver Location (i.e., A and C). However, only one of these locations would also experience a noise increase of 3 dB (i.e., A). The noise level modeling results for the sports field contribution only (i.e., the second column under “Predicted Sound Level Contributions” in Table 5.6-17) are shown graphically in Figure 5.6-5 for the nominal configuration of Option B. This noise contour map depicts lines of constant L_{eq} sound level (in 5 dB divisions) for a full-capacity event with a total of 864 spectators (i.e., 664 in the bleachers and 200 around the secondary field).

Figure 5.6-5 - Predictive Noise Modeling Level Contour Map (Option B)



Base Map Source: Google Earth Pro, 2016

5. Environmental Analysis
NOISE

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As with the Option A assessment and based on the predicted community noise levels in Table 5.6-17, additional modeling was performed to evaluate noise exposure at specific residential building facades near the impacted Modeling Receiver Locations A and S. The same focused receptors locations as used in the Option A specific evaluation (and as shown in Figure 5.6-4 above) were used for the Option B specific evaluation. The results for Option B are shown in Table 5.6-18.

Table 5.6-18 Option B Noise Modeling Results, Building Façade Analysis

Model Receiver Location	Option B (dBA L_{eq})	Option B + Ambient (dBA L_{eq})	Lowest $L_{eq\text{-}1hr}$ (3 PM – 10 PM)	Option B Related Increase (dB)
Location A1 – 1st Floor	40.3	53.2	53	0.2
Location A1 – 2nd Floor	51.6	**55.4**	53	2.4
Location A2 – 1st Floor	41.9	53.3	53	0.3
Location A2 – 2nd Floor	49.8	54.7	53	1.7
Location A3 – 1st Floor	45.5	53.7	53	0.7
Location A3 – 2nd Floor	46.6	53.9	53	0.9
Location A4 – 1st Floor	42.8	53.4	53	0.4
Location A4 – 2nd Floor	45.6	53.7	53	0.7
Location A5 – 1st Floor	45.2	53.7	53	0.7
Location A5 – 2nd Floor	42.2	53.3	53	0.3
Location S6 – 1st Floor	47.9	54.2	53	1.2
Location S6 – 2nd Floor	48.1	54.2	53	1.2
Location S7 – 1st Floor	51.7	**55.4**	53	2.4
Location S7 – 2nd Floor	51.9	**55.5**	53	2.5

Note: Numbers in bold and shaded indicate sound levels that exceed municipal code standards or greater than +3 over the existing ambient, which are considered to be readily discernible changes.

As shown in Table 5.6-18, building façade analysis for the residential buildings in Model Receiver Locations A and S indicated that there would be no noise increase over 3 dB in any of the buildings under Option B. Therefore, impacts at these locations are considered less than significant for the Option B configuration.

Option B Summary

Summary for the L_{eq} Metric

In general, the residential buildings to the north (across Vista Del Oro) that have a direct line of sight to the proposed fields are expected to experience increased project-related noise impacts. During a full-capacity event at these close-proximity locations, the project-related noise contribution would result in levels of up to 55.3 dBA L_{eq} (i.e., Model Receiving Location A) and the total, future environment (project plus ambient) is predicted to be up to 57.3 dBA L_{eq}. Homes beyond the first row of buildings would experience substantially lower noise levels due to barrier effects. As with the analyses for Option A, these results are dependent on distance, orientation to the source, and shielding from existing buildings. Increases in the L_{eq} noise metric at these affected receptors (residences just north of Vista Del Oro) could be as high as 4.3 dB (above the existing evening ambient level) for the generalized receptor locations used in the basic modeling effort. However, further building façade analysis at specific, real-world receptor locations (rather than generalized parcel locations) determined that increases at the building locations would not be over 3 dB, and therefore would not be considered a substantially discernable noise increase. Therefore, impacts would be considered less than significant.

The residential receptors to the west (across Mar Vista Drive) have a direct line of sight to the proposed fields, but these residences are not expected to experience total project-related noise levels in excess of the municipal code standards (due to the distances and orientation to the project-related noise sources). Modeling Receiver Location L represent the general location of these receptors; during a full-capacity event, the total project-related noise environment would result in 43.5 dBA L_{eq}, not exceeding the exterior threshold level of 55 dBA L_{eq}, and the increases in the L_{eq} noise metric at these affected receptors is 0.6 dB above the existing evening ambient level, resulting in negligible impact.

As with Option A, the residential receptors to the east (across Eastbluff Drive) are expected to experience project-related noise levels of around 53 dBA during a full-capacity event, and the calculated change due to the project would be 1 dB. Therefore, as with Option A, impacts to receptors to the east would not be considered significant under Option B. This is true even though the main athletic field has shifted slightly to the east—as compared to the Option A configuration—and, as a result, is closer to the Eastbluff Drive neighborhood receptors (than with Option A). While physically closer, the change from a permanent, pole-mounted PA system (in Option A) to 'roving', mobile speakers (in Option B) offset the reduced distance attenuation aspect and yielded compliant results across Eastbluff Drive.

The projected community sound levels during sports field events would be less than significant for homes in areas other than Location A that have some distance and some degree of intervening barrier benefit. The estimated future noise levels during a sports field event at these locations are approximately equal to the existing community noise levels in these locations. Therefore, these receptors would not experience a substantial noise increase (i.e., greater than 3 dB), and impacts would not be considered significant. Moreover, games would not be allowed to go past 9:00 PM under Option B.

As with Option A, most receptor buildings to the south and southwest would experience substantially less noise than buildings to the north (under Option B). Not only would sound traveling in this direction be attenuated by large distances, but the tall and wide campus buildings would act as barriers. And for the vast majority of areas around the project site, the community noise environment is currently—and would remain—principally dominated by traffic-related noise. For example, the existing ambient at Modeling Receiver Location D is approximately 59 dBA L_{eq}, 4 dB over the standard (without the sports fields). The sports fields' predicted contribution is 40.9 dBA L_{eq} (14 dB below the standard, same as under Option A), but the combined future conditions would still be 4 dB over the standard (at 59 dBA L_{eq}), with no incremental addition due to sports field sources.

Summary for the L_{max} Metric

Same as under the proposed project Option A. That is, the maximum noise thresholds would not be exceeded under Option B, and impacts with respect to the L_{max} noise metric would not be significant.

Receiver Locations Based on Orientation to Direct Sound Path

Direct Line of Sight to Sports Field (Modeling Receiver Locations A, C, S). These locations would experience the highest noise levels during sports field events because the sound path between the source and receiver is generally unimpeded. All noise affecting these receivers is expected to diminish by at least 6 dB per doubling of distance due to distance attenuation alone.

Partial Line of Sight, or slight obstructions to sound path (B, E, K, L, P, S, T). Sports field noise would be audible from these locations. The expected sound level at these receiver locations would vary depending on distance from the source and the degree of obstructions. These locations are shielded by one or two rows of houses and/or nearby open spaces such as roads or drainage areas that sound would easily travel through.

Completely Obstructed Line of Sight to the Sports Field (D, G, H, I, Q, R, U). At times, sports field noise may be audible at these locations, depending on the receiver's distance to the source and the degree of obstruction. Due to the long distance and the many rows of buildings between the source and the receiver, these locations are expected to intermittently hear sports field noise only during high-attendance events and/or pronounced spikes in sound emissions (e.g., cheering over a big play).

For the elementary school use to the northwest and the Catholic school use to the southeast—locations U and I, respectively—project events would occur outside of normal school hours. Therefore, sensitive receptors at surrounding schools would not experience significant sports field noise impacts.

Sports Field Event Noise, Interior

The city's standard for interior noise is 45 dBA L_{eq} up to 10:00 PM and 40 L_{eq} from 10:00 PM to 7:00 AM. The highest future project-related noise levels would be around Modeling Receiver Locations A and S—with predicted exterior noise levels of 57 dBA L_{eq} (per Table 5.6-16 for the worst-case Option A configuration). Factoring in the typical minimum noise reduction of 24 to 25 dBA with windows closed, interior noise levels at these residences are predicted to be approximately 32 to 33 dBA L_{eq} (EPA 1971, 1974, 1978). Thus, with closed windows, even the closest residential receptors would have interior noise environments well below the applicable standards.

With the typical minimum noise reduction of 12 to 14 dBA with windows open, interior noise levels at the closest residences to the north would be approximately 43 to 45 dBA L_{eq}. The predicted interior sound environment in the closest houses may exceed the 45 L_{eq} interior threshold, depending on the orientation of the windows with respect to the proposed field location. This may potentially result in a significant impact, but only under a window-open arrangement.

More-distant homes would have lower exterior sound levels during sports field events because of distance and/or barrier attenuation, and their associated interior sound levels would be substantially less than at the closest receptors to the north. These more distant receptors are not expected to exceed the interior noise standard; regardless of windows-open or windows-closed arrangements.

Sports Field Event Noise, Summary

As discussed above, event noise is highly variable, depending on the type and level of activities; both in the bleachers and on the field. These variables include the operations of the PA systems (i.e., how high the amplifier is turned to), the 'style' and exuberance of the announcer, crowd cheers, clapping, foot-stomping, referee whistles and, occasionally, horns and bells. This variability is compounded by the choices made in the modeling process, including selections for loudspeaker output ratings, directivity patterns, and mounting heights, as well as ground effect characteristics, the specification of intervening buildings, and the representation of area-average crowd/athlete sound sources. Lastly, the choices of representative values for ambient community noise conditions will also influence the evaluation of whether or not the proposed project crosses the +3 dB threshold (for a project-driven noise increment). Slight changes in one or more of these complex and inter-related factors can notably affect the modeling/calculation outcomes. For example, the more-refined modeling for real-world receptor locations at actual building facades (as given in Tables 5.6-16 and 5.6-18 above, for Options A and B, respectively), resulted in different conclusions regarding the nature and extent of significant noise increases due to future project field usage. Thus, it is important to bear in mind that the noise situation for the proposed project's events is generally at the tipping points to the established impact thresholds such that a slight change in one or more parameters could make the conclusion(s) tip to either the less-than-significant determination or the significant determination.

The above discussion notwithstanding, the analyses of Impact 5.6-2 indicate that there will be a:

- **significant** impact for *exterior* noise at the closest residential receptors for Option A;
- **potentially significant** impact for *interior* noise at the closest residential receptors for Option A;
- **less-than-significant** impact for *exterior* noise at the closest residential receptors for Option B;
- **less-than-significant** impact for *interior* noise at the closest residential receptors for Option B; and
- **less-than-significant** impact for *exterior* L_{max} noise for both Options A and B.

Thus, Option A would need mitigation measures to reduce event noise impacts to less than significant levels.

Impact 5.6-3: The proposed project (Options A and B) would not create short-term or long-term groundborne vibration and groundborne noise. [Threshold N-2]

Impact Analysis: Groundborne vibration and groundborne noise may be of concern during ongoing operations or during the construction phase, which are discussed separately below.

Vibration during Operations

Operation of the project, including full-capacity events at the sports field, would not generate substantial levels of vibration because there are no notable sources of vibrational energy associated with the project. Thus, operations of the proposed project would not result in significant groundborne vibration impacts.

Vibration during Construction

Construction activities generate varying degrees of ground vibration, depending on the construction procedures, construction equipment used, and proximity to vibration-sensitive uses. Construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance. Table 5.6-19, *Typical Vibration Levels Produced by Common Construction Equipment Items,* shows the peak particle velocities of some common construction equipment and haul trucks (loaded trucks).

Table 5.6-19 Typical Vibration Levels Produced by Common Construction Equipment Items

Equipment	Peak Particle Velocity in inches per second at 25 ft.	at 50 ft.	at 100 ft.
Clam Shovel Drop (slurry wall)	**0.202**	0.071	0.025
Vibratory Roller	**0.210**	0.074	0.026
Hoe Ram	**0.089**	0.031	0.011
Large Bulldozer	**0.089**	0.031	0.011
Caisson Drilling	**0.089**	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Jackhammer	0.035	0.012	0.004
Small Bulldozer	0.003	0.001	0.0004

Source: FTA 2006.
Note: **Bold** values are considered readily perceptible, per Table 5.6-3 (i.e., greater than 0.08 PPV).

The project site is generally level, so little heavy earthwork would be required. Demolition of the existing tennis courts, portions of the existing parking lot area, and reconfiguration of the existing athletic fields would be required. Typically, these activities are performed with jackhammers, dozers, and backhoes or excavators with hydraulic attachments such as grapples, hammers, and shears. Following demolition, construction equipment would be limited to typical items such as forklifts, delivery/dump trucks, loaders/backhoes, a rubber-tired dozer, pavers, a grader, a concrete saw, and a crane. These types of equipment do not generate substantial levels of vibration at 25 feet. Minor grading and excavation would be necessary to install utilities and structural components for the sports field seating and lighting.

Options A and B

Vibration-Induced Structural/Architectural Damage

The threshold at which there is a risk of architectural damage to normal houses with plastered walls and ceilings is 0.2 in/sec (Caltrans 2004; FTA 2006). Building damage is not a factor for normal construction, with the occasional exception of blasting and pile driving (FTA 2006). No blasting, pile driving, or hard rock ripping/crushing activities are anticipated during project construction. Small construction equipment generates vibration levels less than 0.1 PPV in/sec at 25 feet away. Since vibration-induced architectural damage could result from an instantaneous vibration event, distances are measured from the receptor façade to the nearest location of potential construction activities.

Off-Campus Impacts

The nearest off-site sensitive receptors to construction activities are the residences to the north beyond Vista Del Oro (at least 125 feet from the northern boundary of Field 1 under both options). Because vibration dissipates quickly with distance, and because construction would use small earthmoving equipment that does not generate considerable vibration, the maximum construction-related vibration level at off-campus receptors would be 0.008 PPV in/sec, which is below the 0.2 PPV in/sec criteria for vibration-induced architectural damage. Therefore, architectural-damage vibration impacts from construction would be less than significant for off-campus receptors.

5. Environmental Analysis
NOISE

On-Campus Impacts

Field 2 in Option B is the nearest construction location in terms of on-campus receptors, and will be used as a worst-case situation (for the on-campus analysis). The nearest on-campus buildings are the P.E. and weight-room buildings, approximately 25 feet east of the Field 2 in Option B. Buildings with regular classroom activities are approximately 175 feet east of Field 2 in Option B.[16] The maximum construction-related vibration level at on-campus receptors would be 0.1 PPV in/sec, which is also below the 0.2 PPV in/sec criteria for vibration-induced architectural damage. Therefore, architectural-damage vibration impacts from construction would be less than significant for on-campus receptors.

Vibration Annoyance

The 2006 General Plan EIR used a threshold of 72 VdB for vibration annoyance levels at residential uses, which will also be used in this EIR. The FTA's criteria (see Table 5.6-4) are frequently used as significance thresholds for vibration-related annoyance that is due to resonances of the structural components of a building.

Vibration is typically noticed nearby when objects in a building generate noise, such as rattling windows or picture frames. It is typically not perceptible outdoors, and therefore impacts are based on the distance to the nearest building (FTA 2006). The effects of vibration vary depending on soil type, ground strata, and receptor building construction. They range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibrations at moderate levels, to slight damage at the highest levels. Since construction activities move around the project site, noise levels from project-related construction activities were calculated from the simultaneous use of all applicable construction equipment at spatially averaged distances (i.e., from the center of the nearest construction area) to the property line of the closest receptors.

Off-Campus Impacts

The nearest off-site residential structure would be at least 275 feet away from the center of Field 1 in both options (spatially-averaged distance). At this distance, a large bulldozer would be expected to generate 56 VdB (or 0.002 PPV in/sec). Even with large construction equipment, construction-generated vibration at the nearest residence would be less than the annoyance threshold. Because the proposed project would primarily use smaller (and less vibration intensive) equipment, because construction equipment moves around the site, and because vibration dissipates quickly with distance, the maximum construction-related vibration levels would be much less than 56 VdB (or 0.002 PPV in/sec) for the majority of the time. This is well below the criteria for vibration-induced annoyance at the nearby homes.

The church and school buildings and other homes (including those on Eastbluff Drive and Mar Vista Drive), all of which are more distant from the construction zones than the homes on Vista Del Oro, would experience undetectable or unmeasurable vibration levels. Therefore, construction vibration impacts related to annoyance would be less than significant at all nearby vibration-sensitive land uses.

[16] Vibration-induced architectural damage analysis typically uses worst-case distances (instead of spatially averaged distances). In this case, 25 feet and 175 feet were used as worst-case distances for on-campus buildings.

On-Campus Impacts

The nearest on-site structure (athletic/P.E. building) is approximately 150 feet from the center of Field 2 in Option B (worst-case location). At this distance, large bulldozers or similar equipment items would generate 64 VdB (or 0.006 PPV in/sec), which is well below the criteria for vibration-induced annoyance at on-campus buildings. In fact, for the majority of the time, the maximum construction-related vibration levels would be much less than this because smaller (and less vibration intensive) equipment would be used on the proposed project. Other campus buildings (including those with regular classroom activities) would experience unmeasurable vibration levels. Therefore, construction vibration impacts related to annoyance would be less than significant at all on-campus vibration-sensitive land uses.

Vibration Impact Summary

Neither construction nor operations activities would create substantial groundborne vibration or groundborne noise at off-campus or on-campus receptors. This impact would be less than significant.

Impact 5.6-4: The proposed project (Options A and B) construction activities would not result in temporary noise increases in the vicinity of the project site. [Threshold N-4]

Impact Analysis:

Options A and B

Construction of the proposed project under both options would generate temporary noise and existing land uses surrounding the project site would be exposed to construction noise. In typical construction projects, demolition and grading activities usually generate the highest noise levels since they involve the largest equipment. The project site is generally level, so little heavy earthwork would be required. Further, the project does not require significant cut or fill, so grading would be balanced on site and no import or export of soils is anticipated. Under Option A, new and reconstructed areas include the sports field footprint, landscaping and planters, bleachers, ticket booth/concession building, PA system, and the lighting fixtures. Under Option B, construction areas include two sports field footprints, landscaping and planters, bleachers, and light poles.

In general, construction equipment for the sports field and related athletic facilities would be limited to relatively small- to medium-sized construction equipment such as loaders/backhoes, paving equipment, scrapers, excavators, rubber-tired dozers, graders, concrete saws, forklifts, welders, rollers, pavers, concrete trucks, and air compressors. A crane would be needed to install the new poles for lighting and the PA speakers (for Option A only). Project construction would require demolition of existing field structures such as goalposts, score board, and storage structures; site preparation and utility trenching; installation of bleachers and lighting; and construction of the (Option A only) ticketing/restroom/concession building. No ticketing/restroom/concession building and PA system would be constructed for the main sports field under Option B, and the second sports field would be constructed once the main field is completed. The total duration for project construction would be approximately nine months, and it is intended to be operational by the end of 2019.

5. Environmental Analysis
NOISE

The City of Newport Beach recognizes that the control of construction noise is difficult and provides an exemption for this type of noise when the work is performed between 7:00 AM and 6:30 PM, Monday through Friday, 8:00 AM and 6:00 PM on Saturday, and not at all on Sundays or federal holidays. Two types of short-term noise impacts could occur during construction: (1) mobile-source noise from transport of workers, material deliveries, and debris and soil haul and (2) stationary-source noise from use of construction equipment.

Construction Vehicles

The transport of workers and equipment to the construction site would incrementally increase noise levels along site access roadways. Typically for this type of project, the demolition haul phase would generate the highest traffic increases due to construction vehicles. However, any vehicle trips due to construction activities (for the aggregate of workers, vendors, haul-offs, etc.) would be marginal compared to vehicle flows along Eastbluff Drive, which has average daily traffic of approximately 8,000 (IBI 2017). Construction vehicles would produce less than a 0.5 dB noise increase, which would be inaudible at sensitive receptors[17] and therefore would have a less than significant impact.

Individual construction vehicle pass-bys may create momentary noise levels of up to approximately 85 dBA (L_{max}) at 50 feet from the vehicle, but these occurrences would generally be infrequent and short lived. Therefore, noise impacts from construction vehicles would be less than significant.

Construction Equipment

Noise generated by onsite construction equipment is based on the type of equipment used, its location relative to sensitive receptors, and the timing and duration of noise-generating activities. Each stage of construction involves different kinds of equipment and has distinct noise characteristics. Noise levels from construction activities are typically dominated by the loudest piece of equipment, and the dominant noise source is the engine, although work-piece noise (such as dropping of materials) can also be noticeable.

The noise produced at each construction stage is determined by combining the L_{eq} contributions from each piece of equipment used at a given time. In the construction of residential and mixed-use projects, grading and construction typically generate the highest noise levels because they require the largest equipment. Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels in excess of 80 to 85 dBA at 50 feet. Noise attenuation due to distance, the number and type of equipment, and the load and power requirements to accomplish tasks at each construction phase would result in different noise levels from construction activities at a given sensitive receptor. Since noise from construction equipment is intermittent and diminishes at a rate of 6 dB per doubling distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and/or shielding/scattering effects[18]), the average noise levels at noise-sensitive receptors could varying considerably, because mobile construction equipment would move around the site with different loads and power requirements.

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[17] Audible increases in general community noise levels generally refer to a change of 3 dB or more; this level has been found to be the threshold of perceptibility in exterior environments.

[18] As sound energy travels outward from the source, spreading loss accounts for a 6 dB decrease in noise level. Soft ground and atmospheric absorption effects can decrease this by an additional 1.5 dB (for a total of 7.5 dB decrease per distance-doubling).

Using information provided by the District and methodologies and inputs employed in the air quality assessment, the expected construction equipment mix was estimated and categorized by construction activity. The following analysis uses the equipment mix for Option A, as worst-case scenario. The Field 1 footprint construction under Option A is larger than under Option B; Option A also requires construction of a ticketing/restroom/concession building. Field 2 construction would occur after Field 1 is completed, and the scale would be smaller than the Field 1 construction. Construction activities are projected to last approximately nine months. The noisiest portions, however (i.e., demolition, site preparation, and grading phases), are expected to take a total of four months and are planned to commence in summer of 2018.

Project construction would involve demolition of small surrounding structures and asphalt; site preparation and grading of existing land; and construction of athletic field(s), bleachers, ticket booth/concession building, PA system, and nighttime lighting. Noise levels from project-related construction activities were calculated from the simultaneous use of all applicable construction equipment at spatially averaged distances (i.e., from the center of the nearest potential field option) to the property line of the closest receptors. Although construction may occur across the entire site, the area around the center of the project site best represents the potential average construction-related noise levels at the various sensitive receptors during the proposed construction activities of this project. The associated, aggregate sound levels—grouped by construction activity—are summarized in Table 5.6-20 (for both offsite and on-campus receptors).

Table 5.6-20 Project-Related Construction Noise Levels, Energy-Average (L_{eq}) Sound Levels, dBA

Construction Activity Phase	Dates	Sound Level at Various Distances from Construction Activities, dBA L_{eq}				
		The Plaza Community (275 ft.)	Residential Area to East (430 ft.)	Church and School (1,325 ft.)	On-Site Classroom Building (345 ft.)	On-Site Non-classroom Building (150 ft.)
Asphalt Demolition	7/1/18-7/12/18	70	66	56	68	75
Structures Demolition	7/12/18-7/18/18	72	68	58	69	77
Site Preparation	7/20/18-8/18/18	68	64	54	66	73
Rough Grading	8/17/18-9/10/18	68	64	54	66	73
Utility Trenching	9/10/18-10/4/18	62	58	48	60	67
Fine Grading	10/4/18-10/25/18	68	64	54	66	73
Stadium Construction	10/26/18-3/28/19	64	60	50	62	69
Asphalt Paving	12/16/18-1/3/19	69	65	55	67	74
Finishing/Landscaping	1/3/19-1/25/19	60	56	47	57	64
Field Lighting Install	1/17/19-2/1/19	59	55	45	58	66
Architectural Coating	2/13/19-2/28/19	59	55	45	57	64

Notes: Calculations performed with the FHWA's RCNM software and included in the Appendix G.

5. Environmental Analysis
NOISE

Off-Campus Construction Noise Levels

The sensitive receptors surrounding the CdM campus consist of residential and educational/religious uses. For all off-site receptors and for both Options, the nearest construction location would be the activities at Field 1. The Plaza residential community's structures are as close as 100 feet to the north of Field 1 in both options. The Eastbluff residential community is approximately 430 feet to the east, and a Catholic church and school are approximately 1,300 to 1,600 feet to the south of the nearest sports field location.

For all off-site receptors, the nearest construction location would be Field 1 area in both options. Construction activities would increase noise levels at and near the proposed area of improvements. Due to the proximity, the highest expected construction-related noise levels—up to approximately 72 dBA L_{eq}—would be at the nearest residential receptors at the Plaza community to the north. The nearest measurement location, N-6, recorded daytime noise levels in the range of 57 to 64 dBA L_{eq} at this location. Thus, short-term and intermittent noise levels could increase by 8 to 15 dB (in the A-weighted L_{eq} metric) on the north side of Vista Del Oro, depending on equipment location, power level, and activity duration. Nonetheless, since all construction would occur during the City of Newport Beach's allowable hours of construction, since construction duration would be temporary, and since noise levels above typical ambient conditions would be sporadic and intermittent, impacts at off-campus receivers would be less than significant and no mitigation measures are necessary.

On-Campus Construction Noise Levels

For on-site receptors, the nearest construction location would be Field 2 under Option B. The nearest on-site classroom building is approximately 345 feet east of Field 2 in Option B, and the nearest on-site non-classroom building is approximately 150 feet east of Field 2 in Option B. Since construction activities may take place while school is in session, student learning activities at nearby buildings may be affected by construction noise. Some classroom buildings on campus are approximately 345 feet from Field 2 in Option B, and other existing non-classroom buildings are as close as 150 feet from the nearest field location. Due to the proximity of the nearest school buildings, construction noise levels could be in the range of 57 to 69 dBA L_{eq} at the exterior façade of classroom buildings and in the range of 64 to 77 dBA L_{eq} at the exterior facade of non-classroom buildings. With an assumed exterior-to-interior sound reduction factor for typical school buildings of 24 dB (EPA 1978), these exterior levels would result in interior sound environments of 45 dBA L_{eq} in classrooms and 53 dBA L_{eq} in non-classroom building spaces.[19] For the former, the result would comply with the California requirement of no more than 45 dBA for classroom buildings. For the latter, the estimated interior noise levels at the nearest non-classroom building would be over 45 dBA L_{eq}, but since this building is not considered a sensitive receptor, there would be no noise intrusion. Thus, no significant on-campus noise impacts would occur, and no noise reduction measures are necessary.

[19] That is, 68 minus 24 would be 44 dBA L_{eq} for the classroom building and 74 minus 24 would be 50 dBA L_{eq} for the non-classroom building.

5.6.4 Cumulative Impacts

Options A and B

Mobile-Source Noise

The cumulative traffic noise levels would not increase by a noticeable amount (+3 dB) along the roadways analyzed. Therefore, significant cumulative increases in traffic noise levels would not occur, and impacts would be less than cumulatively considerable.

Stationary-Source Noise

Unlike transportation noise sources, whose effects can extend well beyond the limits of the project site, stationary-source noise generated by the project is limited to noise impacts to noise-sensitive receptors near the project site. Cumulative noise levels from stationary sources would be negligible at the nearest residences. Consequently, stationary noise associated with the daytime use of the school would not be cumulatively considerable and would not result in a significant cumulative noise impact.

Evening stadium noise would be a significant project impact; for only Option A and at only the nearest residential receptor locations to the north of the CdM campus. Therefore, when considered with other evening noise, this project would have a considerable addition to noise. In consideration of the preceding factors, the project's contribution to cumulative noise impacts would be significant, and therefore, project impacts would be cumulatively considerable.

Construction Noise

Like stationary-source noise, construction noise and vibration impacts are confined to a localized area. Cumulative impacts would only occur if other projects were being constructed in the vicinity of the project at the same time as the project. Noise from construction activities would be temporary and would not be significant. The project impacts would not be individually or cumulatively considerable.

5.6.5 Regulatory Requirements

There are no applicable regulatory requirements.

5.6.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions, the following impacts would be less than significant:

- **Impact 5.6-1:** The proposed project (Options A and B) would not result in long-term, operation-related, roadway noise impacts
- **Impact 5.6-2:** Option B: Sports field events would not result in significant temporary and periodic increases in ambient noise levels

- **Impact 5.6-3:** The proposed project (Options A and B) would not create short-term or long-term groundborne vibration and groundborne noise.

- **Impact 5.6-4:** The proposed project (Options A and B) construction activities would not result in temporary noise increases in the vicinity of the project site

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

- **Impact 5.6-2** Option A: Sports field events would result in significant temporary and periodic increases in ambient noise levels; both for exterior and interior (windows-open only) receptor environments.

5.6.7 Mitigation Measures

Option A (Only)

Impact 5.6-2: Option A: Sports field events would result in significant temporary and periodic increases in ambient noise levels; both for exterior and interior (windows-open only) receptor environments.

N-1 Prior to holding the first spectator event, the Newport-Mesa Unified School District shall develop and enforce a good-neighbor policy for sports field events. The District shall authorize a representative responsible for enforcing this policy. Signs shall be erected at entry points that state prohibited activities during an event (e.g., use of air horns, unapproved audio amplification systems, bleacher foot-stomping, boisterous activity in parking lots upon exiting the field) and present a contact name and telephone number of the District-authorized representative to contact in the event of a noise complaint. If the authorized representative receives a complaint, he/she shall investigate, take appropriate corrective action, and report the action to the District.

N-2 The Newport-Mesa Unified School District shall not include a PA System in the Option A Design. Table 5.6-21 shows a building façade analysis for the residential buildings in Model Receiver Locations A and S in terms of project Option A with mitigation (no PA System). The table shows that with implementation of this mitigation measure, there would be no discernable noise increase over 3 dB at any of the nearby buildings.

Table 5.6-21 Option A without PA System Noise Modeling Results, Localized Building Façade Analysis (Locations A and S)

Model Receiver Location	dBA L_{eq} Option A + Ambient (unmitigated)	dBA L_{eq} Option A + Ambient (mitigated)	dB Option A (mitigated) Increase over Ambient[1]	dB Option A (mitigated) decrease below Option A (unmitigated)
Location A1 – 1st Floor	53.2	53.2	0.2	1.0
Location A1 – 2nd Floor	**56.1**	54.7	1.7	3.3
Location A2 – 1st Floor	53.3	53.2	0.2	0.7
Location A2 – 2nd Floor	54.9	53.9	0.9	3.8
Location A3 – 1st Floor	53.9	53.3	0.3	4.7
Location A3 – 2nd Floor	54.3	53.3	0.3	6.1
Location A4 – 1st Floor	53.4	53.2	0.2	2.6
Location A4 – 2nd Floor	54.2	53.3	0.3	6.0
Location A5 – 1st Floor	54.3	53.8	0.8	2.6
Location A5 – 2nd Floor	53.9	53.4	0.4	3.8
Location S6 – 1st Floor	55.0	54.3	1.3	2.2
Location S6 – 2nd Floor	54.9	54.2	1.2	2.5
Location S7 – 1st Floor	**56.8**	55.5	2.5	2.6
Location S7 – 2nd Floor	**56.8**	55.5	2.5	2.6

Note: Numbers in bold and shaded indicate sound levels that exceed municipal code standards or greater than +3 over the existing ambient, which are considered to be readily discernible changes.
[1]53 dBA = lowest $L_{eq\text{-}1hr}$ (3 PM–10 PM)

5.6.8 Level of Significance After Mitigation

Impact 5.6-2, Option A

Mitigation Measures N-1 and N-2 would reduce project-related stadium noise to less than significant levels. During a full-capacity event, the total project-related noise environment would result in levels of up to 2.5 dB above ambient conditions at the nearest buildings to the north with implementation of Mitigation Measure N-2. Therefore, project Option A with mitigation would not result in a substantially discernable noise increase. More importantly, project-related operations would not be materially different than existing operations at the project site. The bleachers would not increase capacity, and the events that take place at the project site would not be different than the events that already take place at the existing site. The only notable change is that since Option A includes the installation of nighttime lighting, these noise sources that are already experienced around the project site would generally extend later into the evening hours. However, the associated noise levels would be comparable to existing, pre-dusk activities at the campus. Further, per the Newport Beach Noise Ordinance, all sports field events are required to end before 10:00 PM (as opposed to existing events ending before dusk). With implementation of Mitigation Measures N-1 and N-2, impacts would be considered less than significant.

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5. Environmental Analysis
NOISE

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5. Environmental Analysis
NOISE

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5.7 PUBLIC SERVICES

This section of the Draft Environmental Impact Report (DEIR) addresses public services, specifically fire protection and police protection. Park services are addressed in Section 5.8, *Recreation*.

5.7.1 Fire Protection

5.7.1.1 ENVIRONMENTAL SETTING

Regulatory Framework

International Fire Code

The International Fire Code includes specialized technical fire and life safety regulations that apply to the construction and maintenance of buildings and land uses. The code addresses fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire safety requirements for new and existing buildings.

California Health and Safety Code

State fire regulations in Sections 13000 et seq. of the California Health and Safety Code address building standards (also in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

City of Newport Beach Municipal Code

The Newport Beach Municipal Code identifies land use categories, development standards, and other general provisions that ensure consistency between the City's general plan and proposed development projects. The following provisions focus on fire services impacts:

- **Chapter 2.20 (Emergency Services).** Addresses preparation and implementation of plans for protection of persons and property in the event of an emergency; the assignment of powers and duties to certain city officials; and the coordination of emergency service functions of the city with all other public agencies and affected private persons, corporations, and organizations. An emergency council is established and its members' powers and duties are described. It is the duty of the emergency council to develop and recommend, for adoption by the city council, emergency and mutual aid plans and agreements as well as ordinances, resolutions, rules, and regulations to implement such plans and agreements.

- **Chapter 3.12 (Property Development Tax).** Funds public improvements and facilities consisting of fire stations and fire-fighting equipment, city libraries, and city parks that cannot be funded by the ordinary city revenues. The tax is imposed upon the construction and occupancy of residential, commercial, and industrial units or buildings in the city.

- **Chapter 9.04 (Fire Code).** Adopts the 2016 California Fire Code and the 2015 International Fire Code, which outline specific fire prevention features to be integrated into new development plans prior to issuance of construction permits.

- **Section 9.04.140 (Very High Fire Hazard Severity Zone).** Identifies areas in the city that are considered in Very High Fire Hazard Severity Zones by the California Department of Forestry and Fire Protection. Areas in the zone are required to adhere to additional fire prevention guidelines to minimize susceptibility to fire hazards.

City of Newport Beach Emergency Management Plan

The emergency management plan provides guidance for Newport Beach's response to extraordinary emergency situations from natural disasters, technological incidents, and national security emergencies. This plan determines the actions to be taken by the city to prevent disasters where possible, reduce the vulnerability of residents to any disasters, protect citizens from the effects of disasters, respond effectively to the actual occurrence of disasters, and provide for recovery in the aftermath of an emergency.

