April 2025 | Initial Study/Mitigated Negative Declaration

NORM ROSS SPORTS PARK IMPROVEMENT PROJECT

City of Stanton

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Stanton, California 91739
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Abbreviations and Acronyms

ACRONYMS AND ABBREVIATIONS

AAQS	ambient air quality standards
AB	Assembly Bill
ACM	asbestos-containing materials
ADT	average daily traffic
amsl	above mean sea level
AQMP	air quality management plan
AST	aboveground storage tank
BAU	business as usual
bgs	below ground surface
BMP	best management practices
CAA	Clean Air Act
CAFE	corporate average fuel economy
CalARP	California Accidental Release Prevention Program
CalEEMod	California Emissions Estimator Model
CalEMA	California Emergency Management Agency
Cal/EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CALGreen	California Green Building Standards Code
CalRecycle	California Department of Resources, Recycling, and Recovery
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDE	California Department of Education
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
cfs	cubic feet per second
CGS	California Geologic Survey
CGP	Construction General Permit

Abbreviations and Acronyms

CMP	congestion management program
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CO	carbon monoxide
CO_2e	carbon dioxide equivalent
Corps	US Army Corps of Engineers
CSO	combined sewer overflows
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DAMP	Drainage Area Management Plan
DPM	diesel particulate matter
DSA	Division of the State Architect
DTSC	Department of Toxic Substances Control
EIR	environmental impact report
EPA	United States Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
Fc	Foot-Candle
GHG	greenhouse gases
GSWC	Golden State Water Company
GWP	global warming potential
HCM	Highway Capacity Manual
HQTA	high quality transit area
HVAC	heating, ventilating, and air conditioning system
IPCC	Intergovernmental Panel on Climate Change
kWh	kilowatt hours
L_{dn}	day-night noise level
L_{eq}	equivalent continuous noise level
LBP	lead-based paint

Abbreviations and Acronyms

LCFS	low-carbon fuel standard
LOS	level of service
LST	localized significance thresholds
M_W	moment magnitude
MBTA	Migratory Bird Treaty Act
MCL	maximum contaminant level
MEP	maximum extent practicable
mgd	million gallons per day
MMT	million metric tons
MPO	metropolitan planning organization
MT	metric ton
MWD	Metropolitan Water District of Southern California
NAHC	Native American Heritage Commission
NO_X	nitrogen oxides
NPDES	National Pollution Discharge Elimination System
O_3	ozone
OCFA	Orange County Fire Authority
OC SAN	Orange County Sanitation District
OCSD	Orange County Sheriff's Department
OCTA	Orange County Transportation Authority
OES	California Office of Emergency Services
PM	particulate matter
POTW	publicly owned treatment works
ppm	parts per million
PPV	peak particle velocity
RCNM	Roadway Construction Noise Model
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition
RMP	risk management plan
RMS	root mean square
RPS	renewable portfolio standard
SB	Senate Bill
SCAG	Southern California Association of Governments

Abbreviations and Acronyms

South Coast AQMD	South Coast Air Quality Management District
SCCIP	South-Central Coastal Information Center
SCE	Southern California Edison
SIP	state implementation plan
SLM	sound level meter
SoCAB	South Coast Air Basin
SO_X	sulfur oxides
SQMP	stormwater quality management plan
SRA	source receptor area
SUSMP	standard urban stormwater mitigation plan
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminants
TNM	transportation noise model
tpd	tons per day
TRI	toxic release inventory
TTCP	traditional tribal cultural places
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	urban water management plan
V/C	volume-to-capacity ratio
VdB	velocity decibels
VHFHSZ	very high fire hazard severity zone
VMT	vehicle miles traveled
VOC	volatile organic compound
WQMP	water quality management plan
WSA	water supply assessment

1. Introduction

The City of Stanton (City) is proposing to redevelop the underutilized Norm Ross Sports Park at 11111 Cedar Street in the rear of Carver Early Education Center in the City of Stanton (APN 131-091-30). The proposed project would develop a little league baseball field, lighting poles, a U-12 soccer field, a multipurpose sports court, a playground, a courtyard amphitheater, shaded picnic areas, fitness equipment, a community garden, a storage building, a park building with restrooms, a new water basin, a new pedestrian bridge, a new perimeter wall on east and southside, new perimeter fencing on the west and northside, utility/emergency entrance, utility access area, and a small and large dog park; the proposed project would also upgrade an existing pedestrian bridge. In addition, the City would reorient the existing little league baseball field so that home plate is on the southwest corner of the field near the existing parking lot and add a U-12 soccer field over the same area. Field improvements also include new sports lighting, two shaded bleachers, two shaded dug outs, a field storage structure, a trash enclosure and two free standing drinking fountains. Norm Ross Sports Park is a joint-use park with the Garden Grove Unified School District (GGUSD). The City of Stanton is lead agency for the proposed redevelopment project and the project will be funded through a Proposition 68 Grant.

The proposed project is required to undergo an environmental review pursuant to the California Environmental Quality Act (CEQA). This initial study provides an evaluation of the potential environmental consequences associated with this proposed project.

1.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

The completion of the environmental compliance process is governed by two principal regulations: CEQA and the State CEQA Guidelines (California Code of Regulations, Title 14, Section 15000 et seq.). CEQA was enacted in 1970 by the California Legislature to disclose to decision makers and the public the significant environmental effects of proposed activities and to identify ways to avoid or reduce the environmental effects through feasible alternatives or mitigation measures. Compliance with CEQA applies to California government agencies at all levels: local, regional, and state agencies, boards, commissions, and special districts (such as school districts and water districts).

The City of Stanton is lead agency for the proposed project and is therefore required to analyze the potential environmental effects associated with the project.

Public Resources Code Section 21080(a) states that analysis of a project's environmental impact is required for any "discretionary projects proposed to be carried out or approved by public agencies…." In this case, the city has determined that an initial study is required to determine whether there is substantial evidence that implementation of the project would result in environmental impacts. An initial study is a preliminary environmental analysis to determine whether an environmental impact report (EIR), a mitigated negative declaration (MND), or a negative declaration (ND) is required for a project (CEQA Guidelines Section 15063). An initial study must have a project description; a description of the environmental setting; an identification of

1. Introduction

environmental effects by checklist or other similar form; an explanation of environmental effects; a discussion of mitigation for significant environmental effects; an evaluation of the project's consistency with existing, applicable land use controls; the names of persons who prepared the study; and identification of data sources (CEQA Guidelines Section 15063(d)).

When an initial study identifies substantial evidence of the potential for significant environmental impacts, the lead agency must prepare an EIR (CEQA Guidelines Section 15064); however, if all impacts can be mitigated to a less than significant level, the lead agency can prepare an MND that incorporates mitigation measures into the project (CEQA Guidelines Section 15070).

1.1.1 Environmental Process

A "project" means the whole of an action that 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:

- An activity directly undertaken by any public agency, including but not limited to public works construction and related activities clearing or grading of land, improvements to existing public structures, enactment and amendment of zoning ordinances, and the adoption and amendment of local General Plans or elements thereof pursuant to Government Code Sections 65100 to 65700.

- 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.

- 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 (CCR § 15378[a]).

The proposed actions by the City constitute a "project" because the activity would result in a direct physical change in the environment and would be undertaken by a public agency. All "projects" in the State of California are required to undergo an environmental review to determine the environmental impacts associated with implementation of the project.

1.1.2 Initial Study

This initial study was prepared in accordance with CEQA and the CEQA Guidelines, as amended, to determine if the project could have a significant impact on the environment. The purposes of this initial study, as described in the State CEQA Guidelines Section 15063, are to 1) provide the lead agency with information to use as the basis for deciding whether to prepare an EIR or ND; 2) enable the lead agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the project to qualify for an ND; 3) assist the preparation of an EIR, if one is required; 4) facilitate environmental assessment early in the design of a project; 5) provide documentation of the factual basis for the finding in an ND that a project will not have a significant effect on the environment; 6) eliminate unnecessary EIRs; and 7) determine whether a previously prepared EIR could be used with the project. The findings in this initial study have determined that an MND is the appropriate level of environmental documentation for this project.

1.2 PROJECT LOCATION

The approximately 4.2-acre Norm Ross Sports Park is at 11111 Cedar Street in the City of Stanton, Orange County (project site). The project site is at the rear of Carver Early Education Center located at 11150 Santa Rosalia Street (APN 131-091-30), owned by GGUSD.

The City of Stanton is surrounded by the cities of Cypress, Buena Park, Anaheim, Garden Grove, Westminster, with regional access provided by Interstate 405 (I-405), State Route 22 (SR-22), and SR-39. Figure 1, *Regional Location*, shows the project site in regional context, and Figure 2, *Local Vicinity*, in local context.

1.3 ENVIRONMENTAL SETTING

1.3.1 Existing Land Use

The project site is currently developed as the approximately 4.2-acre Norm Ross Sports Park. The majority of the project site is improved as baseball and softball fields with bleachers behind the home plate of both fields. The home plate for the baseball field and softball field are located on the northeast side and southeast side of the project site, respectively. Stadium lights surround the fields. The project site has a total of 7 existing lighting poles with sport lighting fixtures that surround the baseball/softball field. and there is an additional sports lighting pole and fixture on the Carver campus in the parking lot towards the southwest corner of the project site (offsite). An approximately 492-square-foot triangular area on the northwest corner of the project site is developed as a community garden, maintained and operated by the City of Stanton. The project site is not currently in use due to poor site conditions, with the exception of the community garden.

A total of 16 trees line the perimeter of the project site with a variety of tree species, including four chinaberry trees (*Melia Azedarach)*, three melaleuca species, one Tulip Tree (*Liriodendron Tulipifera*), two pinus species, four Holly oaks (*Quercus Ilex)*, one orchard tree (*Baudinia*), and one dead tree. Pedestrian access to the project site is accessed via one pedestrian bridge on the northeast side of the project site that crosses over the Stanton Storm Channel from the adjacent Stanton Park to the north. Another pedestrian bridge connects Stanton Park to Carver Early Education Center and can also provide access to the project site. A controlled vehicle access on the southeast corner of the project site for authorized/emergency vehicles from Ruthann Avenue. General vehicle access to the project site is not permitted. Drivers can park in the parking lot in Stanton Park or in the Parking Structure, to the north of the project site, and use the pedestrian access points to enter the project site. Access to the community garden is restricted from the Carver Early Education Center and provided only from Cedar Street/the Stanton Park parking lot. The community garden is accessible 7 days a week to residents who lease plots via the Stanton Community Foundation.