Existing Conditions

The Newport Beach Fire Department (NBFD) provides fire protection services for the entire City of Newport Beach. Automatic aid is given to and received from the cities of Costa Mesa, Huntington Beach, and Laguna Beach and the Orange County Fire Authority.

The department is divided into two divisions: Fire Operations and Marine Operations. As an "all risk" fire department, NBFD is responsible for reducing loss of life and property from fire, medical, and environmental emergencies, such as hazardous material problems, beach rescues, traffic accidents, cliff rescues, high-rise incidents, wildland fires, major flooding, disaster operations, etc.

Stations, Equipment, and Staffing

NBFD has eight fire stations throughout the city in eight districts that encompass the immediate geographical area around the station. Overall, NBFD is staffed with 148 full-time employees, including 114 firefighting personnel, 38 of whom are on duty at any time, and 12 full-time lifeguards. The nearest fire station to the project site is Station #3 at 868 Santa Barbara Drive, approximately one driving mile from the project site. Station #3 is equipped with one fire engine, one ladder truck, one paramedic van, and one command vehicle, and staffed with two captains, two engineers, three firefighters, two firefighter paramedics, and one battalion chief.

Response Times

NBFD's response time objective for a priority incident requiring full personal protective equipment is less than 5 minutes and 20 seconds, 90 percent of the time. For priority incidents not requiring full personal protective equipment, the performance objective is less than 5 minutes, 90 percent of the time. Currently, the citywide average response time for priority incidents (with full personal protective equipment or without) is 5 minutes and 44 seconds, 64 percent of the time (Newport Beach 2016).

Funding

Funding for NBFD equipment and staffing comes primarily from the city's general funds. However, a property excise tax in Chapter 3.12 of the municipal code funds public improvements that include fire stations and equipment. Additionally, the fire department generates fees for various fire and marine operations services that are budgeted each year to partially offset department expenses.

5.7.1.2 THRESHOLDS OF SIGNIFICANCE

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

FP-1 Result in a substantial adverse physical impact associated with the provisions 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 fire protection services.

5.7.1.3 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Recirculated Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.7-1: The proposed project (Options A and B) would not have adverse physical impacts on the city's fire protection services. [Threshold FP-1]

Impact Analysis:

Option A

The proposed project Option A is intended to serve the existing CdM campus operations and would not increase the bleacher capacity or student enrollment of the CdM campus. However, the proposed nighttime lighting and synthetic turf field would increase the usage of the main sports field during nighttime. These students are CdM MS/HS students who currently travel to other District facilities for games and practices; therefore, implementation of the project would not increase the city fire department's service population but reaccommodate and bring home the service population. Therefore, the proposed project Option A would not result in new overall demands for fire services, and no expanded or physically altered fire facilities would be required.

Although the proposed project Option A could increase traffic congestion around the CdM campus during spectator events at night, as discussed in Section 5.9, *Traffic and Transportation*, adequate parking is available to

5. Environmental Analysis
PUBLIC SERVICES

accommodate the expected number of spectators, and implementation of an "event traffic management plan" (included as Appendix I) would further ensure that traffic is properly managed if necessary. Additionally, the Option A project site fronts two streets to provide good emergency vehicle access.

The minimum fire access road width required by the California Fire Code is 20 feet, and the City of Newport Beach requires a minimum width of 36 feet for public fire access with parking allowed on both sides (Newport Beach 2016). Mar Vista Drive and Vista Del Oro are local streets that are approximately 40 feet wide, providing adequate width for an emergency vehicle to pass through even with street parking on both sides of the streets. The existing sports field already provides 664 bleacher seats, and implementation of the proposed project Option A would not increase the bleacher seat capacity. Therefore, no inadequate emergency access would occur. No significant traffic or parking impacts are anticipated that could cause adverse impacts to provision of adequate fire services. Therefore, the proposed project under Option A would not result in a substantial adverse physical impact associated with the need for or provision of new or physically altered fire facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services. Impacts would be less than significant.

Option B

As with Option A, the proposed project Option B would serve the existing CdM campus operations and would not increase the enrollment or capacity of the school. Although no increase in bleacher seat capacity would occur, with two synthetic turf fields with nighttime lighting, Option B would increase the usage of the both sports fields, especially during nighttime. The interior field currently provides 200 portable bleacher seats, which would remain; therefore, a combined total of 864 spectators could be accommodated by the proposed project Option B.

However, these students currently travel to other District facilities for games and practices; therefore, implementation of the project would reallocate the service population and would not result in new overall demands for fire services. Therefore, no expanded or physically altered fire facilities, the construction of which could cause significant environmental impacts, would occur.

Although Option B could increase traffic congestion around the CdM campus during evening practices and events, as discussed in Section 5.9, *Traffic and Transportation*, no significant traffic or parking impacts are anticipated, and an "event traffic management plan" (included as Appendix I) would be implemented if necessary to further ensure that traffic is properly managed at spectator events. As with Option A, the emergency vehicle access plan would be reviewed and approved by the NBFD. No increase in capacity of the bleachers would occur to permanently increase the service population within the NPFD's service area. Furthermore, no significant traffic or parking impacts are projected that could cause adverse impacts to emergency services. Therefore, the proposed project under Option B would not result in a substantial adverse physical impact associated with the need or provision of new or physically altered fire facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for fire protection services. Impacts would be less than significant.

5.7.1.4 CUMULATIVE IMPACTS

Options A and B

The geographic area for cumulative analysis of fire protection services is the NBFD service boundaries. Both options of the proposed project would serve the existing school's athletic program and would not increase the bleacher-seat and student-enrollment capacities at the CdM campus. Although increased activities around the CdM campus would occur during evening, school population is already a part of the NBFD service population, and increased activities would not require additional staffing or new or expanded fire facilities to be constructed. The NBFD is required to review and approve the final site plan for adequate emergency access, and no adverse physical impacts are anticipated. Because the proposed project would not increase service population or contribute to the need to expand fire protection services, its cumulative impacts would also be considered less than significant.

5.7.1.5 REGULATORY REQUIREMENTS

- International Fire Code
- California Health and Safety Code
- City of Newport Beach Municipal Code
- Chapter 2.20 (Emergency Services)
- Chapter 9.04 (Fire Code)

5.7.1.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

Upon implementation of regulatory requirements the following impact would be less than significant:

- **Impact 5.7-1:** The proposed project would not have adverse physical impacts on the city's fire protection services.

5.7.1.7 MITIGATION MEASURES

No mitigation measures are required.

5.7.1.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts are less than significant without mitigation.

5.7.2 Police Protection

5.7.2.1 ENVIRONMENTAL SETTING

Existing Conditions

The Newport Beach Police Department (NBPD) provides police services, crime prevention and investigation, community awareness programs, and traffic control to the entire City of Newport Beach. All law enforcement agencies in Orange County provide mutual aid to one another. The primary agencies providing aid to the city would be the Orange County Sheriff's Department and the Costa Mesa Police Department. Police headquarters is at 870 Santa Barbara Drive, approximately one mile south of the project site.

Staffing and Equipment

The NBPD currently has 140 full-time sworn officers and 80 full-time civilian personnel. At this time, there are no specific plans for expansion of police facilities or addition of staff or equipment inventory (Newport Beach 2016).

Response Times

NBPD's goal response time for emergency calls is 4 minutes, with a current average response time of 3:42 minutes. For nonemergency calls, the goal response time is 6 minutes, with a current average response time of 5:48 minutes (Newport Beach 2016).

Funding

Funding for NBPD comes primarily from the city's general fund. In addition, NBPD generates revenue from various police services, such as penalty fees or service request fees. These sources of funding provide NBPD with adequate staffing, equipment, and facilities to give the city a high level of police services.

5.7.2.2 THRESHOLDS OF SIGNIFICANCE

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

PP-1 Result in a substantial adverse physical impact associated with the provisions 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 police protection services.

5.7.2.3 ENVIRONMENTAL IMPACTS

The following impact analysis addresses thresholds of significance for which the Recirculated Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.7-2: The proposed project would not have adverse physical impacts on the city's police protection services. [Threshold PP-1]

Impact Analysis:

Options A and B

Police-service needs are related to the size of the population and geographic area served, the number and types of calls for service, and other community characteristics. Although the proposed project (Options A or B) would not result in an increase in area population, school enrollment, or campus capacity, it would enable the campus to accommodate athletic events and practices that were previously held at other facilities. The proposed project would result in increased vehicle and pedestrian traffic on local streets before and after these events. Although the proposed project would not increase the existing bleacher capacities under either option, allowing additional sports field activities during evening hours while other campus facilities are in use could require additional support staff and security personnel to assist on-campus operations. And in the event that multiple facilities are in use concurrently, additional police staff for traffic management could be necessary for off-campus circulation assistance. In such event, police officers provide assistance with traffic and other safety management issues on an overtime basis. NBPD's Explore[1] or similar staff could also supplement the sworn officers as needed. Such an increase in police services would be temporary, and it would not require permanent changes to the current NBPD staffing levels or require expanded or altered police facilities that could result in physical environmental impacts. Therefore, impacts would be less than significant.

5.7.2.4 CUMULATIVE IMPACTS

Options A and B

The geographic area for cumulative analysis of police protection services is the NBPD service boundaries. The proposed project under both options would serve the existing school's athletic program and would not increase the enrollment or capacity at CdM campus. Although the increased number of events at CdM campus would increase the demands for NBPD services, CdM school population is part of the existing NBPD service population who were traveling to other areas, and would not result an increased overall service population for NBPD. The proposed project under both options is not a growth inducing project that require changes to permanent staffing levels of NBPD, therefore, would not require permanently expanded or altered police facilities. No significant environmental impacts would occur in order to maintain acceptable police protection service ratios or response times individually or cumulatively. Impacts would be less than significant.

5.7.2.5 REGULATORY REQUIREMENTS

There are no applicable regulations regarding police services.

5.7.2.6 LEVEL OF SIGNIFICANCE BEFORE MITIGATION

The following impact would be less than significant:

[1] The NBPD Explorers are young men and women between the ages of 14 and 21 who learn about all aspects of law enforcement, such as CSI, tactics, DUI, gun safety, radio codes, and more. With assistance of other police personnel, they volunteer their time for community services such as crowd control, parking control, and traffic directing.

5. Environmental Analysis
PUBLIC SERVICES

- **Impact 5.7-2:** The proposed project would not have adverse physical impacts on the city's police protection services.

5.7.2.7 MITIGATION MEASURES

No mitigation measures are required.

5.7.2.8 LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts are less than significant without mitigation.

5.7.2.9 REFERENCES

Newport Beach, City of. 2006, July. City of Newport Beach General Plan Update EIR: Public Services. http://newportbeachca.gov/PLN/General_Plan/GP_EIR/Volume_1/16_Sec4.11_Public_Services.pdf.

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———. 2016b, August. Museum House Environmental Impact Report. Prepared by PlaceWorks.

5.8 RECREATION

This section of the Recirculated Draft Environmental Impact Report (RDEIR) evaluates the potential for implementation of the proposed project to impact public parks and recreational facilities.

5.8.1 Environmental Setting

5.8.1.1 REGULATORY FRAMEWORK

State

Quimby Act of 1975

The Quimby Act of 1975 (California Government Code § 66477) requires the dedication of land and/or fees for public park and recreational purposes as a condition of approval for a tentative map or parcel map. The Quimby Act establishes procedures that can be used by local jurisdictions to provide neighborhood and community parks and recreational facilities and services for new residential subdivisions. It allows cities and counties to require up to five acres of park for every 1,000 residents.

California Public Park Preservation Act

The primary instrument for protecting and preserving parkland is California's Public Park Preservation Act of 1971. Under the Public Resources Code, cities and counties may not acquire any real property that is in use as a public park for any nonpark use unless compensation, land, or both are provided to replace the parkland acquired. This ensures no net loss of parkland and facilities.

Local

City of Newport Beach Municipal Code

The municipal code identifies land use categories, development standards, and other general provisions that ensure consistency between the city's general plan and proposed projects. The following provisions from the municipal code focus on park and recreational facilities impacts:

- **Chapter 3.12 (Property Development Tax).** Funds public improvements and facilities—consisting of fire stations and fire-fighting equipment, public City libraries, and public City parks—that cannot be met by ordinary city revenues The excise tax is imposed upon the construction and occupancy of residential, commercial, and industrial units or buildings in the city.

- **Chapter 11.04 (Parks, Park Facilities, and Beaches).** Outlines the City's policy to allow maximum public use of public parks, park facilities, and beaches subject to rules and regulations necessary for administration and maintenance.

- **Chapter 19.52 (Park Dedications and Fees).** Intended to provide the City with land dedication, in-lieu fees, or a combination of both for park and/or recreational purposes in conjunction with the approval of new residential development.

- **Section 19.52.040 (Parkland Standard).** States that the City's park dedication standard shall be five acres per 1,000 residents.

- **Section 19.52.070 (Fee in Lieu of Dedication).** Computes the fee by multiplying the fair market value per acre times the acreage of land that would otherwise be dedicated, pursuant to Section 19.52.050.

City of Newport Beach General Plan Policy

The Newport Beach General Plan Recreation Element provides guidance to ensure the provision of sufficient parks and recreation facilities that are appropriate for the residential and business population of Newport Beach. The following policy is relevant to potential recreation impacts of the proposed project:

- **Policy R 1.1.** Require developers of new residential subdivisions to provide parklands at five acres per 1,000 persons, as stated in the City's Park Dedication Fee Ordinance, or to contribute in-lieu fees for the development of public recreation facilities meeting demands generated by the development's resident population, as required in the City's Park Dedications Fees Ordinance.

5.8.1.2 EXISTING CONDITIONS

The City of Newport Beach offers approximately 590 acres of developed parks and recreational facilities and 28.8 acres of active beach (North Star Beach and Corona del Mar State Beach), for a total of approximately 619 acres (Newport Beach 2016). Parks range in size from less than an acre to more than 200 acres and offer various amenities and recreational activities, such as playgrounds, sports fields, picnic areas, barbecue pits, community centers, and an aquatic center. The city has multiuse trails for hiking, biking, and equestrian activities, and also has park and community center facilities available. Also, the above acreage does not include the majority of beaches fronting the Pacific Ocean, Newport Harbor, and Upper Newport Bay, which provide additional recreational opportunities.

Pursuant to Section 19.52.040 of the municipal code, Newport Beach's parkland standard is five acres per 1,000 residents. The city provides approximately 619 acres of park and beach amenities (Newport Beach 2016); therefore, the park-to-population ratio is 7.3 acres of parkland per 1,000 residents based on the city's estimated 2016 population of 84,270 (DOF 2016).

Funding for city parks and recreational facilities comes primarily through general funds (property tax revenues), building excise tax funds, and grant funds. Additionally, Chapter 19.52 of the municipal code outlines a park fee imposed on all dwelling unit developments if the project site is unsuitable for park development or the developer decides to pay the fee rather than dedicate land to future park expansion. The fee is determined by Section 19.52.070 (Fee in Lieu of Dedication) and is used solely for the acquisition, development, improvement, and maintenance of public parks and recreational facilities, as designated in the annual capital improvement program.

Eastbluff Newport North Service Area Parks

The Newport Beach Recreation Department divides the city into different park service areas. The service areas were created to determine whether particular areas in the City are deficient in parks and recreational facilities and to identify acquisitions or improvements that would provide residents with equal recreational opportunities. As shown on Figure 5.8-1, *Eastbluff Newport North Service Area*, the project site is within the Eastbluff Newport North Service Area 7, which includes Big Canyon Park (39.16 acres), Bonita Creek Park (14.24 acres), Eastbluff Park (13.20 acres), and portions of Upper Newport Bay Regional Park. Big Canyon Park and Upper Newport Bay Regional Park do not provide any amenities other than trails and vista points. Bonita Creek Park and community center provide a number of amenities, such as athletic fields, two ball diamonds, a basketball half court, picnic tables, play equipment, community room, kitchen, restrooms, water fountains, and a parking lot. Eastbluff Park is equipped with athletic fields, ball diamond, barbecue, picnic tables, play equipment, restrooms, water fountains, and a parking lot.

5.8.2 Thresholds of Significance

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

R-1 Would 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.

R-2 Includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

The Recirculated Initial Study, included as Appendix A2, substantiates that impacts associated with the following threshold would be less than significant:

- Threshold R-2

This impact will not be addressed in the following analysis.

5.8.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Recirculated Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.8-1: The proposed project (Options A and B) would increase the use of existing park and recreational facilities, but would not result in substantial physical deterioration of the facilities. [Threshold R-1]

Impact Analysis:

Options A and B

Because the demand for neighborhood and regional parks and other recreational facilities is generally created by residential uses, the redevelopment of the existing natural turf sports fields and rubber track would not directly result in increased demand on existing recreational facilities. However, the natural turf sports fields and synthetic track at CdM campus are currently open for community use outside of normal school uses, and use of the synthetic-turf fields, Field 1 for Option A and Field 1 and Field 2 for Option B, would be limited to authorized users. Perimeter chain-link fencing would be constructed around the synthetic-turf fields, and community use would be allowed on case-by-case basis per District Board Policy 1330(a) under the Civic Center Act. Since the current unrestricted use of the well-used natural turf fields and tracks would no longer be available, community members could use other community recreational amenities instead. The District has a joint use agreement with the city for school facilities use, which would be governed by the District's Use Policy 1330(a). However, the city's overall parkland per resident ratio does not include CdM campus's sports facilities; therefore, it would not be impacted by the proposed project under either option. Residents would need to use nearby Big Canyon Park, Bonita Creek Park, Eastbluff Park, and Upper Newport Bay Regional Park, as shown in Figure 5.8-1, *Eastbluff Newport North Service Are*a. The Eastbluff service area provides approximately 66.6 acres of park and recreational acreage plus the Upper Newport Bay Regional Park. Although residents may experience inconvenience from the restricted use of the CdM sports fields, other recreational facilities such as natural trails and baseball fields would be available a short distance away. The target users for these city facilities are the residents near the CdM campus, and the increase in use due to project implementation would not result in substantial physical deterioration of the facilities. Impacts would be less than significant.

5.8.4 Cumulative Impacts

Options A and B

The area considered for cumulative impacts is the City of Newport Beach. Demand for new recreational facilities is typically generated by population growth. The proposed project under both options would not increase the bleacher capacity or enrollment capacity of the CdM campus, therefore, would not create additional demands for recreational facilities in the city. The CdM sports fields serve as bonus amenities for community members. Therefore, the proposed project under both options would not affect the city's overall parkland to resident ratio or result in substantial physical deterioration of the city's recreational facilities. The project's contribution to cumulative park and recreation impacts would be less than significant and would not be cumulatively considerable.

5.8.5 Regulatory Requirements

State

- Quimby Act (California Government Code Section 66477)
- California Public Park Preservation Act of 1971(Public Resource Code Sections 5400–5409)

Local

- City of Newport Beach Municipal Code
  - Chapter 19.52 (Park Dedications and Fees)
  - Chapter 11. 04 (Parks, Park Facilities, and Beaches)

Figure 5.8-1 - Eastbluff Newport North Service Area

5. Environmental Analysis

Base Map Source: Newport Beach General Plan, 2006

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5.8.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements, the following impact would be less than significant:

- Impact 5.8-1: The proposed project (Options A and B) would increase the use of existing park and recreational facilities, but would not result in substantial physical deterioration of the facilities

5.8.7 Mitigation Measures

No mitigation measures are required.

5.8.8 Level of Significance After Mitigation

Impacts would be less than significant.

5.8.9 References

Department of Finance (DOF). 2016, May. Table E-1: Population Estimates for Cities, Counties and the State with Annual Percent Change, January 1, 2015 and 2016. State of California.

Newport Beach, City of. 2006a. General Plan Recreation Element. http://www.newportbeachca.gov/government/departments/community-development/planning-division/general-plan-codes-and-regulations/general-plan.

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5. Environmental Analysis
RECREATION

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5.9 TRANSPORTATION AND TRAFFIC

This section of the recirculated draft environmental impact report (RDEIR) evaluates the potential for implementation of the Corona del Mar Middle and High School (project site or CdM MS/HS campus or CdM campus) Sports Field project to result in transportation and traffic impacts in the City of Newport Beach. The analysis in this section is based in part on the following technical reports:

- *Corona del Mar High School Sports Field Project Traffic Study*, IBI Group, August 8, 2017.

A complete copy of this report is included as Appendix H of the RDEIR.

5.9.1 Environmental Setting

The project site is approximately a mile southwest of State Route (SR) 73, and the project area is designated "Governmental, Educational and Institutional Facilities" by the Newport Beach General Plan. Adjacent uses are defined by the general plan as Single-Unit Residential Attached to the west and north and Single-Unit Residential Detached to the east; to the south is Our Lady Queen of Angels Catholic Church.

5.9.1.1 EXISTING ROADWAY NETWORK

Major roadways in the project traffic study area are described below. The discussion focuses on roadways that are approaches to the study intersections or directly affected by the proposed project. The descriptions of the lane configurations are based on designations in the general plan circulation element and may not reflect existing configurations.

- **SR-73:** SR-73 is northeast of the proposed project site, a freeway/limited-access toll highway that extends north-south through Orange County. Access to the site from SR-73 is via northbound and southbound on-ramps and off-ramps at Bristol Street (north and south), MacArthur Boulevard, Bison Avenue, and Bonita Canyon Drive.

- **Pacific Coast Highway:** Pacific Coast Highway is south of the proposed project site and is designated an east-west Principal Arterial (eight-lane divided) west of Jamboree Road and a Major Arterial (six-lane divided) east of Jamboree. The east- and westbound segments fluctuate between three and four lanes west of Jamboree Road, and both have three lanes east of Jamboree Road. Adjacent land uses consist of primarily residential and some commercial. The speed limit is 50 miles per hour (mph). There are bike lanes and no street parking available. The project site can be reached using Jamboree Road.

- **MacArthur Boulevard:** MacArthur Boulevard is east of the proposed project site and is designated as a north-south Principal Arterial (eight-lane divided) north of Ford Road/Bonita Canyon Drive and a Major Arterial (six-lane divided) south of Ford Road. The north- and southbound segments fluctuate between three to five lanes north of Ford Road/Bonita Canyon Drive, and both have three lanes south of Ford Road/Bonita Canyon Drive. Adjacent land uses consist primarily of residential, with some commercial nearer to SR-73. The speed limit is generally 55 mph with a stretch of 60 mph between SR-73 and Jamboree Road. There are bike lanes available south of SR-73 and no street parking available. MacArthur

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

Boulevard provides access to SR-73, and the project site can be reached via Jamboree Road, Bison Avenue, or Ford Road.

- **Jamboree Road:** Jamboree Road is east of the proposed project site and is designated a north-south Major Arterial (six-lane divided). The north- and southbound segments fluctuate between three to five lanes north of Bayview Way, and both have three lanes south of Bayview Way. Adjacent land uses consist primarily of residential, with commercial near SR-73 and scattered private institutions and industrial. The speed limit is 55 mph. On-street parking is not available. Class II bike lanes are provided intermittently on Jamboree Road in the study area. The project site can be reached via Eastbluff Drive.

- **San Joaquin Hills Road:** San Joaquin Hills Road is south of the proposed project site and is designated an east-west Major Arterial (six-lane divided). The east- and westbound segments are both primarily three lanes. Adjacent land uses consist primarily of residential to the northeast, with commercial to the southwest. The speed limit is 50 mph. It has bike lanes and no street parking is available.

- **University Drive:** University Drive is north of the proposed project site and is designated an east-west Major Highway (four lane divided) between Jamboree Road and MacArthur Boulevard. The east- and westbound segments are two to three to lanes each. Adjacent land uses consist of single-unit residential detached, multiple unit residential, and parks and recreation. The speed limit is 50 mph. It has bike lanes, and no street parking is available. University Drive turns into Eastbluff Drive west of Jamboree Road. The project site can be reached using Eastbluff Drive.

- **Ford Road:** Ford Road is south of the proposed project site and is designated an east-west Major Highway (four lane divided). The east- and westbound segments are two lanes each. Adjacent land uses consist of single-unit residential detached, multiple unit residential, and parks and recreation. The speed limit is 50 mph. It has bike lanes, and no street parking is available. Ford Road turns into Eastbluff Drive west of Jamboree Road and turns into Bonita Canyon Drive east of MacArthur Boulevard. The project site can be reached using Eastbluff Drive.

- **Bonita Canyon Drive:** Bonita Canyon Drive is southeast of the proposed project site and is designated an east-west Major Highway (four lane divided). The east- and westbound segments are two lanes each. Adjacent land uses consist of single-unit residential detached, multiple unit residential, neighborhood commercial, private institutions, and parks and recreation. The speed limit is 50 mph. It has bike lanes, and no street parking is available. Bonita Canyon Road turns into Ford Road west of MacArthur Boulevard. The project site can be reached using Ford Road.

- **Bison Avenue:** Bison Avenue is northeast of the proposed project site and is designated an east-west Major Highway (four lane divided). The east- and westbound segments are two to three lanes each. Adjacent land uses consist of single-unit residential detached, multiple unit residential, commercial, private institutions, public facilities, and open space. The speed limit is 45 to 50 mph. It has no bike lanes west of MacArthur Boulevard, and no street parking is available. Bison Avenue provides access to SR-73.

- **Bristol Street (North):** Bristol Street (North) is north of the proposed project site and is designated a north Major Highway (four lane divided). The road travels in one direction northbound and has three lanes. Adjacent land use consists of commercial. The speed limit is 45 mph. It has bike lanes, and no street parking is available.

- **Bristol Street (South):** Bristol Street (South) is north of the proposed project site and is designated a south Major Highway (four lane divided). The road travels in one direction southbound and has four lanes. Adjacent land use consists of commercial. The speed limit is 45 mph. It has bike lanes, and no street parking is available. Bristol Street (South) provides access to SR-73.

- **Santa Cruz Drive:** Santa Cruz Drive is south of the proposed project site and is designated a north-south Major Highway (four lane divided). The north- and southbound segments are two to three lanes each. Adjacent land use consists of commercial. The speed limit is 35 mph. It has bike lanes, and no street parking is available.

- **Santa Rosa Drive:** Santa Rosa Drive is south of the proposed project site and is designated a north-south Major Highway (four lane divided). The north- and southbound segments are three lanes each. Adjacent land use consists of commercial. The speed limit is 30 mph. There are no bike lanes and no street parking available.

Traffic Study Intersections

Eighteen study area intersections have been selected for traffic analysis based on input from both the District and City staff. The existing (2017) lane geometry and signal controls for each intersection are illustrated on Figures 5.9-1a and 5.9-1b, *Study Intersections*.

1. Eastbluff Drive/Vista del Oro
2. Eastbluff Drive/Mar Vista Drive
3. Eastbluff Drive/Alba Street
4. Jamboree Road/Eastbluff Drive-Ford Road
5. Jamboree Road/University Drive/Eastbluff Road
6. MacArthur Boulevard/Ford Road-Bonita Canyon Drive
7. MacArthur Boulevard/Bison Avenue
8. Jamboree Road/MacArthur Boulevard
9. Jamboree Road/Bristol Street (North)
10. Jamboree Road/Bristol Street (South)
11. Jamboree Road/Bayview Way
12. Jamboree Road/Bison Avenue
13. Jamboree Road/San Joaquin Hills Road
14. Jamboree Road/Santa Barbara Drive
15. Jamboree Road/Pacific Coast Highway
16. Santa Cruz Drive/San Joaquin Hills Road
17. Santa Rosa Drive/San Joaquin Hills Road

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

18. MacArthur Boulevard/San Joaquin Hills Road

Existing Public Transportation

Orange County Transportation Authority (OCTA) buses serve the project site and the Newport Transportation Center (NTC) is approximately 2 miles to the southeast. The following is a description of the bus routes passing near the project site:

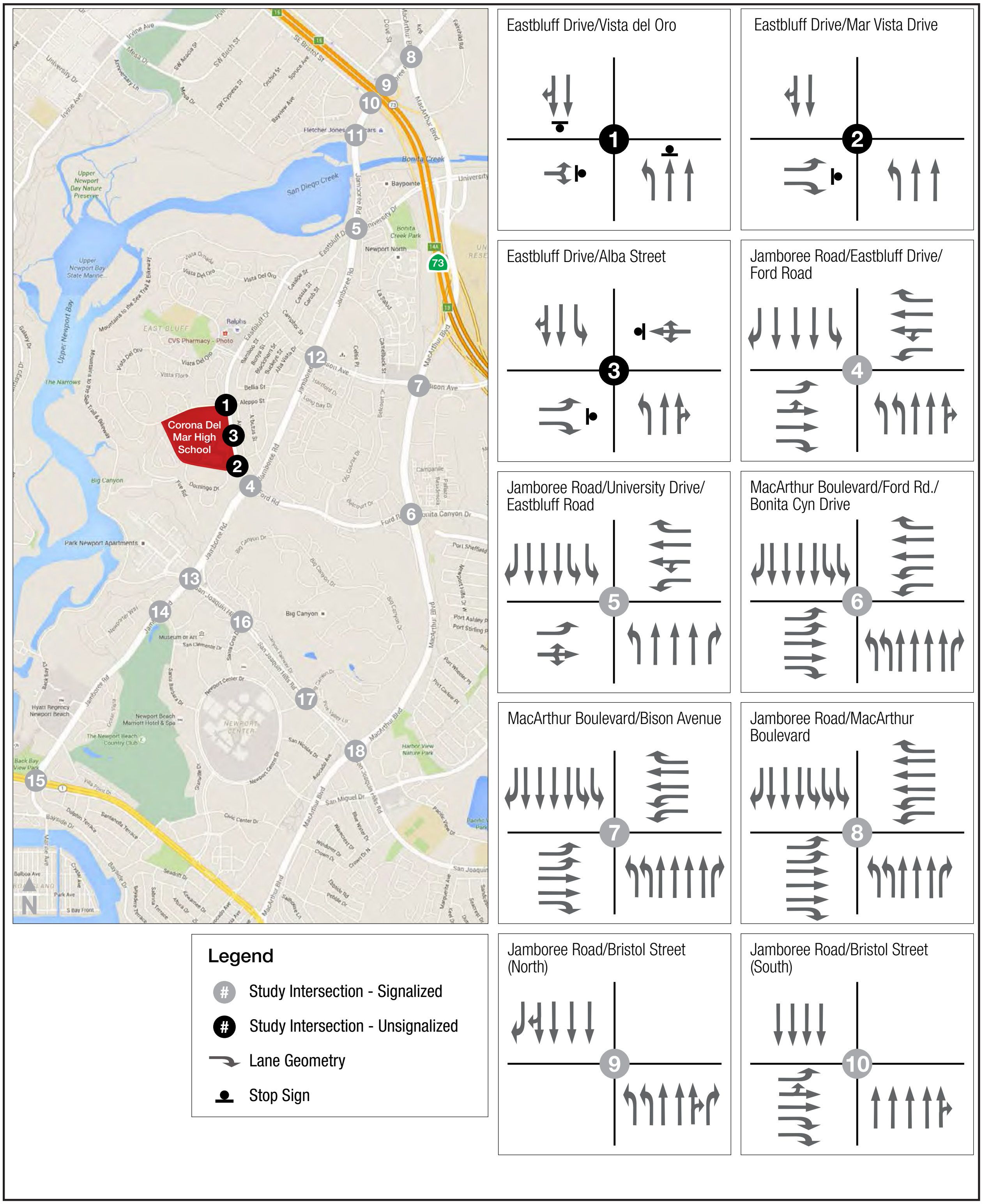
- **Route 1:** Has approximately 30-minute frequencies during peak hours. The route is from Long Beach to San Clemente. Near the site the bus travels from the west along Pacific Coast Highway, heads north along Newport Center Drive to the NTC, proceeds south along Avocado Avenue, and continues east along Pacific Coast Highway.

- **Route 55:** A high-quality transit corridor that offers 15-minute (or less) weekday peak hour frequency. The route is from Santa Ana to Newport Beach. Near the site the bus travels from the NTC around Newport Center Drive and then follows Pacific Coast Highway west.

- **Route 57:** Has approximately 15- to 20-minute frequencies during peak hours. The route is from Brea to Newport Beach. Near the site the bus travels from the NTC along Newport Center Drive and Santa Cruz Drive, heads west along San Joaquin Hills Road, and then proceeds north along Jamboree Road. A stop is near Corona del Mar MS/HS at the intersection of Jamboree Road and Eastbluff Drive.

- **Route 79:** Has approximately 30-minute frequencies during peak hours. The route is from Tustin to Newport Beach. Near the site the bus travels from the NTC along Newport Center Drive and Santa Cruz Drive, heads west along San Joaquin Hills Road, heads north along Jamboree Road, and then proceeds north along Eastbluff Drive and University Drive. An alternate route 79A travels from the NTC along Avocado Avenue, heads east on San Miguel Drive, heads west along Bonita Canyon Drive, then Ford Road, and then proceeds on the original route north on Eastbluff Drive and University Drive. A stop is directly adjacent to Corona del Mar MS/HS on Eastbluff Drive.