The Norm Ross Sports Park is on property owned by GGUSD and currently operates under the joint-use agreement between the City of Stanton and GGUSD. GGUSD has non-exclusive access and use of the park on weekdays between the hours of 7:00 am until 4:00 pm, and the park is open to the general public from 4:00 pm to 10:30 pm., subject to the approved joint use agreement. During the weekends, the park is open to the general public from 8:00 am to 8:00 pm.

1.3.2 Surrounding Land Use

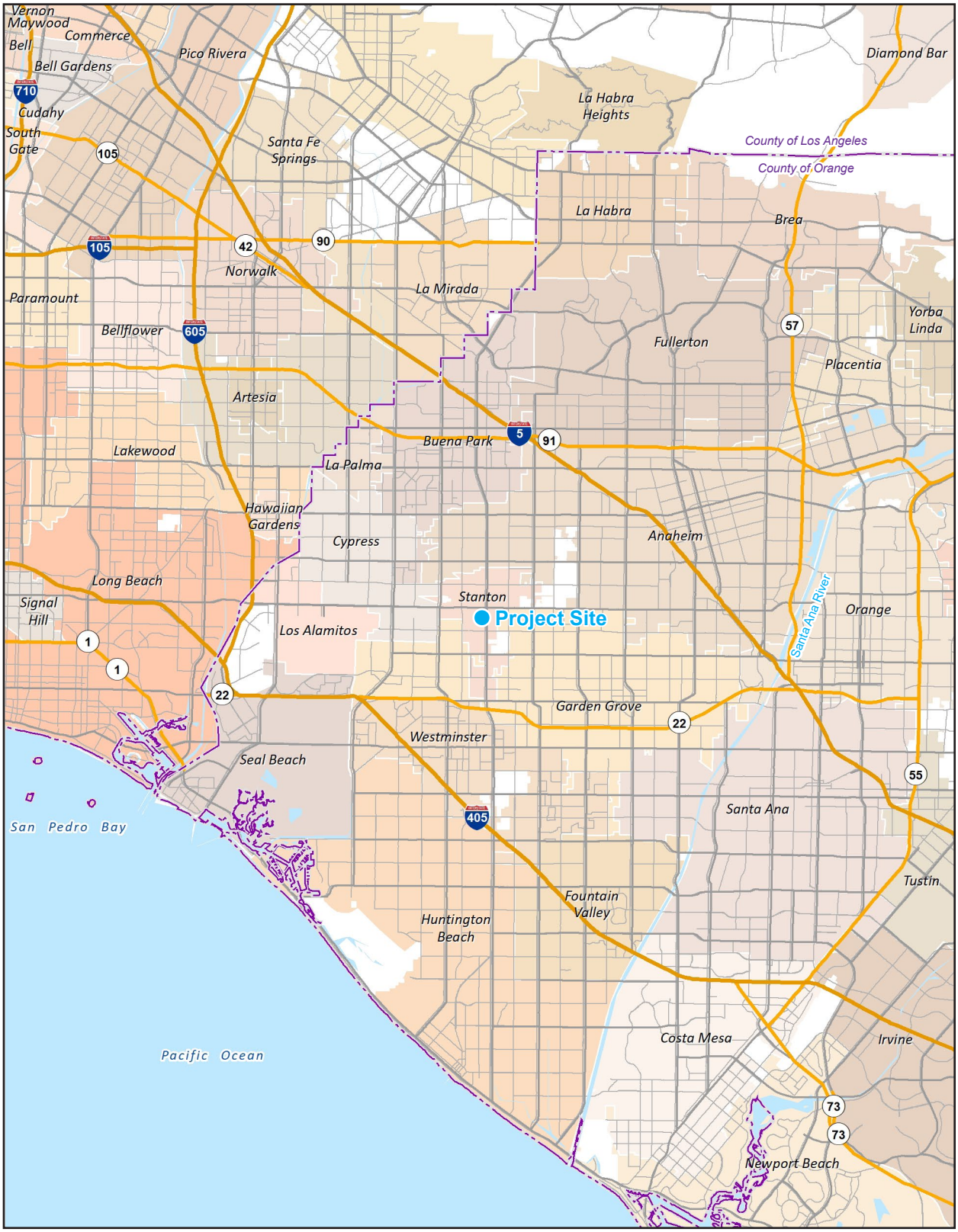
The project site is surrounded by residential uses to the south; Stanton Park to the north; the Carver Early Education Center to the west; and commercial/retail, including night club, motel, and restaurant uses, to the east (See Figure 3, *Aerial Photograph*). Stanton Park is bordered by residential uses, a parking structure for the Stanton City Hall, Food 4 Less, and McDonald's to the north. Other major uses in the area include a block and hardscape manufacturing company across Bleach Boulevard to the northeast.

The properties surrounding the project site have zoning designations of Single-Family Residential (RL) to the south, Parks and Recreation (PR) to the north, Public Institutional (PI) to the west, and Commercial General Zone (CG) to the east (Station 2008). The surrounding General Plan Land Use designation includes low density residential to the south, open space to north, public/institutional to the west, and general mixed use to the east.

1.3.3 Existing Zoning and General Plan

The City of Stanton General Plan designates the project as Public/Institutional and the zoning designation is "PI" Public Institutional.

Figure 1 - Regional Location



County Boundary

Note: Unincorporated county areas are shown in white.

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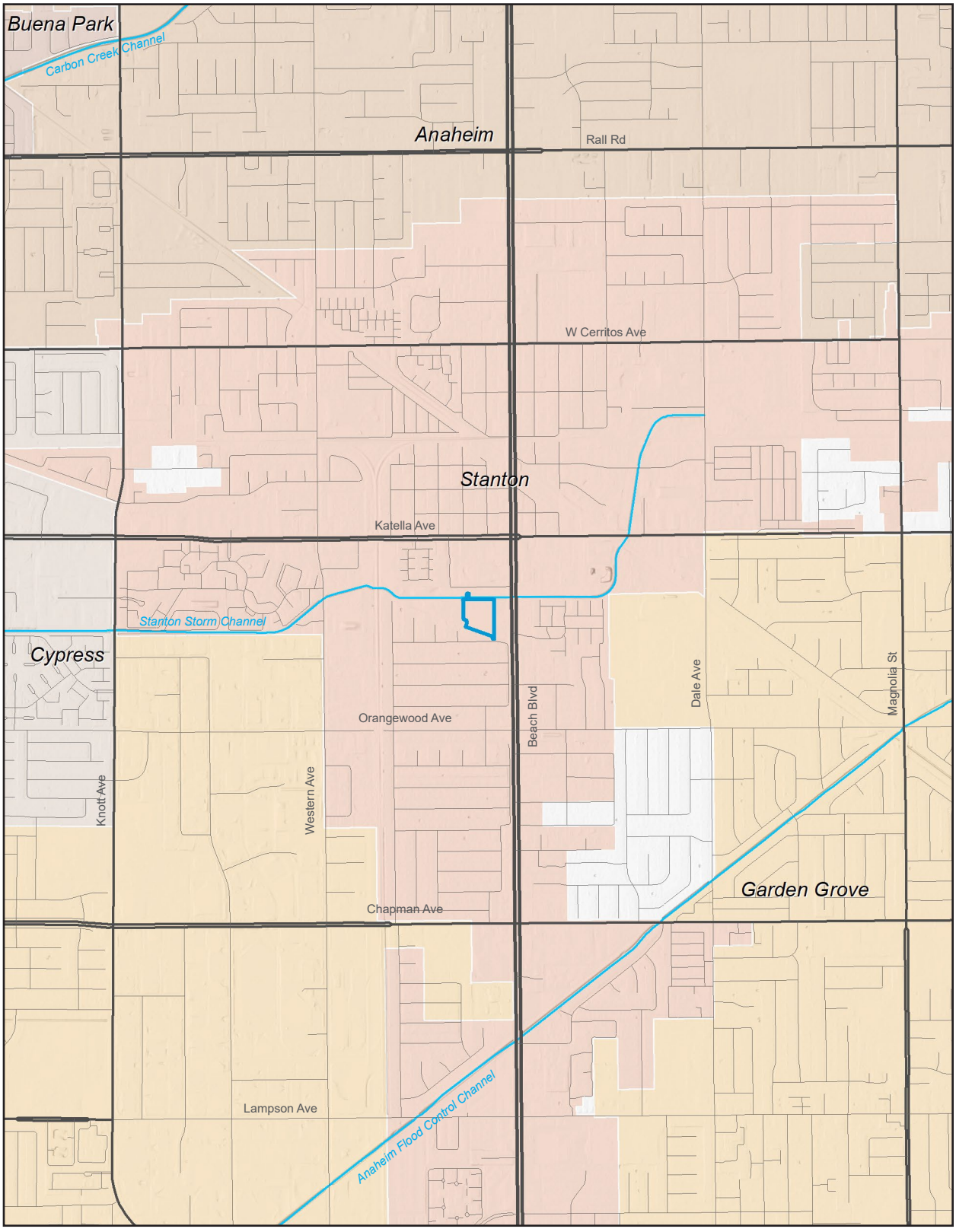
Figure 2 - Local Vicinity



Project Boundary

Note: Unincorporated county areas are shown in white.

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Figure 3 - Aerial Photograph

Project Boundary

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Source: NearMap 2023.

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1.4 PROJECT DESCRIPTION

1.4.1 Proposed Land Use

The City of Stanton (City) is proposing to redevelop the underutilized Norm Ross Sports Park at 11111 Cedar Street in the rear of Carver Early Education Center in the City of Stanton (APN 131-091-30). The proposed project would be financed through a Proposition 68 Grant.

The proposed project would demolish existing uses and redevelop the project site with new sports and park facilities. The proposed project would develop a little league baseball field, lighting poles, a U-12 soccer field, a multipurpose sports court, a playground, a courtyard amphitheater, shaded picnic areas, fitness equipment, a community garden, a storage building, a park building with restrooms, a new water basin, a new pedestrian bridge, a new perimeter wall on east and southside, new perimeter fencing on the west and northside, utility/emergency entrance, utility access area, and a small and large dog park; the proposed project would also upgrade an existing pedestrian bridge.

The new little league baseball field would place the home plate on the southwest corner of the project site and have the outfield towards the northeast of the project site. Field improvements also include new sport field lighting (two light poles to the south, west, and east of the baseball/soccer field) and visitor and home team dugouts, two free standing drinking fountains, and shade structures over the two sets of bleachers near the home plate on the southwest side of the baseball field. Additionally, the outfield area of the new little league baseball field would also be utilized as a U-12 soccer field. The multipurpose sports court (approximately 4,281 square feet) and shaded picnic tables would be located to the north of the baseball field.

The park building would be located at the northwest end of the project site, near the proposed pedestrian bridge, and would be approximately 2,533 square feet. The proposed building would include a community room, an office, a break/storage room, an electrical room, a data room, two outdoor and one indoor restroom, a custodian room, an equipment storage room, and an event storage room. The park building would be connected to the 1,055-square feet storage room by an overhanging shade roof. The playground (approximately 3,372 square feet), courtyard with outdoor seating and picnic tables would be located to the south of the park building, west of the baseball field. See Figure 5, *Community Building and Garden Storage Building Floor Plan,* and Figure 6, *Building Elevations.*

The community garden would be reoriented from its triangular area in the northwest corner, to a rectangular orientation along Carver Early Education Center, along the west side of the project site. Improvements to the community garden would include new planter boxes, an additional garden storage shed, decomposed granite, pedestrian scale lights, and a pedestrian walkway connected to the Carver Early Childhood Education Center.

A dog park (approximately 7,589 square feet) with separate areas for large and small dogs would be located on the northeast corner of the project site. The dog park would be fenced and include benches, trashcans, turf and decomposed granite.

The project site would include a new pedestrian bridge (approximately 411 square feet) near the northwest corner of the project site and walking paths and small vehicle paths throughout. The proposed project would

include a total of approximately 111,519 square feet of landscaping and approximately 70,301 square feet of hardscaping. The footings for the pedestrian bridge would not alter the existing channel.

1.4.1.1 LIGHTING

The proposed project would include lighting throughout the project site to support the uses onsite and for safety and security. The proposed project would include 50-foot tall light poles with light fixtures in the dog park; 50-foot tall light poles with light fixtures to illuminate the multipurpose court; and 60- to 70-foot tall light poles with stadium light fixtures to illuminate the baseball and soccer field. The proposed project would include up to pedestrian scale lights in the community garden, courtyard, playground, dog park, around the basketball court, and along walkways.

1.4.1.2 USE AND SCHEDULE

The park's operating hours and use schedule would comply with the adopted joint use agreement with the GGUSD. It is anticipated that the park would be open to the general public daily from dusk to dawn with seasonal adjustment. The multi-use field would operate on a first come, first serve basis, and other park amenities would also be used freely by the park visitors. The baseball field would be reserved for use by different little league teams throughout the week on a set schedule, revised twice a year. The future use schedule is anticipated to include practices, two games per day on weekdays, and 5 games per day on Saturdays. The two games during the weekdays are expected to occur from 4 pm to 6 pm and from 6 pm-8 pm. During the summer hours of play are anticipated to be extended, with an additional two teams playing or practicing. A baseball team consists of approximately 15 players.

Use of the community garden is not anticipated to change and would continue to be accessible 7 days a week to residents.

1.4.1.3 PEDESTRIAN AND VEHICLE ACCESS

Pedestrian access to the project site would continue to be provided by the two existing pedestrian bridges – the northeast pedestrian bridge directly connects to the project site and the pedestrian bridge to the northwest is offsite and provides direct access to Carver Early Education Center. As part of the proposed project, a new pedestrian bridge would be constructed on the northwest corner of the project site. This new pedestrian bridge would provide a second pedestrian access point from Stanton Park directly to the project site.

Vehicle access and parking will continue to be provided on Stanton Park. The emergency/authorized vehicle access on the southeast corner of the project site from Ruthann Avenue would be improved with paving and would remain.

1.4.1.4 STORMWATER MANAGEMENT

Aside from a concrete path along the southern side of the project site and concrete areas associated with the existing baseball diamond, the project site contains pervious surfaces. The existing project site is approximately 99 percent pervious surfaces. The proposed project would construct new building, walkways, and hardscaped areas. With the proposed project, the project site would be approximately 32 percent impervious surfaces and

68 percent pervious surfaces. The proposed project includes the installation of an infiltration basin or a bioretention basin without underdrain on the southwest side of the project site in the lawn area between the community garden and playground. The infiltration basin or a bioretention basin without underdrain would be approximately 156 feet long, between three to 30 feet wide (average width 18 feet), and five to nine feet deep. A storm drain line would extend north from the infiltration basin or a bioretention basin without underdrain to the north side of the project site, where it would turn west at the channel and run parallel to the channel.

In pervious areas, stormwater on the project site would either percolate into the into pervious ground surfaces or leave the site as runoff. In impervious areas, stormwater would either be directed to storm drain inlets, directed to pervious surfaces, or leave the project site as runoff. The majority of the stormwater generated by the proposed project would percolate into the ground or be directed to the infiltration basin or a bioretention basin without underdrain. A portion of stormwater is expected to flow or discharge into the offsite channel.

1.4.2 Construction

Construction activities would include demolition and site preparation, grading, utility trenching, building construction, paving, architectural coating and finishing/landscaping. All 16 trees would be removed. Construction of the proposed project would occur over one phase. The proposed project would include a total of 14,437 cubic yards of soil export from the project site. The construction is anticipated to start Fall 2025 and end in Spring 2027.

1.5 CITY ACTION REQUESTED

Implementation of the proposed project would require the following discretionary and ministerial project approvals from the City of Stanton:

- Adopt the Mitigated Negative Declaration
- Approve the bid Specification and Plans
- Award a Construction Contract

The following agencies are responsible or trustee agencies under CEQA and would review and/or approve certain components of the proposed project:

- Orange County Fire Authority: Fire Master Plan Review
- California Department of Transportation (CalTrans): Plan review if waterline is required to encroach onto Beach Boulevard
- Division of State Architects: Plan review
- Orange County Public Works: New Bridge/Plan Review
- Golden State Water Company: Waterline Design Review

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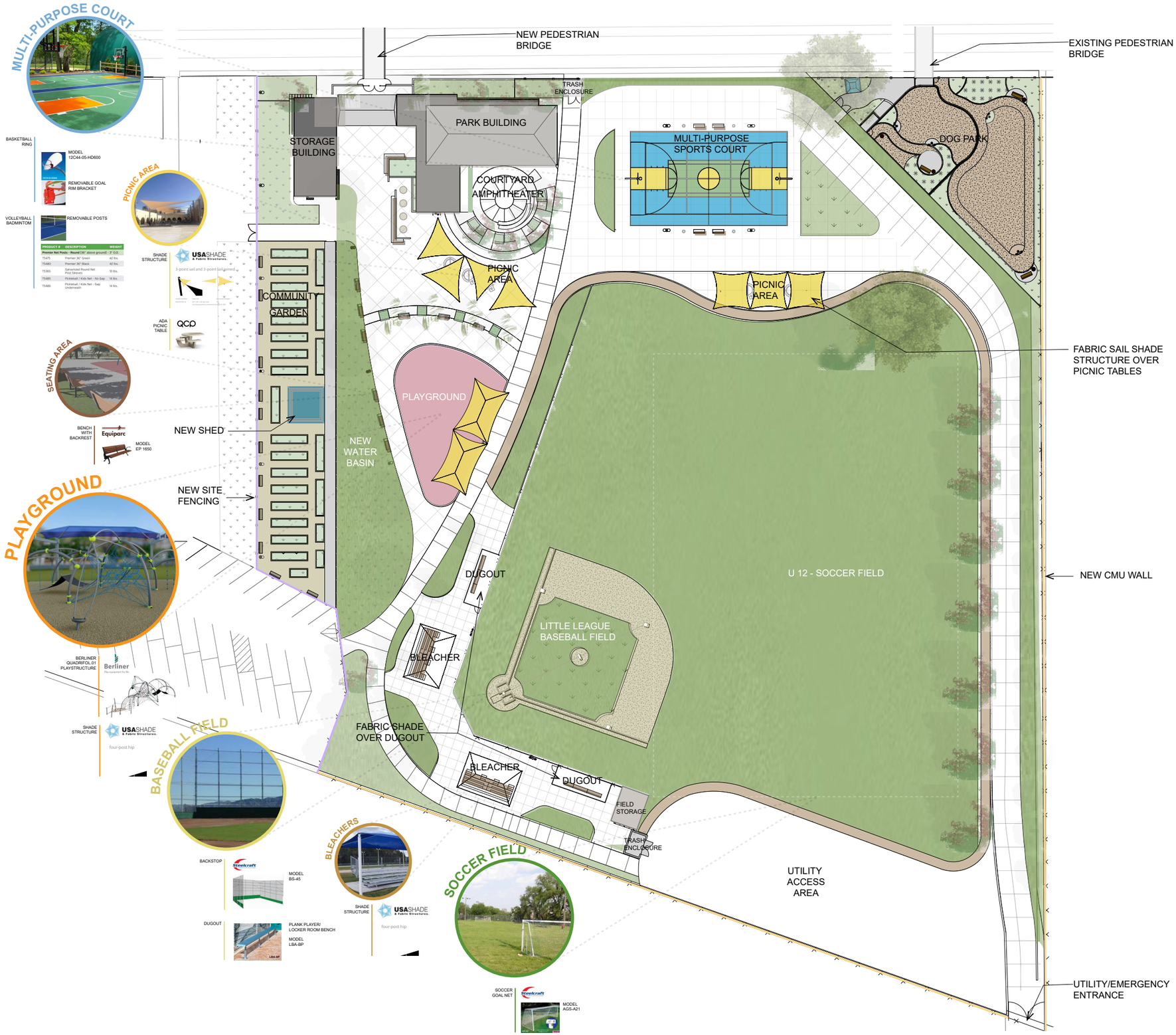
MULTI-PURPOSE COURT
BASKETBALL RING
MODEL 12C44-05-HD600
REMOVABLE GOAL RIM BRACKET
VOLLEYBALL BADMINTON
REMOVABLE POSTS
PICNIC AREA
SHADE STRUCTURE
USASHADE
ADA PICNIC TABLE
QCP
SEATING AREA
BENCH WITH BACKREST
Equiparc
MODEL EP 1650
PLAYGROUND
BERLINER QUADROFOLD1 PLAYSTRUCTURE
Berliner
SHADE STRUCTURE
USASHADE
four-post hip
BASEBALL FIELD
BACKSTOP
Steelcraft
MODEL BS-45
DUGOUT
PLANK PLAYER/ LOCKER ROOM BENCH
MODEL LBA-BP
BLEACHERS
SHADE STRUCTURE
USASHADE
four-post hip
SOCCER FIELD
SOCCER GOAL NET
Steelcraft
MODEL AGS-A21
NEW PEDESTRIAN BRIDGE
EXISTING PEDESTRIAN BRIDGE
TRASH ENCLOSURE
PARK BUILDING
STORAGE BUILDING
COURTYARD AMPHITHEATER
MULTI-PURPOSE SPORTS COURT
DOG PARK
PICNIC AREA
PICNIC AREA
COMMUNITY GARDEN
NEW SHED
NEW WATER BASIN
PLAYGROUND
FABRIC SAIL SHADE STRUCTURE OVER PICNIC TABLES
NEW SITE FENCING
DUGOUT
U 12 - SOCCER FIELD
LITTLE LEAGUE BASEBALL FIELD
BLEACHER
NEW CMU WALL
FABRIC SHADE OVER DUGOUT
BLEACHER
DUGOUT
FIELD STORAGE
TRASH ENCLOSURE
UTILITY ACCESS AREA
UTILITY/EMERGENCY ENTRANCE