Figure 5.9-1a - Study Intersections



0 3,000
Scale (Feet)

Source: IBI Group, 2017

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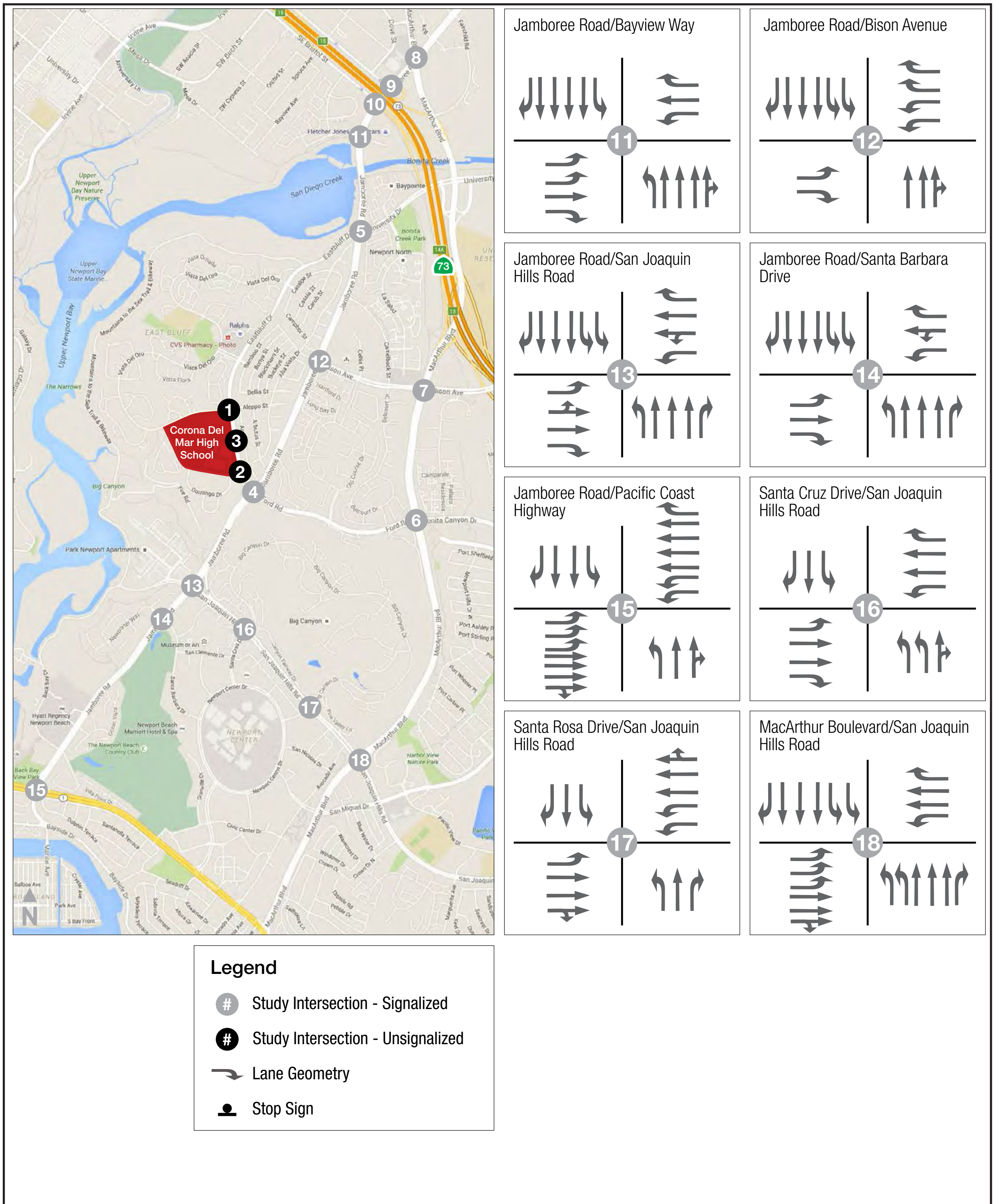
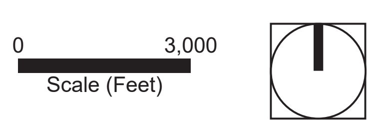
Figure 5.9-1b - Study Intersections





Source: IBI Group, 2017

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

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Existing Parking

On Campus

The CdM campus provides three parking lots totaling 592 spaces (573 regular spaces and 19 ADA spaces), as shown in Table 5.9-1.

Table 5.9-1 Existing Parking Summary

Lot Description	Type		Total
	Student/Staff	ADA	
Lot 1: Student/Staff adjacent to Eastbluff and Vista del Oro	225	7	232
Lot 2: Corner of Eastbluff and Mar Vista Drive	135	5	140
Lot 3: West lot behind the Middle School Enclave	213	7	220
On-campus Total	573	19	592
Off-Campus Street Parking	n/a	n/a	246
Total			838

Source: Counted by CdM MS/HS staff on February 26, 2016.

On-campus student parking is allowed through parking permits, with priority to seniors then to juniors. Approximately 380 to 395 permits per year were issued to students over the past two to three years, and approximately 190 staff permits were issued (Scott 2017). A parking permit is required from 7:00 AM until the end of lunch on school days.

Parking regulations for students are described in the 2016-2017 Corona del Mar Student Handbook:

- Parking regulations will be enforced by CDM security staff and NBPD; parking permits must be properly displayed at all times.
- Parking permits will be distributed to seniors in good standing with attendance, discipline, and grades.
- Students must have a school-issued parking pass to park on campus and park in the student designated lots.
- Students may not park in the faculty lot and/or designated guest or faculty spaces around campus.
- Permits belong to the school and can be revoked at any time based on violations of these policies.

Off Campus

Street parking is available along the school frontages on Vista Del Oro and Mar Vista Drive.

Parking restrictions are enforced in the residential streets adjacent to the CdM campus, as described below and shown on Figure 5.9-2, *Neighborhood Parking Restrictions*:

- Residential Preferential Parking Zone: Limiting parking of one-hour duration on school days from 7:00 AM to 4:00 PM except by permit on the following streets:
    - All of Aralia Street
    - Aleppo Street including cul-de-sac across Alta Vista Dr.
    - Arbutus Street
    - Alta Vista Dr. from Aralia St. to Aleppo St.
    - Alder Place (cul-de-sac off Alta Vista)
    - Almond Place (cul-de-sac off Alta Vista)

- Parking ban on weekdays between 8:30 AM and 3:00 PM on north side of Vista Del Oro between Eastbluff and Mar Vista.

5.9.1.2 METHODOLOGY

The traffic analysis for the proposed project includes an assessment of traffic conditions at the adjacent and surrounding circulation network for the following analysis time frames:

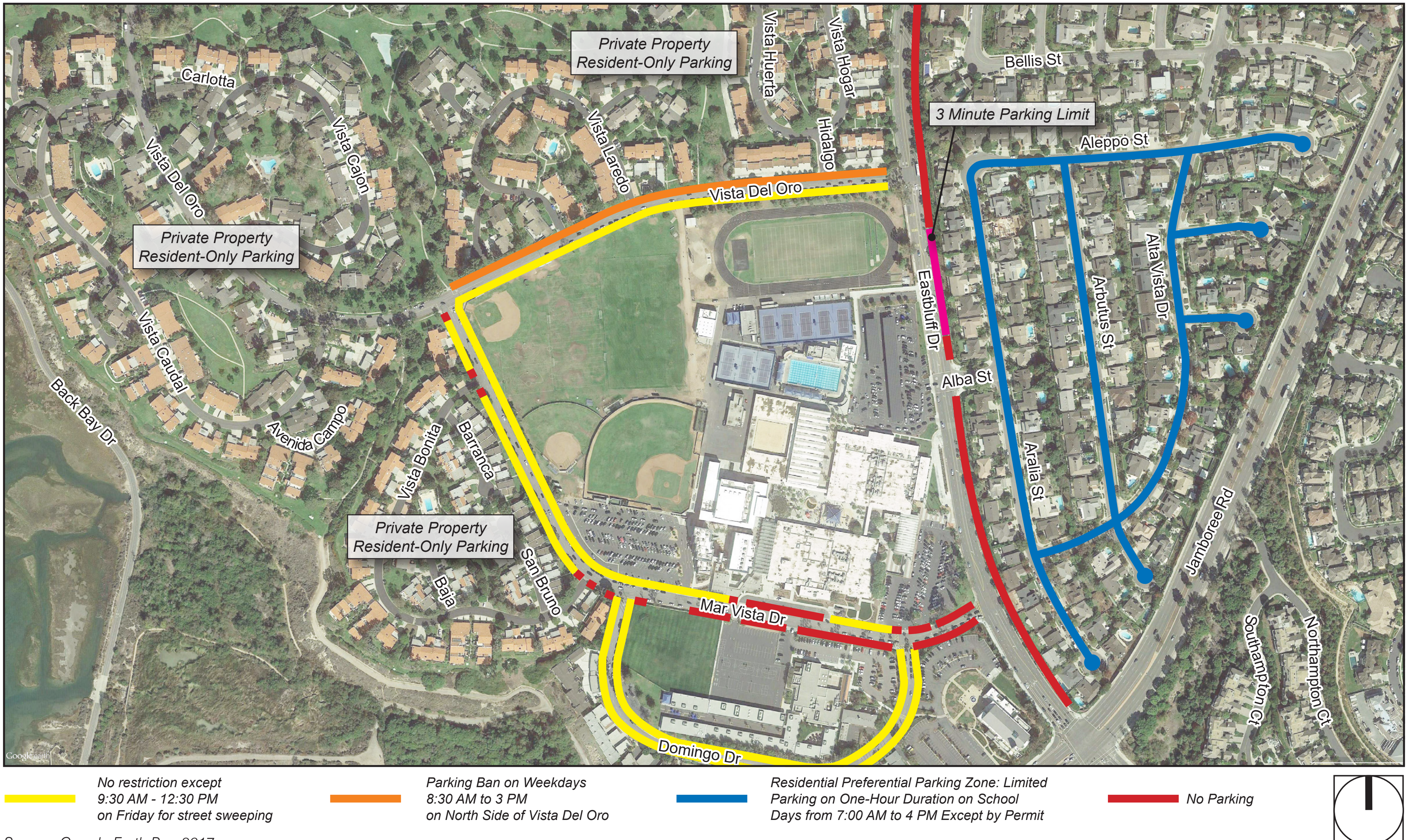
- Existing (2017)
- TPO Analysis Year (2020)
- CEQA Analysis Year (2020)
- Buildout Year (Post-2030)

The analysis methodology and performance criteria used in this analysis have been prepared in accordance with the City of Newport Beach Traffic Phasing Ordinance (TPO) (Newport Beach Municipal Code Chapter 15.40) and the County of Orange Congestion Management Program (CMP).

Signalized Intersections

Traffic conditions at signalized traffic study intersections are analyzed using the Intersection Capacity Utilization (ICU) methodology, which is used by both the City of Newport Beach and the Orange County CMP. The ICU methodology is based on intersection volume-to-capacity (V/C) ratios. The ICU value for each movement is the observed or forecast volume divided by the saturation flow volume (defined at 1,600 vehicles per hour per lane). The intersection ICU value is the sum of the highest ICU values on each leg of the intersection (left, through, and right). ICU values are usually expressed as a decimal (e.g., 0.74), and 1.00 represents saturated conditions, where the volume of traffic flow is equal to the capacity.

Figure 5.9-2 - Neighborhood Parking Restrictions



Source: Google Earth Pro, 2017

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

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The efficiency of traffic operations is measured in levels of service (LOS). The LOS refers to the quality of traffic flow along roadways and at intersections. Evaluation of roadways and intersections involves the assignment of grades from A to F, with LOS A representing the best operating conditions and LOS F representing extremely congested and restricted operations. Each letter grade corresponds to a range of V/C values, which are described for intersections operating under signal control in Table 5.9-2, *Categories of LOS for Signalized Intersections*.

Table 5.9-2 Categories of LOS for Signalized Intersections

LOS	Description	ICU Value
A	At level of service A there are no cycles that are fully loaded, and few are even close to loaded. No approach phase is utilized by traffic and no vehicle waits longer than one red indication. Typically, the approach appears quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0.00–0.60
B	Level of service B represents stable operation. An occasional approach phase is fully utilized and a substantial number are approaching full use. Many drivers begin to feel somewhat restricted within platoons of vehicles.	0.61–0.70
C	In level of service C stable operation continues. Full signal cycle loading is still intermittent, but more frequent. Occasionally drivers may have to wait through more than one red signal indication, and back-ups may develop behind turning vehicles.	0.71–0.80
D	Level of service D encompasses a zone of increasing restriction, approaching instability. Delay to approaching vehicles may be substantial during short peaks within the peak period, but enough cycles with lower demand occur to permit periodic clearance of developing queues, thus preventing excessive back-ups.	0.81–0.90
E	Level of service E represents the most vehicles that any particular intersection approach can accommodate. At capacity (V/C = 1.00) there may be long queues of vehicles waiting upstream of the intersection and delays may be great (up to several signal cycles).	0.91–1.00
F	Level of service F represents jammed conditions. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration; hence, volumes carried are not predictable. V/C values are highly variable, because full utilization of the approach may be prevented by outside conditions.	>1.000

Source: Orange County Congestion Management Program.

Intersection LOS analysis uses TRAFFIX software (v. 8.0), a network-based interactive computer program that enables calculation of LOS at signalized and unsignalized intersections for multiple locations and scenarios. TRAFFIX also calculates signal timing (green times and cycle lengths) and maximum queue lengths to assist in evaluating signalized intersections.

Unsignalized Intersections

Intersection analysis for unsignalized intersections has been conducted using the Highway Capacity Manual (HCM) methodology, which estimates a delay value expressed in average seconds of delay per vehicle or the worst-approach delay per vehicle, depending on the intersection type. The two types of unsignalized intersections are two-way stop controlled and all-way stop controlled. The HCM methodology estimates the delay based on the worst approach at two-way-stop intersections and reports the average delay at all-way-stop intersections. The delay range for unsignalized intersections is different from the delay range for signalized intersections, primarily due to driver expectation. The expectation is that signalized intersections are designed

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

to carry higher volumes of traffic and therefore higher levels of delay are acceptable. The LOS criteria for unsignalized intersections are presented in Table 5.9-3, *Levels of Service for Unsignalized Intersections*.

Table 5.9-3 Levels of Service for Unsignalized Intersections

LOS	Description	ICU Value in Seconds
A	Little or no delays	0–10
B	Short traffic delays	10–15
C	Average traffic delays	15–25
D	Long traffic delays	25–35
E	Very long traffic delays	35–50
F	Extreme traffic delays with intersection capacity exceeded	50 or more

Source: Highway Capacity Manual (2010), Chapter 17.

5.9.1.3 EXISTING TRAFFIC CONDITIONS

The proposed project is not expected to generate a significant number of vehicle trips during the AM peak hour because sports field events are anticipated to occur during weekday evenings. Therefore, the time period selected for analysis in this study is the weekday PM peak period only (4:00 to 6:00 PM). Additionally, the anticipated events are most likely to occur on Friday evenings; therefore, this date of the week was selected for traffic data collection.

Manual counts of intersection turning movements were collected in 15-minute intervals from 4:00 to 6:00 PM on Friday, April 18, 2017. The full vehicle, pedestrian, and bicycle counts are available in Appendix A of the Traffic Study (Appendix H of this RDEIR). Existing (2017) PM peak hour turning movement count volumes are presented in Figures 5.9-3a and 5.9-3b, *Existing (2017) Traffic Volumes, PM Peak Hour*.

Existing Intersection LOS

A level of service analysis was conducted to evaluate existing intersection operations during the weekday PM peak hour. Table 5.9-4, *Existing Intersection LOS, PM Peak Hour*, summarizes the existing LOS at the traffic study area intersections. As shown, all study area intersections operate at acceptable LOS under Existing (2017) conditions except for one:

- MacArthur Boulevard / Ford Road-Bonita Canyon Drive (LOS E) (#6)

Table 5.9-4 Existing (2017) Intersection LOS, PM Peak Hour

ID	Unsignalized Intersections	Traffic Control	PM Peak Hour Delay (sec)	PM Peak Hour LOS
1	Eastbluff Drive & Vista del Oro	AWSC	10.1	B
2	Eastbluff Drive & Mar Vista Drive	TWSC	12.5	B
3	Eastbluff Drive & Alba Street	TWSC	15.7	C
ID	**Signalized Intersections**	**Traffic Control**	**PM Peak Hour Delay (sec)**	**PM Peak Hour LOS**
4	Jamboree Road & Eastbluff Drive/Ford Road	Signal	0.78	C
5	Jamboree Road & University Drive /Eastbluff Drive	Signal	0.73	C
6	MacArthur Boulevard & Ford Road/Bonita Canyon Drive	Signal	**0.91**	**E**
7	MacArthur Boulevard & Bison Avenue	Signal	0.73	C
8	Jamboree Road & MacArthur Boulevard	Signal	0.90	D
9	Jamboree Road & Bristol Street (North)	Signal	0.51	A
10	Jamboree Road & Bristol Street (South)	Signal	0.73	C
11	Jamboree Road & Bayview Way	Signal	0.63	B
12	Jamboree Road & Bison Avenue	Signal	0.68	B
13	Jamboree Road & San Joaquin Hills Road	Signal	0.72	C
14	Jamboree Road & Santa Barbara Drive	Signal	0.80	C
15	Jamboree Road & Pacific Coast Highway	Signal	0.80	C
16	Santa Cruz Drive & San Joaquin Hills Road	Signal	0.56	A
17	Santa Rosa Drive & San Joaquin Hills Road	Signal	0.43	A
18	MacArthur Boulevard & San Joaquin Hills Road	Signal	0.72	C

TWSC = two-way stop control; AWSC = all-way stop control
Bold and shaded = unacceptable LOS

5.9.1.4 TPO YEAR (2020) TRAFFIC CONDITIONS

This section describes the future City of Newport Beach Traffic Phasing Ordinance (TPO) Year (2020) conditions in the traffic study area. TPO Year (2020) baseline traffic is composed of existing traffic (based on 2017 count data), background ambient traffic growth per year, and traffic from committed projects.

Ambient Traffic Growth

TPO Year (2020) traffic volumes were first developed by applying a linear annual ambient traffic growth rate of 1 percent (a total of 3 percent for 3 years) to the existing (2017) traffic volumes. The growth rate has been applied based on current and previous studies within the City of Newport Beach to account for area-wide growth not captured by committed projects.

Committed Projects

Committed projects consist of projects already approved by the City of Newport Beach that are not yet fully constructed or occupied. There are 21 committed projects near the project site. Corresponding traffic phasing data was provided by the City of Newport Beach Public Works Department and is found in Appendix D of the Traffic Study (Appendix H of this RDEIR). The peak-hour study intersection volumes for the TPO Year

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

(2020)—existing traffic volumes, ambient traffic growth, and committed projects trips (the committed base traffic)—are shown on Figure 5.9-4a and 5.9-4b, *TPO Year (2020) Traffic Volumes, PM Peak Hour*.

TPO Year (2020) Intersection LOS

A level of service analysis was conducted to evaluate TPO Year (2020) intersection operations during the weekday PM peak hour. Table 5.9-5 summarizes the TPO Year (2020) levels of service at the study area intersections. All study area intersections are forecast to operate at acceptable LOS under Opening Year (2020) Conditions with the exception of:

- MacArthur Boulevard/Ford Road/Bonita Canyon Drive (#6): LOS E
- Jamboree Road/MacArthur Boulevard (#8): LOS E

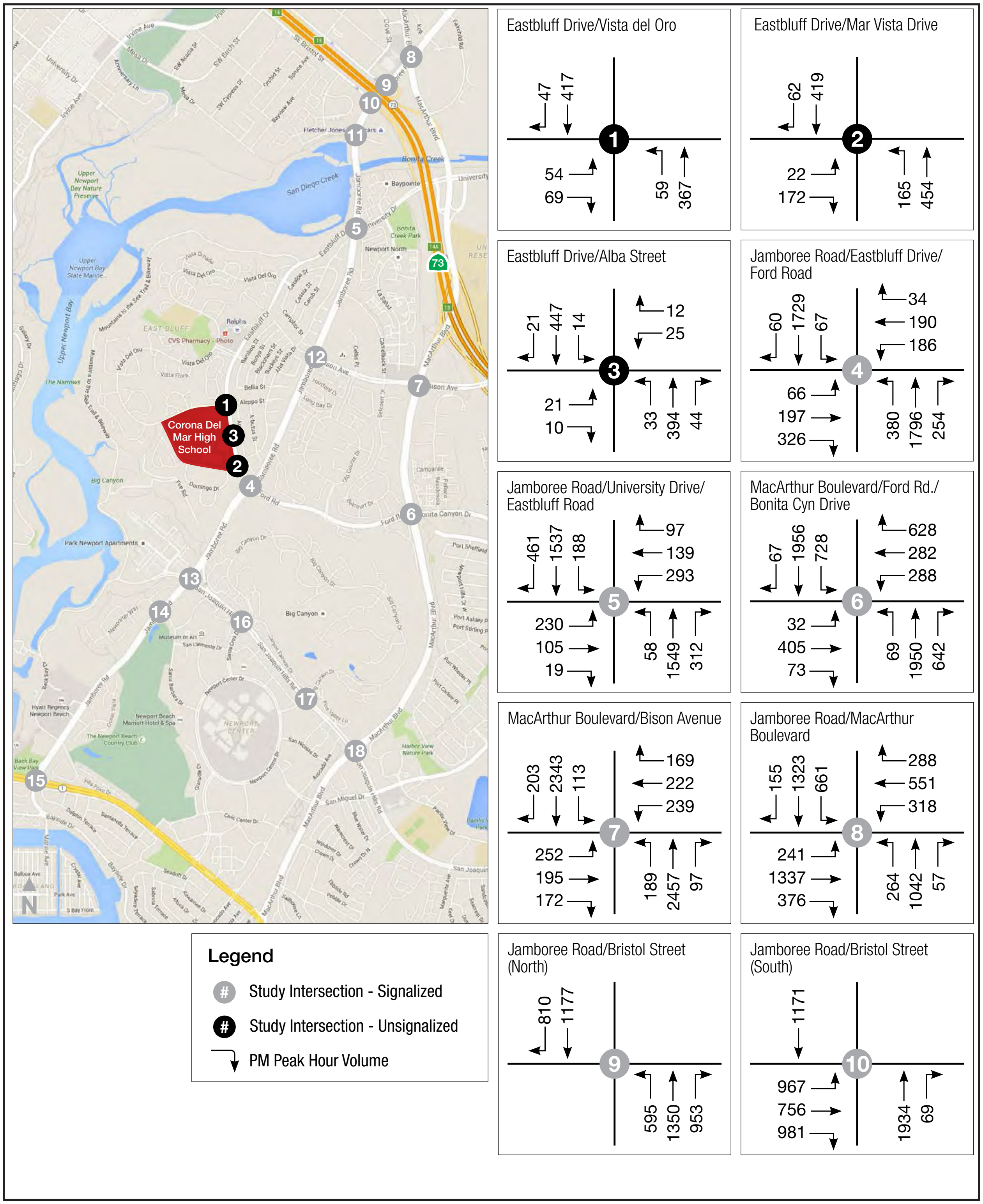
Table 5.9-5 TPO Year (2020) Intersection LOS, PM Peak Hour

ID	Unsignalized Intersections	Traffic Control	PM Peak Hour Delay	PM Peak Hour LOS
1	Eastbluff Drive & Vista del Oro	AWSC	10.3	B
2	Eastbluff Drive & Mar Vista Drive	TWSC	12.8	B
3	Eastbluff Drive & Alba Street	TWSC	16.3	C
ID	**Signalized Intersections**	**Traffic Control**	**PM Peak Hour Delay**	**PM Peak Hour LOS**
4	Jamboree Road & Eastbluff Drive/Ford Road	Signal	0.82	D
5	Jamboree Road & University Drive /Eastbluff Drive	Signal	0.80	C
6	MacArthur Boulevard & Ford Road/Bonita Canyon Drive	Signal	**0.95**	**E**
7	MacArthur Boulevard & Bison Avenue	Signal	0.76	C
8	Jamboree Road & MacArthur Boulevard	Signal	**0.95**	**E**
9	Jamboree Road & Bristol Street (North)	Signal	0.56	A
10	Jamboree Road & Bristol Street (South)	Signal	0.81	D
11	Jamboree Road & Bayview Way	Signal	0.67	B
12	Jamboree Road & Bison Avenue	Signal	0.73	C
13	Jamboree Road & San Joaquin Hills Road	Signal	0.77	C
14	Jamboree Road & Santa Barbara Drive	Signal	0.84	D
15	Jamboree Road & Pacific Coast Highway	Signal	0.86	D
16	Santa Cruz Drive & San Joaquin Hills Road	Signal	0.59	A
17	Santa Rosa Drive & San Joaquin Hills Road	Signal	0.48	A
18	MacArthur Boulevard & San Joaquin Hills Road	Signal	0.76	C

TWSC = two-way stop control
AWSC = all-way stop control
Bold and shaded = unacceptable LOS

Figure 5.9-3a - Existing (2017) Traffic Volumes, PM Peak Hour

5. Environmental Analysis



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Scale (Feet)

Source: IBI Group, 2017

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

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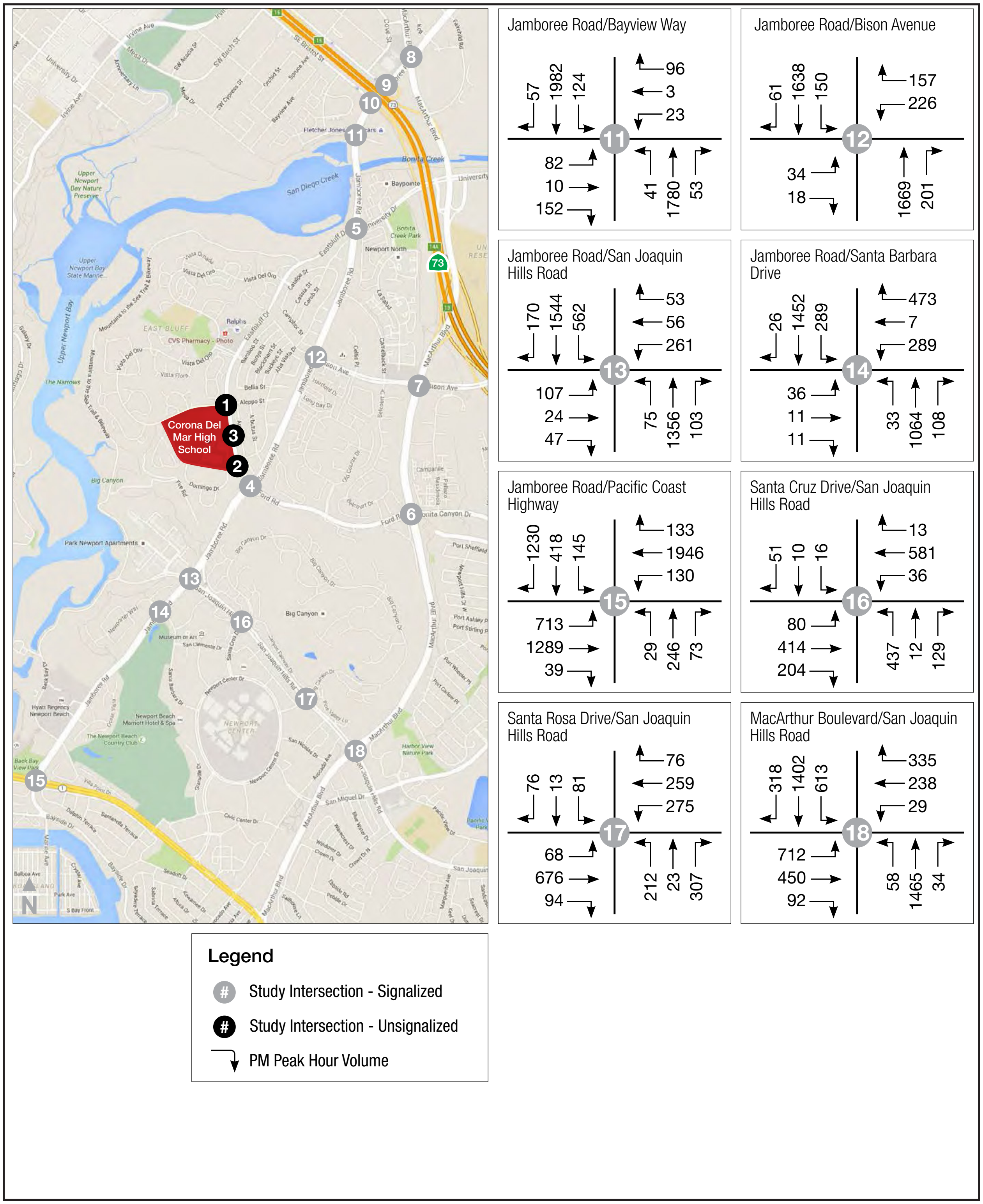
Figure 5.9-3b - Existing (2017) Traffic Volumes, PM Peak Hour



Source: IBI Group, 2017

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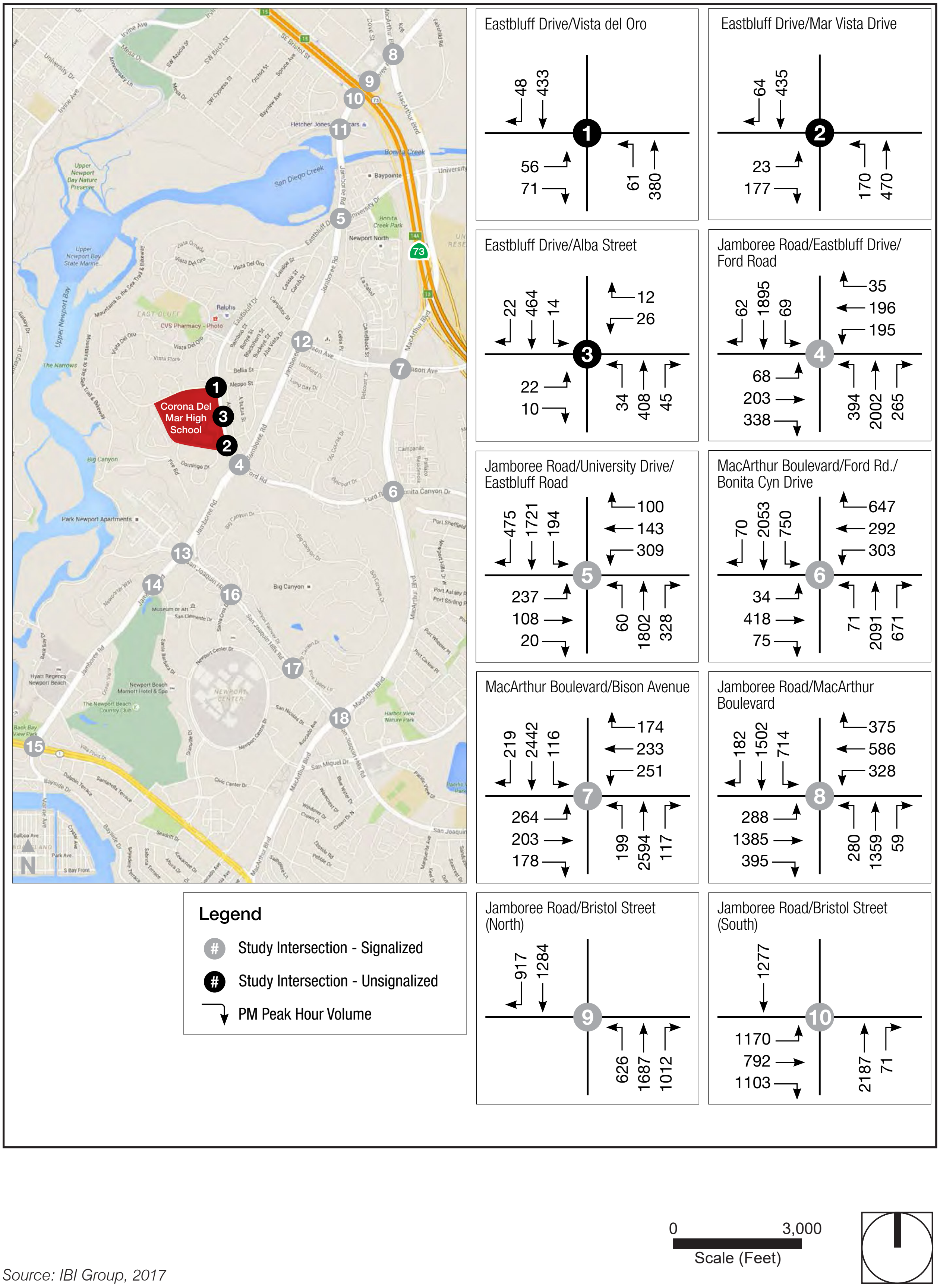
Figure 5.9-4a - TPO Year (2020) Traffic Volumes, PM Peak Hour



Source: IBI Group, 2017

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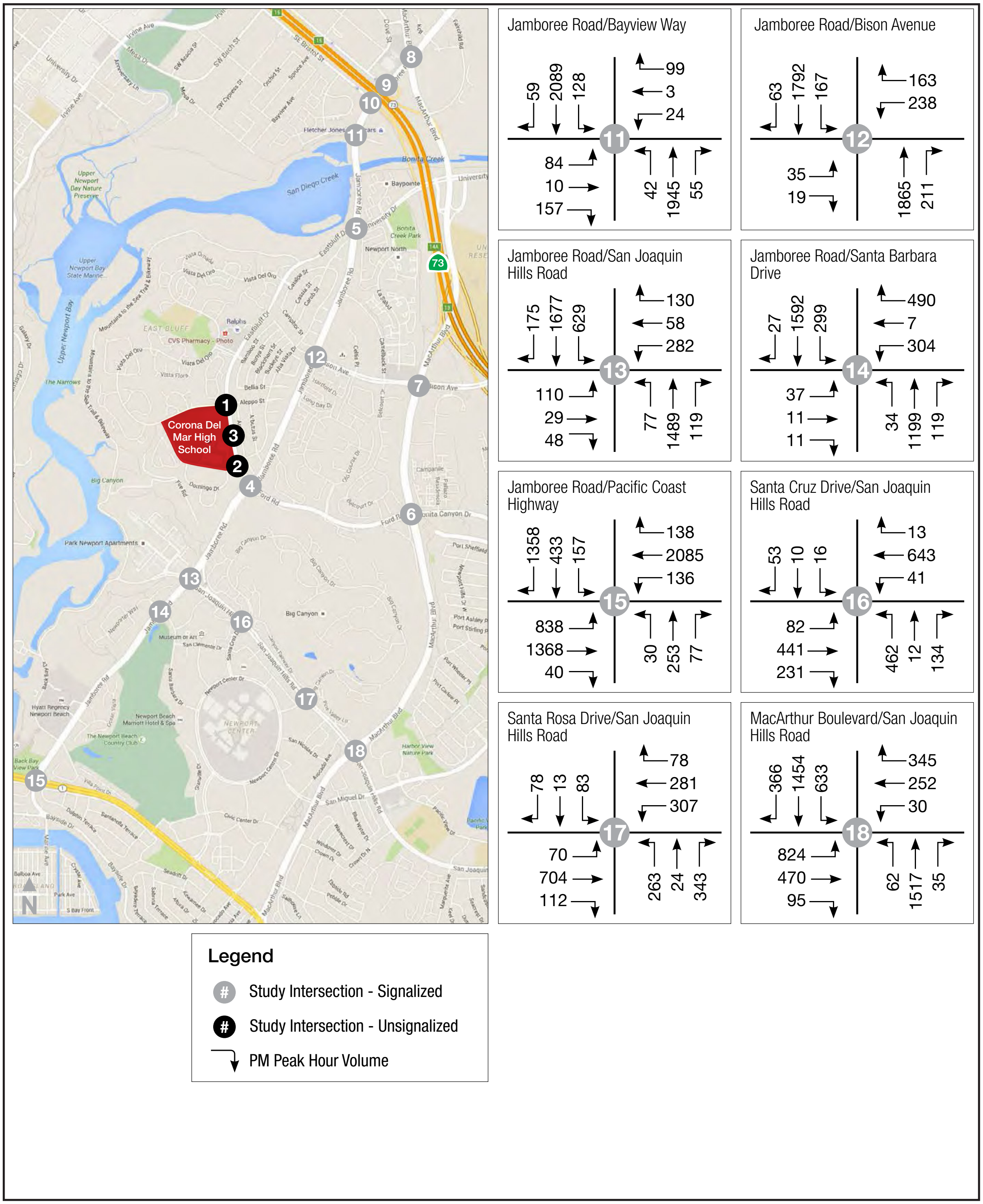
Figure 5.9-4b - TPO Year (2020) Traffic Volumes, PM Peak Hour

5. Environmental Analysis



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Scale (Feet)

Source: IBI Group, 2017

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5.9.1.5 CEQA YEAR (2020) TRAFFIC CONDITIONS

This section describes the future baseline CEQA Year (2020) conditions in the traffic study area. The CEQA Year (2020) scenario is composed of TPO Year (2020) baseline traffic (i.e., existing traffic (based on 2017 count data), background ambient traffic growth per year, and traffic from committed projects) and traffic from cumulative projects. Cumulative projects are defined as planned projects that are not yet approved but are "reasonably foreseeable." Therefore, a list of 13 cumulative projects was provided by the City of Newport Beach Planning Division and is provided in Appendix E of the Traffic Study (Appendix H of this RDEIR). Committed projects from the TPO Year (2020) baseline traffic conditions were removed from the original list of cumulative projects. Corresponding trip generation data were referenced from the City of Newport Beach Planning Division. The reference number, project title, project ID, and net trips for each related project are summarized in Traffic Study table 5-1. A detailed list of the cumulative projects with their respective trip generation rates is provided in Appendix E of the Traffic Study. The locations of the cumulative projects are shown on Chapter 4, Figure 4-8, *Cumulative Project Location*, of this RDEIR. Trips generated by the cumulative projects through the traffic study intersections are shown on traffic study figure 8, "Cumulative Project Traffic Volumes, PM Peak Hour." The peak hour study intersection volumes for the CEQA Year (2020)—existing traffic volumes, ambient traffic growth, and related project trips (the cumulative base traffic)—are shown on Figures 5.5-5a and 5.9-5b, *CEQA Year (2020) Traffic Volumes, PM Peak Hour*.