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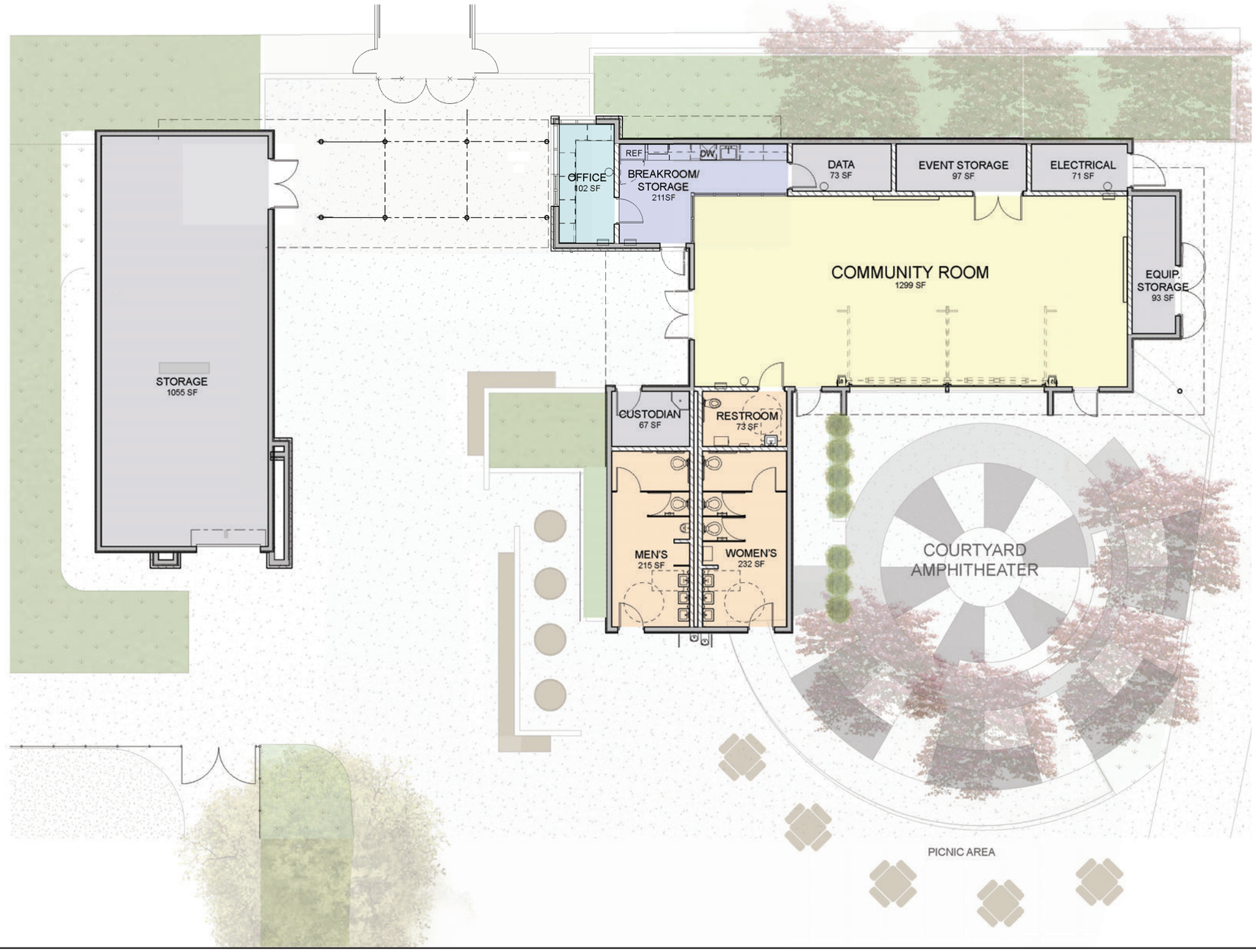
Figure 5 - Community Building and Garden Storage Building Floor Plan



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Source: PBK 2024.

1. Introduction

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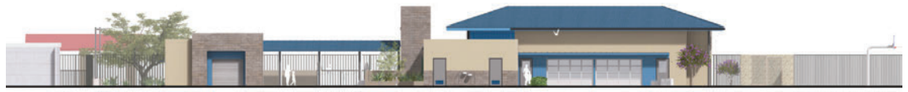
Figure 6 - Building Elevations

North Elevation

West Elevation



South Elevation

West Elevation - Entry

East Elevation

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Scale (Feet)

Source: PBK 2024.

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2. Environmental Checklist

2.1 PROJECT INFORMATION

1. **Project Title:** Norm Ross Sports Park Improvement Project

2. **Lead Agency**:
   City of Stanton
   7800 Katella Avenue
   Stanton, California 90680

3. **Contact Person and Phone Number:**
   Cesar Rangel, Public Works Director/City Engineer
   714.890.4203

4. **Project Location:** 11111 Cedar Street , Stanton, Orange County

5. **Project Sponsor's Name and Address:**
   City of Stanton
   7800 Katella Avenue
   Stanton, California 90680

6. **General Plan Designation:** OS Public/Institutional

7. **Zoning:** "PI" Public Institutional.

8. **Description of Project:**

   The City of Stanton (City) is proposing to redevelop the underutilized Norm Ross Sports Park at 11111 Cedar Street in the rear of Carver Early Education Center in the City of Stanton (APN 131-091-30). The proposed project would develop a little league baseball field, lighting poles, a U-12 soccer field, a multipurpose sports court, a playground, a courtyard amphitheater, shaded picnic areas, fitness equipment, a community garden, a storage building, a park building with restrooms, a new water basin, a new pedestrian bridge, a new perimeter wall on east and southside, new perimeter fencing on the west and northside, utility/emergency entrance, utility access area, and a small and large dog park; the proposed project would also upgrade an existing pedestrian bridge.

9. **Surrounding Land Uses and Setting:**
   The project site is surrounded by residential uses to the south; Stanton Park to the north; Carver Early Education Center to the west; and commercial/retail, night club, motel, and restaurant uses to the east.

3. Environmental Analysis

10. Other Public Agencies Whose Approval Is Required (e.g., permits, financing approval, or participating agreement):

- Orange County Fire Authority: Fire Master Plan Review
- California Department of Transportation (CalTrans): Plan review if waterline is required to encroach onto Beach Boulevard
- Division of State Architects: Plan review
- Orange County Public Works: New Bridge/Plan Review
- Golden State Water Company – Waterline Design Review

11. Have California Native American Tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

The City of Stanton has engaged in tribal consultation pursuant to Assembly Bill 52. The City sent AB 52 notification letters on October 29, 2024; to the following tribes:

- Gabrielino-Tongva Tribe
- Juaneño Band of Mission Indians Acjachemen Nation
- Gabrielino Tongva Indians of California Tribal Council
- Ewiiaapaayp Tribal Office
- Pala Band of Mission Indians
- Gabrielino/Tongva nation
- Mesa Grande Band of Diegueno Mission Indians
- Sycuan Band of Kumeyaay Nation
- Gabrieleno/Tongva San Gabriel Band of Mission Indians
- La Posta Band of Diegueno Mission Indians
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseno Indians
- Gabrieleno Band of Mission Indians – Kizh Nation
- Manzanita Band of Kumeyaay Nation
- Cahuilla Band of Indians
- Juaneño Band of Mission Indians Acjachemen Nation – Belardes
- Juaneño Band of Mission Indians Acjachemen Nation 84A
- Campo Band of Diegueno Mission Indians

Three responses were received. The Pala Band of Mission Indians notified the City that the project site is not within the boundaries of the recognized Pala Indian Reservation, and beyond the territory that the tribe

considers its traditional use area. The Pala Band of Mission Indians have declined AB-52 consultation. The Santa Rosa Band of Cahuilla Indians deferred to the Soboba Band of Luiseno Indians Cultural Resources Department and did not request additional consultation. The Gabrieleño Band of Mission Indians – Kizh Nation requested consultation with the City in accordance with AB52. Consultation with the Gabrieleño Band of Mission Indians - Kizh Nation has concluded. The City is in compliance with Public Resources Code section 21080.3.1.

Refer to Section 3.18, *Tribal Cultural Resources*.

3. Environmental Analysis

2.2 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture / Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards and Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use / Planning	☐ Mineral Resources
☐ Noise	☐ Population / Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities / Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

2.3 DETERMINATION (TO BE COMPLETED BY THE LEAD AGENCY)

On the basis of this initial evaluation:

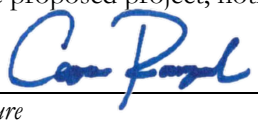
☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.



Signature

4/29/2025

Date

Cesar Rangel

Public Works Director/City Engineer

2.4 EVALUATION OF ENVIRONMENTAL IMPACTS

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors, as well as general standards (e.g., the project would not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4. "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level.

5. Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

   a) **Earlier Analyses Used.** Identify and state where they are available for review.

   b) I**mpacts Adequately Addressed.** Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.

   c) **Mitigation Measures.** For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

3. Environmental Analysis

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance.

3. Environmental Analysis

This section provides an evaluation of the impact categories and questions contained in the checklist and identifies mitigation measures, if applicable.

3.1 AESTHETICS

Except as provided in Public Resources Code Section 21099, would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
I. AESTHETICS. Except as provided in Public Resources Code Section 21099, would the project:				
a) Have a substantial adverse effect on a scenic vista?				X
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?			X	

a) Have a substantial adverse effect on a scenic vista?

No Impact. A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the benefit of the public. The City of Stanton General Plan does not identify any scenic vistas (Stanton 2008). The project site is surrounded by urban development, including commercial and residential uses, Carver Early Education Center, and Stanton Park. The proposed project would redevelop the existing Norm Ross Sports Park, which is currently closed due to poor site conditions, with modern park and sports facilities. The proposed project would be designed to be visually appealing with modern facilities, one-story community building, one-story garden storage building, landscaping, and hardscaping that would be typical of park/sport uses and visually similar to the adjacent Stanton Park and surrounding one to two-story buildings. Therefore, implementation of the proposed project would not obstruct or alter views, and no impacts to scenic vistas would occur.

3. Environmental Analysis

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. A scenic highway is a stretch of public roadway that is designated as a scenic corridor by a federal, state, or local agency. Caltrans defines a scenic highway as any freeway, highway, road, or other public right-of-way that traverses an area of exceptional scenic quality.

The project site is in a highly urbanized area of the City and is not on or near a state-designated scenic highway, as designated on the California Scenic Highway Mapping System of the California Department of Transportation. The nearest officially designated state scenic highway is State Route (SR) 91 from SR 55 to east city limit of Anaheim, which is approximately 10 miles northeast of the project site (Caltrans 2024). The nearest eligible state scenic highway is State Route 1, approximately 7 miles southwest of the project site. Due to the distance and intervening development and vegetation, the project site is not visible from the officially designated scenic highway.

Furthermore, the proposed project would redevelop the existing sports complex, which is currently closed due to its poor condition, with modern and improved facilities. There are no scenic resources on or near the project site. No scenic resources would be damaged, and no impact would occur.

c) In nonurbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

Less Than Significant Impact. The project site is already developed as a sports park and is in an urbanized area surrounded by Stanton Park to the north, Carver Early Education Center to the west, residential uses to the south, and a motel and commercial/retail uses to the east. The City of Stanton General Plan designates the project site as Public/Institutional and the zoning designation is "PI" Public Institutional. The proposed project would not change the current zoning designation and a sports park is a permitted use under the PI zoning (Stanton 2008). There are no specific building standards that govern scenic quality in PI zone. As stated in the General Plan, the visual identity of Stanton includes the City's physical form, activity nodes, landmarks, street corridors, buildings, signs and other similar physical features (Stanton 2008). The proposed project supports Goal CD-1.1, "[p]romote quality development and design that preserves and enhances a positive and unique image of Stanton, and fosters a sense of community pride", by providing modern and upgraded park and sport complex facilities at a park site that is currently closed due to poor site conditions.

Goal CD-1.2 of the General Plan states, "Promote an attractive streetscape and public right-of-way, especially along major primary and secondary corridors, that is consistent with the desired vision and image of Stanton." Goal CD-1.3 states, "Promote compatibility between land uses, including existing, redeveloped, and new uses, to further cohesiveness along the city's primary and secondary corridors." Katella Avenue to the north of the project site and Beach Boulevard to the east of the project site are identified as major arterial and principal arterial roadways by the General Plan. The proposed project is approximately 230 feet away from Beach Boulevard and approximately 750 feet from Katella Avenue. Due to surrounding intervening development, the project site would not be readily seen from these locations, and the proposed project does not include

improvements to Katella Avenue nor Beach Boulevard. Nevertheless, the proposed project would redevelop an existing park/sports complex with modern, upgraded park and sports facilities. The proposed project is consistent with the existing land use designation on the project site. The modern and upgraded park and sports facilities would be visually appealing and consistent with the surrounding development and would support the desired vision and image of Stanton. The proposed project would not hinder Goal CD-1.2 nor Goal CD-1.3.

The proposed project would be required to comply with the development standards pursuant to the City of Stanton Building Codes and Construction Regulations, including the California Building Code (Title 24, Part 2), the California Energy Code (Title 24, Part 6), the California Fire Code (Title 24, Part 9), and the California Green Building Standards Code (Title 24, Part 11).

The site and lighting plans are also required to be reviewed and approved by the Division of the State Architect (DSA) since it's a joint use park with Garden Grove USD. Therefore, the proposed project would not conflict with any applicable zoning and other regulations governing scenic quality, and impacts would be less than significant.

d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Less Than Significant Impact.

Terminology

The **foot-candle (fc)** is a unit based on English measurements. Although foot-candles are considered obsolete in some scientific circles, they are nevertheless used because many existing light meters are calibrated in foot-candles. Moonlight produces approximately 0.01 fc, and sunlight can produce up to 10,000 fc. The general benchmarks for light levels are shown in Table 1, *General Light Levels Benchmark*.

3. Environmental Analysis

Table 1 General Light Levels Benchmark

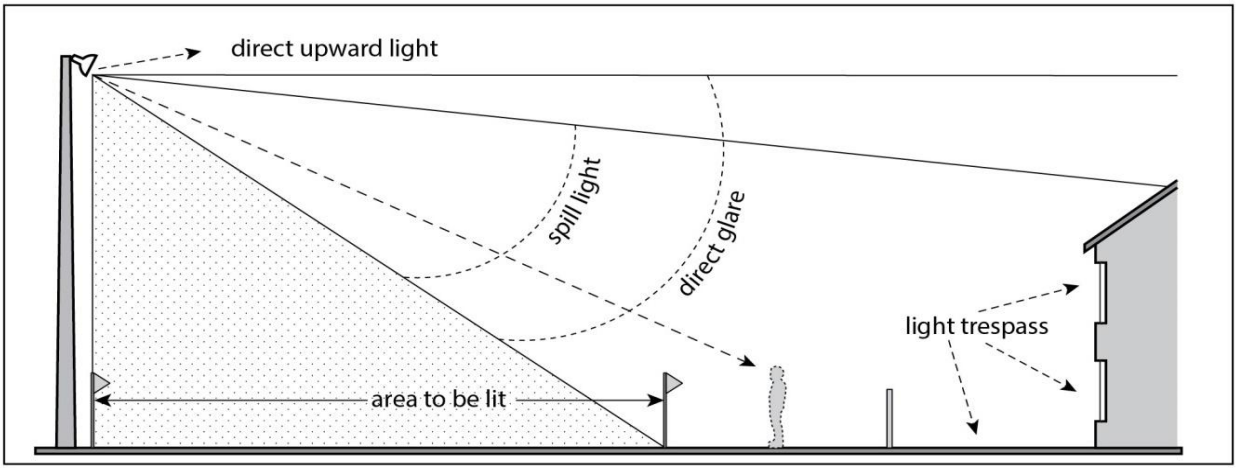
Outdoor Light	Foot-Candles
Direct Sunlight	10,000
Full Daylight	1,000
Overcast Day	100
Dusk	10
Twilight	1
Deep Twilight	0.1
Full Moon	0.01
Quarter Moon	0.001
Moonless Night	0.0001
Overcast Night	0.00001
Gas station canopies	25–30
Typical neighborhood streetlight and parking garage	1.0–5.0

- **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.

- **Glare** means lighting entering the eye directly from a light fixture or indirectly from reflective surfaces that causes visual discomfort or reduced visibility. Glare can be generated by building-exterior materials, surface-paving materials, vehicles traveling or parked on roads and driveways, and sports 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 Exhibit B, *Spill Light, Direct Glare, and Light Trespass*, adapted from the Institution of Lighting Engineers (ILE 2003).

Exhibit A: Spill Light, Direct Glare, and Light Trespass



- **Direct glare** is caused by looking at an unshielded lamp or a light at maximum candlepower. Direct glare is dependent on the brightness of the light source, the contrast in brightness between the light source and the surrounding environment, the size of the light source, and its position.

- **Illuminance** is the amount of light on a surface or plane, typically expressed in a horizontal plane (e.g., on the ground) or in a vertical plane (e.g., on the side of a building).

- **Lumen** means the unit of measure used to quantify the amount of visible light produced by a light source or emitted from a luminaire (as distinct from "watt," a measure of power consumption).

- **Luminaire** means outdoor electrically powered illuminating devices that include a light source, outdoor reflective or refractive surfaces, lenses, electrical connectors and components, and all parts used to mount the assembly, distribute the light, and/or protect the light source, whether permanently installed or portable. 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.

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

3. Environmental Analysis

distribution across the playing area and reduce spill light, as shown in Exhibit B, *Spill Light, Direct Glare, and Light Trespass*.

- **Sky Glow** is light that reflects into the night sky and reduces visibility of the sky and stars. It is a concern in many jurisdictions, especially those with observatories.
- **Spill light** is caused by misdirected light that illuminates areas outside the area intended to be lit. Spill light can contribute to light pollution.

Municipal Code

Stanton Municipal Code Section 20.300.080(B)(2) states lighting levels shall not exceed 0.5 fc on any common property line zoned, used as, or planned for residential uses (Stanton 2024). The proposed project site is bound by residential uses to the south. Therefore, for the purposes of this analysis 0.5 fc was used for a significance determination.

Lighting and Glare

The proposed project includes four 50-foot tall and six 60- to 70-foot-tall light poles around the dog park, multipurpose court, and baseball and soccer field as well as pedestrian scale lights throughout the project site to support the park's uses and for safety and security. Though the project site is already developed as a sports park with seven sport lighting poles, the park is not in use and thus the lights are not currently in use. Therefore, all the proposed lighting features would add additional light and glare to the project site compared to existing conditions. The nearest light and glare sensitive receptors are the single-family residences adjacent to the project site to the south.

The buildout of the proposed project would result in more reflective surfaces compared to existing conditions on the project site, such as a new community building, bleachers, and light-colored surfaces. The location of the proposed building would be located away from sensitive receptors. Proposed landscaping, surrounding vegetation and buildings, and shade structures would further block reflective surfaces from generating substantial glare. Further, the proposed project would construct a new 8-foot (ft) concrete masonry unit (CMU) block wall along southern and eastern boundaries of the project site. The new 8-ft CMU block wall would further block light and glare to the residential uses to the south and commercial uses and roadway to the east. Therefore, the proposed project would not create a new source of substantial glare.

The proposed project's lights would be shielded and downward facing, which focuses light on the desired area. As shown in Figure 7, *Field Lighting Property Line Light Spill*, the proposed field lights would generate between 0.0 to 0.50 horizontal fc along the southern property line. The proposed projects light would meet the City of Stanton's 0.5 fc threshold pursuant to Stanton Municipal Code Section 20.300.080(B)(2), thus impacts would be considered less than significant. Additionally, the proposed 8-ft block wall would further block light from spilling onto the residential properties. Therefore, the proposed project would not create a substantial new source of lighting.