CEQA Year (2020) Intersection LOS

A level of service analysis was conducted to evaluate CEQA Year (2020) intersection operations during the weekday PM peak hour. Table 5.9-6 summarizes the CEQA Year (2020) levels of service at the study area intersections. As shown in Table 5.9-6, traffic study area intersections are forecast to operate at acceptable LOS under CEQA Year (2020) Conditions with the exception of:

- MacArthur Boulevard/Ford Road/Bonita Canyon Drive (#6): LOS E
- Jamboree Road/MacArthur Boulevard (#8): LOS E

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

Table 5.9-6 CEQA Year (2020) Intersection LOS, PM Peak Hour

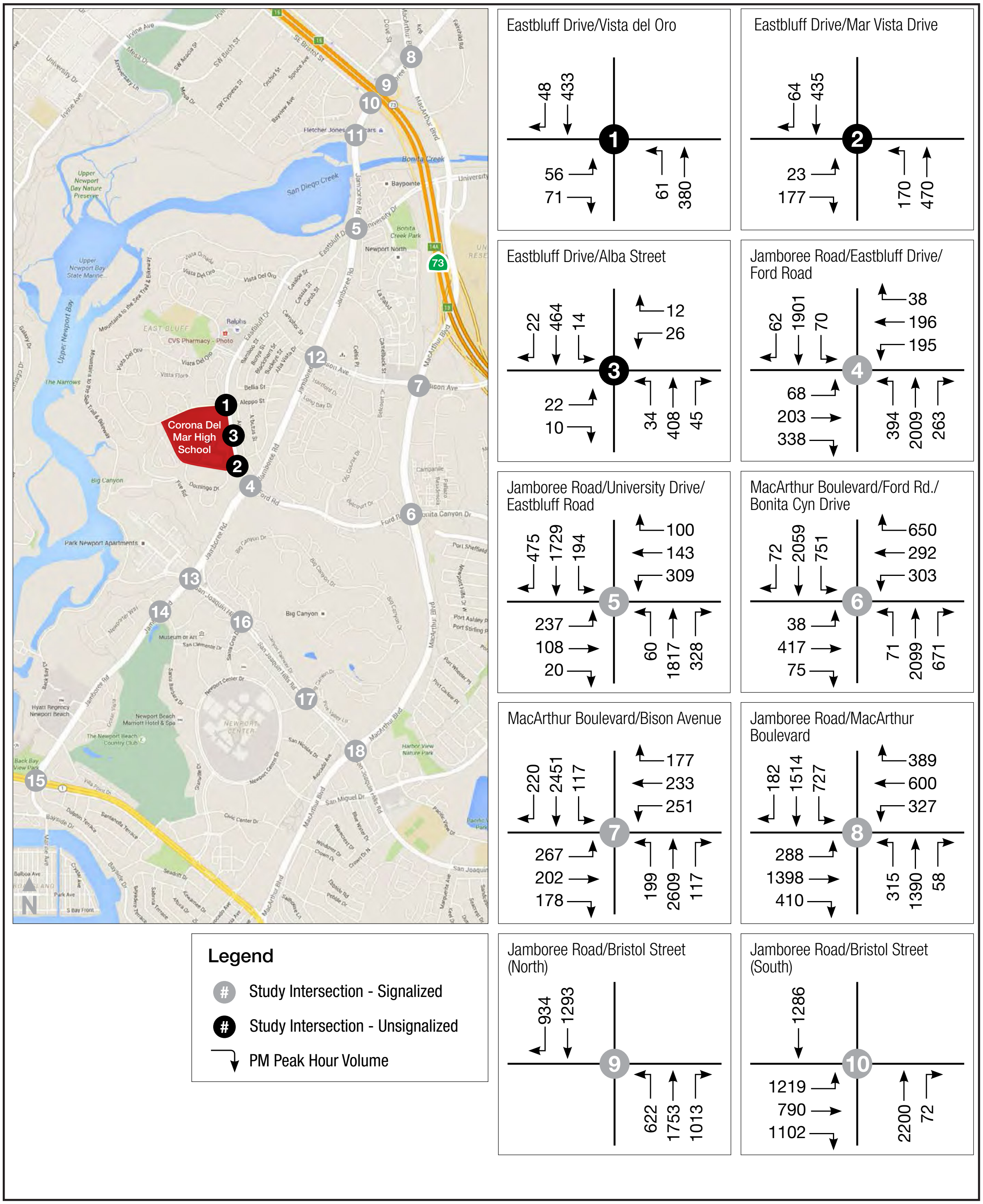
ID	Unsignalized Intersections	Traffic Control	PM Peak Hour Delay	PM Peak Hour LOS
1	Eastbluff Drive & Vista del Oro	AWSC	10.3	B
2	Eastbluff Drive & Mar Vista Drive	TWSC	12.8	B
3	Eastbluff Drive & Alba Street	TWSC	16.3	C
ID	**Signalized Intersections**	**Traffic Control**	**PM Peak Hour Delay**	**PM Peak Hour LOS**
4	Jamboree Road & Eastbluff Drive/Ford Road	Signal	0.82	D
5	Jamboree Road & University Drive /Eastbluff Drive	Signal	0.80	C
6	MacArthur Boulevard & Ford Road/Bonita Canyon Drive	Signal	**0.95**	**E**
7	MacArthur Boulevard & Bison Avenue	Signal	0.76	C
8	Jamboree Road & MacArthur Boulevard	Signal	**0.97**	**E**
9	Jamboree Road & Bristol Street (North)	Signal	0.57	A
10	Jamboree Road & Bristol Street (South)	Signal	0.82	D
11	Jamboree Road & Bayview Way	Signal	0.67	B
12	Jamboree Road & Bison Avenue	Signal	0.73	C
13	Jamboree Road & San Joaquin Hills Road	Signal	0.78	C
14	Jamboree Road & Santa Barbara Drive	Signal	0.84	D
15	Jamboree Road & Pacific Coast Highway	Signal	0.86	D
16	Santa Cruz Drive & San Joaquin Hills Road	Signal	0.59	A
17	Santa Rosa Drive & San Joaquin Hills Road	Signal	0.48	A
18	MacArthur Boulevard & San Joaquin Hills Road	Signal	0.77	C

TWSC = two-way stop control
AWSC = all-way stop control
Bold and shaded = unacceptable LOS

5.9.1.6 BUILDOUT YEAR (POST-2030) TRAFFIC CONDITIONS

Buildout Year (Post-2030) baseline traffic volumes and lane configurations were obtained from the City of Newport Beach Traffic Model (NBTM) forecasts for the General Plan Buildout. Forecast traffic data was provided for study intersections #4 through #18, and the future volumes for study intersections #1 to #3 were extrapolated from the available data by using the average growth rate. In addition, the intersection of Jamboree Road and San Joaquin Hills Road assumes that the westbound right-turn volumes utilize the channelized right-turn lane. The peak hour study intersection volumes for the Buildout Year (Post-2030) are shown on Figures 5.9-6a and 5.9-6b, *Buildout Year (Post-2030) Traffic Volumes, PM Peak Hour*.

Figure 5.9-5a - CEQA Year (2020) Traffic Volumes, PM Peak Hour



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Scale (Feet)

Source: IBI Group, 2017

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

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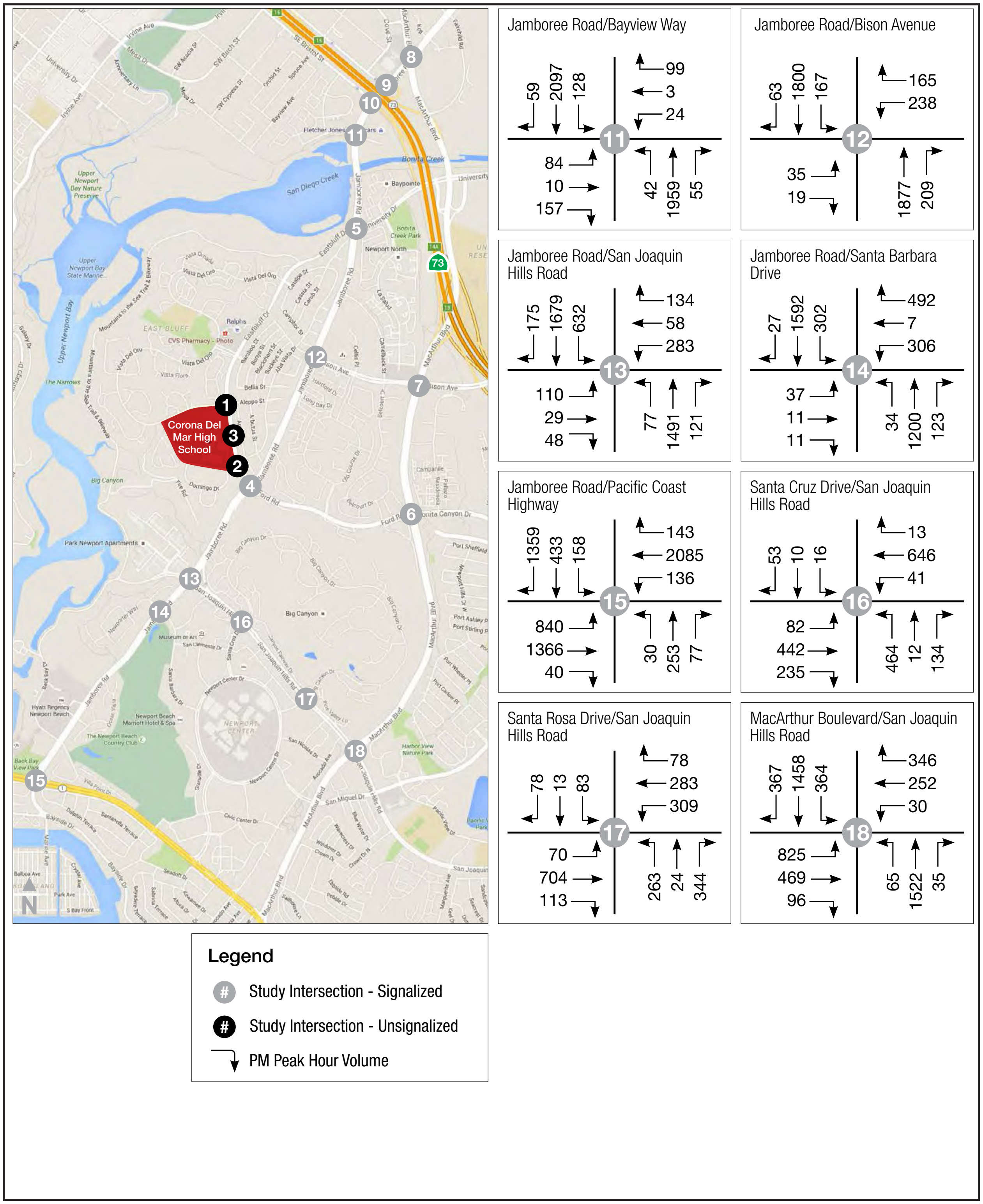
Figure 5.9-5b - CEQA Year (2020) Traffic Volumes, PM Peak Hour



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Source: IBI Group, 2017

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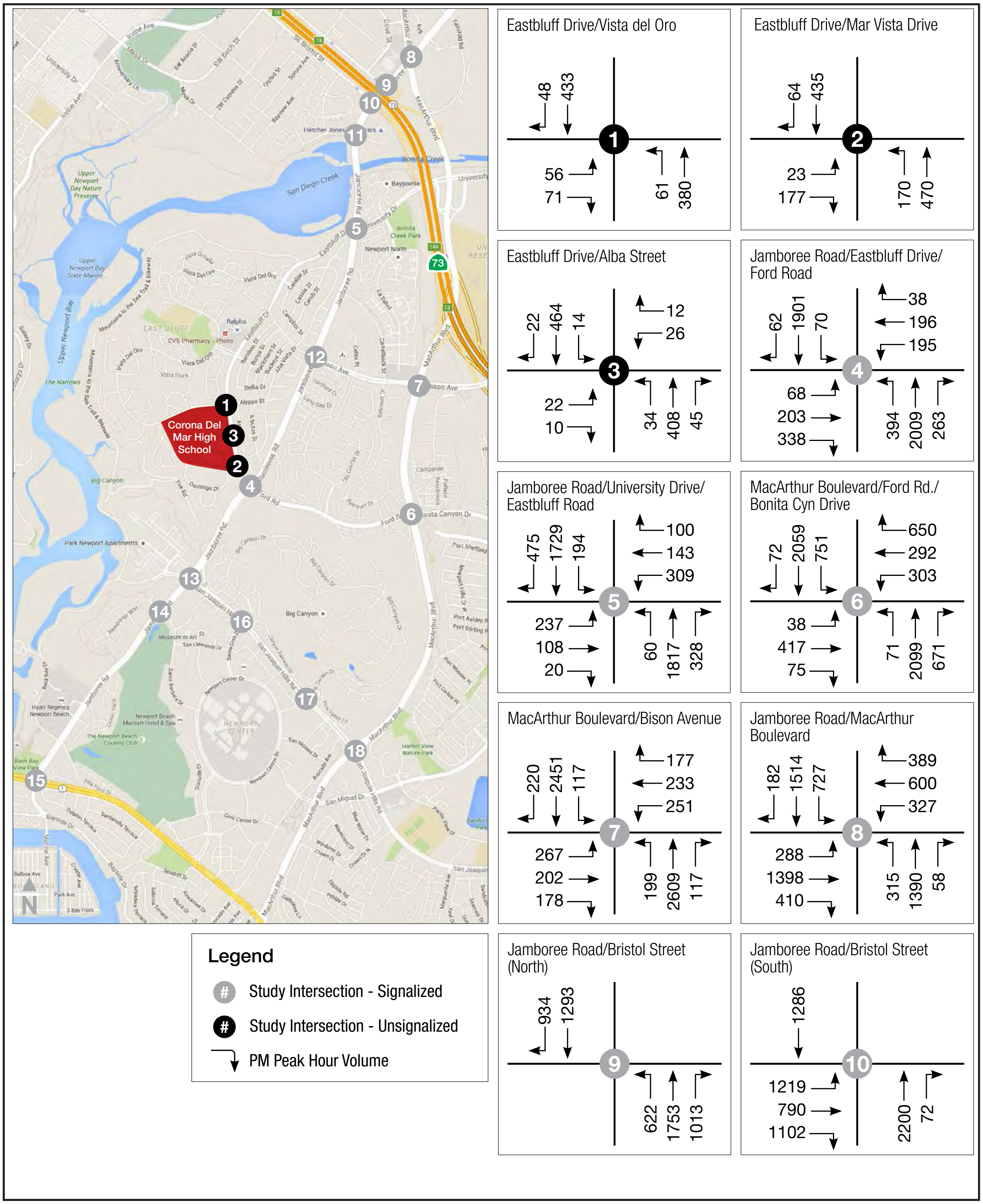
Figure 5.9-6a - Buildout Year (Post-2030) Traffic Volumes, PM Peak Hour

5. Environmental Analysis



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Scale (Feet)

Source: IBI Group, 2017

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

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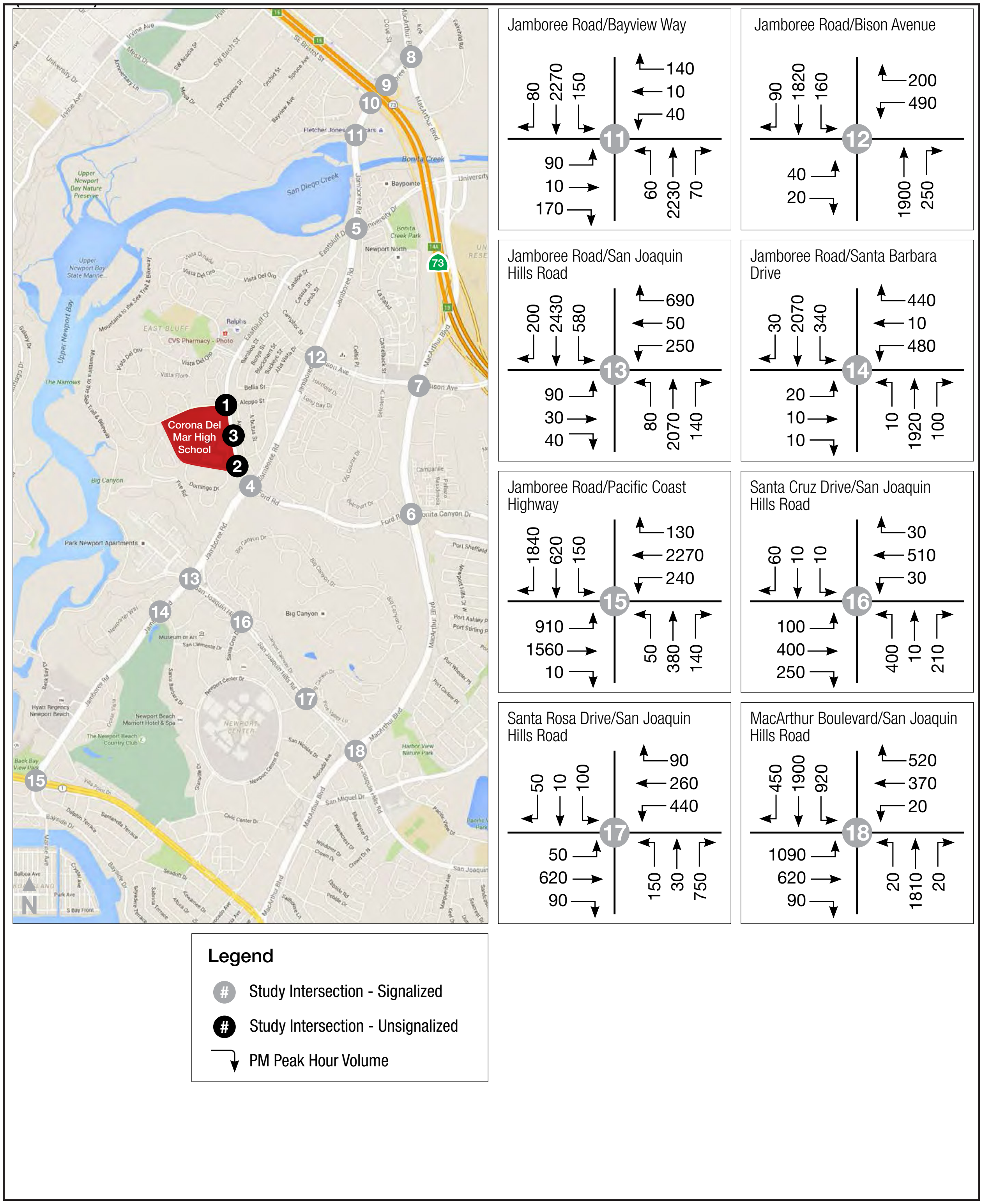
Figure 5.9-6b - Buildout Year (Post-2030) Traffic Volumes, PM Peak Hour



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Scale (Feet)

Source: IBI Group, 2017

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Buildout Year (Post-2030) Intersection LOS

An LOS analysis was conducted to evaluate Buildout Year (Post-2030) intersection operations during the weekday PM peak hour. Table 5.9-7, *Buildout Year (Post-2030) Intersection LOS*, summarizes the Buildout Year (Post-2030) LOS at the study area intersections. All study area intersections are forecast to operate at acceptable LOS under Buildout Year (Post-2030) conditions with the exception of the following intersections:

- MacArthur Boulevard/Ford Road/Bonita Canyon Drive (#6): LOS F
- MacArthur Boulevard/Bison Avenue (#7): LOS E
- Jamboree Road/MacArthur Boulevard (#8): LOS F
- Jamboree Road/Bristol Street (South) (#10): LOS E
- Jamboree Road/Santa Barbara Drive (#14): LOS E
- Jamboree Road/Pacific Coast Highway (#15): LOS E
- MacArthur Boulevard/ San Joaquin Hills Road (#18): LOS F

Table 5.9-7 Buildout Year (Post-2030) Intersection LOS, PM Peak Hour

ID	Unsignalized Intersections	Traffic Control	PM Peak Hour Delay	PM Peak Hour LOS
1	Eastbluff Drive & Vista del Oro	AWSC	9.6	A
2	Eastbluff Drive & Mar Vista Drive	TWSC	12.4	B
3	Eastbluff Drive & Alba Street	TWSC	16.4	C
ID	**Signalized Intersections**	**Traffic Control**	**PM Peak Hour Delay**	**PM Peak Hour LOS**
4	Jamboree Road & Eastbluff Drive/Ford Road	Signal	0.89	D
5	Jamboree Road & University Drive /Eastbluff Drive	Signal	0.83	D
6	MacArthur Boulevard & Ford Road/Bonita Canyon Drive	Signal	**1.16**	**F**
7	MacArthur Boulevard & Bison Avenue	Signal	**0.95**	**E**
8	Jamboree Road & MacArthur Boulevard	Signal	**1.01**	**F**
9	Jamboree Road & Bristol Street (North)	Signal	0.69	B
10	Jamboree Road & Bristol Street (South)	Signal	**0.99**	**E**
11	Jamboree Road & Bayview Way	Signal	0.74	C
12	Jamboree Road & Bison Avenue	Signal	0.82	D
13	Jamboree Road & San Joaquin Hills Road	Signal	0.87	D
14	Jamboree Road & Santa Barbara Drive	Signal	**0.95**	**E**
15	Jamboree Road & Pacific Coast Highway	Signal	**0.96**	**E**
16	Santa Cruz Drive & San Joaquin Hills Road	Signal	0.54	A
17	Santa Rosa Drive & San Joaquin Hills Road	Signal	0.68	B
18	MacArthur Boulevard & San Joaquin Hills Road	Signal	**1.01**	**F**

TWSC = two-way stop control
AWSC = all-way stop control
Bold and shaded = unacceptable LOS

5.9.2 Thresholds of Significance

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

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

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

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

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

T-5 Result in inadequate emergency access.

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

T-7 Result in inadequate parking capacity. (Optional: this threshold was deleted from the 2010 CEQA Guidelines)

The Recirculated Initial Study, included as Appendix A2, substantiates that impacts associated with the following thresholds would be less than significant:

- Threshold T-3
- Threshold T-6

These impacts will not be addressed in the following analysis.

5.9.2.1 STANDARD OF SIGNIFICANCE

According to City of Newport Beach criteria, LOS D (ICU = 0.81 to 0.90) is the minimum acceptable condition that should be maintained during the morning (AM) and evening (PM) peak commute hours. Therefore, intersections operating at LOS E or F are considered deficient. To determine whether or not the addition of project-generated trips at a signalized intersection results in a significant impact, the City of Newport Beach has adopted the following thresholds of significance:

- The LOS at any study area intersection deteriorates from acceptable to unacceptable LOS (e.g., from LOS C to LOS E) or
- The ICU value to an intersection already operating at unsatisfactory LOS (below the target LOS of LOS D) increases by 0.010 or greater.

For unsignalized intersections, the project would be considered to create a significant impact if:

- The LOS at any study area intersection deteriorates from acceptable to unacceptable LOS (e.g., from LOS C to LOS E) or
- The proposed project creates or adds traffic to an intersection already operating at unsatisfactory LOS (below the target LOS of LOS D).

Should a significant impact occur, project mitigation would be required to bring the intersection back to baseline conditions, at a minimum.

5.9.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Recirculated Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

Impact 5.9-1: Project-related trip generation (Options A and B) would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system with the exception of four intersections under Buildout Year (Post-2030). [Threshold T-1]

Impact Analysis:

Options A and B

The District is planning to construct and operate one or two artificial-turf sports field(s) at roughly the same location as the existing natural turf sports field (turf field and rubber track) on the CdM campus. Options A and B would include bleachers with seating for 664 spectators on the main field. Option B includes a second field where portable bleachers with 200 seats may be positioned for events, creating bleacher space for a total of 864 spectators. The traffic analysis that follows is based on this maximum capacity of 864 spectators, which represents the worst-case scenario. Although Option A does not include the second artificial-turf field, portable bleachers are already used occasionally on the existing grass field.

Project Trip Generation

The sports field land use category is not listed in the Institute of Transportation Engineers (ITE) manual, *Trip Generation*, and there is limited local or national survey data available for this type of use. High school sports fields typically do not generate a significant number of vehicle trips during the peak traffic hours of

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

adjacent streets, but volumes may vary depending on the type of event and the scheduled start time. Vehicle trips generated by various sports team practices and activities that take place on the proposed sports field(s) are already captured in the existing counts for day time. Sports field uses that would not attract large numbers of spectators are not expected to generate substantial additional trips.

School sports events that attract large numbers of spectators tend to be seasonal, demands for field use by CdM athletic teams are listed in Chapter 3, Table 3-1 of the RDEIR. In-season football games are played during fall and winter months, soccer during winter and spring months, and lacrosse games during spring and summer months.

The CdM MS/HS athletic teams currently participate in games held at a variety of venues, including CdM MS/HS, Estancia High School, Newport Harbor High School, and OCC. If the proposed improvements are constructed, the people that would have traveled to off-site venues to watch a home game would travel to the CdM campus instead. Therefore, peak hour and daily trip estimates developed in this section would not be new trips generated by a new use, but redistributed trips from these offsite facilities to the CdM site. Many of these trips are already reflected in ambient traffic counts and Newport Beach Transportation Model (NBTM) forecast volumes. The peak hour trips are shown to be generated by the sports field land use and distributed through the study area network as a worst-case scenario. The actual impacts caused by the proposed sports field use are anticipated to be substantially less, and concentrated in the immediate vicinity of the school site.

Varsity football games would not be played at CdM campus with implementation of the proposed project, but would continue to be played at other facilities.

PM Peak Hour Trips

Although no varsity football games would be played at CdM sports field(s) and the largest crowd gathering event would be varsity lacrosse and/or soccer games, the daily and peak-hour trip generation for a varsity football game at the Estancia High School sports field was used to estimate the trip generation for the proposed project as worst-case scenario. The daily and peak-hour trips generation for a varsity lacrosse and soccer games are anticipated to be less than for a varsity football game.

Driveway counts were taken at the Estancia High School stadium during a CdM varsity football game to identify the number of vehicles that enter and exit the Estancia High School during a typical varsity football game. These counts are shown in Table 5.9-8, *PM Peak-Hour Driveway Count Volumes at Estancia Stadium*. However, a number of other school activities took place at Estancia High School at the same time as the varsity football game, as further described in Impact 5.9-4. Because these activities were presumed to account for a large percentage of the counted trips, these trips were estimated by using the ITE-forecast PM peak-hour rates and were subtracted from the total counts. Table 5.9-9, *Estancia High School PM Peak Hour Trip Generation Estimate,* shows the estimated total PM peak-hour trips unrelated to the varsity football game.

Table 5.9-8 PM Peak-Hour Driveway Count Volumes at Estancia Stadium

Driveway Access Intersections	PM Peak Trips		
	Enter	Exit	Total
Estancia High School Stadium Driveway 1	124	84	208
Estancia High School Stadium Driveway 2	53	30	83
Total Peak Hour	**177**	**114**	**291**
Percentage	61%	39%	100%

Notes: Counts at access driveways to Estancia High School parking lots on Friday, October 30, 2015, between 5:00 PM and 7:00 PM. The football game started at 7:00 PM.

Table 5.9-9 Estancia High School PM Peak-Hour Trip Generation Estimate

ITE Code	Land Use	Unit	Quantity	PM Peak Rates			PM Peak Trips		
				Enter	Exit	Total	Enter	Exit	Total
530	High School Sports Field	Students	1,200	0.53	0.47	0.13	73	83	156
						Trip Reduction	**73**	**83**	**156**

As shown in Table 5.9-10, *Project Trip Generation Volume Calculation,* the trip generation for the proposed project was calculated by subtracting the Estancia HS trip generation estimates shown in Table 5.9-9 from the actual driveway count volumes shown in Table 5.9-8. Therefore, it was determined that the CdM HS varsity football game at Estancia High School generated a total of 135 PM peak trips.

Table 5.9-10 Project Trip Generation Volume Calculation

Driveway Access Intersections	PM Peak Trips		
	Enter	Exit	Total
Estancia HS Stadium and Estancia High School Driveway Counts	177	114	291
Estancia High School Trip Generation Estimate	(73)	(83)	(156)
Stadium Derived Driveway Volumes	**104**	**31**	**135**
Percentage	77%	23%	100%

Based on the 135 PM peak-hour trip volumes, a ratio of 0.304 trip per seat was calculated by dividing the total sports field-derived driveway volumes by total attendees at the October 30, 2015, varsity football game (i.e., 135 trips/444 attendees). And with this ratio, a worst-case scenario project trips are calculated in Table 5.9-11, *Worst-Case Project Trip Generation*. For a full-capacity sporting event with 864 spectators, 263 PM peak-hour trips are anticipated. And for other activities happening at CdM campus unrelated to the sports fields, a total of 332 trips were estimated by using the ITE-forecast PM peak-hour rates for 2,557 students. Therefore, the total PM peak-period trip generation is expect to be 595.

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

Table 5.9-11 Worst-Case Project Trip Generation

Land Use	Unit	Quantity	PM Peak Rates			PM Peak Trips		
			Enter	Exit	Total	Enter	Exit	Total
High School Sports Field	Seats	864	0.234	0.070	0.304	203	60	263
ITE Trip Generation	Students	2,557	0.47	0.53	0.13	156	176	332
					Total	359	236	595

It should be noted that typical school activities occur between 8:00 AM and 3:00 PM, outside of the PM peak hour between 4:00 PM and 6:00 PM. During the AM peak period, 2,557 students would generate approximately 1,100 trips. The projected trips for the proposed project is based on a full-capacity sporting event with 864 spectators and not for regular school day practices with fewer attendees. Therefore, worst case full-capacity events under the proposed project would generate fewer trips than on a normal weekday during the AM peak hour.

Average Daily Trips

Daily trip generation for a high school or middle school sports field use is highly variable and depends on a number of local factors, including demographics, weather patterns, team performance, and other site-specific criteria. A high school sports field is not one of the land use categories in the ITE manual, so two other sources were used to estimate the daily trip rate for the proposed sports field(s) project: 1) the San Diego Municipal Code, Land Development Code, Trip Generation Manual, and 2) the calculated trip rate per attendee for a sports field (i.e., Table 5.9-11).

The City of San Diego Traffic and Engineering Division's recommended trip generation rate for a sports-facility land use is one trip per attendee. A spectator-sport facility is defined as a specially designed land use where people gather to watch a team sport or other attraction, such as the San Diego Qualcomm Stadium, the Sports Arena, or the Del Mar Race Track. This type of land use generally attracts more regional trips than a local high school sports field and would be expected to have a higher daily trip generation rate. Therefore, an average of the San Diego trip rate for a Sports Facility (one trip per attendee) and the calculated trips per attendee for the proposed sports field (0.304 trip per seat) was used to calculate the daily trip generation rate of 0.65 trip per seat for the proposed project.

The daily traffic volume for a spectator event at the proposed sports field is forecast to be 564 trip—282 inbound trips and 282 outbound trips throughout the day. The proposed sports field trips would not be generated on typical weekdays throughout the year. Total driveway trips of 564 are only expected on days when a full-capacity special event fills both of the sports fields under Option B. These special events would not contribute to the typical daily traffic volumes year round.

Trip Distribution

According to the proposed site plan, the proposed sports field(s) would use three different parking lots. Trips are distributed to the parking lots based on the shortest walking distance to the sports field(s) (visitors will try to park in the closest lot first), and most of the trips are assigned to the main parking lot (Lot 1) closest to the sports field(s). Local trip distribution is based on the District's map of the area from which the CdM MS/HS draws students. Regional trips are estimated according to the surrounding populated areas from which visiting teams would arrive. The inbound and outbound trip distribution percentages are shown in Figures 5.9-7a and 5.9-7b, *Project Trips Distribution*.

Existing (2017) Traffic Conditions With Project

Existing (2017) intersection volumes with the proposed project under Option B (as worst case scenario) are shown on Figures 5.9-8a and 5.9-8b, *Existing With Project Traffic Volumes, PM Peak*. A summary of the LOS analysis results for the Existing (2017) With Project conditions is in Table 5.9-12, *Existing Intersection LOS With Project, PM Peak Hour*. As shown, the MacArthur & Ford Road/Bonita Canyon Drive intersection (#6), would operate at unacceptable LOS E without and with the project. However, the proposed project would not increase the ICU value by 0.010; therefore, it would not exceed the significance threshold and no impact would occur.