Further, the proposed project would be required to comply with Chapter 20.300.080, *Outdoor Light and Glare,* of the Stanton Municipal Code. Section E, *Outdoor Recreation/Entertainment Areas*, states that for facilities used for outdoor recreation within 200 feet of a residential zone, lighting is subject to the approval of a Minor Site Plan and Design Review. The southern end of the project site is within 200 feet of a residential zone; thus, the proposed project would need to be reviewed by the City prior to development.

The proposed project is in an urban environment surrounded by urban development, and the proposed project would include typical park and sports facilities that are common in an urban environment. The proposed project would not create a new source of substantial glare that would adversely affect day or nighttime views. The proposed project would not significantly impact nighttime nor daytime views. in the area, and a less than significant impact would occur.

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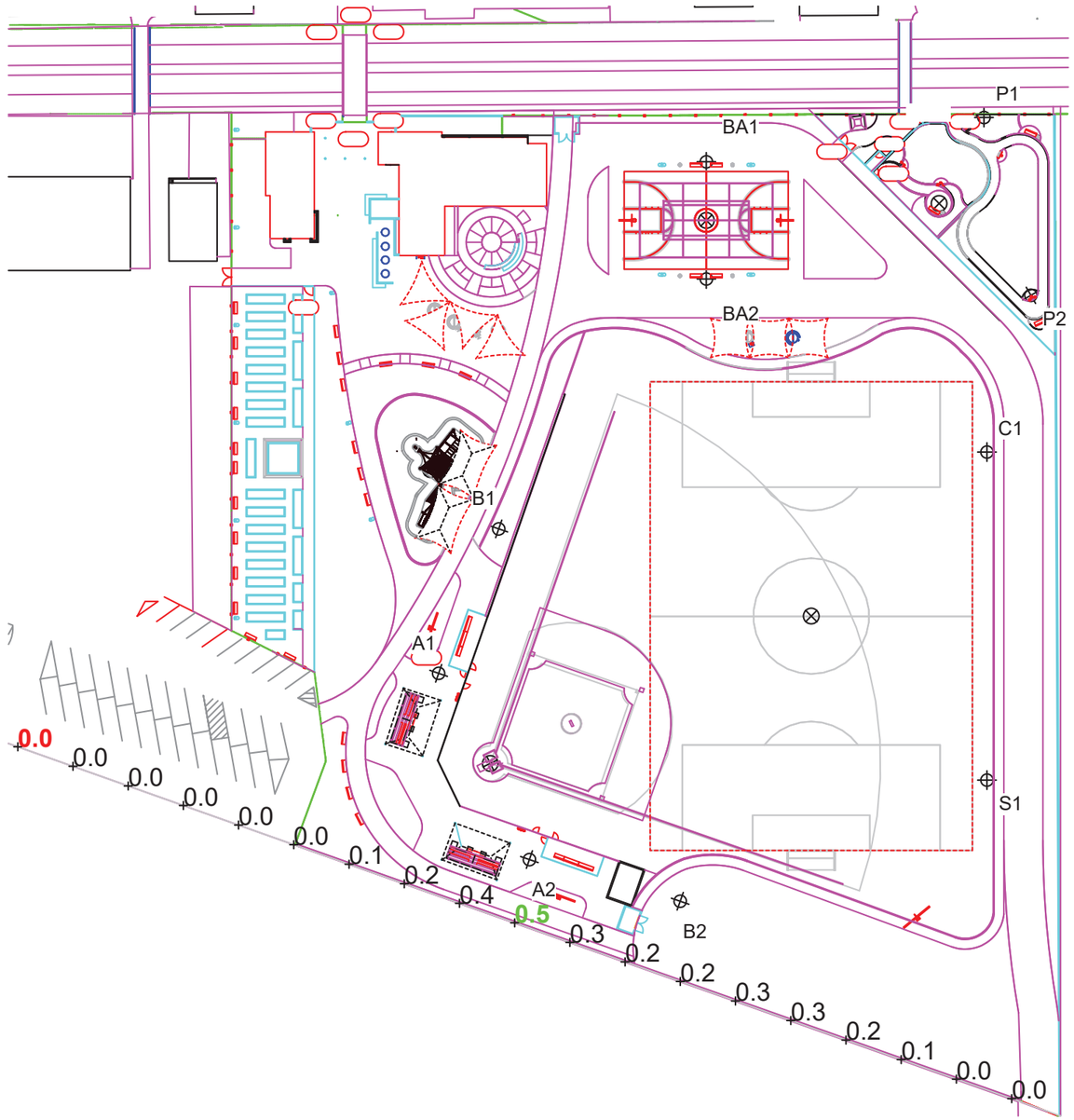
Figure 7 - Field Lighting Property Line Light Spill



Norm Ross Sports Park
Stanton,CA

Grid Summary

Name	**Property Line Spill**
Spacing	30.0'
Height	3.0' above grade

Illumination Summary

	INITIAL HORIZONTAL FOOTCANDLES
	Entire Grid
Scan Average	**0.1493**
Maximum	0.49
Minimum	0.00
CU	0.00
No. of Points	19
LUMINAIRE INFORMATION	
Applied Circuits	A,B,C,D,E,F
No. of Luminaires	**40**
Total Load	31.51 kW

Equipment List For Areas Shown

Pole				Luminaires			
QTY	LOCATION	SIZE	GRADE ELEVATION	ABOVE GRADE LEVEL	LUMINAIRE TYPE	QTY/POLE	THIS GRID
2	A1-A2	60'	-	60'	TLC-LED-900	3	3
				15.5'	TLC-BT-575	1	1
1	B1	70'	-	70'	TLC-LED-1200	3	3
				70'	TLC-LED-550	2*	2
				70'	TLC-LED-900	2	2
				15.5'	TLC-BT-575	1	1
1	B2	70'	-	70'	TLC-LED-1200	3	3
				70'	TLC-LED-900	2	2
				15.5'	TLC-BT-575	1	1
4	BA1-BA2 P1-P2	50'	-	50'	TLC-LED-550	2	2
1	C1	70'	-	70'	TLC-LED-1200	4	4
				15.5'	TLC-BT-575	2	2
1	S1	70'	-	70'	TLC-LED-550	4	4
10	Totals					40	40

0 80
Scale (Feet)

Source: MUSCO 2024.

3. Environmental Analysis

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3.2 AGRICULTURE AND FORESTRY 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 (CARB). Would the project:

Issues		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
II. AGRICULTURE AND FORESTRY 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?				X
b)	Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
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))?				X
d)	Result in the loss of forest land or conversion of forest land to non-forest use?				X
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?				X

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. The project site has no agricultural or farm use on it, nor is there agricultural or farm use in its immediate proximity. No project-related farmland conversion would occur. The proposed project would

rehabilitate an underutilized sports park in an urban area. The project site is zoned "PI" Public Institutional and is listed as Urban and Built-Up Land, not an important farmland by the Division of Land Resource Protection (Stanton 2008; DOC 2022). Therefore, no impact would occur.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The zoning designation for the project site is "PI" Public Institutional. The proposed project would not conflict with agricultural zoning or a Williamson Act contract because it is not zoned for agricultural use Stanton 2008; (DOC 2022). Williamson Act contracts restrict the use of privately owned land to agriculture and compatible open-space use under contract with local governments; in exchange, the land is taxed based on actual use rather than potential market value. Since the project site is zoned "PI" Public Institutional, there is no Williamson Act contract in effect on-site. The existing community garden on-site is not considered an agricultural use. Therefore, no impact would occur.

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. Forest land is defined as "land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits" (California PRC § 12223 [g]). Timberland is defined as "land…which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products, including Christmas trees" (California PRC § 4526). The project site is zoned "PI" Public Institutional and is currently developed as a sports park that is not in use (Stanton 2008). No forest land nor timberland exists onsite. Project implementation would not conflict with existing zoning for forest land, timberland, or timberland production. No impact would occur.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. As stated in above Section 3.2(c), the project site is not a forest land. Vegetation on-site is limited to ornamental vegetation. Project implementation would not result in the loss or conversion of forestland. Therefore, no impact would occur.

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. The City of Stanton, including the project site, is listed as Urban and Built-Up Land and is not mapped as important farmland by the Division of Land Resource Protection (DOC 2022). Project development would not indirectly cause the conversion of such land to nonagricultural or nonforest use. Therefore, no impact would occur.

3.3 AIR QUALITY

The Air Quality section addresses the impacts of the proposed project on ambient air quality and the exposure of people, especially sensitive individuals, to unhealthy pollutant concentrations. A background discussion on the air quality regulatory setting, meteorological conditions, existing ambient air quality in the vicinity of the project site, and air quality modeling can be found in Appendix A.

The primary air pollutants of concern for which ambient air quality standards (AAQS) have been established are ozone (O3), carbon monoxide (CO), coarse inhalable particulate matter (PM10), fine inhalable particulate matter (PM2.5), sulfur dioxide (SO2), nitrogen dioxide, and lead (Pb). Areas are classified under the federal and California Clean Air Act as either in attainment or nonattainment for each criteria pollutant based on whether the AAQS have been achieved. The South Coast Air Basin (SoCAB), which is managed by the South Coast Air Quality Management District (South Coast AQMD), is designated nonattainment for O3, and PM2.5 under the California and National AAQS, nonattainment for PM10 under the California AAQS, and nonattainment for lead (Los Angeles County only) under the National AAQS (CARB 2024).

Furthermore, the South Coast AQMD has identified regional thresholds of significance criteria for pollutant emissions and criteria air pollutant precursors, including volatile organic compounds (VOCs), CO, nitrogen oxide (NOx), SO2, PM10, and PM2.5. Development projects below the regional significance thresholds are not expected to generate sufficient criteria pollutant emissions to violate any air quality standard or contribute substantially to an existing or projected air quality violation. Where available, the significance criteria established by the South Coast AQMD may be relied upon to make the following determinations. Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
III. AIR QUALITY. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
b) 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?			X	
c) Expose sensitive receptors to substantial pollutant concentrations?		X		
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			X	

a) Conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The South Coast AQMD adopted the 2022 Air Quality Management Plan (AQMP) on December 2, 2022. Regional growth projections are used by South Coast AQMD to forecast future emission levels in the SoCAB. For southern California, these regional growth projections are provided by the

3. Environmental Analysis

Southern California Association of Governments (SCAG) and are partially based on land use designations included in city/county general plans. Typically, only large, regionally significant projects have the potential to affect regional growth projections. In addition, the consistency analysis is generally only required in connection with the adoption of General Plans, specific plans, and significant projects. Changes in population, housing, or employment growth projections have the potential to affect SCAG's demographic projections and therefore the assumptions in South Coast AQMD's AQMP. These demographic trends are incorporated into SCAG's 2020–2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) to determine priority transportation projects and vehicle miles traveled (VMT) in the SCAG region.

Changes in population, housing, or employment growth projections have the potential to affect SCAG's demographic projections and therefore the assumptions in South Coast AQMD's AQMP. As further described in Section 1.4.1, *Proposed Land Use*, the proposed project would involve redeveloping the existing Norm Ross Sports Park, including construction of a new community building as well as a new community garden building, playgrounds, sports courts and fields, landscaping, and hardscaping. In addition, as described in Section 3.14*, Population and Housing*, the proposed project would not propose new homes and would not induce substantial unplanned population growth in the area directly or indirectly. Therefore, the proposed project would not be a regionally significant project that has the potential to result in changes in population, housing, or employment in the City of Stanton. Due to the nature of the proposed project, it would not result in new long-term employment. Construction activities associated with the proposed project would result in short-term employment only and would end upon completion.

Additionally, as demonstrated below in Section 3.3(b), the regional emissions that would be generated by the operational phase of the proposed project would be less than the South Coast AQMD emissions thresholds and would therefore not be considered by South Coast AQMD to be a substantial source of air pollutant emissions that would have the potential to affect the attainment designations in the SoCAB. Therefore, the proposed project would not affect the regional emissions inventory or conflict with strategies in the AQMP. Impacts would be less than significant.

b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. The following describes project-related impacts from regional short-term construction activities and regional long-term operation of the proposed project.

Regional Short-Term Construction Impacts

Construction activities would generate air pollutants. These emissions would primarily be 1) exhaust from off-road diesel-powered construction equipment; 2) dust generated by construction activities; 3) exhaust from on-road vehicles; and 4) off-gassing of VOCs from paints and asphalt.

Construction activities associated with the proposed project are anticipated to disturb approximately 4.2 acres on the project site. The proposed project would involve demolition, site preparation and soil haul, rough grading and soil haul, fine grading and soil haul, utilities trenching, building construction, paving, architectural coating, and finishing/landscaping. Construction would occur from October 2024 to September 2025. Construction

emissions were estimated using the California Emissions Estimator Model (CalEEMod), Version 2022.1, and are based on the preliminary construction duration provided by the City. The results of the construction emissions modeling are shown in Table 2, *Maximum Daily Regional Construction Emissions* and shows that the maximum daily emissions for NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$ from construction-related activities would be less than their respective South Coast AQMD regional significance threshold values.

Table 2 Maximum Daily Regional Construction Emissions

Construction Phase [3]	Pollutants (lb/day)[1, 2]					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Demolition	3	25	23	<1	2	1
Site Preparation	4	59	45	<1	15	7
Rough Grading	2	23	22	<1	6	3
Fine Grading	2	22	22	<1	5	3
Utility Trenching	<1	3	3	<1	<1	<1
Building Construction 2024	1	11	13	<1	1	<1
Building Construction 2025	1	10	13	<1	<1	<1
Building Construction 2025, Paving, and Architectural Coating	5	18	24	<1	1	1
Building Construction 2025, Paving, Architectural Coating, and Finishing/Landscaping	6	20	27	<1	1	1
Maximum Daily Construction Emissions						
Maximum Daily Emissions	6	59	45	<1	15	7
South Coast AQMD Regional Construction Threshold	**75**	**100**	**550**	**150**	**150**	**55**
Significant?	No	No	No	No	No	No

Source: CalEEMod Version 2022.1.

[1] Based on the preliminary information provided by the City. Where specific information regarding project-related construction activities was not available, construction assumptions were based on CalEEMod defaults, which are based on construction surveys conducted by South Coast AQMD of construction equipment.

[2] Includes implementation of fugitive dust control measures required by South Coast AQMD under Rule 403, including watering disturbed areas a minimum of two times per day, reducing speed limit to 25 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.

[3] For CalEEMod modeling, a 5,000-square-foot building was modeled which is larger than the proposed 3,588-square-foot buildings (2,533-square-foot park building and 1,055-square-foot Garden storage Building) and provides a conservative analysis.

Long-Term Operation-Related Air Quality Impact

Typical long-term air pollutant emissions are generated by area sources (e.g., landscape fuel use, aerosols, architectural coatings, and asphalt pavement), energy use (natural gas), and mobile sources (i.e., on-road vehicles). As identified in Section 3.17, *Transportation*, and in Appendix F, the proposed project would generate 279 non-summer weekday vehicle trips and 415 summer weekday vehicle trips[1] and 438 weekend vehicle trips (Garland and Associates 2023). As shown in Table 3, *Maximum Daily Regional Operation Emissions*, it is anticipated

[1] Modeling assumed an average of 313 weekday vehicle trips based on summer weekday trips occurring during 25 percent of the year and non-summer weekday trips occurring over 75 percent of the year.

3. Environmental Analysis

that operation of the proposed project would result in minimal emissions overall and would not exceed the South Coast AQMD regional operation-phase significance thresholds. Impacts to the regional air quality associated with operation of the proposed project would be less than significant.

Table 3 Maximum Daily Regional Operation Emissions

Source	Maximum Daily Emissions (lbs/Day)					
	VOC	NO_X	CO	SO_2	PM_{10}	$PM_{2.}$
Emissions						
Mobile[1]	1	1	14	<1	3	1
Area	<1	<1	<1	<1	<1	<1
Energy[2,3]	<1	<1	<1	<1	<1	<1
Total	2	1	14	<1	3	1
South Coast AQMD Regional Threshold	**55**	**55**	**550**	**150**	**150**	**55**
Exceeds Threshold?	No	No	No	No	No	No

Source: CalEEMod Version 2022.1.
Notes: lbs: Pounds. Highest winter or summer emissions report.
[1] Mobile emission calculations consider 438 vehicle trips as provided by Garland and Associates to estimate the maximum daily operational emissions.
[2] Estimated natural gas consumption based on health club energy rates from EDFZ 7 from CalEEMod Appendix G, *Default Data Tables*, as an approximation since CalEEMod "City Park" land use default rates do not account for natural gas use.
[3] For CalEEMod modeling, a 5,000-square-foot building was modeled which is larger than the proposed 3,588-square-foot buildings (2,533-square-foot park building and 1,055-square-foot Garden storage Building) and provides a conservative analysis.

c) Expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. The proposed project could 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.

Construction LSTs

Localized significance thresholds (LSTs) are based on the California AAQS, which are the most stringent AAQS to provide a margin of safety in the protection of public health and welfare. They are designated 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. The screening-level construction LSTs are based on the size of the project site, distance to the nearest sensitive receptor, and Source Receptor Area (SRA). The nearest offsite sensitive receptors to the project site are the single-family residences along Ruthann Avenue and Ale Lane directly south of the project site.

Air pollutant emissions generated by construction activities would cause temporary increases in air pollutant concentrations. Table 4, *Localized Construction Emissions,* shows that the maximum daily construction emissions (pounds per day) generated during onsite construction activities compared with the South Coast AQMD Screening-level LSTs, for sensitive receptors within 82 feet (25 meters). As shown in Table 4, the construction-

related onsite emissions would not exceed the screening-level LSTs, except for PM_{10} and $PM_{2.5}$ during the site preparation phase.

Table 4 Localized Construction Emissions

Construction Activity[3]	Pollutants(lbs/day)[1]			
	NO_X	**CO**	**PM_{10}[2]**	**$PM_{2.5}$[2]**
South Coast AQMD ≤1.00 Acre LST	**81**	**485**	**4.00**	**3.00**
Demolition	25	22	1.47	1.02
Utility Trenching	3	3	0.13	0.12
Exceeds LST?	No	No	No	No
South Coast AQMD 1.31 Acre LST	**92**	**557**	**4.62**	**3.31**
Building Construction 2024	11	13	0.50	0.46
Building Construction 2025	10	13	0.43	0.40
Exceeds LST?	No	No	No	No
South Coast AQMD 1.81 Acre LST	**109**	**672**	**5.62**	**3.81**
Building Construction 2025, Paving, and Architectural Coating	18	23	0.75	0.69
Building Construction 2025, Paving, Architectural Coating, and Finishing/Landscaping	19	25	0.81	0.75
Exceeds LST?	No	No	No	No
South Coast AQMD 2.50 Acre LST	**126**	**805**	**7.16**	**4.50**
Rough Grading	18	19	4.37	2.19
Fine Grading	18	19	4.37	2.19
Exceeds LST?	No	No	No	No
South Coast AQMD 3.50-Acre LSTs	**149**	**984**	**9.50**	**5.50**
Site Preparation	37	34	**10.41**	**5.56**
Exceeds LST?	No	No	**Yes**	**Yes**

Source: CalEEMod Version 2022.1. South Coast AQMD 2008, 2011, and 2023.

Notes: In accordance with South Coast AQMD methodology, only onsite stationary sources and mobile equipment are included in the analysis. Screening level LSTs are based on receptors within 82 feet (25 meters) in SRA 17.

[1] Where specific information for project-related construction activities or processes was not available modeling was based on CalEEMod defaults. These defaults are based on construction surveys conducted by the South Coast AQMD.

[2] Includes fugitive dust control measures required by South Coast AQMD under Rule 403, such as watering disturbed areas a minimum of two times per day, reducing speed limit to 25 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers.

[3] For CalEEMod modeling, a 5,000-square-foot building was modeled which is larger than the proposed 3,588-square-foot buildings (2,533-square-foot park building and 1,055-square-foot garden storage building) and provides a conservative analysis.

However, as shown in Table 5, implementation of Mitigation Measure AQ-1, which requires the construction contractor(s) to water exposed ground surfaces and disturbed areas three times a day during earthmoving activities (i.e., site preparation, rough grading, and fine grading), would reduce construction-related emissions below the South Coast AQMD screening-level LST. Therefore, air quality impacts from project-related construction activities would be less than significant with incorporation of mitigation.

3. Environmental Analysis

Mitigation Measures

Construction

AQ-1 The City of Stanton (City) shall specify in the construction bid that the construction contractor(s) shall water exposed ground surfaces and disturbed areas three times per day during earthmoving activities (i.e., site preparation, rough grading, and fine grading) to minimize fugitive dust. Prior to construction, the construction contractor(s) shall ensure that all construction plans clearly show the watering requirement to control fugitive dust.