Table 5.9-12 Existing Year (2017) Intersection LOS With Project, PM Peak Hour

ID	Unsignalized Intersection	Traffic Control	Without Project		With Project		Change	Significant?
			Delay (sec)	LOS	Delay (sec)	LOS		
1	Eastbluff Dr./Vista del Oro	AWSC	10.1	B	10.2	B	0.1	No
2	Eastbluff Dr./Mar Vista Dr.	TWSC	12.5	B	13.8	B	1.3	No
3	Eastbluff Dr./Alba St.	TWSC	15.7	C	20.5	C	4.8	No
ID	Signalized Intersection	Traffic Control	Without Project		With Project		Change	Significant?
			ICU	LOS	ICU	LOS		
4	Jamboree Rd./Eastbluff Dr./Ford Rd.	Signal	0.78	C	0.83	D	0.050	No
5	Jamboree Rd./University Dr./Eastbluff Rd.	Signal	0.73	C	0.74	C	0.010	No
6	MacArthur Blvd./Ford Rd./Bonita Cyn Dr.	Signal	**0.91**	**E**	**0.91**	**E**	0.00	No
7	MacArthur Blvd./Bison Ave.	Signal	0.73	C	0.73	C	0.00	No
8	Jamboree Rd./MacArthur Blvd.	Signal	0.90	D	0.90	D	0.00	No
9	Jamboree Rd./Bristol St. (North)	Signal	0.51	A	0.5	A	0.00	No
10	Jamboree Rd./Bristol St. (South)	Signal	0.73	C	0.73	C	0.00	No
11	Jamboree Rd./Bayview Way	Signal	0.63	B	0.63	B	0.00	No
12	Jamboree Rd./Bison Ave.	Signal	0.68	B	0.68	B	0.00	No
13	Jamboree Rd./San Joaquin Hills Rd.	Signal	0.72	C	0.74	C	0.020	No
14	Jamboree Rd./Santa Barbara Dr.	Signal	0.80	C	0.80	C	0.00	No
15	Jamboree Rd./Pacific Coast Highway	Signal	0.80	C	0.81	D	0.010	No
16	Santa Cruz Dr./San Joaquin Hills Rd.	Signal	0.56	A	0.59	A	0.030	No
17	Santa Rosa Dr./San Joaquin Hills Rd.	Signal	0.43	A	0.43	A	0.00	No
18	MacArthur Blvd./San Joaquin Hills Rd.	Signal	0.72	C	0.73	C	0.010	No

TWSC = two-way stop control; AWSC = all-way stop control
Bold and shaded– unacceptable LOS

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

TPO Year (2020) Traffic Conditions With Project

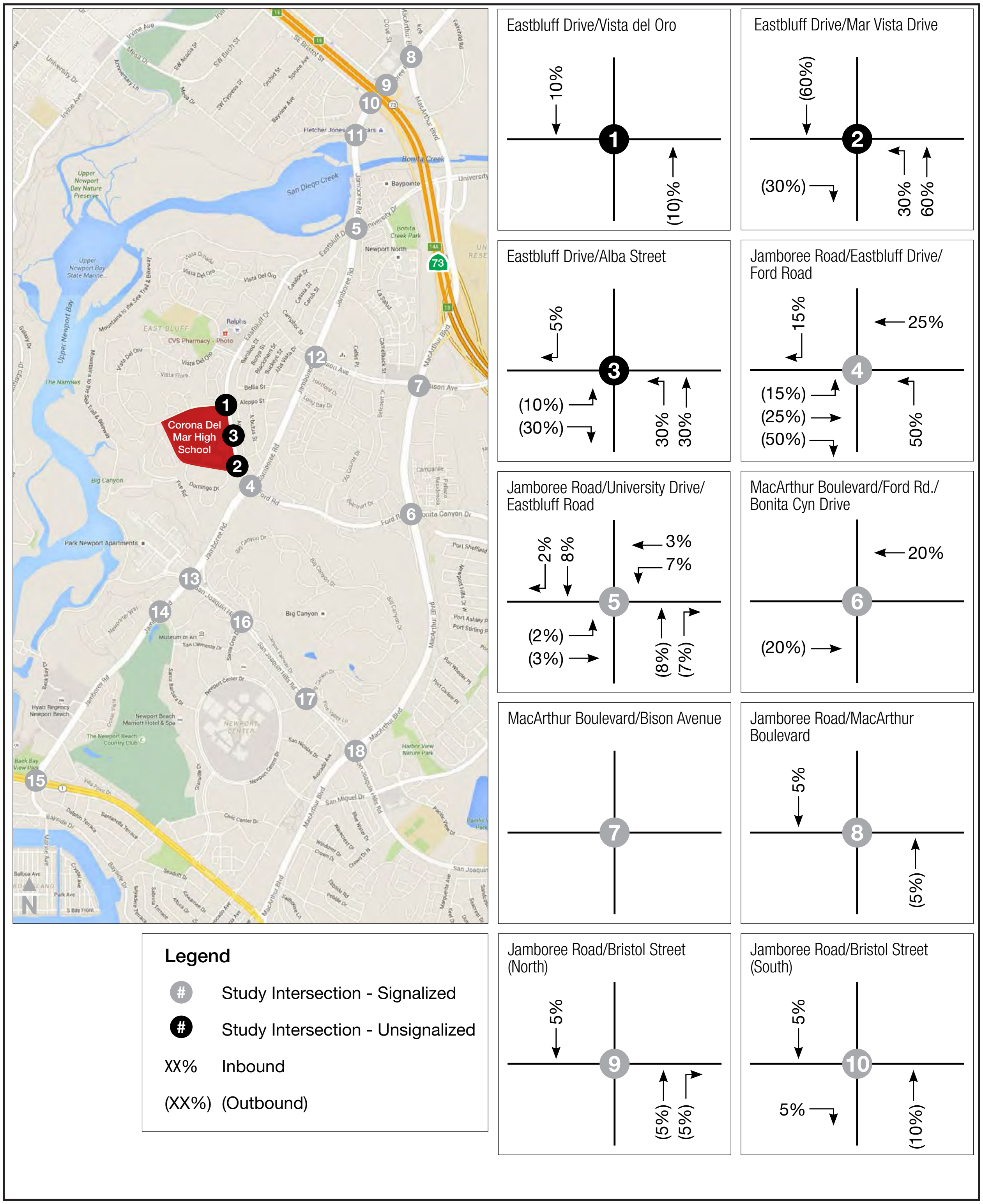
TPO Year (2020) forecast intersection volumes with project are shown on Figures 5.9-9a and 5.9-9b, *TPO Year (2020) With Project Traffic Volumes, PM Peak Hour*. A summary of the level of service analysis results for the TPO Year (2020) with project condition is in Table 5.9-13. As shown, the intersections of MacArthur Boulevard & Ford Road/Bonita Canyon Drive (#6) and Jamboree Road/MacArthur Boulevard (#8) would operate at unacceptable LOS with and without the project. However, the incremental increase would not trigger an impact based on the City's threshold of 0.010. No impacts would occur in this scenario.

Table 5.9-13 TPO Year (2020) Intersection LOS With Project PM Peak Hour

ID	Unsignalized Intersection	Traffic Control	Without Project Delay (sec)	Without Project LOS	With Project Delay (sec)	With Project LOS	Delta	Significant?
1	Eastbluff Dr./Vista del Oro	AWSC	10.3	B	10.4	B	0.1	No
2	Eastbluff Dr./Mar Vista Dr.	TWSC	12.8	B	14.3	B	1.5	No
3	Eastbluff Dr./Alba St.	TWSC	16.3	C	21.5	C	5.2	No
ID	**Signalized Intersection**	**Traffic Control**	**Without Project ICU**	**Without Project LOS**	**With Project ICU**	**With Project LOS**	**Delta**	**Significant?**
4	Jamboree Rd & Eastbluff Dr./Ford Rd.	Signal	0.82	D	0.87	D	0.050	No
5	Jamboree Rd & University Dr./Eastbluff Rd.	Signal	**0.80**	**C**	**0.81**	**D**	0.010	No
6	MacArthur Blvd & Ford Rd./Bonita Cyn Dr.	Signal	**0.95**	**E**	**0.95**	**E**	0.00	No
7	MacArthur Blvd./Bison Ave.	Signal	0.76	C	0.76	C	0.00	No
8	Jamboree Rd./MacArthur Blvd.	Signal	**0.95**	**E**	**0.95**	**E**	0.00	No
9	Jamboree Rd./Bristol St. (North)	Signal	0.56	A	0.56	A	0.00	No
10	Jamboree Rd./Bristol St. (South)	Signal	0.81	D	0.81	D	0.00	No
11	Jamboree Rd./Bayview Way	Signal	0.67	B	0.67	B	0.00	No
12	Jamboree Rd./Bison Ave.	Signal	0.73	C	0.73	C	0.00	No
13	Jamboree Rd./San Joaquin Hills Rd.	Signal	0.77	C	0.84	D	0.070	No
14	Jamboree Rd./Santa Barbara Dr.	Signal	0.84	D	0.84	D	0.00	No
15	Jamboree Rd./Pacific Coast Highway	Signal	0.86	D	0.87	D	0.010	No
16	Santa Cruz Dr./San Joaquin Hills Rd.	Signal	0.59	A	0.62	B	0.030	No
17	Santa Rosa Dr./San Joaquin Hills Rd.	Signal	0.48	A	0.49	A	0.010	No
18	MacArthur Blvd./San Joaquin Hills Rd.	Signal	0.76	C	0.78	C	0.020	No

TWSC = two-way stop control
AWSC = all-way stop control
Bold and shaded = unacceptable LOS

Figure 5.9-7a - Project Trip Distribution



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Scale (Feet)

Source: IBI Group, 2017

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

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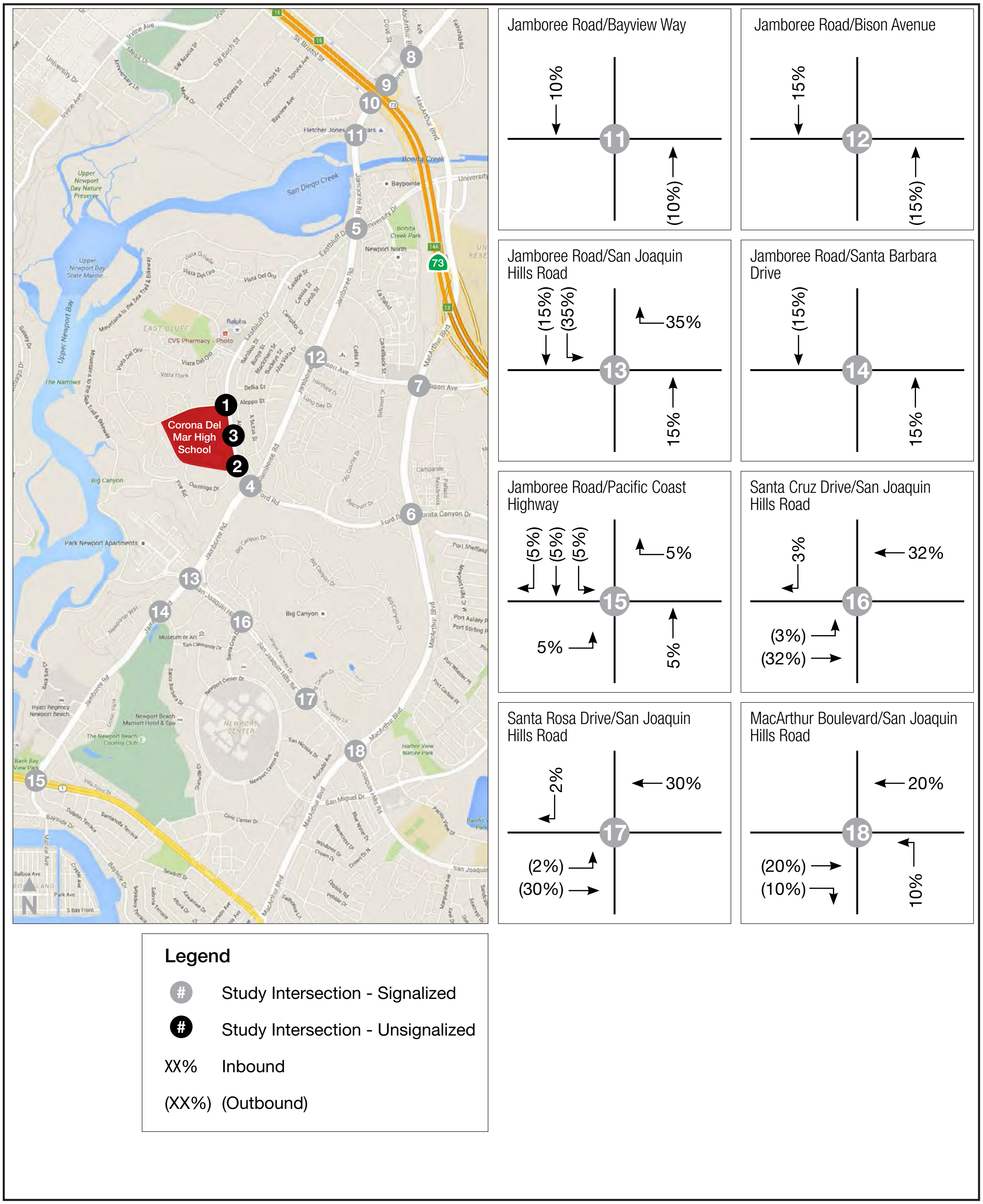
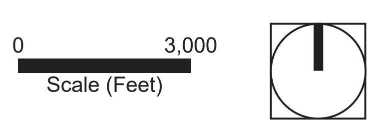
Figure 5.9-7b - Project Trip Distribution
5. Environmental Analysis





Source: IBI Group, 2017

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

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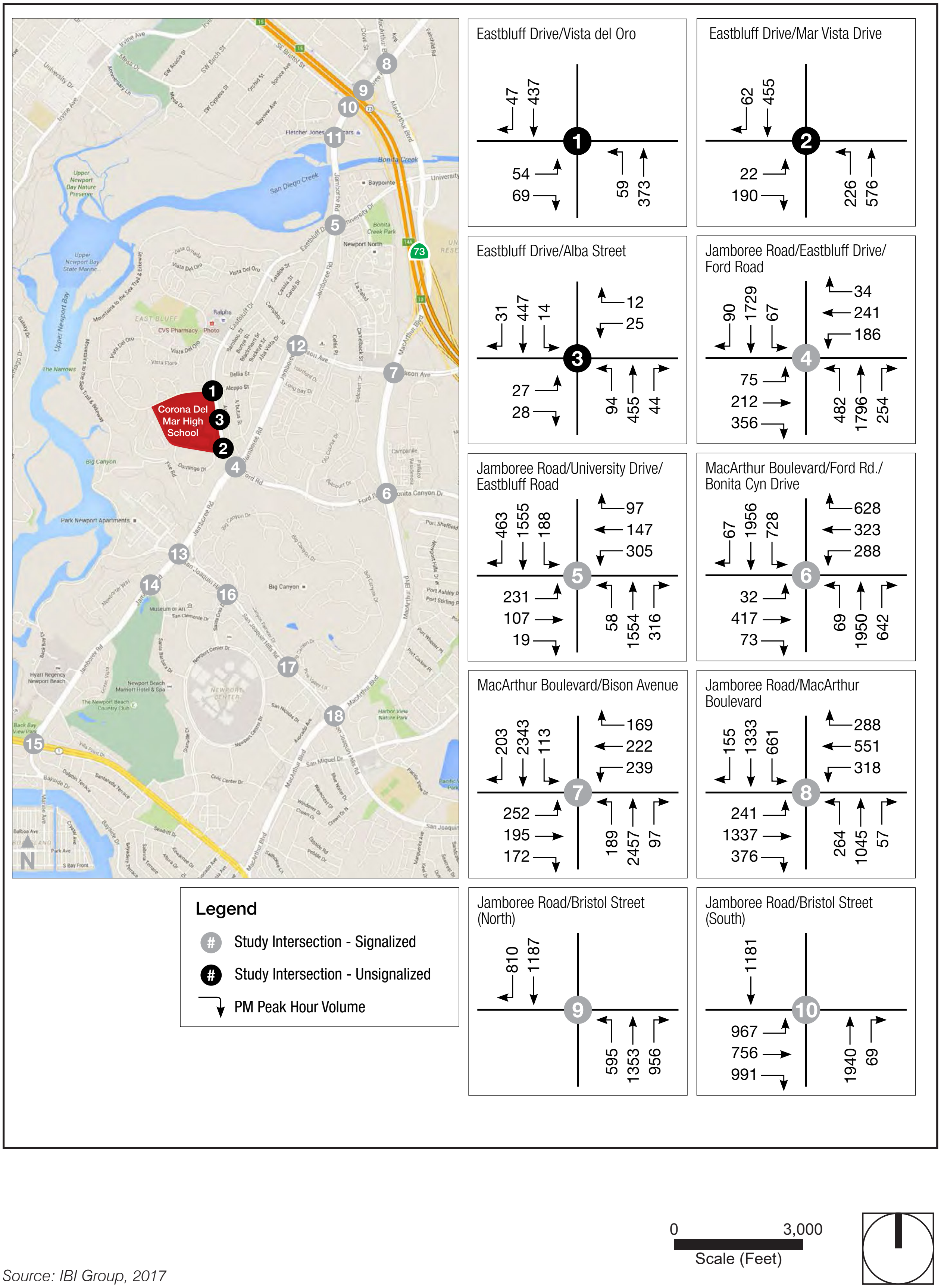
Figure 5.9-8a - Existing With Project Traffic Volumes, PM Peak Hour

5. Environmental Analysis



Source: IBI Group, 2017

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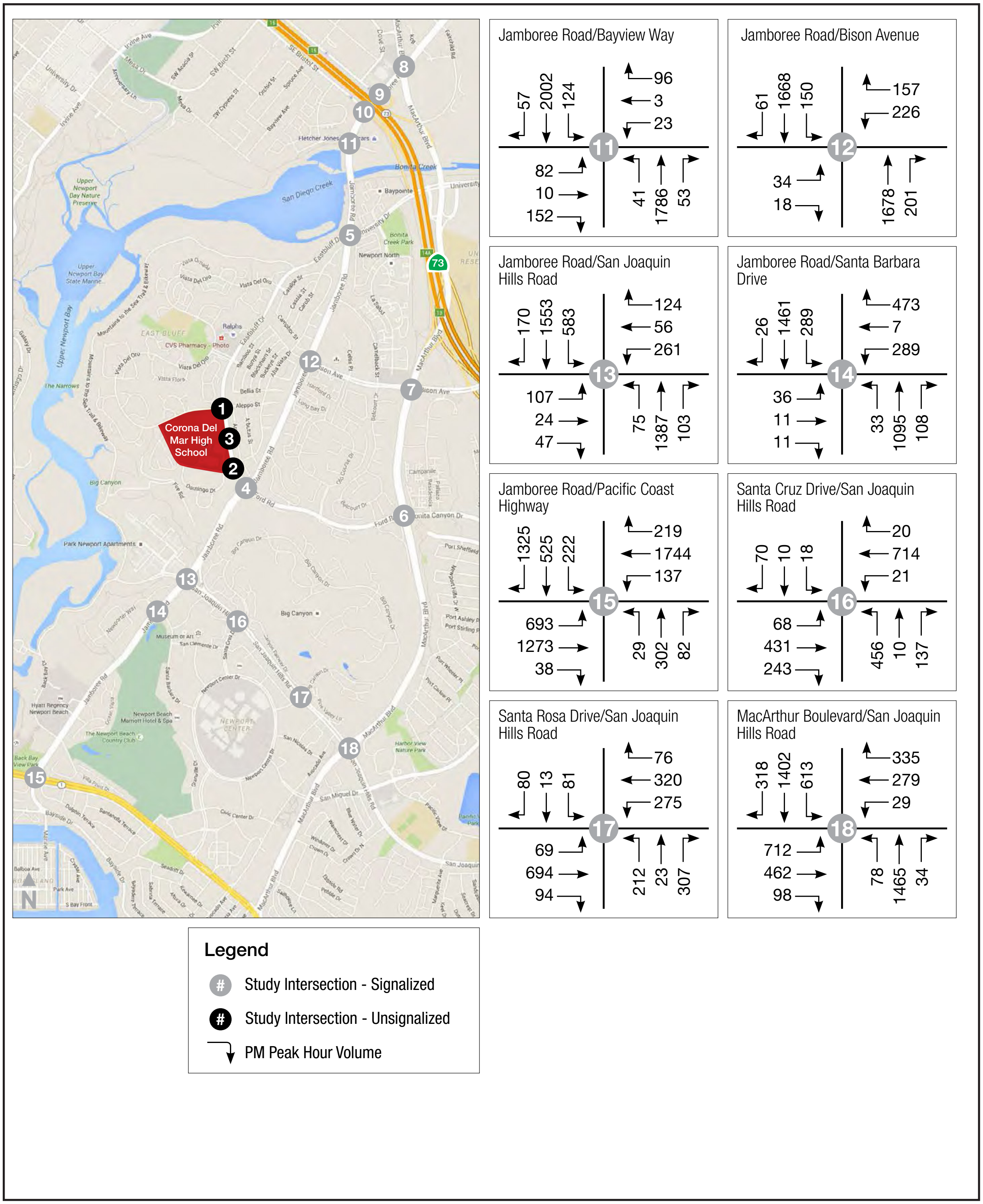
Figure 5.9-8b - Existing With Project Traffic Volumes, PM Peak Hour

5. Environmental Analysis



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Source: IBI Group, 2017

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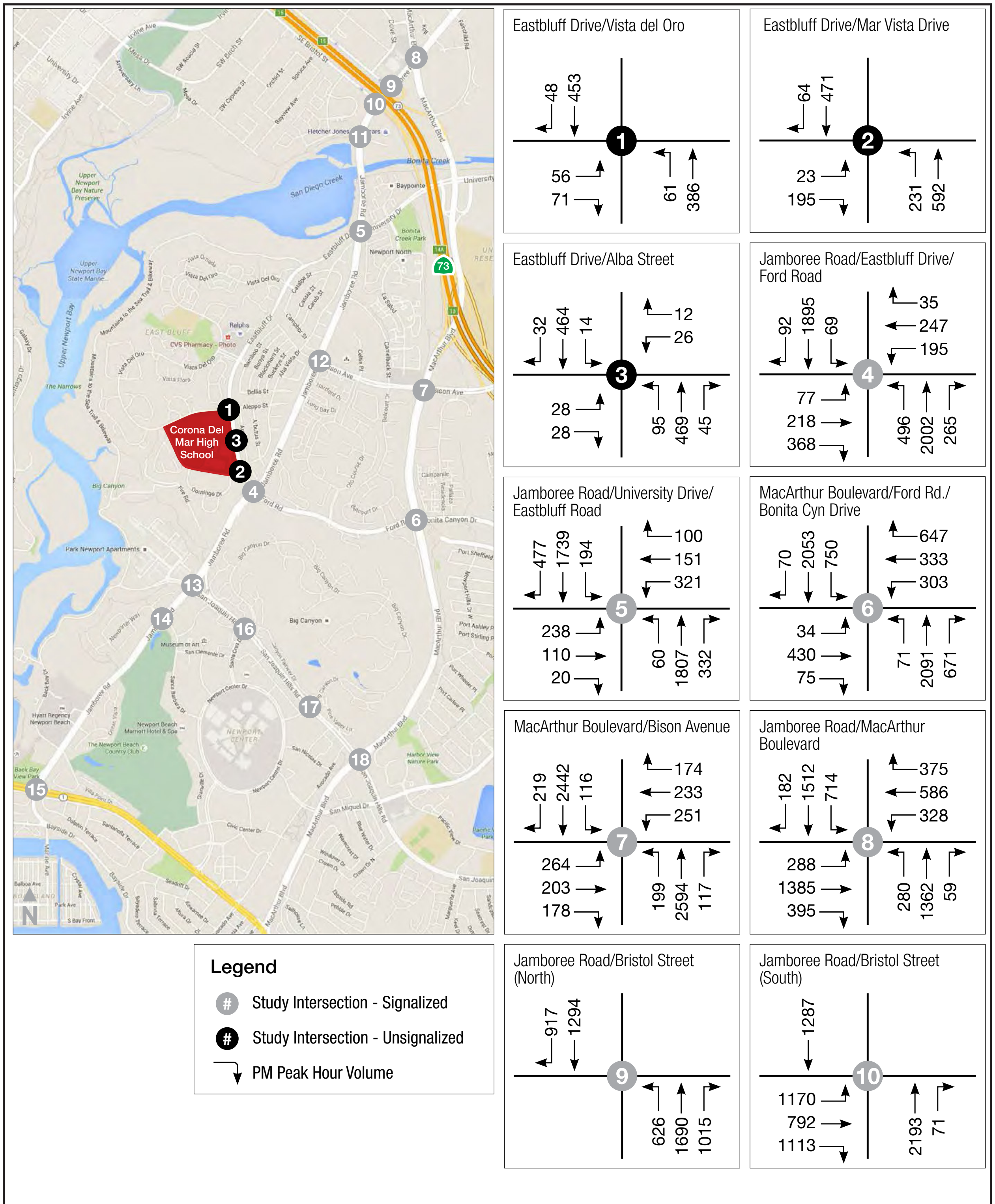
Figure 5.9-9a - TPO Year (2020) With Project Traffic Volumes, PM Peak Hour



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Scale (Feet)

Source: IBI Group, 2017

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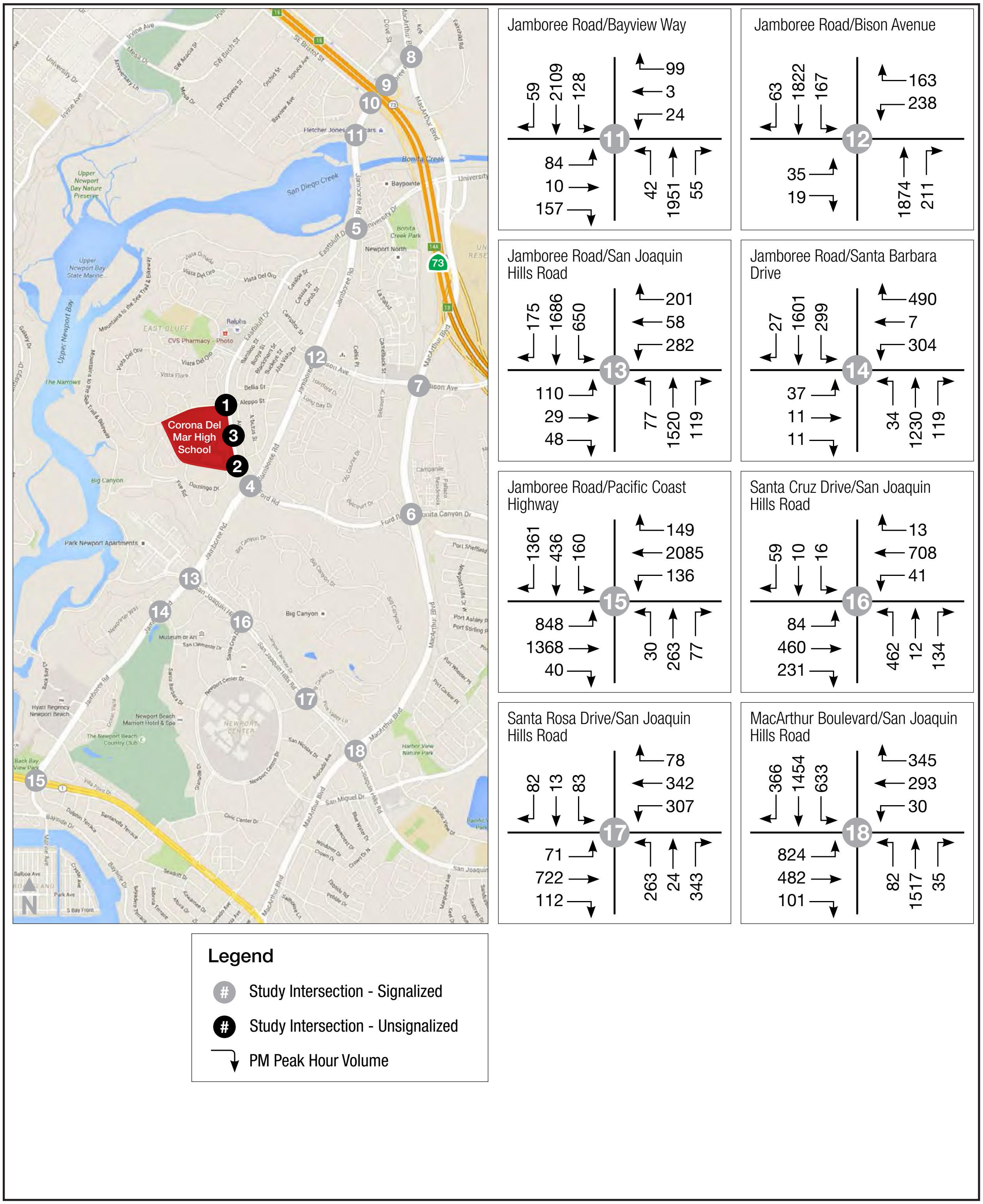
Figure 5.9-9b - TPO Year (2020) With Project Traffic Volumes, PM Peak Hour



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Scale (Feet)

Source: IBI Group, 2017

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CEQA Year (2020) Conditions With Project

CEQA Year (2020) forecast intersection volumes with the project are shown on Figures 5.9-10a and 5.9-10b, *CEQA Year (2020) With Project Traffic Volumes, PM Peak Hour*. A summary of the level of service analysis results for the CEQA Year (2020) with project condition is in Table 5.9-14, *CEQA Year (2020) Intersection LOS With Project PM Peak Hour*. As shown, the intersections of MacArthur Boulevard & Ford Road/Bonita Canyon Drive (#6) and Jamboree Road/MacArthur Blvd (#8) would operate at unacceptable LOS with and without the project. However, the incremental increase would not trigger an impact based on the City's threshold of 0.010. No impacts would occur in this scenario.

Table 5.9-14 CEQA Year (2020) Intersection LOS With Project PM Peak Hour

ID	Unsignalized Intersection	Traffic Control	Without Project		With Project		Delta	Significant?
			Delay (sec)	LOS	Delay (sec)	LOS		
1	Eastbluff Dr./Vista del Oro	AWSC	10.3	B	10.4	B	0.1	No
2	Eastbluff Dr./Mar Vista Dr.	TWSC	12.8	B	14.3	B	1.5	No
3	Eastbluff Dr./Alba St.	TWSC	16.3	C	21.5	C	5.2	No
ID	**Signalized Intersection**	**Traffic Control**	**Without Project**		**With Project**		**Delta**	**Significant?**
			ICU	**LOS**	**ICU**	**LOS**		
4	Jamboree Rd & Eastbluff Dr./Ford Rd.	Signal	0.82	D	0.87	D	0.050	No
5	Jamboree Rd & University Dr./Eastbluff Rd.	Signal	**0.80**	**C**	**0.81**	**D**	0.010	No
6	MacArthur Blvd & Ford Rd./Bonita Cyn Dr.	Signal	**0.95**	**E**	**0.95**	**E**	0.00	No
7	MacArthur Blvd./Bison Ave.	Signal	0.76	C	0.76	C	0.00	No
8	Jamboree Rd./MacArthur Blvd.	Signal	**0.97**	**E**	**0.95**	**E**	0.00	No
9	Jamboree Rd./Bristol St. (North)	Signal	0.57	A	0.56	A	0.00	No
10	Jamboree Rd./Bristol St. (South)	Signal	0.82	D	0.81	D	0.00	No
11	Jamboree Rd./Bayview Way	Signal	0.67	B	0.67	B	0.00	No
12	Jamboree Rd./Bison Ave.	Signal	0.73	C	0.73	C	0.00	No
13	Jamboree Rd./San Joaquin Hills Rd.	Signal	0.78	C	0.84	D	0.070	No
14	Jamboree Rd./Santa Barbara Dr.	Signal	0.84	D	0.84	D	0.00	No
15	Jamboree Rd./Pacific Coast Highway	Signal	0.86	D	0.87	D	0.010	No
16	Santa Cruz Dr./San Joaquin Hills Rd.	Signal	0.59	A	0.62	B	0.030	No
17	Santa Rosa Dr./San Joaquin Hills Rd.	Signal	0.48	A	0.49	A	0.010	No
18	MacArthur Blvd./San Joaquin Hills Rd.	Signal	0.77	C	0.78	C	0.020	No

TWSC = two-way stop control
AWSC = all-way stop control
Bold and shaded = unacceptable LOS

Buildout Year (Post-2030) Conditions With Proposed Project

Buildout Year (Post-2030) forecast intersection volumes with the project are shown on Figures 5.9-11a and 5.9-11b, *Buildout (Post-2030) With Project Traffic Volumes, PM Peak Hour*. A summary of the level of service analysis results for the Buildout Year (Post-2030) with project condition is in Table 5.9-15. The following intersections are considered significantly impacted by implementation of the proposed project without mitigation. It should be noted that three (#14, #15, and #18) of the four impacted intersections would operate at unacceptable LOS even without the proposed project.

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

- Jamboree Road and Eastbluff Drive/Ford Road (#4)
- Jamboree Road and Santa Barbara Drive (#14)
- Jamboree Road and Pacific Coast Highway (#15)
- MacArthur Boulevard and San Joaquin Hills Road (#18)

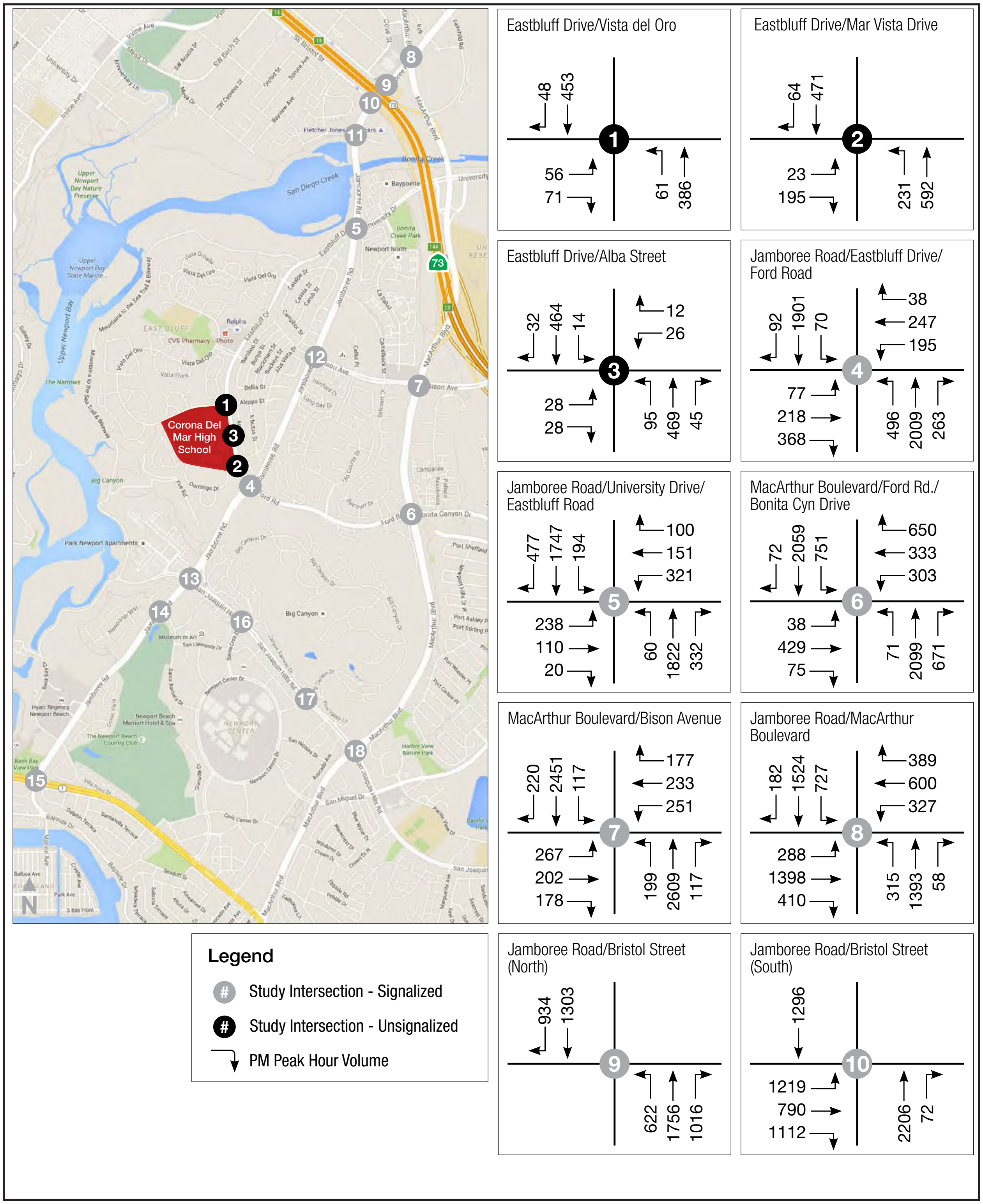
Table 5.9-15 Buildout Year (Post-2030) Intersection LOS With Project PM Peak Hour

ID	Unsignalized Intersection	Traffic Control	Without Project Delay (sec)	Without Project LOS	With Project Delay (sec)	With Project LOS	Delta	Significant?
1	Eastbluff Dr./Vista del Oro	AWSC	11.9	B	12.1	B	0.2	No
2	Eastbluff Dr./Mar Vista Dr.	TWSC	15.7	C	18.6	C	2.9	No
3	Eastbluff Dr./Alba St.	TWSC	21.3	C	30.4	D	9.1	No
ID	**Signalized Intersection**	**Traffic Control**	**Without Project ICU**	**Without Project LOS**	**With Project ICU**	**With Project LOS**	**Delta**	**Significant?**
4	Jamboree Rd & Eastbluff Dr./Ford Rd.	Signal	0.89	D	**0.94**	**E**	0.050	**Yes**
5	Jamboree Rd & University Dr./Eastbluff Rd.	Signal	0.83	D	0.83	D	0.00	No
6	MacArthur Blvd & Ford Rd./Bonita Cyn Dr.	Signal	**1.16**	**F**	**1.16**	**F**	0.00	No
7	MacArthur Blvd./Bison Ave.	Signal	**0.95**	**E**	**0.95**	**E**	0.00	No
8	Jamboree Rd./MacArthur Blvd.	Signal	**1.01**	**F**	**1.01**	**F**	0.00	No
9	Jamboree Rd./Bristol St. (North)	Signal	0.69	B	0.69	B	0.00	No
10	Jamboree Rd./Bristol St. (South)	Signal	**0.99**	**E**	**0.99**	**E**	0.00	No
11	Jamboree Rd./Bayview Way	Signal	0.74	C	0.75	C	0.010	No
12	Jamboree Rd./Bison Ave.	Signal	0.82	D	0.83	D	0.010	No
13	Jamboree Rd./San Joaquin Hills Rd.	Signal	0.87	D	0.88	D	0.010	No
14	Jamboree Rd./Santa Barbara Dr.	Signal	**0.95**	**E**	**0.96**	**E**	0.010	**Yes**
15	Jamboree Rd./Pacific Coast Highway	Signal	**0.96**	**E**	**0.97**	**E**	0.010	**Yes**
16	Santa Cruz Dr./San Joaquin Hills Rd.	Signal	0.54	A	0.57	A	0.030	No
17	Santa Rosa Dr./San Joaquin Hills Rd.	Signal	0.68	B	0.68	B	0.00	No
18	MacArthur Blvd./San Joaquin Hills Rd.	Signal	**1.01**	**F**	**1.02**	**F**	0.010	**Yes**

TWSC = two-way stop control
AWSC = all-way stop control
Bold and Shaded = Unacceptable LOS

Figure 5.9-10a - CEQA Year (2020) With Project Traffic Volumes, PM Peak Hour

5. Environmental Analysis



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Scale (Feet)

Source: IBI Group, 2017

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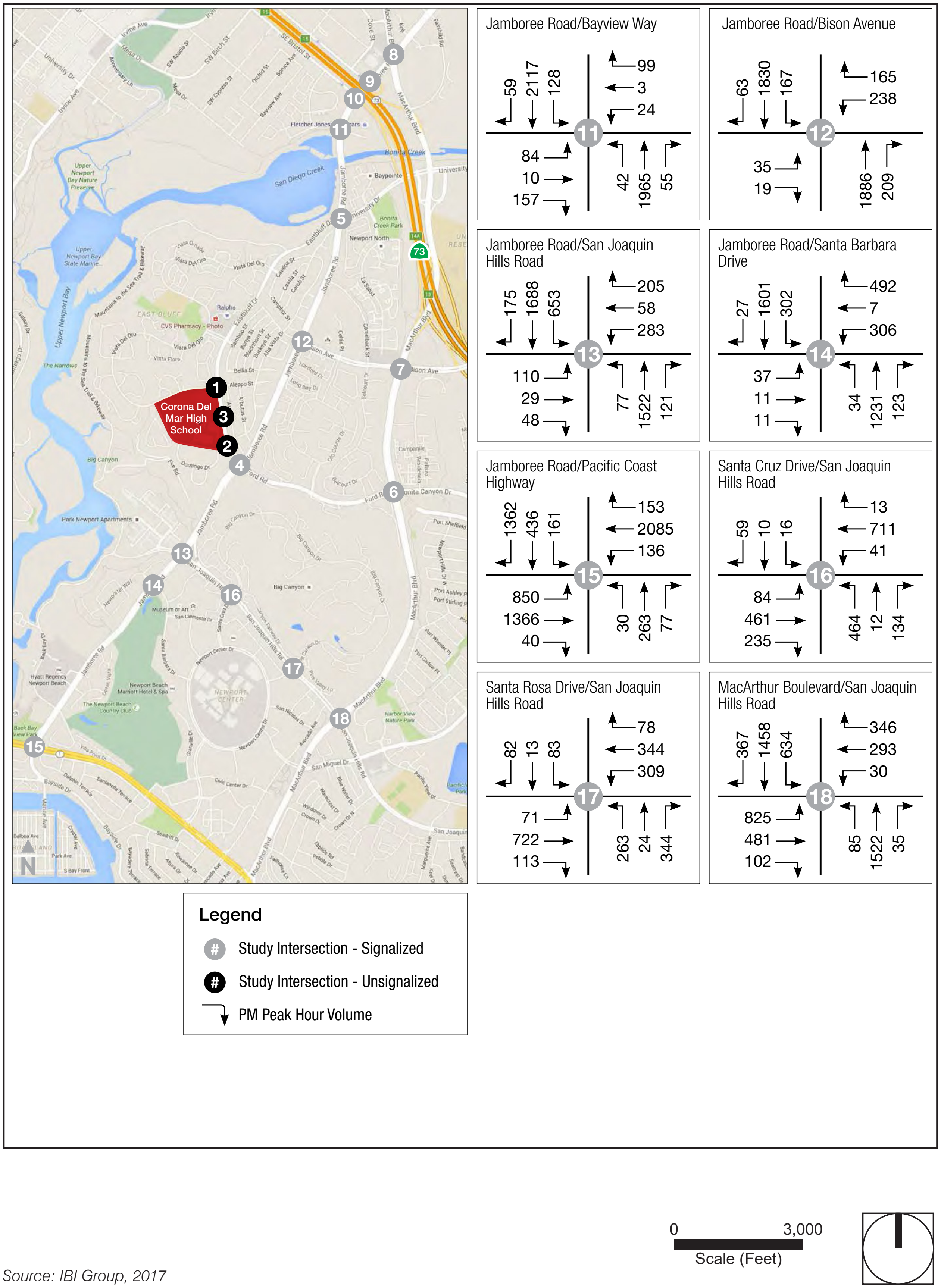
Figure 5.9-10b - CEQA Year (2020) With Project Traffic Volumes, PM Peak Hour

5. Environmental Analysis



Source: IBI Group, 2017

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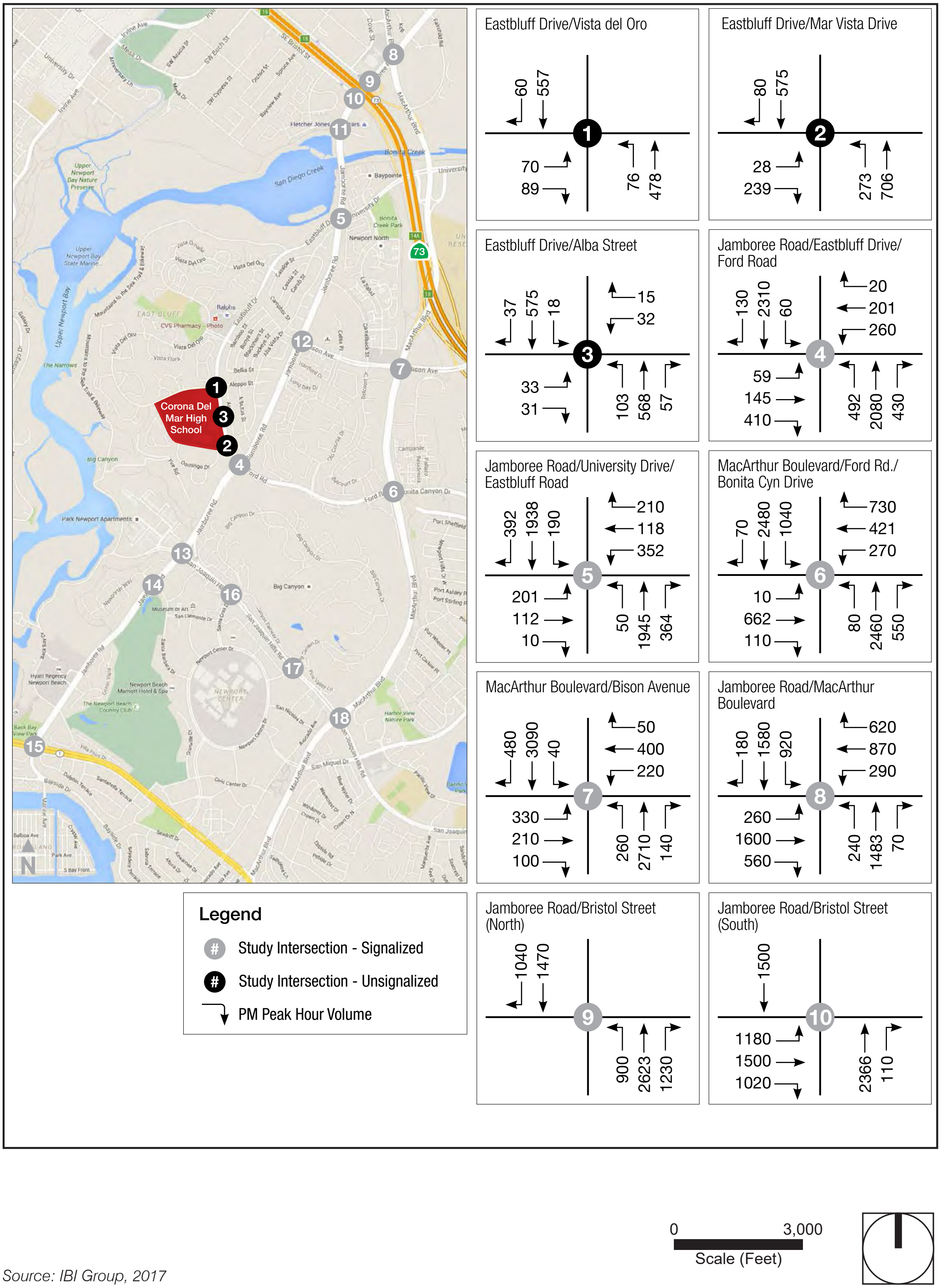
Figure 5.9-11a - Buildout (Post-2030) With Project Traffic Volumes, PM Peak Hour



Source: IBI Group, 2017

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

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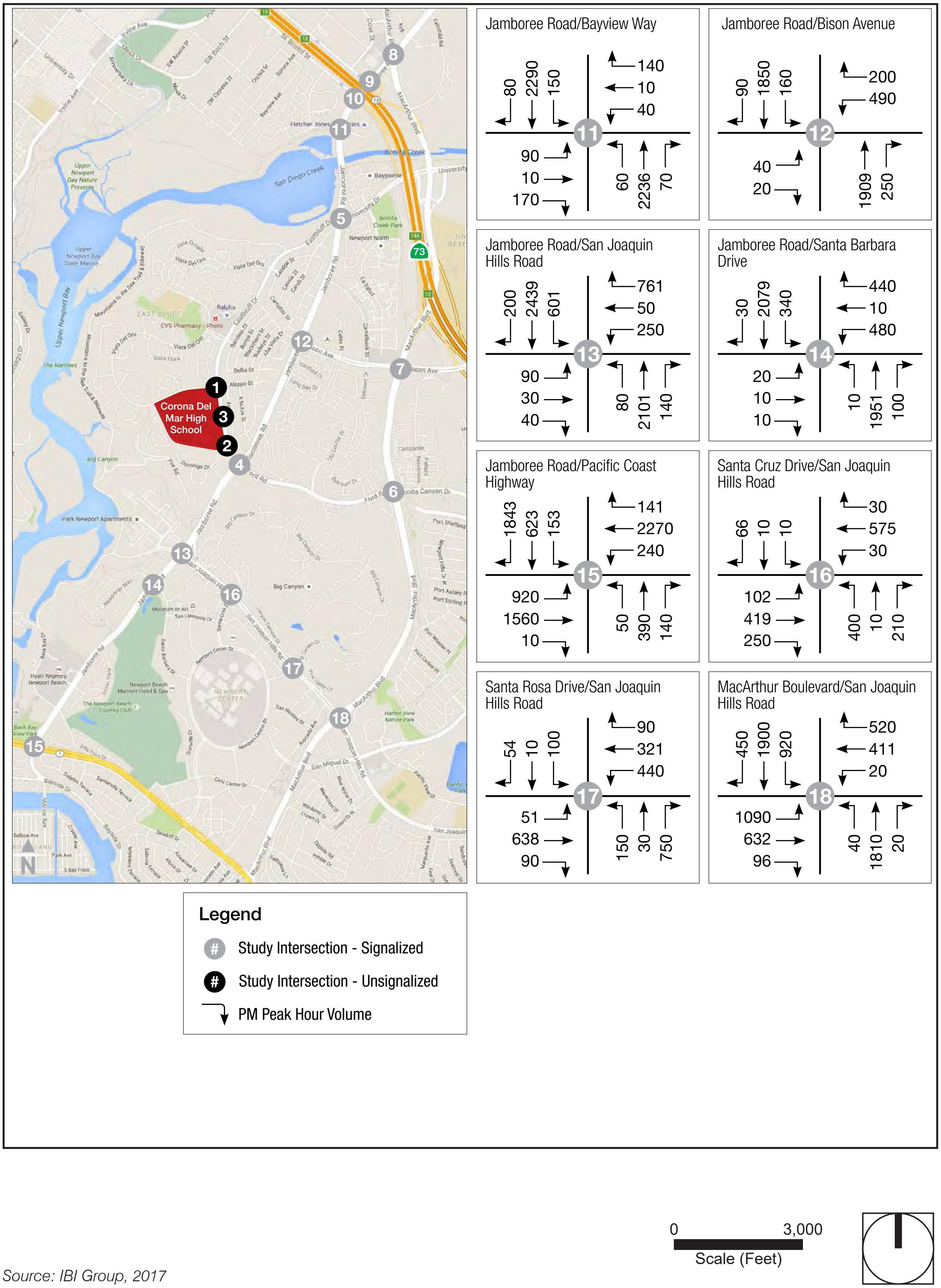
Figure 5.9-11b - Buildout (Post-2030) With Project Traffic Volumes, PM Peak Hour



Source: IBI Group, 2017

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Impact 5.9-2: The proposed project (Options A and B) would not substantially increase the vehicle miles traveled. [No Specific Threshold]

Impact Analysis:

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743, which creates a process to change the analysis of transportation impacts under the California Environmental Quality Act (CEQA). On December 30, 2013, the California Office of Planning and Research (OPR) released a preliminary evaluation of alternative methods of transportation analysis. In August 2014, the OPR released a Preliminary Discussion Draft of Updates to CEQA Guidelines Implementing SB 743. The report recommends amendments to the CEQA Guidelines to replace the Level of Service (LOS), auto-delay-based standard with other metrics to measure transportation impacts; these other metrics may include, but are not limited to, vehicle miles traveled (VMT), vehicle miles traveled per capita, and automobile trips generated in order to align CEQA analyses more closely with other State goals, most notably the greenhouse gas emission reduction goals contained in the State's climate change law, Assembly Bill (AB) 32.

The SB 743 legislation does not authorize OPR to set thresholds, but it does direct OPR to develop guidelines for determining the significance of transportation impacts for Proposed Projects. OPR is expected to circulate a revised guidance document sometime in 2015. The current schedule has the adoption of the OPR amendment to the CEQA Guidelines by sometime after January 2016, thus no specific significance thresholds have yet been adopted for purposes of complying with SB 743. In addition, the OPR guidance does not preclude an agency from establishing their own significance thresholds prior to the adoption of the OPR amendment to the CEQA Guidelines and/or permitting additional analysis beyond the typical auto delay based standards in the interim.

Neither the City of Newport Beach nor the County of Orange have specifically adopted elements of SB 743 into their current traffic study guidelines.

In light of SB 743, metrics related to vehicle miles traveled (VMT) and vehicle miles traveled per capita will replace the current LOS metrics to evaluate transportation impacts. However, no specific significance thresholds have yet been adopted for purposes of complying with SB 743. Therefore, this evaluation is provided for information purposes to support assumptions made in the traffic analysis.

Options A and B

Two types of events are associated with the change in VMT between the existing and proposed conditions: competitive sporting events and practices. Some of competitive sporting events and practices are currently held at offsite locations such as Davidson Field at Newport Harbor High School, Jim Scott Stadium at Estancia High School, LeBard Stadium at Orange Coast College, Eastbluff Elementary, and Bonita Creek Park. Under both options, the proposed project would make it possible to hold some of these off-site activities on the CdM campus.

Varsity football games would continue to be played at offsite locations, but practices and other sporting events would move back to the CdM campus. Trips associated with competitive sporting events are those made by the home team (CdM) and visiting team athletes, coaches, and spectators. It can be assumed that the home audience would live closer to the CdM campus than other, off-site locations. Therefore, the vehicle miles traveled for sporting events at the CdM campus would be fewer than for those events off-site, and also fewer than the visiting team's VMTs, which would originate from farther away. Since the majority of trips for home games are made by the home audience, who are closer to CdM campus, the proposed project can be qualitatively assessed to result in a net reduction in VMT associated with competitive sporting events. However, for the purposes of this analysis, a conservative net change of 0 mile is assumed.

Trips associated with practices are made by either athletes and coaches going to practice or parents dropping off their kids at remote practices. For practices at CdM campus, athletes and coaches would be able to walk to practice from other areas of the CdM campus, and parents would not need to drive their kids from school to practice. Although practice schedules vary, at a minimum, girls soccer and girls lacrosse would be relocated to the CdM campus from Bonita Creek Park and Eastbluff Elementary School, respectively. Table 5.9-16 summarizes the conservative assumptions made for the current and proposed girls soccer and lacrosse practice conditions.

Table 5.9-16 Existing and Proposed Practice VMTs

	Girls Soccer	Girls Lacrosse	Other Sports
Existing			
Practice Location	Bonita Creek Park	Eastbluff ES	CdM MS/HS
Distance to CdM Campus	2 vehicle miles	0.7 vehicle mile	0 mile
# of Practices	60	57	N/A
# of People	30	78	N/A
# of Cars	15	55	0
VMT	1,800 vehicle miles	2,195 vehicle miles	0 vehicle mile
Proposed Project			
Practice Location	CdM Campus	CdM Campus	CdM Campus
Distance to CdM Campus	0 mile	0 mile	0 mile
# of Practices	60	57	N/A
# of People	30	78	N/A
# of Cars	0	0	0
VMT	0 vehicle miles	0 vehicle miles	0 vehicle mile

The change in VMT associated with practices is summarized in Table 5.9-17. Both Options A and B would result in a net reduction in VMT of at least 3,995 vehicle-miles associated with these practices. Therefore, impacts related to VMT would not be significant. This analysis is very conservative; it underestimates VMT reduction because it only addresses girls soccer and lacrosse. Other practices would also be brought back to the CdM campus.

Table 5.9-17 Change in VMT

	Existing VMT	Proposed VMT	Change in VMT
Girls Soccer	1,800 miles	0 mile	-1,800 miles
Girls Lacrosse	2,195 miles	0 mile	-2,195 miles
Other Sports	0 mile	0 mile	0 mile
		Total	**-3,995 vehicle miles**

Impact 5.9-3: The proposed project (Options A and B) would not conflict with the Orange County Congestion Management Program. [Threshold T-2]

Impact Analysis:

Options A and B

The Orange County CMP monitors the level of service at all designated CMP intersections in the county. One CMP intersection and three arterial roadways are in the traffic study area for the proposed project. According to the 2013 Orange County CMP, a traffic impact analysis is required for CMP purposes for all proposed developments generating 2,400 or more daily trips. The proposed project is anticipated to generate 433 daily trips under Option A with 664-seat bleachers and 564 daily trips under Option B with 864-seat bleachers, and no action is required for CMP purposes. The proposed project under both options would not conflict with the Orange County CMP and impacts would be less than significant.

Impact 5.9-4: The proposed project (Options A and B) would not substantially increase hazards due to a design feature or inadequate emergency access. [Threshold T-4]

Impact Analysis:

Options A and B

No changes to access would occur under both options. Vehicular access to the CdM campus is provided via six existing unsignalized driveways. Parking Lot 1, just south of the proposed sports field, has three access driveways on Eastbluff Drive, with the northern driveway being an entrance only, center driveway enter and exit, and southern driveway being an exit only. Parking Lot 2, at the intersection of Eastbluff Drive and Mar Vista Drive, has an entrance and exit access driveway on Mar Vista Drive. Parking Lot 3, at the southwestern end of the CdM campus, has two access driveways on Mar Vista Drive. The following describes each of the site accesses:

- **Site Access 1** is the northern entrance driveway for Parking Lot 1 on Eastbluff Drive. The access driveway is entrance-only with two lanes. Vehicles entering the Parking Lot 1 from northbound Eastbluff Drive currently turn left into Site Access 1 via an existing left turn lane. Vehicles entering the site from southbound Eastbluff Drive currently turn right into Site Access 1 via the through or right lane. No vehicles can exit onto Eastbluff Drive from this driveway.

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

- **Site Access 2** is the middle driveway for Parking Lot 1 on Eastbluff Drive, and is an extension of Alba Street. The intersection is a two-way stop control with the stop signs on Alba Street and Site Access 2. Vehicles entering the site from northbound Eastbluff Drive would be able to turn left into Site Access 2 via an existing left turn lane. Vehicles entering the site from southbound Eastbluff Drive would be able to turn right into Site Access 2 via the through or right lane. Vehicles exiting Site Access 2 would be able to turn left or right onto Eastbluff Drive.

- **Site Access 3** is the southern exit driveway for Parking Lot 1 on Eastbluff Drive. The intersection is a two-way stop control with the stop on Site Access 3. Vehicles exiting Site Access 3 would be able to turn right onto Eastbluff Drive. Although a physical stop sign is not present, vehicles exiting the driveway must stop and wait for gaps in the main street.

- **Site Access 4** is the driveway for Parking Lot 2 on Mar Vista Drive and is an extension of Domingo Drive. The intersection is a two-way stop control, with the stop signs on Domingo Drive and Site Access 3. Vehicles entering or exiting the site from Mar Vista Drive would be able to turn into Site Access 3 via the one traffic lane in each direction. Vehicles exiting Site Access 3 would be able to turn left or right onto Mar Vista Drive. Although a physical stop sign is not present, vehicles exiting the driveway must stop and wait for gaps in traffic on Mar Vista Drive.

- **Site Accesses 5 and 6** are the driveways for Parking Lot 3 on Mar Vista Drive, respectively located at the southern and northern end of the parking lot. Both intersections are two-way stop control, with the stop signs on Site Accesses 4 and 5. Vehicles entering or exiting the site from Mar Vista Drive would be able to turn into Site Accesses 4 or 5 via the one traffic lane in each direction. Vehicles exiting Site Accesses 4 or 5 would be able to turn left or right onto Mar Vista Drive. Although a physical stop sign is not present, vehicles exiting the driveway must stop and wait for gaps in traffic on Mar Vista Drive.

A separate LOS analysis is performed for the site accesses, with the exception of Site Access 2, which was included as a study area intersection in the previous analysis. Site Access 2 (i.e., Eastbluff Drive/Alba Street intersection [#3]) was not an impacted intersection in the previous analysis, and no mitigation measure was required. The level of service from TPO Year (2020) to CEQA Year (2020) does not change for the site access intersections, and they are thus combined in the same table. Tables 5.9-18, 5.9-19, and 5.9-20 summarize the existing levels of service and the future levels of service at these site accesses.

Table 5.9-18 Existing Year (2017) Site Access Intersection LOS

ID	Unsignalized Intersection	Traffic Control	Without Project		With Project		Delta	Significant?
			Delay	LOS	Delay	LOS		
S1	Eastbluff Dr./Site Access 1	TWSC	8.5	A	8.8	A	0.3	No
S3	Eastbluff Dr./Site Access 3	TWSC	9.8	A	10.0	A	0.2	No
S4	Site Access 4/Mar Vista Dr.	TWSC	12.6	B	13.5	B	0.9	No
S5	Mar Vista Dr./Site Access 5	TWSC	9.4	A	9.7	A	0.3	No
S6	Mar Vista Dr./Site Access 6	TWSC	9.1	A	9.2	A	0.1	No

TWSC = two-way stop control

Table 5.9-19 TPO Year (2020) Site Access Intersection LOS

ID	Unsignalized Intersection	Traffic Control	Without Project		With Project		Delta	Significant?
			Delay	LOS	Delay	LOS		
S1	Eastbluff Dr./Site Access 1	TWSC	8.6	A	8.9	A	0.3	No
S3	Eastbluff Dr./Site Access 3	TWSC	9.9	A	10.0	A	0.1	No
S4	Site Access 4/Mar Vista Dr.	TWSC	12.8	B	13.7	B	0.9	No
S5	Mar Vista Dr./Site Access 4	TWSC	9.4	A	9.7	A	0.3	No
S6	Mar Vista Dr./Site Access 5	TWSC	9.1	A	9.2	A	0.1	No

TWSC = two-way stop control

Table 5.9-20 Buildout Year (Post-2030) Site Access Intersection LOS

ID	Unsignalized Intersection	Traffic Control	Without Project		With Project		Delta	Significant?
			Delay	LOS	Delay	LOS		
S1	Eastbluff Dr./Site Access 1	TWSC	9.0	A	9.4	A	0.4	No
S3	Eastbluff Dr./Site Access 3	TWSC	10.4	B	10.6	B	0.2	No
S3	Site Access 4/Mar Vista Dr.	TWSC	14.7	B	16.0	C	1.3	No
S4	Mar Vista Dr./Site Access 5	TWSC	9.7	A	10.	A	0.3	No
S5	Mar Vista Dr./Site Access 6	TWSC	9.3	A	9.4	A	0.1	No

TWSC = two-way stop control

The trip distribution for Eastbluff Drive/Site Access 1 is estimated by the counts taken at the directly perpendicular intersections of Eastbluff Drive/Vista Del Oro and Eastbluff Drive/Alba Street. The trip distribution for Site Access 4, 5, and 6 are estimated using a ratio of parking spaces from the largest parking lot to the respective parking lots. The trips for Parking Lot 3 are evenly split between Site Access 5 and 6. The inbound and outbound volumes are then calculated using the ratio and the inbound and outbound trips from the largest parking lot.

During a maximum attendance event, adequate on-campus parking capacity would be provided as further discussed in Impact 5.9-5. The project site has streets fronts on all sides and would not obstruct movement of emergency vehicles. The minimum fire access road width required by the California Fire Code is 20 feet and the City of Newport Beach requires minimum width of the street for public fire access to be 36 feet with parking allowed on both sides (Newport Beach 2016). Mar Vista Drive and Vista Del Oro are local streets that are approximately 40 feet wide, providing adequate width for an emergency vehicle to pass through even with street parking on both sides of the streets. The proposed project would not result in inadequate emergency access and impacts would be less than significant.

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

Impact 5.9-5 Implementation of the proposed project (Options A and B) would not result in inadequate parking capacity impact. [Threshold T-6]

Impact Analysis:

Options A and B

The ITE's *Parking Generation* (3rd edition) does not include parking rates for a middle or high school sports field land use. In the absence of national statistical parking rates, parking demand for the proposed Sports Field was estimated using occupancy count data from surveys made at the Estancia High School stadium in Costa Mesa during a CdM HS varsity football game. A parking occupancy count was taken at the Estancia HS stadium during a Friday CdM HS varsity football game. The varsity football game took place on October 30, 2015 at 7:00 PM. The occupied stalls were counted at 7:00 PM, 8:00 PM, and 9:00 PM to determine the peak parking demand as summarized in Table 5.9-21. The total parking supply for the Estancia HS stadium was 724 spaces in four parking lots, all accessed from Placentia Avenue. Parking Lot 1 is at the northern end of Estancia High School, closest to the stadium, and contains 141 parking spaces. Parking Lot 2 is directly south of Parking Lot 1 and contains 24 parking spaces. Parking Lot 3 is at the southern end of Estancia High School and contains 299 parking spaces. Parking Lot 4 is directly west of Parking Lot 3 and contains 260 parking spaces. (The total number of parking spaces for Parking Lot 4 is estimated because it is not a designated parking lot, but some cars were parked in unmarked areas or on the blacktop.)

Table 5.9-21 Parking Occupancy Counts at Estancia High School

Parking Lot	Lot Capacity	Occupied Parking Spaces 7:00 PM	Occupied Parking Spaces 8:00 PM	Occupied Parking Spaces 9:00 PM
Parking Lot 1	141	135	133	99
Parking Lot 2	24	24	20	8
Parking Lot 3	299	26	25	16
Parking Lot 4	260	169	192	174
Total	**724**	**354**	**370**	**297**
Percent Occupied		48.9%	51.1%	41.0%
Parking Demand Ratio: 370 occupied stalls / 444 attendees = 0.833				

As shown in Table 5.9-21, *Parking Occupancy Counts at Estancia High School*, the occupied parking spaces peaked around 8:00 PM with 370 spaces. Therefore, with the recorded 444 attendees at the varsity football game, a parking demand forecast of 0.8333 spaces per attendee was calculated. However, this ratio overstates the parking demands because not all occupied stalls are attributed to the stadium event and other activities were occurring on the Estancia High School concurrently with the football game. According to the activities schedule for Estancia High School on October 30, 2015, the following events must also be considered to establish a reasonable parking ratio.

- 1:30–9:00 PM: Girls volleyball practice and games with expected attendance of 80.
- 2:00–10:00 PM: Best Buddies Halloween Dance for SPED with expected attendance of 150.

- 3:00–10:00 PM: Drama rehearsals with expected attendance of 40.
- 4:00–9:00 PM: Basketball practice and games with expected attendance of 100.
- 5:00–8:30 PM: City of Costa Mesa Pop Warner with expected attendance of 100.

When accounting for all activities that occurred in Estancia HS between 7:00 PM and 9:00 PM, approximately 470 people were present in Estancia HS in addition to 444 attendees for the football game. With a combined total of 914 people on Estancia HS campus and 370 occupied stalls, a 0.40 parking ratio can be calculated. Therefore, in order to calculate a reasonable parking ratio for the proposed project, different parking requirements and demands relevant to the proposed project were also considered.

The City of Newport Beach Municipal Code Section 20.40.040 requires one parking space per three seats for assembly/meeting facilities (0.33 space per seat), while no specific parking demand for stadium seating is provided. The City of Costa Mesa Municipal Code requires one space for each three fixed seats for theaters and auditoriums (0.33 space per seat). As with the City of Newport Beach, no specific parking demand for stadium seating is provided. The City of Santa Ana Municipal Code requires one parking space per four seats for stadiums (0.25 space per seat) (§ 41-1373). Rates from four previous high school stadium studies were 0.2 space per seat for Costa Mesa High School, 0.23 space per seat for Irvine High School, 0.24 space per seat for Estancia High School, and 0.333 space per seat for El Toro High School. Therefore, a rate of 0.367 space per seat was deemed appropriate for the proposed sports field, which was calculated by averaging the observed overstated 0.833 space per attendee from the parking survey with the parking rates from four other area high school stadium use. Using the overstated 0.833 space per attendee provides a conservative rate, since when accounting for all activities that were occurring at Estancia HS at the time of parking survey, that ratio would be 0.40, not 0.833. The assumed rate of 0.367 also exceeds the City of Newport Beach's parking requirement for assembly/meeting facilities, the City of Costa Mesa's theater and auditorium's parking requirement, and the City of Santa Ana's stadium parking requirement. Therefore, a rate of 0.367 space per seat is considered an appropriate generation rate to use for the analysis.

Under Option A, a full capacity event with 664-seat bleachers at 0.367per seat rate would require 244 spaces.

Under Option B, full capacity events at both fields with total maximum bleacher seat capacity of 864 would require 318 spaces.

Parking Supply

The existing CdM campus currently provides 592 onsite parking spaces: Parking Lot 1 (North) has 232 parking spaces (7 ADA and 225 Standard), Parking Lot 2 (South) has 140 parking spaces (5 ADA and 135 Standard), and Parking Lot 3 (Southwestern) has 220 parking spaces (7 ADA and 213 Standard). Occupied stalls were counted at 6:00 PM, 7:00 PM, and 8:00 PM on March 4, 2016, to determine the peak parking demand for a typical Friday evening, as shown in Table 5.9-22. A peak total of 61 on-campus parking spaces were occupied.

5. Environmental Analysis
TRANSPORTATION AND TRAFFIC

Table 5.9-22 Parking Occupancy Counts at CdM MS/HS

Parking Areas	Parking Capacity	Type	6:00 PM	7:00 PM	8:00 PM
Street Parking	246	Estimated/unassigned	37	36	39
Parking Lot 1	232	Including 7 disabled	20	22	11
Parking Lot 2	140	Including 6 disabled	9	3	2
Parking Lot 3	220	Including 7 disabled	32	6	6
On-Campus Only	592	On-campus parked only	61	31	19
	838	Total Vehicles Parked	98	67	58
	100%	Percent Occupied	11.69%	8%	7.04%

Note: The parking counts were taken on Friday, March 4, 2016, at 6:00 PM, 7:00 PM, and 8:00 PM.

Currently, first bell is at 7:55 AM and the last period ends at 3:00 PM. As such, typical school activities occur between 8:00 AM to 3:00 PM, but early bell is at 6:50 AM. The existing track and field without the nighttime lights accommodates various practices and games before sundown and the proposed project would allow activities to occur during evening times. According to ITE's *Parking Generation* (4th ed.), the maximum expected parking generation for the CdM high school use is 536 spaces, calculated by using the conservative generation rate of 0.31 vehicle per student from the ITE's parking generation rate value range of 0.14 to 0.31 during the peak period (9:00 AM to 11:00 AM). And the maximum expected parking generation for the CdM middle school use is 92 spaces, calculated by using the conservative generation rate of 0.11 from the ITE's middle school parking generation range of 0.07 to 0.11. Therefore, the combined total parking demands for the CdM campus would be 628 spaces. With a total of 592 on-campus parking spaces and 246 off-site street parking spaces, the AM peak parking demands of 628 spaces for the entire CdM campus could be accommodated.

It should be noted that the proposed project under both options would not increase the capacity of the campus or the bleacher seating capacity. Therefore, while the evening use of the sports field would be introduced, the worst-case parking demands would continue to occur during the AM peak period. And during the PM peak period, typical after-school activities would generate less parking demand than the AM peak period because there is no class in session for the 2,557 students.

Maximum parking occupancy during a fully occupied sports field event with regular after-school activity is expected to be 305 spaces—the sum of the maximum sports field parking forecast (244 spaces) and peak after-school-activity parking (61 spaces). Therefore, with 592 onsite parking spaces available on CdM campus, the projected maximum occupied parking spaces of 305 could be accommodated with excess of 287 unoccupied spaces.

The total after-school peak period parking demand, combining school activities and the project-related activities, is expected to be 305 spaces, which is less than what currently occurs on a typical day. Since the project proposes to build a new sports field where trips would occur outside the typical school period, potential impacts associated with the project were only analyzed during the PM peak hour, when the impacts would be most severe. The CdM campus has adequate parking capacity for full-capacity events under both options, and parking impacts would be less than significant.

5.9.4 Cumulative Impacts

Options A and B

The committed and cumulative projects lists are included in Appendix D and E of the Traffic Study (Appendix H to the RDEIR). is shown in Table 4-1 and shown in Chapter 4, Figure 4-8, *Cumulative Project Locations*. Cumulative project impacts were analyzed when the proposed project was combined with other future developments to evaluate the overall traffic impacts. A significant cumulative impact is identified when a facility is projected to operate below the LOS standards and exceeds the established threshold due to cumulative future traffic and project-related traffic. The project's incremental effect to congested intersections would result in one intersection that operates at a level below the LOS standards and exceeds the established significance threshold.

5.9.5 Regulatory Requirements

There are no regulatory requirements that are applicable to the proposed project.

5.9.6 Level of Significance Before Mitigation

The following impacts would be less than significant:

- **Impact 5.9-2:** The proposed project (Options A and B) would not substantially increase the vehicle miles traveled.
- **Impact 5.9-3:** The proposed project (Options A and B) would not conflict with the Orange County Congestion Management Program.
- **Impact 5.9-4:** The proposed project (Options A and B) would not substantially increase hazards due to a design feature or inadequate emergency access.
- **Impact 5.9-5:** Implementation of the proposed project (Options A and B) would not result in inadequate parking capacity impact.,

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

- **Impact 5.9-1** Project-related trip generation (Options A and B) would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system with the exception of four intersections under Buildout Year (Post-2030).

5.9.7 Mitigation Measures

Options A and B

Impact 5.9-1: The proposed project (Options A and B) would cause four intersections to exceed the applicable significance threshold under the Buildout Year (Post-2030) conditions.

TRAN-1 The Newport-Mesa Unified School District shall manage campus events and activities such that the four identified intersections are not impacted under Buildout year (Post-2030) conditions. In Post year 2030 conditions, the District shall limit facility permits for other campus venues during the 4:00 PM to 6:00 PM hours allowing a maximum of 756 participants when maximum capacity field events are expected.

5.9.8 Level of Significance After Mitigation

Impact 5.9-1, Options A and B

The proposed project is forecast to create significant impacts at four of the study primary intersections under Buildout Year (Post-2030). Implementation of Mitigation Measure TRAN-1 would reduce impacts to their pre-project levels (see *With Mitigation* ICU values in Table 5.9-23). This mitigation measure is based on the Jamboree Road and Santa Barbara Drive (#14) intersection, which represents the greatest impact of these four intersections as shown below. The reduction of attendees needed at the other campus venues is shown in parentheses for each intersection. There were 1,490 attendees at various venues on campus when traffic counts were taken. Based on two attendees per trip and 50/50 inbound/outbound trips, a reduction of 734 attendees is needed to eliminate the impact at intersection #14. [1,490 – 734 = 756 attendees allowed at other venues]

- Jamboree Road and Eastbluff Drive/Ford Road (#4): (584 attendees)
- Jamboree Road and Santa Barbara Drive (#14): (734 attendees)
- Jamboree Road and Pacific Coast Highway (#15): (300 attendees)
- MacArthur Boulevard and San Joaquin Hills Road (#18): (176 attendees)

Table 5.9-23 Impacted Intersection LOS With Mitigation

ID	Signalized Intersection	Traffic Control	Without Project		With Project	
			ICU	LOS	ICU	LOS
4	Jamboree Rd./Eastbluff Dr./Ford Rd.	Signal	0.89	D	**0.94**	**E**
4	*With Mitigation*	Signal	n/a	n/a	0.89	D
14	Jamboree Rd./Santa Barbara Dr.	Signal	**0.95**	**E**	**0.96**	**E**
14	*With Mitigation*	Signal	n/a	n/a	**0.95**	**E**
15	Jamboree Rd./Pacific Coast Highway	Signal	**0.96**	**E**	**0.97**	**E**
15	*With Mitigation*	Signal	n/a	n/a	**0.96**	**E**
18	MacArthur Blvd./San Joaquin Hills Rd.	Signal	**1.01**	**F**	**1.02**	**F**
18	*With Mitigation*	Signal	n/a	n/a	**1.01**	**F**

Bold and Shaded = Unacceptable LOS

5.9.9 References

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5.10 ENERGY

5.10.1 Environmental Setting

5.10.1.1 REGULATORY FRAMEWORK

State

California Energy Commission

The CEC was created in 1974 as the state's principal energy planning organization in order to meet the energy challenges facing the state in response to the 1973 oil embargo. The CEC is charged with six basic responsibilities when designing state energy policy:

- Forecast statewide electricity needs.
- License power plants to meet those needs.
- Promote energy conservation and efficiency measures.
- Develop renewable energy resources and alternative energy technologies.
- Promote research, development and demonstration.
- Plan for and direct the state's response to energy emergencies.

Title 24, California Code of Regulations, Part 6: Energy Efficiency Standards for Buildings

Title 24 was first established in 1978 in response to a legislative mandate to reduce California's energy consumption. Since that time, Title 24 has been updated periodically to allow for consideration and possible incorporation of new energy-efficiency technologies and methods.

All new construction in California is subject to the energy conservation standards in Title 24, Part 6, Article 2 of the California Administrative Code. These are prescriptive standards that establish maximum energy consumption levels for the heating and cooling of new buildings. The use of alternative energy applications in development projects, while encouraged, is not required as a development condition. Such applications may include installation of photovoltaic solar panels, active solar water heating systems, or integrated pool deck water heating systems, all of which serve to displace consumption of conventional energy sources. Incentives are primarily state and federal tax credits, as well as reduced energy bills.

Title 20, California Code of Regulations, Sections 1601 et seq.: Appliance Efficiency Regulations

The 2012 Appliance Efficiency Regulations took effect on February 13, 2013. The regulations include standards for both federally and nonfederally regulated appliances.

Electric Utility Industry Restructuring Act: Assembly Bill 1890 (1996)

The California Public Utilities Commission regulates investor-owned electric power and natural gas utility companies in the State of California. AB 1890, enacted in 1996, deregulated the power generation industry, allowing customers to purchase electricity on the open market. Under deregulation, the production and distribution of power that were under the control of investor-owned utilities (e.g., Southern California Edison) were decoupled.

5.10.1.2 EXISTING CONDITIONS

Electricity

Southern California Edison (SCE) is the primary distribution provider of electricity to Newport Beach and much of southern and central California. SCE serves 180 cities over 50,000 square miles of service area, providing power to over 13 million people and over 300,000 businesses. The CdM campus is currently connected to the SCE power grid. The CdM campus has solar panels in parking lot 1 to form canopies over parking spaces to generate solar energy.

Natural Gas

The Southern California Gas Company (SoCalGas) provides natural gas services to all of Newport Beach. The CdM campus is currently connected to and served by SoCalGas.

5.10.2 Thresholds of Significance

Section 21100(b)(3) of California Environmental Quality Act (CEQA) requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing any inefficient, wasteful, and unnecessary consumption of energy. Although energy is not a topical section in Appendix G of the CEQA Guidelines, Appendix F of the CEQA Guidelines states that the goal of conserving energy implies the wise and efficient use of energy and that the means of achieving this goal include 1) decreasing overall per capita energy consumption; 2) decreasing reliance on fossil fuels such as coal, natural gas, and oil; and 3) increasing reliance on renewable energy sources. Appendix F states that potential environmental impacts considered in the EIR concerning energy may include:

- The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project, including construction, operation, maintenance, and/or removal. If appropriate, the energy intensiveness of materials maybe discussed.
- The effects of the project on local and regional energy supplies and on requirements for additional capacity.
- The effects of the project on peak and base period demands for electricity and other forms of energy.
- The degree to which the project complies with existing energy standards.
- The effects of the project on energy resources.

Therefore, the following thresholds are also addressed in the impact analysis: a project would normally have a significant effect on the environment if the project:

EN-1 Would increase demand for energy that requires expanded supplies or the construction of new infrastructure or expansion of existing facilities, the construction of which could cause significant environmental effects.

EN-2 Would result in an inefficient, wasteful and unnecessary consumption of energy.

5.10.3 Environmental Impacts

The applicable thresholds are identified in brackets after the impact statement.

Impact 5.10-1: The proposed project (Options A and B) would increase the demand for electrical services but would not require new or expanded electrical infrastructure for the provider or result in wasteful electrical energy consumption. [Thresholds EN-1 and EN-2]

Impact Analysis:

Option A

The proposed project would require approximately 205,000 kilowatt hours (kWh) per year of electricity—approximately 187,000 kWh for the nighttime lighting system and 18,000 kWh for the 3,000-square-foot restroom/ticket booth/concession building. The increased demand is expected to be adequately served by the existing SCE electrical facilities currently serving the CdM campus. Additionally, the CdM campus has solar panels that support campus electricity demands. SCE forecasts that it would have adequate electricity to meet the expected growth in its service area through 2022. Using SCE's anticipated consumption in 2022 in a high-demand consumption scenario, electricity demand is expected to be 116,637 gigawatt hours (CEC 2012). The increase in electricity demand from the proposed project would be a negligible percentage (less than 0.0002 percent) of overall demand in SCE's service area. Therefore, projected electrical demand would not significantly impact SCE's level of service. The ancillary building would also be required to adhere to the provisions of CALGreen, which establishes planning and design standards for sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and internal air contaminants. Therefore, no significant impact to electricity systems is anticipated. SCE is the primary electricity supply company for much of Southern California, and SCE has the capacity to provide electricity demands projected for the proposed project. Considering the size of the SCE service area, its supply capacity, and the existing solar panels on campus, the total estimated electricity consumption for the proposed project would not require SCE to obtain new or expanded electricity supplies. Impacts would be less than significant.

Option B

Under Option B, the proposed project would require approximately 187,000 kWh per year of electricity for each of the two-field nighttime lighting system, totaling 374,000 kWh per year of electricity for the two fields.

Using SCE's anticipated consumption in 2022 in a high-demand consumption scenario, total electricity demand in the SCE service area is expected to be 116,637 gigawatt hours (CEC 2012). The increase in electricity demand from the proposed project would be a negligible percentage (less than 0.0003 percent) of the overall demand in SCE's service area. Additionally, the CdM campus has solar panels that support campus electricity demands. Therefore, the projected electrical demands under Option B would not significantly impact SCE's level of service. SCE is the primary electricity supply company for much of Southern California, and SCE has the capacity to provide electricity demands projected for the proposed project. Considering the size of the SCE service area, its supply capacity, and the existing solar panels at the CdM campus, the total estimated electricity consumption for the proposed project would not require SCE to obtain new or expanded electricity supplies. Impacts would be less than significant.

Impact 5.10-2: The proposed project (Options A and B) would not increase the demand for natural gas services to require new or expanded natural gas capacity for the provider or result in wasteful natural gas energy consumption. [Thresholds EN-1 and EN-2]

Impact Analysis:

Option A

The proposed project is assumed to generate a demand for 35,700 kBTU (thousand British thermal units) per year for the 3,000-square-foot restroom/ticket booth/concession building. Natural gas is generally used to heat water and interior space and to operate cooling equipment, and since the proposed building would rarely require heated water or heated interior, there would not be wasteful natural gas consumption. No natural gas demand is anticipated for the lighting system. Total supplies of natural gas available to SoCalGas are expected to remain stable at 3.875 billion cubic feet per day, that is, 1,414,375 billion BTU per year, between 2015 and 2035 (CGEU 2014). Total natural gas consumption in SoCalGas's service area is forecast to be 2.647 billion cubic feet per day (966,155 billion BTU per year) in 2035. Therefore, the natural gas demand from the proposed project would represent a negligible percentage of overall demand in SoCalGas's service area. The projected minimal increase in natural gas demands would not require additional local or regional capacity or result in wasteful consumption. Impacts to natural gas services would be less than significant.

Option B

Under Option B, no restroom/ticket booth/concession building would be constructed. Therefore, no increase in demand for natural gas is anticipated. No impacts to natural gas service would occur.

Impact 5.10-3: The proposed project (Options A and B) would not result in increased demand for transportation energy, would not require new or expanded transportation energy capacity for the provider, and would not result in wasteful transportation energy consumption. [Thresholds EN-1 and EN-2]

Impact Analysis:

Options A and B

Transportation energy use depends on the type and number of trips, vehicle miles traveled (VMT), fuel efficiency of vehicles, and travel mode. The proposed project would reduce VMT by allowing CdM students to remain on campus for practices and some games rather than traveling to other facilities (i.e., Eastbluff Elementary School, Bonita Creek Park, Estancia High School, Newport Harbor High School, Orange Coast Community College). Trips associated with practices are made by athletes and coaches going to practice or parents dropping off their kids at remote practices. For practices at CdM campus, athletes and coaches would be able to walk to practice from other areas of the CdM campus, and parents would not need to drive their kids from school to practice. Although practice schedules vary, at a minimum, girls soccer and girls lacrosse would be relocated from Bonita Creek Park and Eastbluff Elementary School, respectively, to the CdM campus. Table 5.10-1 summarizes the conservative assumptions made for the current and proposed girls soccer and lacrosse practice conditions under both options. As shown, the proposed project would reduce VMT by at least 3,995 vehicle miles.

Table 5.10-1 Existing and Proposed Practice VMTs

	Girls Soccer	Girls Lacrosse	Total
Existing			
Practice Location	Bonita Greek Park	Eastbluff ES	
Distance to CdM Campus	2 vehicle miles	0.7 vehicle mile	
# of Practices	60	57	Not Applicable
# of People	30	78	
# of Cars	15	55	
VMT	1,800 vehicle miles	2,195 vehicle miles	3,995 vehicle miles
Proposed Project			
Practice Location	CdM Campus	CdM Campus	
Distance to CdM Campus	0 mile	0 mile	
# of Practices	60	57	Not Applicable
# of People	30	78	
# of Cars	0	0	
VMT	0 vehicle miles	0 vehicle miles	0 vehicle miles

Therefore, the proposed project would result in an overall reduction in VMT and consume less transportation energy. No transportation-related measures are required to further reduce VMT for the project. No new or expanded transportation energy capacity is necessary, and the proposed project would not result in wasteful transportation energy consumption. Impacts would not be significant.

5.10.4 Cumulative Impacts

Options A and B

The areas considered for cumulative impacts are the SCE and SoCalGas service areas for electricity and natural gas, respectively. Cumulative development projects listed in Table 4-1 would result in net increases in development intensity within the City. However, future projects in the service areas would be required to achieve more rigorous energy efficiency standards than existing developments in Newport Beach. The CdM campus also provides solar panels and generates electricity used on campus. Although the proposed project and other cumulative projects would result in increased demands for electrical services, considering the size of the project, the effects would not adversely impact local or regional energy supplies. Natural gas demands from the 3,000-square-foot restroom/concession/ticket booth building would be negligible because there would not be much need for heated water or interior. And no natural gas demands would be generated by the lighting system. Therefore, the proposed project under both options would not have significant cumulative impact on the larger SoCalGas service area.

The proposed project in both options would result in decreased VMT compared to the existing conditions, and therefore would not contribute cumulatively to the increased transportation energy use. Other cumulative projects in the City are required to comply with various federal and state government legislations to improve energy efficiency in buildings, equipment, and appliances and reduce VMTs. Utility companies are required to increase their renewable energy sources to meet the state mandate of 50 percent renewable supplies by 2030. Cumulative impacts to energy resources would be less than significant.

5.10.5 Regulatory Requirements

- California Green Building Standards Code (24 CCR Part 11)
- California Appliance Efficiency Regulations (20 CCR, Sections 1601 through 1608)

5.10.6 Level of Significance Before Mitigation

Upon implementation of regulatory requirements and standard conditions of approval, the following impacts would be less than significant: 5.10-1, 5.10-2, and 5.10-3.

5.10.7 Mitigation Measures

No mitigation measures are required.

5.10.8 Level of Significance After Mitigation

The existing applicable regulations would reduce potential impacts associated with energy to a level that is less than significant. Therefore, no significant unavoidable adverse impacts relating to energy use remain.

5.10.9 References

California Energy Commission (CEC). 2012, June. California Energy Demand 2012-2022 Final Forecast. Volume 2: Electricity Demand by Utility Planning Area. http://www.energy.ca.gov/2012publications/CEC-200-2012-001/CEC-200-2012-001-CMF-V2.pdf.

California Gas and Electric Utilities (CGEU). 2014. 2014 California Gas Report. https://www.socalgas.com/regulatory/documents/cgr/2014-cgr.pdf.

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6. Significant Unavoidable Adverse Impacts

At the end of Chapter 1, *Executive Summary*, is a table that summarizes the impacts, mitigation measures, and levels of significance before and after mitigation. Mitigation measures would reduce all potentially significant impacts to a less than significant level, and no significant and unavoidable impact remains.

6. Significant Unavoidable Adverse Impacts

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7. Alternatives to the Proposed Project

7.1 INTRODUCTION

7.1.1 Purpose and Scope

The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) include a discussion of reasonable project alternatives that would "feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant effects of the project, and evaluate the comparative merits of the alternatives" (CEQA Guidelines Section 15126.6). This chapter identifies potential alternatives to the proposed project and evaluates them, as required by CEQA.

Key provisions of the CEQA Guidelines on alternatives (Section 15126.6[a] through [f]) are summarized below to explain the foundation and legal requirements for the alternatives analysis in the EIR.

- "The discussion of alternatives shall focus on alternatives to the project or its location which 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" (15126.6[b]).

- "The specific alternative of 'no project' shall also be evaluated along with its impact" (15126.6[e][1]).

- "The no project analysis shall discuss the existing conditions at the time the Notice of Preparation (NOP) is published, and at the time the environmental analysis is commenced, as well as what would reasonably be 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. If the environmentally superior alternative is the 'no project' alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives" (15126.6[e][2]).

- "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" (15126.6[f]).

- "Among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent)" (15126.6[f][1]).

- For alternative locations, "only locations that would avoid or substantially lessen any of the significant effects of the project need be considered for inclusion in the EIR" (15126.6[f][2][A]).
- "An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative" (15126.6[f][3]).

7.1.2 Project Objectives

As described in Section 3.2, the following objectives have been established for the proposed project and will aid decision makers in their review of the project, the project alternatives, and associated environmental impacts:

- Upgrade athletic field(s) to boost student participation in athletics and return team practices and small home events from remote venues.
- Reduce travel time and vehicle miles traveled for home events and practices.
- Reduce the amount of District funds associated with transportation to and from off-campus venues.
- Reduce field maintenance downtime by installing durable year-round surface materials.
- Expand use of the field into evening hours by providing field lighting.
- Provide bleachers with a maximum seating capacity of 664 seats, adequate to accommodate certain limited spectator events currently held off campus.
- Enhance school pride by increasing the number of home sporting events to occur on campus.
- Improve security around artificial surface fields.
- Allow use of the facility by District-approved community groups per adopted Board Policy 1130 Use of School Facilities.
- If feasible, further enhance on-campus athletics by providing second artificial surface field.

7.1.3 Community Input on Alternatives

Community members made a number of recommendations for alternatives during the scoping/project planning process, including the following:

- Use other existing lighted sports field in the area (No Project alternative). Only replace the track and field at CdM MS/HS, but no lighting.

7. Alternatives to the Proposed Project

- Move the sports field west to the center of the campus and increase setbacks.
- Provide a second soccer / practice field with synthetic surface and allow portable lights.
- Keep the track and field in its current location, thereby keeping the existing sports field configuration and not removing existing trees.
- Do not construct permanent structures; instead, provide portable, not-permanent bleachers and eliminate the bathroom/concession/entryway building.
- Reduce the bleacher size.
- Do not allow varsity games at the new sports field.
- Provide alternative lighting technologies and reduce pole heights.
- Provide alternative PA system technologies.
- Alternative site: Relocate to a different, larger area for a bigger field and enough space.
- Parking lot expansion and/or parking structure in the rear area of the campus as a prerequisite improvement.
- Alternative bleacher technologies to reduce noise (concrete or other noise-absorbing seats).

Moreover, the following recommendations were identified by Newport Citizens for Responsible Growth (NCRG):

- Replace natural fields with two synthetic sports fields (existing football field 60 x 120 yards (lacrosse ready); keep current configuration, no new layout of the field; current interior soccer/lacrosse field 120 x 75 yards).
- Provide new track while keeping location of current track.
- Provide portable lights for the second field (movable) or provide fixed 45-foot to 50-foot permanent lighting at interior field (LED preferred).
- Provide portable bleachers for the second field (movable).
- Maintain 6-foot fence height.

NCRG indicated that the NCRG preferred plan would accomplish the following objectives:

- Meets the needs of more students by allowing more practice time at CdM campus and providing two all-weather artificial fields.
- Reduce lighting impacts.
- Reduce noise impacts.
- No need for additional bleacher seating, and new restroom not required by DSA without additional seating capacity.
- Improved aesthetic quality by preserving mature buffer trees.
- Reduce impacts of parking and traffic problems, and provide field access from both front and back parking lots.
- Flexible seating and lighting placement to accommodate program needs.

The District considered various recommendations and concerns from the community and included two options for the proposed project and two project alternatives for further discussion. The final selection of alternatives is based on the CEQA Guidelines Section 15126.6(f), which states that the selection of alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project.

7.1.4 Significant and Unavoidable Impacts

The Recirculated Draft EIR (RDEIR) determined that all impacts are either less than significant or there is mitigation available to reduce such impacts to a less than significant level.

7.2 ALTERNATIVES REJECTED FROM FURTHER REVIEW

The following is a discussion of the alternatives considered during the scoping and planning process and the reasons why they were not selected for detailed analysis in this RDEIR.

7.2.1 Alternative Sites

CEQA requires that the EIR 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. An EIR need not consider every conceivable alternative to a project (CEQA Guidelines Section 15126.6[a]).

Construction and operation of a new sports field at another location would not meet the District's main objective for the project, which is to enhance on-campus sports facilities to reduce the number of events and practices that currently occur off-campus, therefore enhance school pride, reduce travel time and cost, and minimize maintenance and downtime. An off-site alternative site would not feasibly attain most of the basic objectives of the project. Moreover, among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, and availability of infrastructure; general plan consistency, other plans or regulatory limitations, and jurisdictional boundaries; and whether the proponent can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent) (CEQA Guidelines Section 15126.6[f][1]). There is no suitable site that is economically viable within a mile of the project site that could reasonably be developed into a lighted sports field for the CdM MS/HS programs.

Selecting an alternative location when there already is an existing location without substantially lessening environmental effects is not required under CEQA.

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. Additionally, only locations that would avoid or substantially lessen any of the significant effects of the project need to be considered for inclusion in the EIR (Guidelines Sec. 15126.6[f][2]).

Construction and operation of a similar facility at an offsite location would likely result in similar impacts. Furthermore, the No Project Alternative discussed in Section 7.5 is considered an "alternative site" alternative, because students would continue to travel to various locations for games and practices. Discussion of alternative sites is unnecessary.

7.2.2 Alternative Public-Address Technologies

There are many methods of providing public address to spectators and participants. These include variables in the location, orientation, and height of speakers; amplifier control systems; and operational specifications. However, under Option B, no PA system is proposed, negating the need to address alternative PA technologies. Furthermore, no significant noise impact was found under Option B. Although a PA system was proposed under Option A, a mitigation measure was incorporated to eliminate the PA system to reduce sports field impact to a less than significant level. Therefore, under both options, no PA system would be provided, negating the need to address alternative PA technologies in this chapter. While alternative PA technology could potentially reduce noise from the PA system under Option A, a superior mitigation to eliminate the PA system was incorporated. Therefore, this alternative was rejected for further review. The District may avoid any significant noise impact by selecting Option B or by selecting Option A with its mitigation eliminating the PA system.

7.2.3 Alternative Lighting Technologies/Pole Heights

Several alternatives were suggested during the scoping process. These included lower pole lights, portable/temporary lights, and alternative light technologies such as LED and variations of LEDs.

Because nighttime lighting and glare impacts were determined to be less than significant, a full consideration of alternative lighting technologies and pole heights was deemed unnecessary.

Consideration of portable lights is included in Alternative 2: Two Fields with Portable Lights.

Reducing pole heights for the permanent lights was rejected for the reasons provided in Section 4.1, *Aesthetics* (see Impact 5.1-3). Note that Alternative 2: Two Fields with Portable Lights, includes 35-foot-tall portable light systems.

7.2.4 Parking Garage Alternatives

As discussed in Impact 5.9-4 of Section 5.9, *Transportation and Traffic*, based on a detailed analysis of parking, the CdM campus was found to provide adequate on-campus parking to accommodate maximum spectator events under Options A and B.

Although no adverse parking impact of the proposed project was identified, the District has considered two parking garage options. As depicted in Figure 7-1, *Parking Garage Alternatives*, Parking Garage Alt. 1 would replace Parking Lot 1, and Parking Garage Alt 2 would replace Parking Lot 3. Alternative 1 would be closest to the field and therefore most advantageous for access to the field events. A parking garage at either location would be four or five stories, which would create its own visual impacts, and further, the District does not have the budget to fund its estimated $7 million-plus cost.

A parking garage would improve parking conditions during the school day when parked cars intrude into adjoining neighborhoods. However, based on the survey of parked cars during event times and analysis of event-generated parking, no significant project-related parking impact was identified. As a result, the parking garage alternative was rejected from further analysis.

7.3 ALTERNATIVES SELECTED FOR FURTHER ANALYSIS

Based on the criteria listed in Section 7.1.1, the following three alternatives have been determined to represent a reasonable range of alternatives that have the potential to feasibly attain most of the basic objectives of the project, but may avoid or substantially lessen any of the environmental effects of the project. These alternatives are analyzed in the following sections.

- Alternative 1: No Project
- Alternative 2: Two Fields with Portable Lights
- Alternative 3: Two Fields, No Lights

For each development alternative, this analysis:

- Describes the alternative.
- Analyzes the impact of the alternative compared to the proposed project.
- Identifies the impacts of the project that would be avoided or lessened by the alternative.
- Assesses whether the alternative would meet most of the basic project objectives.
- Evaluates the comparative merits of the alternative and the project.

Figure 7-1 - Parking Garage Alternatives

Source: Google Earth Pro, 2015

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Per CEQA Guidelines Section 15126.6(d), additional significant effects of the alternatives are discussed in less detail than the significant effects of the project as proposed.

An EIR must identify an "environmentally superior" alternative, and where the No Project Alternative is identified as environmentally superior, the EIR is then required to identify as environmentally superior an alternative from among the others evaluated. Each alternative's environmental impacts are compared to the proposed project (Options A and B) and determined to be environmentally superior, neutral, or inferior. However, only impacts found significant and unavoidable are used in making the final determination of whether an alternative is environmentally superior or inferior to the proposed project. Since all impacts were found to be less than significant, the alternatives were simply judged on their ability to reduce impacts further. Section 7.7 identifies the Environmentally Superior Alternative.

7.4 ALTERNATIVE 1: NO PROJECT

The CEQA Guidelines requires the analysis of a No Project alternative. This analysis must discuss the existing site conditions as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved.

Under the No Project alternative, the proposed synthetic turf field and rubber track, permanent 664-seat capacity bleachers, four or eight light poles, and restroom/concession/ticket building (Option A only) would not be constructed. The existing sports field would continue to be used only during the day time, and CdM students would continue to travel to other facilities for some practices and games. This alternative would not meet any of the project objectives.

7.4.1 Aesthetics

Under this alternative, no structural changes to the existing CdM campus facilities would occur, and some of the school practices and games would continue to take place away from the CdM campus. No tall light poles would be constructed, and no new permanent bleachers would be added to the existing sports field. Without the addition of lights, daytime views across the campus would not change, and no spill light or glare impact would occur. Although aesthetic and light glare impacts of the project are not significant, this alternative would result in less of an impact than the proposed project.

7.4.2 Air Quality

No construction would be required under this alternative; therefore, no construction-related air quality impacts would occur. This alternative would result in less of an impact than the proposed project under both options.

The greatest maximum daily regional operational emissions are from mobile sources. Operational air quality emissions were calculated based on a maximum capacity event with 664 people and 432 average daily trips for Option A, and a maximum capacity event with 864 people and 562 average daily trips for Option B. Total CO emissions from mobile sources are 7 lbs/day for Option A and 9 lbs/day for Option B. Under this alternative, these emissions would not be generated. Therefore, this alternative would result in less of an impact than the proposed project under both options for operational air quality.

7.4.3 Cultural Resources

Under this alternative no earthwork or soil disturbance would occur. Ground disturbance during project development that may discover and damage buried archaeological and paleontological resources would be eliminated. This alternative would eliminate required mitigation measures for possible archaeological and paleontological resources. The No Project alternative would result in less of an impact than the proposed project for cultural resources.

7.4.4 Greenhouse Gas Emissions

Under this alternative, no building, bleachers, and lighting system development would occur. Therefore, the projected greenhouse gas (GHG) emissions from onsite energy uses would be less than the proposed project. However, the greatest GHG emissions source is mobile sources. GHG emissions can be evaluated in terms of reduction in vehicle miles traveled (VMT). Under this alternative, CdM athletic teams and spectators would continue to drive longer distance to various locations for practices and games. Therefore, no reduction in VMT would occur under this alternative, and greater GHG emissions are anticipated. This alternative would result in a greater impact than the proposed project under both options.

7.4.5 Hydrology and Water Quality

No ground disturbance would result under this alternative; therefore, no construction-related water quality impact would occur. Without the synthetic turf field, no change to the volume or velocity of stormwater would occur, and runoff quality would not change. This alternative would result in less of an impact than the proposed project for hydrology and water quality.

7.4.6 Noise

No construction noise would occur under this alternative. All scheduled nighttime activities, including practices and games, would continue to be held at other facilities. Therefore, noise would not increase at the residences adjacent to the CdM campus. This alternative would eliminate noise impacts and the required mitigation measures related to operational event noise (Option A only). No significant noise impact is identified. This alternative would result in less of an impact than the proposed project for both construction- and operation-related noise.

7.4.7 Public Services

Under this alternative, no changes to the public services demand would occur compared to the existing conditions. This alternative would eliminate the increase in the site-specific public services demands (i.e., fire and police) under the proposed project. The No Project alternative would result in less of an impact than the proposed project related to public services.

7.4.8 Recreation

Under this alternative, the community members would continue to use the existing track and field without restrictions outside of normal school operation. Therefore, no increased use for other city parks and recreational facilities would occur. The No Project alternative would result in less of an impact than the proposed project for recreation.

7.4.9 Transportation and Traffic

Under this alternative, total vehicle trips and circulation patterns would remain as they currently exist. As explained in Section 5.9, *Transportation and Traffic,* the project would result in a reduction in VMT because several practices and events would no longer need to travel to off-site facilities. In this regard, the No Project alternative would result in greater impacts than the proposed project, since this reduction in VMT would not occur.

The No Project alternative would eliminate the project's impact on area intersections and parking, and this alternative would result in less of an impact than the proposed project.

7.4.10 Energy

Under this alternative, no energy related to nighttime lighting and the restroom/ticket/concession building operation would be used. Although site-specific energy use would be less under this No Project alternative, the overall energy use would be greater since practices and games would continue to be played at off-site facilities that also use energy resources. Since students and visitors would have to drive farther under this alternative, more transportation energy would be used under this alternative. This alternative would result in greater impact than the proposed project for energy resources.

7.4.11 Conclusion

This alternative would lessen environmental impacts in the areas of daytime aesthetics, light and glare, construction and operational air quality, cultural resources (archaeological and paleontological resources), hydrology and water quality, construction and operational noise, public services (fire and police services), recreation, and traffic and parking; it would worsen impacts in the areas of GHG emissions and energy resources. Although no significant and unavoidable impact has been identified for the proposed project under both options, this alternative is considered environmentally superior to the proposed project.

7.5 ALTERNATIVE 2: TWO FIELDS WITH PORTABLE LIGHTS

As shown on Figure 7-2, *Two Fields with Portable Lights*, this alternative is identical to Option B except the only lights provided for evening use are portable lights. Ten portable light units would be provided for nighttime events and practices, three on one side and two on the other of each field. Portable lights would allow occasional nighttime games and nighttime practices. Compared to Option A, the provision of two synthetic turf fields would allow increased field usage with reduced scheduling conflicts and reduced injuries from uneven and compacted turf. Compared to the Option B, the use of portable lights implies less frequent use than with permanent lighting systems.

7.5.1 Aesthetics

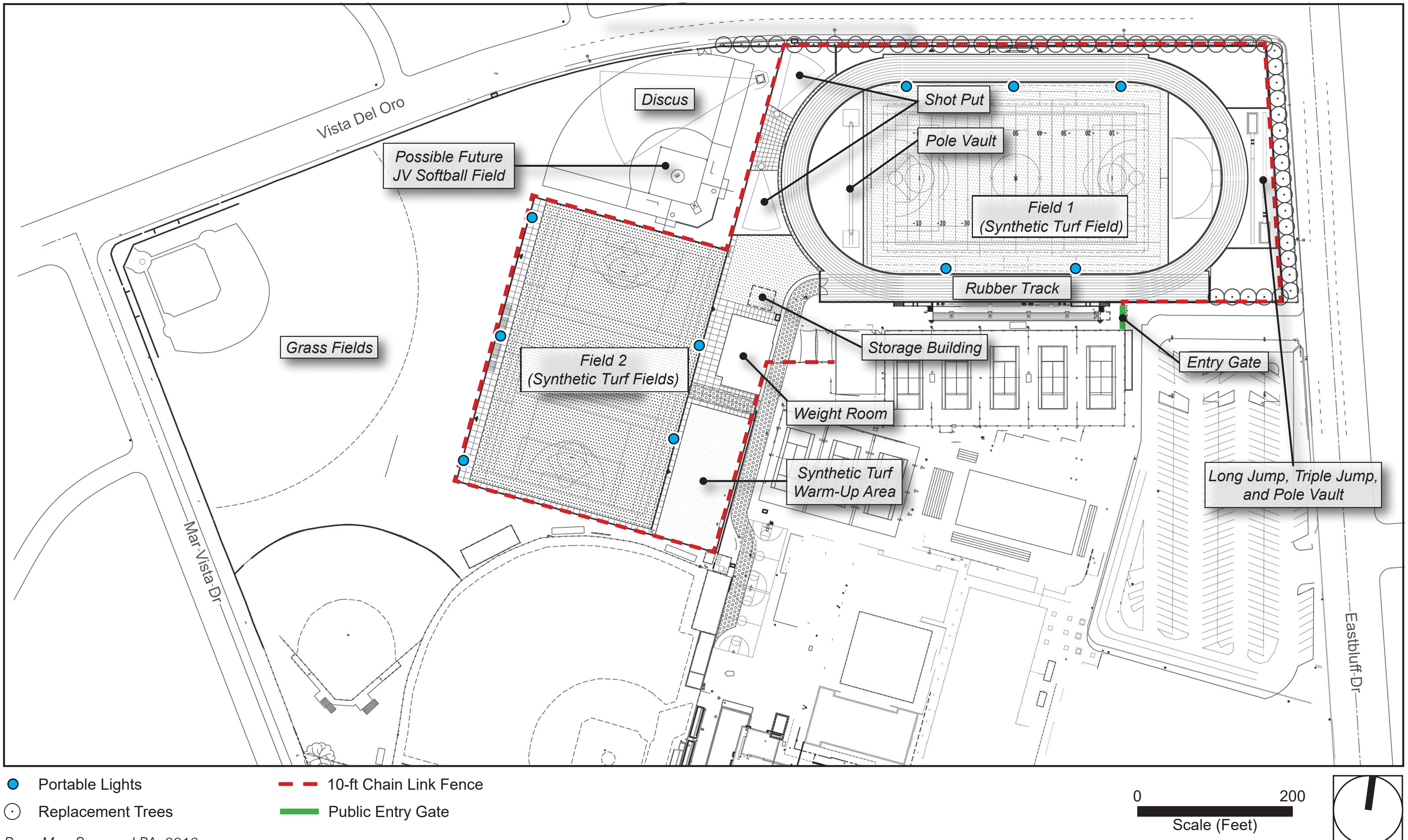
Under this alternative, ten portable light units would be provided for nighttime events and practices, three on one side and two on the other of each field, as shown in Figure 7-2. A typical portable lighting system used by the District is shown in Figure 7-3, *Typical Portable Light*, which has a maximum pole height of 35 feet. As the light pole height would be reduced by more than half compared to the project (Options A and B), no daytime visual impacts from scenic viewsheds are anticipated. Although poles would be visible from various community view areas, at 35 feet they would not extend above the height of campus and street trees, and they are lower in height than street lights and the background skyline.

Compared to Option A, the elimination of the restroom/concession/ticket building on the east would also result in a less modified visual character along Eastbluff Drive and Vista Del Oro.

Nighttime lighting impacts would be greater under this alternative because the portable lights do not provide as much control over spill light and glare as the proposed permanent lighting system. As explained in Section 5.1, *Aesthetics*, taller poles allow light fixtures to be aimed more directly on the playing surface, which reduces the amount of light spilling into surrounding areas. The visors and shielding provided for each luminaire under the proposed project would also minimize sky glow and glare impacts. Therefore, with the lower pole heights and unshielded luminaries under this alternative, light would spill beyond its intended boundaries and be more visible from offsite positions. Although the portable lights would be placed inside the track of the sports field, as shown in Figure 7-3, creating more distance from residences north of Vista Del Oro for the main field compared to the proposed project, greater light trespass and glare impacts are anticipated. The portable lights under this alternative would be similar in height or shorter than the existing swimming pool lights and would likely cause similar or brighter glare impact compared to the proposed project under either Option A or B. Without the proper pole height for controlled aim, the lighting levels beyond the CdM boundaries for the main sports field would be greater than identified with both project options, and the glare from these would be considered significant.

The same field use policy as Option B would be applicable under this alternative, with lights not allowed after 8:00 PM for practices and 9:00 PM for games. This alternative would result in less of an impact than the proposed project for daytime visual impact but greater impact than the proposed project for nighttime light and glare.

Figure 7-2 - Two Fields with Portable Lights



Base Map Source: LPA, 2016

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Figure 7-3 - Typical Portable Light System

Source: N-MUSD, 2016

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7.5.2 Air Quality

This alternative would develop two fields identical to Option B, except that it would not construct the eight permanent light structures and instead use ten portable light units. Hence, construction emissions would be similar, but slightly reduced by this alternative compared to Option B. Option A would disturb a smaller amount of the site, but it also includes construction of a concession/restroom building with its related emissions. Therefore, a similar construction air quality impact is anticipated. The maximum daily regional construction emissions would occur during the demolition stage of Field 1 area under both options. As this alternative would develop two fields identical to Option B, it would result in the same construction criteria air emission impacts as Option B. This alternative would have similar environmental impacts as the proposed project related to construction air quality impacts.

The greatest maximum daily regional operational emissions are from mobile sources. Operational air quality emissions were calculated based on a maximum capacity event with 664 people and 432 average daily trips for Option A, and a maximum capacity event with 864 people and 562 average daily trips for Option B. Total CO emissions from mobile source are 7 lbs/day for Option A and 9 lbs/day for Option B. Under this alternative, the maximum capacity would be 864 people, and ADT would be 562, the same as Option B. Therefore, it is anticipated that this alternative would result in greater daily mobile source emission impacts than Option A and the same mobile source impacts as Option B. From the energy sources, this alternative would generate greater emissions because portable lights would be diesel powered. Diesel sources generate direct criteria pollutants, whereas only indirect emissions from electricity use would occur under the permanent lighting system.

Therefore, this alternative would result in greater operational impacts to air quality than Option A and Option B. Air quality impacts are not a significant and unavoidable impact of the proposed project.

7.5.3 Cultural Resources

This alternative would provide two synthetic turf fields, disturbing approximately 9 acres, identical to Option B but less than Option A with just one field with approximately 6 acres of disturbance. Therefore, compared to Option A, this alternative would disturb more areas, thereby increasing the potential for discovery of buried cultural resources. Compared to Option B, the disturbance area would be the same. Under this alternative, the same mitigation measures related to archaeological, tribal, and paleontological resources would be required to reduce impacts to a less than significant level. This alternative would result in greater impacts than Option A and less of an impact than Option B for cultural resources. Cultural resources impact is not a significant and unavoidable impact of the proposed project.

7.5.4 Greenhouse Gas Emissions

This alternative would generate GHG emissions from construction, vehicle trips and the portable lighting system. The proposed project's lighting system would generate GHG emissions indirectly from purchased electricity use; however, the portable lighting system would generate direct emissions from diesel fuel consumption. The air quality analysis evaluated the maximum daily regional operational emissions and compared to regional thresholds, but long-term operational emissions can be evaluated in terms of reduction in VMT. Under this alternative, two synthetic fields would likely allow more practices to be held at CdM campus than under Option A with only one field. Therefore, an overall reduction in mobile source GHG emissions can be anticipated. Compared to Option B, the use of rented portable lights implies less frequent use, which would result in fewer off-site activities returning to the CdM campus. Therefore, a greater reduction in VMT can be anticipated under Option B than this alternative. Therefore, this alternative would result in less of an impact than Option A and greater impacts than Option B for GHG emissions.

7.5.5 Hydrology and Water Quality

This alternative would provide two synthetic turf fields, increasing the area to be graded and disturbed and converted to synthetic turf fields compared to Option A. The amount of area disturbed would be identical to Option B. Required compliance with the National Pollutant Discharge Elimination System permit and implementation of appropriate best management practices (BMP) per the Storm Water Pollution Prevention Plan (SWPPP) and water quality management plan (WQMP) would ensure that impacts are reduced to a less than significant level. This alternative would increase the surface area with the cryogenic styrene-butadiene rubber field compared to Option A. As with the proposed project, the stormwater runoff would undergo treatment and underground infiltration prior to discharging to the City's storm drain system. Although impacts would not be significant, the increased volume of runoff water compared to Option A would result in greater hydrology and water quality impacts. This alternative would result in greater impacts than Option A and similar impacts to Option B for hydrology and water quality.

7.5.6 Noise

This alternative would develop two fields identical to Option B, but would use rented portable lights. Hence, construction noise would be similar, but slightly reduced by this alternative compared to Option B. Option A would disturb a smaller amount of the site, but involves construction of a concession/restroom building. Therefore, this alternative would result in similar construction noise impacts compared to the proposed project.

This alternative would allow evening events on two fields, although the use of rented portable lights implies fewer evening practices and events. While fewer evenings of field use would reduce the frequency of noise during the evening, the use of generator-driven lights would introduce an additional noise source to the fields. When both fields are in use during in the evening, ten portable generators would be in operation, each producing these noise levels:

- 70-72 dBA at 50 feet
- 64-66 dBA at 100 feet
- 58-60 at 200 feet (PlaceWorks, Noise Measurements, El Toro High School, 10/25/2013)

The use of portable lights may reduce the frequency of field use and associated participant noise, but the portable lights themselves will add a new noise source. Therefore, this alternative would result in greater impacts than the proposed project (both options) for operational noise.

7.5.7 Public Services

Under this alternative, evening practices and games would be played at CdM with portable lights. This alternative would allow more practices and games to be played at CdM campus than under Option A where only one field is proposed. Therefore, a slight increase in demands for public services could occur. However, this alternative would not include a restroom/ticket/concession building, thus slightly reducing fire services impacts for this 3,000-square-foot building. Therefore, in general, this alternative would result in similar impacts as the proposed project Option A for fire and police services. As with this alternative, Option B does not include a restroom/ticket/concession building, and fewer practices and games would be played at CdM campus with rented lights. Therefore, this alternative would result in less of an impact than the proposed project Option B.

7.5.8 Recreation

As with the proposed project, unauthorized use of both synthetic turf fields under this alternative would be prohibited pursuant to the District's adopted field use policy. Therefore, this alternative would also require residents to use other existing parks and recreational facilities. This alternative would result in greater impacts than Option A, since use of two sports fields would be restricted instead of one, and would result in the same impacts as Option B with the same two artificial turf fields restriction.

7.5.9 Transportation and Traffic

Under this alternative, more practices and events would occur compared to Option A, where only one field is proposed. A maximum capacity event would be with 864-seat bleachers for this alternative compared to 664-seat capacity event for Option A. This alternative would generate more evening trips, and related traffic impacts on the area road system would be greater than Option A. A greater number of practices and events would also result in greater parking impacts than Option A.

The use of portable lights would imply a reduction in the frequency of evening use compared to Option B. Therefore, related traffic impacts are anticipated to be slightly reduced. A reduced number of practices and events during the evening would also result in reduced parking impacts. This alternative would result in less of an impact than Option B for roadway and parking impacts. No significant and unavoidable traffic and parking impacts were identified for the proposed project under either option.

7.5.10 Energy

Under this alternative, the additional electricity and natural gas energy consumed by the restroom/ticket/concession building under Option A would not occur. However, portable lights under this option would consume diesel fuel, which would not occur under either Option A or B.

Under this alternative, more practices and events would take place than under Option A with only one field. Therefore, this alternative would result in a greater reduction than Option A in VMT. Compared to Option B, less frequent evening practices and events would take place under this alternative. Therefore, the amount of VMT reduction would be less than under Option B.

In general, this alternative would result in less of an impact than Option A and greater impacts than Option B for energy.

7.5.11 Conclusion

Compared to Option A, this alternative would lessen environmental impacts in the areas of daytime aesthetics, GHG emissions, and energy; have similar environmental impacts in the areas construction air quality and public services; and increase impacts related to light and glare, long-term operational air quality, cultural resources (archaeological and paleontological resources), hydrology/water quality, operational noise, recreation, and traffic and parking.

Compared to Option B, this alternative would lessen environmental impacts in the areas of daytime aesthetics, public services, and traffic and parking; have similar impacts in the areas of short-term construction air quality, cultural resources (archaeological and paleontological resources), hydrology and water quality, construction noise, and recreation; and increase impacts related to light and glare, operational air quality, GHG emissions, operational noise, and energy resources.

The proposed project under both options did not identify any significant and unavoidable impacts. However, the use of portable lights would introduce a significant new light source that is difficult to control and is expected to create new significant spill light and glare impacts. For this reason, this alternative is considered inferior to both Options A and B.

7.6 ALTERNATIVE 3: TWO FIELDS, NO LIGHTS

This alternative would provide two synthetic turf fields as shown in Figure 3-5, *Option B Site Plan*, but without nighttime lighting. Two synthetic turf fields would allow increased field usage with minimal scheduling conflicts and reduce injuries from uneven or compacted turf. However, no nighttime practices or games would occur under this alternative.

7.6.1 Aesthetics

This alternative would convert the existing turf sports fields to synthetic fields, but no 80-foot light poles or restroom/ticket/concession building would be constructed. The existing 664-seat portable bleachers would be replaced with permanent bleachers with the same capacity, and no press-box would be provided. Similar to both Options A and B, existing trees along Vista Del Oro would be replaced with new landscaping. As with the proposed project, 10-foot-high tubular steel fencing would be provided along the perimeter of the two fields, the same as shown in Figure 3-5, *Option B Site Plan*. Because there would be no nighttime lighting, no light spill and glare impacts would occur, and the nighttime views from surrounding sensitive receptors would not change. This alternative would primarily update and replace the existing CdM athletic facilities without increasing capacity or adding nighttime use. This alternative would likely improve the overall quality of the CdM sports field without causing any spill light or glare impacts. This alternative would result in less of an impact than the proposed project (Options A and B) for both daytime and evening aesthetics.

7.6.2 Air Quality

Under this alternative, the amount of soil disturbance and construction would be the same as Option B except for the elimination of the eight light poles. Although the area of disturbance is less under Option A, a restroom/concession/ticket building would not be constructed in Option B. Therefore, a similar construction air quality impact is anticipated compared to Option A. The construction-related emissions from installation of eight light poles would be minimal. Therefore, construction-related emissions under this alternative would be nearly identical to those under Option B. This alternative would have similar environmental impacts as the proposed project for construction air quality impacts.

Under this alternative, localized traffic conditions would essentially be unchanged from current conditions. Without lights, use of the fields would not extend into evening hours. This alternative would not capture the trips that now take student athletes to other facilities and therefore, this alternative would not reduce VMT and the associated air pollution of the proposed project. This alternative would result in a greater impact compared to Options A and B. Air quality impact is not a significant and unavoidable impact of the proposed project.

7.6.3 Cultural Resources

This alternative would provide two synthetic turf fields; therefore, it would increase the area to be graded compared to Option A, but would disturb the same amount of area compared to Option B. Additional areas to be disturbed would result in increased potential for discovery of buried cultural resources. As with the proposed project, mitigation measures would be required to reduce impacts to a less than significant level. This alternative would result in greater impacts than Option A and similar impacts to Option B for cultural resources.

7.6.4 Greenhouse Gas Emissions

This alternative would relocate fewer of the practices and games back to the CdM campus compared to the proposed project under both options, since there would be no nighttime use of the fields. Therefore, associated reduction in VMT would be less under this alternative than the proposed project. The greatest project-related GHG emissions source is vehicle trips; therefore, with fewer practices and games played at CdM, more vehicular emissions would be generated by the need to drive longer distance to other offsite facilities. GHG generated from electricity used for the lighting system would be a fraction of GHG from mobile sources. Therefore, elimination of eight light poles would not result in a significant difference in GHG emissions evaluation. This alternative would result in greater GHG emissions impacts than the proposed project under both options.

7.6.5 Hydrology and Water Quality

This alternative would provide two synthetic turf fields, and the area to be graded and disturbed and converted to synthetic turf fields would be greater than Option A, but identical to Option B. The potential for hydrologic and water quality impacts is greater for this alternative than under Option A. However, as with the proposed project, required compliance with the National Pollutant Discharge Elimination System permit and implementation of appropriate BMPs per the SWPPP and WQMP would ensure that impacts are reduced to a less than significant level. This alternative would increase the surface area covered by cryogenic styrene-butadiene rubber field compared to Option A. As with the proposed project under both options, the stormwater runoff would undergo treatment in an underground infiltration system prior to discharging to the city's storm drain system. This alternative would result in greater impacts than Option A and similar impacts as Option B for hydrology and water quality.

7.6.6 Noise

Under this alternative, the area of construction would be larger than Option A but no restroom/concession/ticket building would be eliminated. Therefore, in general, construction noise impacts under this alternative is considered the same as Option A. Compared to Option B, the only difference is the elimination of the eight light poles. However, installation of eight light poles in different phases is not anticipated to generate loud construction noise. Therefore, this alternative would result in similar noise impacts as the proposed project under both options.

Without nighttime lighting, fewer practices and games would be played under this alternative than Options A and B, and no PA system would be provided as with Option B. Therefore, this alternative would result in less operational sports field noise than the proposed project (Options A and B). However, no significant and unavoidable noise impacts have been identified for the proposed project under either option.

7.6.7 Public Services

This alterative would allow fewer practices and games to be played at CdM compared to Options A and B. No large crowd-gathering field events would occur in the evening, and no restroom/concession/ticket building would be constructed. Therefore, this alternative would result in less fire and police services impacts than the proposed project for both options.

7.6.8 Recreation

As with the proposed project, unauthorized use of the two synthetic turf fields would be prohibited pursuant to the District's adopted field use policy. Residents would be required to use other existing parks and recreational facilities. This alternative would result in greater impacts than Option A, since use of two sports fields would be restricted instead of one, and would result in the same impacts as Option B with restrictions a on two artificial turf fields.

7.6.9 Transportation and Traffic

Under this alternative, localized traffic conditions would essentially be unchanged from current conditions. Without lights, use of the fields does not extend into evening hours, and games and practices would occur as they do now. This alternative would not generate new PM peak hour trips. Therefore, related traffic impacts are anticipated to be less than the proposed project under both options. A reduced number of practices and events during evening would also result in reduced parking impacts. This alternative would result in less of an impact than Options A and B for roadway and parking impacts. No significant and unavoidable traffic and parking impacts were identified for the proposed project.

7.6.10 Energy

Options A and B includes a lighting system and only Option A includes a building. Under this alternative, site-specific demands related to electricity and natural gas would be reduced compared to the proposed project because there would not be a lighting system and the restroom/ticket/concession building would not constructed. This alternative would not allow evening practice and games, therefore, CdM athletic teams and visitors would continue to drive farther distance for these activities. Therefore, VMT under this alternative would be greater than the proposed project, which would result in greater vehicular energy consumption.

This alternative would lessen electricity and natural gas impacts somewhat (no lights and no building), but the increase in transportation energy consumption would be greater than the savings in electricity and natural gas. This alternative would result in greater impacts than the proposed project in energy resources.

7.6.11 Conclusion

Compared to Option A, this alternative would lessen environmental impacts in the areas of daytime aesthetics, light and glare, operational air quality, construction and operational noise, public services, and traffic and parking; have similar impacts related to short-term construction air quality; and increase environmental impacts in the areas of cultural resources (archaeological and paleontological resources), GHG emissions, hydrology and water quality, recreation, and energy.

Compared to Option B, this alternative would lessen environmental impacts in the areas of daytime aesthetics, light and glare, operational air quality, and public services; have similar impacts related to short-term air quality, cultural resources (archaeological and paleontological resources), hydrology and water quality, construction and operational, and recreation; and increase impacts related to GHG emissions and energy.

Because this alternative would reduce the impacts of most concern to the community, aesthetics, light and glare, and noise and traffic, this alternative is considered environmentally superior to the proposed project (Options A and B).

7.7 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires a lead agency to identify the "environmentally superior alternative" and, in cases where the "No Project" Alternative is environmentally superior to the proposed project, the environmentally superior development alternative must be identified. The No Project and Two Fields No Lights alternatives have been identified as environmentally superior to both options of the proposed project. The Two Fields Portable Lights alternative is considered environmentally inferior to the project due to the impacts on light/glare, noise, and emissions related to the portable lights. Table 7-1 compares each alternative's impacts to Option A, and Table 7-2 compares each alternative to Option B.

7. Alternatives to the Proposed Project

Table 7-1 Summary of Proposed Project – Option A Impacts and Alternatives

Topic	Proposed Project Option A	Alternative 1: No Project	Alternative 2: 2 Fields with Portable Lights	Alternative 3: Two Fields, No Lights
Aesthetics				
Daytime	LTS	–	–	–
Evening	LTS/MM	–	+	–
Air Quality				
Short-term Construction	LTS	–	=	=
Long-term Operation	LTS	–	+	+
Cultural Resources				
Archaeological Resources	LTS/MM	–	+	+
Paleontological Resources	LTS/MM	–	+	+
Greenhouse Gas Emissions	LTS	+	–	+
Hydrology and Water Quality	LTS/MM	–	+	+
Noise				
Construction	LTS	–	–	–
Operation	LTS/MM	–	+	–
Public Services	LTS	–	=	–
Recreation	LTS	–	+	+
Transportation and Traffic				
Traffic	LTS/MM	–	+	–
Parking	LTS	–	+	–
Energy	LTS	+	–	+

Notes: NI: No impact; LTS: Less than Significant; LTS/M: Less than Significant with Mitigation Incorporated; S/U: Significant and Unavoidable
(–) The alternative would result in less of an impact than the proposed project.
(+) The alternative would result in greater impacts than the proposed project.
(=) The alternative would result in the same/similar impacts as the proposed project.
* The alternative would reduce a significant and unavoidable impact.

Table 7-2 Summary of Proposed Project – Option B Impacts and Alternatives

Topic	Proposed Project Option B	Alternative 1: No Project	Alternative 2: 2 Fields with Portable Lights	Alternative 3: Two Fields, No Lights
Aesthetics				
Daytime	LTS	–	–	–
Evening	LTS/MM	–	+	–
Air Quality				
Short-term Construction	LTS	–	=	=
Long-term Operation	LTS	+	+	+
Cultural Resources				
Archaeological Resources	LTS/MM	–	=	=
Paleontological Resources	LTS/MM	–	=	=
Greenhouse Gas Emissions	LTS	+	+	+
Hydrology and Water Quality	LTS/MM	–	=	=
Noise				
Construction	LTS	–	=	=
Operation	LTS	–	+	=
Public Services	LTS	–	–	–
Recreation	LTS	–	=	=
Transportation and Traffic				
Traffic	LTS/MM	–	–	–
Parking	LTS	–	–	–
Energy	LTS	+	+	+

Notes: LTS: Less than Significant; LTS/MM: Less than Significant with Mitigation Measure Incorporated; S/U: Significant and Unavoidable
(–) The alternative would result in less of an impact than the proposed project.
(+) The alternative would result in greater impacts than the proposed project.
(=) The alternative would result in the same/similar impacts as the proposed project.
* The alternative would reduce a significant and unavoidable impact.

Table 7-3 identifies the ability of the two project options and each alternative to achieve project objectives. As shown, Option B achieves all project objectives without generating any significant environmental impact. Option A achieves all but one objective without generating any significant impacts. The No Project is environmentally superior, but does not achieve most of the project objectives. The Two Fields Portable Lights alternative would achieve the project objectives (although not fully), but would create a new significant impact. The Two Fields No Lights is environmentally superior, but achieves only half the project objectives.

7. Alternatives to the Proposed Project

Table 7-3 Ability of Each Alternative to Meet the Project Objectives

Objective	Proposed Project Option A	Proposed Project Option B	No Project Alternative	2 Fields - Portable Lights	Two Fields - No Lights
1. Upgrade athletic field(s) to boost student participation in athletics and return team practices and small home events from remote venues.	YES	YES	NO	YES	NO
2. Reduce travel time and vehicle miles traveled for home events and practices.	YES	YES	NO	YES	NO
3. Reduce the amount of District funds associated with transportation to and from off-campus venues.	YES	YES	NO	YES	NO
4. Reduce field maintenance downtime by installing durable year-round surface materials.	YES	YES	NO	YES	YES
5. Expand use of the field into evening hours by providing field lighting.	YES	YES	NO	YES	NO
6. Provide bleachers with a maximum seating capacity of 664 seats, adequate to accommodate certain limited spectator events currently held off campus.	YES	YES	YES	YES	YES
7. Enhance school pride by increasing the number of home sporting events to occur on campus.	YES	YES	NO	YES	NO
8. Improve security around artificial surface fields.	YES	YES	NO	YES	YES
9. Allow use of the facility by District-approved community groups per adopted Board Policy 1130 Use of School Facilities	YES	YES	YES	YES	YES
10. If feasible, further enhance on-campus athletics by providing second artificial surface field.	NO	YES	NO	YES	YES

8. Impacts Found Not to Be Significant

California Public Resources Code Section 21003 (f) states: "…it is the policy of the state that…[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical, and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." This policy is reflected in the State California Environmental Quality Act (CEQA) Guidelines (Guidelines) Section 15126.2(a), which states that "[a]n EIR [Environmental Impact Report] shall identify and focus on the significant environmental impacts of the proposed project" and Section 15143, which states that "[t]he EIR shall focus on the significant effects on the environment." The Guidelines allow use of an Initial Study to document project effects that are less than significant (Guidelines Section 15063[a]). Guidelines Section 15128 requires that an EIR contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant, and were therefore not discussed in detail in the Draft EIR.

8.1 ASSESSMENT IN THE INITIAL STUDY

The Recirculated Initial Study prepared for the proposed project in March 2016 determined that impacts listed below would be less than significant. Consequently, they have not been further analyzed in this Recirculated Draft EIR (RDEIR). Please refer to Appendix A2 for explanation of the basis of these conclusions. Impact categories and questions below are summarized directly from the CEQA Environmental Checklist, as contained in the Recirculated Initial Study.

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues		Initial Study Determination
II. AGRICULTURE AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:		
a)	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	No Impact.
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact.
c)	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	No Impact.

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues		Initial Study Determination
d)	Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact.
e)	Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	No Impact.
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:		
e)	Create objectionable odors affecting a substantial number of people?	Less Than Significant.
IV. BIOLOGICAL RESOURCES. Would the project:		
a)	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No Impact.
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	No Impact.
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	No Impact.
d)	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	Less Than Significant.
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	No Impact.
f)	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	No Impact.
V. CULTURAL RESOURCES. Would the project:		
a)	Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	No Impact.
d)	Disturb any human remains, including those interred outside of formal cemeteries?	Less Than Significant.
e)	Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074?	Less Than Significant.
VI. GEOLOGY AND SOILS. Would the project:		
a)	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	No Impact.
	ii) Strong seismic ground shaking?	Less Than Significant.
	iii) Seismic-related ground failure, including liquefaction?	No Impact.
	iv) Landslides?	Less Than Significant.
b)	Result in substantial soil erosion or the loss of topsoil?	Less Than Significant.
c)	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Less Than Significant.

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

	Environmental Issues	Initial Study Determination
d)	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	Less Than Significant.
e)	Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact.
VIII. HAZARDS AND HAZARDOUS MATERIALS. Would the project:		
a)	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less Than Significant.
c)	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	Less Than Significant.
d)	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 a result, would it create a significant hazard to the public or the environment?	Less Than Significant.
e)	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 for people residing or working in the project area?	Less Than Significant.
f)	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	No Impact.
g)	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less Than Significant.
h)	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	No Impact.
IX. HYDROLOGY AND WATER QUALITY. Would the project:		
a)	Violate any water quality standards or waste discharge requirements?	Less Than Significant.
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	Less Than Significant.
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in a substantial erosion or siltation on- or off-site	Less Than Significant.
f)	Otherwise substantially degrade water quality?	Less Than Significant.
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	No Impact.
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	Less Than Significant.
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	No Impact.
j)	Inundation by seiche, tsunami, or mudflow?	Less Than Significant.
X. LAND USE AND PLANNING. Would the project:		
a)	Physically divide an established community?	No Impact.
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	Less Than Significant.

8. Impacts Found Not to Be Significant

Table 8-1 Impacts Found Not to Be Significant

Environmental Issues		Initial Study Determination
c)	Conflict with any applicable habitat conservation plan or natural community conservation plan?	No Impact.
XI. MINERAL RESOURCES. Would the project:		
a)	Result in the loss of availability of a known mineral resource that would be a value to the region and the residents of the state?	Less Than Significant.
b)	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	No Impact.
XII. NOISE. Would the project result in:		
e)	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 expose people residing or working in the project area to excessive noise levels?	Less Than Significant.
f)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	Less Than Significant.
XIII. POPULATION AND HOUSING. Would the project:		
a)	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No Impact.
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	No Impact.
c)	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	No Impact.
XIV. PUBLIC SERVICES. Would the project 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:		
c)	Schools?	No Impact.
e)	Other public facilities?	Less Than Significant.
XV. RECREATION.		
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	Less Than Significant.
XVI. TRANSPORTATION/TRAFFIC. Would the project:		
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	Less Than Significant.
f)	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	Less Than Significant.

9. Significant Irreversible Changes Due to the Proposed Project

Section 15126.2(c) of the CEQA Guidelines requires that an Environmental Impact Report (EIR) describe any significant irreversible environmental changes that would be caused by the proposed project should it be implemented. In the case of the proposed project, implementation would involve:

- Construction activities that entail the commitment of nonrenewable and/or slowly renewable energy resources, including gasoline, diesel fuel, natural gas, electricity, human resources, and natural resources such as lumber and other forest products, sand and gravel, asphalt, steel, lead, other metals, and water.

- The energy commitment of nonrenewable and/or slowly renewable energy resources during long-term implementation.

- The long-term social and public services commitments.

9. Significant Irreversible Changes Due to the Proposed Project

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10. Growth-Inducing Impacts of the Proposed Project

Pursuant to Sections 15126(d) and 15126.2(d) of the CEQA Guidelines, this section is provided to examine ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also required is an assessment of other projects that would foster other activities which could affect the environment, individually or cumulatively. To address this issue, potential growth-inducing effects will be examined through analysis of the following questions:

- Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?
- Would this project result in the need to expand one or more public services to maintain desired levels of service?
- Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?
- Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Please note that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information on ways in which this project could contribute to significant changes in the environment, beyond the direct consequences of developing the land use concept examined in the preceding sections of this EIR.

Would this project remove obstacles to growth, e.g., through the construction or extension of major infrastructure facilities that do not presently exist in the project area, or through changes in existing regulations pertaining to land development?

Options A and B

Project implementation would not require extension of major infrastructure to places currently unserved by such facilities. The project site is already developed as a high/middle school sports field(s) in a residential neighborhood served by infrastructure such as water and sewer mains and electricity and natural gas services. The proposed project would not change the underlying land use of the project site and would not change the existing regulations pertaining to land development.

10. Growth-Inducing Impacts of the Proposed Project

Would this project result in the need to expand one or more public services to maintain desired levels of service?

Options A and B

The proposed project would serve the existing CdM campus athletic programs and would not increase total campus enrollment or capacity in the District. The proposed project would not require expansion of facilities and personnel for fire protection services to maintain desired levels of service. Although demands for police services could increase during sporting games, the increase would be minimal as other activities on CdM campus would be managed so that significant traffic impacts do not occur. The bleacher capacities would not increase from the existing conditions and the impacts during full-capacity events on CdM sports fields would only be temporary. Expanded police services would not be required to maintain desired levels of service. The proposed project would not result in a growth-inducing impacts related to public services.

Would this project encourage or facilitate economic effects that could result in other activities that could significantly affect the environment?

Options A and B

Construction would generate short-term employment. However, considering the size and scale of the proposed project, it would not encourage or facilitate economic effects that could result in other activities that could affect the environment. It is anticipated that construction employment could be absorbed from the regional labor force and would not attract new workers into the city permanently. Operation of the proposed project would not increase total employment at the CdM campus since it would accommodate the existing school programs. The proposed project would not result in growth inducing impacts in this regard.

Would approval of this project involve some precedent-setting action that could encourage and facilitate other activities that could significantly affect the environment?

Options A and B

The proposed project involves improvements to an existing sports field(s) at an existing school campus, and there is no precedent-setting action that could encourage and/or facilitate other activities that could significantly affect the environment. No growth-inducing impact would occur in this regard.

11. Organizations and Persons Consulted

Newport-Mesa Unified School District

Ara Zareczny, LEED AP, Director, Facilities Development, Planning and Design

Timothy Holcomb, Assistant Superintendent, Chief Operating Officer

Tim Marsh, Administrative Director

Corona del Mar Middle and High School

Kathy Scott, Principal

Don Grable, CAA, Athletics Director

Jeff Perry, Assistant Principal

LPA

Glenn Kubota, Project Manager/Landscape

Jane Theobald, PLA/ASLA, Design Coordinator/Landscape

11. Organizations and Persons Consulted

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12. Qualifications of Persons Preparing EIR

PLACEWORKS

Dwayne Mears, AICP
Principal, Environmental Services and School Facilities Planning

- BS California Polytechnic State University, San Luis Obispo, City and Regional Planning, 1978
- MRP, University of North Carolina, Chapel Hill, City and Regional Planning, 1980

Elizabeth Kim
Associate

- BS, University of California, Irvine, Environmental Analysis and Design, 1998
- MURP, University of California, Irvine, 2001

Nicole Vermilion
Associate Principal, Air Quality & GHG

- Master of Urban and Regional Planning, University of California, Irvine
- BA, Environmental Studies, and BS, Ecology and Evolutionary Biology, University of California, Santa Cruz

Bob Mantey
Senior Engineer, Noise, Vibration & Acoustics

- BS, Engineering, Harvey Mudd College

Cathy Fitzgerald, DEnv
Senior Engineer

- BA, Biology, University of California, Los Angeles
- MA, Marine Biology, University of California, Santa Barbara
- DEnv, Environmental Science & Engineering, University of California, Los Angeles

12. Qualifications of Persons Preparing EIR

John Vang, JD
Project Planner, Air Quality & GHG

- Master of Urban Planning, Design, & Development, Cleveland State University
- Juris Doctor, Cleveland-Marshall College of Law, Cleveland State University
- BA, Anthropology, University of California, Los Angeles

Cameron Sullivan
Scientist, Noise

- BS, Acoustics, Columbia College Chicago

Alex Reyes
Designer

- BS, Landscape Architecture, Cal Poly Pomona

Cary Nakama
Graphic Designer

- BA, Data Processing and Marketing, California State University, Long Beach
- AA, Computer Graphic Design, Platt College of Computer Graphic Design

IBI GROUP

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Managing Principal, Irvine

- BA, Environmental Analysis and Design, University of California, Irvine

Michael Arizabal
Senior Transportation Planner

- BS, Civil Engineering, University of California, Irvine