Table 5 Localized Construction Emissions with Mitigation Incorporated

Construction Activity	Pollutants(lbs/day)[1]			
	NO_X	CO	PM_{10}[2]	$PM_{2.5}$[2]
South Coast AQMD 3.50-Acre LSTs	**149**	**984**	**9.50**	**5.50**
Site Preparation	37	34	**7.85**	**4.25**
Exceeds LST?	No	No	**No**	**No**

Source: CalEEMod Version 2022.1. South Coast AQMD 2008, 2011, and 2023.
Notes: In accordance with South Coast AQMD methodology, only onsite stationary sources and mobile equipment are included in the analysis. Screening level LSTs are based on receptors within 82 feet (25 meters) in SRA 17.
[1] Where specific information for project-related construction activities or processes was not available modeling was based on CalEEMod defaults. These defaults are based on construction surveys conducted by the South Coast AQMD.
[2] Includes fugitive dust control measures required by South Coast AQMD under Rule 403, such as reducing speed limit to 25 miles per hour on unpaved surfaces, replacing ground cover quickly, and street sweeping with Rule 1186–compliant sweepers. Modeling also includes Mitigation Measure AQ-1, which would entail watering exposed areas a minimum of three times per day during earthmoving activities.

Construction Health Risk

Emissions from construction equipment primarily consist of diesel particulate matter (DPM). In 2015, the Office of Environmental Health Hazards Assessment adopted guidance for preparation of health risk assessments, which included the development of a cancer risk factor and non-cancer chronic reference exposure level for DPM over a 30-year time frame (OEHHA 2015). Currently, South Coast AQMD does not require the evaluation of long-term excess cancer risk or chronic health impacts for a short-term project. The proposed project is anticipated to be completed in approximately 11 months, which would limit the exposure to onsite and offsite receptors. Furthermore, construction activities would not generate onsite exhaust emissions that would exceed the screening-level construction LSTs. Thus, construction emissions would not pose a health risk to onsite and offsite receptors, and project-related construction health impacts would be less than significant.

Operation LSTs

Operation of the proposed project would not generate substantial emissions from onsite stationary sources. Land uses that have the potential to generate substantial stationary sources of emissions include industrial land uses, such as chemical processing and warehousing operations where truck idling would occur onsite and would require a permit from South Coast AQMD. The proposed project involves redevelopment of a park and would not fall within these categories of uses. Localized air quality impacts related to operation-related emissions would be less than significant.

Carbon Monoxide Hotspots

Vehicle congestion has the potential to create pockets of CO called hotspots. Hotspots are typically produced at intersections, where traffic congestion is highest because vehicles are backed-up and idle for longer periods and are subject to reduced speeds. These pockets could exceed the state one-hour standard of 20 parts per million (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 AAQS is typically demonstrated through an analysis of localized CO concentrations.

The SoCAB has been designated attainment under both the national and California AAQS for CO. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection to 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 2023). As shown in Appendix F, the project-related 19 peak hour AM and 83 PM peak hour vehicle trips would be minimal compared to the AAQS screening levels (Garland and Associates 2023). The proposed project would not substantially increase CO hotspots at intersections and impacts would be less than significant.

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

Less Than Significant Impact. The proposed project would not result in objectionable odors. The threshold for odor is if a project creates an odor nuisance pursuant to South Coast AQMD Rule 402, Nuisance, which states:

> A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. The provisions of this rule shall not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.

The type of facilities that are considered to have objectionable odors include wastewater treatments plants, compost facilities, landfills, solid waste transfer stations, fiberglass manufacturing facilities, paint/coating operations (e.g., auto body shops), dairy farms, petroleum refineries, asphalt batch plants, chemical manufacturing, and food manufacturing facilities. The proposed project involves construction and improvements to an existing park and would not fall within the objectionable odors land uses. Emissions from construction equipment, such as diesel exhaust and volatile organic compounds from architectural coatings and paving activities may generate odors. However, these odors would be low in concentration, temporary, and would not affect a substantial number of people. Odor impacts would be less than significant.

3.4 BIOLOGICAL RESOURCES

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 Wildlife or U.S. Fish and Wildlife Service?			X	
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 Wildlife or U.S. Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
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?		X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
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?				X

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 Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact. The project site is developed as a joint-use sports park and is part of an existing elementary school. The project site contains disturbed natural grass field and mature ornamental trees and vegetation. Sixteen trees line the perimeter of the project site: four chinaberry trees (*Melia Azedarach)*, three melaleuca species, one Tulip Tree (*Liriodendron Tulipifera*), two pinus species, four Holly oaks (*Quercus Ilex)*, one orchard tree (*Baudinia*), and one dead tree. None of these trees are identified as a candidate, sensitive, or special status species (CNDDB 2024). Though the proposed project may require tree removal, the proposed project would not impact any special status tree species.

The California Department of Fish and Wildlife (CDFW) BIOS mapper identified the project site as a limited habitat terrestrial connectivity area with no riparian corridors (CDFW 2024a). However, the project site is fully

developed as a park and would continue to operate as a park. Additionally, the project site is surrounded by various urban uses, and there is no native habitat or no habitat suitable for candidate, sensitive, or special status species on-site. The project site is in the Anaheim Quad of the California Natural Diversity Database (CNDDB), which has 27 special status species, including 11 birds, one fish, one amphibian, two insects, one mammal, two reptiles, and nine plant species (CDFW 2022).

Considering the disturbed nature of the project site, the project site does not provide native habitat for candidate, sensitive, or special status species. The project site is heavily disturbed by human activities, and any use of the site by sensitive species would be incidental foraging, which does not constitute habitat use.

The Stanton storm channel, which runs along the north side of the project site is identified as riverine habitat by the National Wetlands Mapper (USFWS 2024). As discussed in Section 3.10, *Hydrology and Water Quality*, the proposed project includes the construction of a new pedestrian bridge over the existing stormwater channel along the northern side of the project site; however, the footings for the pedestrian bridge would be entirely outside of the channel and the bridge would extend over the channel. Therefore, the proposed project would not interfere with water flows within the existing drainage channel nor potential riparian wildlife movement. Further, construction and operation of the proposed project would be required to comply with applicable permits that regulate stormwater runoff and incorporate best management practices (BMPs) consistent with the National Pollution Discharge Elimination System (NPDES) program, Construction General Permit (CGP), Municipal Separate Storm Sewer System (MS4) permit, and City regulations. Further, as discussed in Section 1.4, *Project Description*, the proposed project would include stormwater infrastructure onsite, and operation of the proposed project would not direct stormwater runoff to the channel. As a result of compliance with regulations, implementation of BMPs, and stormwater infrastructure onsite, the proposed project will not directly or indirectly affect species that may use the channel. Impacts would be less than significant.

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 Wildlife or U.S. Fish and Wildlife Service?

Less than Significant Impact. The project site is developed as a joint-use sports park and is part of an existing elementary school. The project site is currently unused with the exception of the community garden. The Stanton storm channel, which runs along the north side of the project site is identified as riverine habitat by the National Wetlands Mapper, with a classification of "R4SBAr" (USFWS 2024). Riverine (R) is defined as "The Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts of 0.5 ppt or greater. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water" (USFWS 2024). The "4" designation indicates that the channel contains flowing water only part of the year (intermittent). When the water is not flowing, the channel may contain water in isolated pools or surface water may be absent. The "SB" designation indicates "Includes all wetlands contained within the Intermittent Subsystem of the Riverine System and all channels of the Estuarine System or of the Tidal Subsystem of the Riverine System that are completely dewatered at low tide."

3. Environmental Analysis

The "A" and "r" designations indicate that the channel temporarily floods, but the groundwater lies well below the ground surface for most of the season and that the channel is concrete lined drainage way (USFWS 2024).

As discussed in Section 3.10, *Hydrology and Water Quality*, the proposed project includes the construction of a new pedestrian bridge over the existing stormwater channel along the northern side of the project site; however, the footings for the pedestrian bridge would be entirely outside of the channel and the bridge would extend over the channel. Therefore, the proposed project would not interfere with water flows within the existing drainage channel nor interfere with the riverine habitat. Further, construction and operation of the proposed project would be required to comply with applicable permits that regulate stormwater runoff and incorporate BMPs consistent with the NPDES program, CGP, MS4 permit, and City regulations. Further, as discussed in Section 1.4, *Project Description*, the proposed project would include stormwater infrastructure onsite and operation of the proposed project would not direct stormwater runoff to the channel. Compliance with regulations, implementation of BMPs, and stormwater infrastructure ensure, the proposed project would not have a substantial adverse effect on a riparian habitat or other sensitive natural community. Less than significant impact would occur.

c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less than Significant Impact. The project site is developed as a joint-use sports park and is part of an existing school. As discussed under Section 3.4(b), above, the Stanton storm channel runs along the northern side of the project site and is identified as riverine habitat (USFWS 2024). As discussed in Section 3.10, *Hydrology and Water Quality*, the proposed project includes the construction of a new pedestrian bridge over the existing stormwater channel along the northern side of the project site; however, the footings for the pedestrian bridge would be entirely outside of the channel and the bridge would extend over the channel. Therefore, the proposed project would not interfere with water flows within the existing drainage channel nor interfere with the riverine habitat. Further, construction and operation of the proposed project would be required to comply with applicable permits that regulate stormwater runoff and incorporate BMPs consistent with the NPDES program, CGP, MS4 permit, and City regulations. Further, as discussed in Section 1.4, *Project Description*, the proposed project would include stormwater infrastructure onsite and operation of the proposed project would not direct stormwater runoff to the channel. Compliance with regulations, implementation of BMPs, and stormwater infrastructure onsite, proposed project would not impact the drainage channel, and no substantial adverse effect on state or federally protected wetlands would occur. Less than significant impact would occur.

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 Impact With Mitigation Incorporated. Wildlife movement corridors facilitate the movement of species between large patches of natural habitat. As previously discussed, CDFW BIOS mapper identified the project site as a limited habitat terrestrial connectivity area with no riparian corridors (CDFW 2024a). However, the project site is already developed as a joint-use sports park and is part of an existing

elementary school campus; and would continue to operate as a park. The project site contains disturbed habitat comprised of natural grass turf athletic field and nonnative landscaping and ornamental trees, and therefore lacks suitable habitat for wildlife species and is not a native wildlife nursery site. Based on the existing developed condition of the project site and the surrounding area, the project site does not meet the definition of a wildlife corridor and is not expected to serve or contribute to a wildlife movement corridor. As discussed in Section 3.4(b) and (c) above, a Stanton storm drain channel runs along the northern side of the project site, and the construction and operation of the proposed project would not affect the channel, which could be used by fish and other wildlife species.

There are ornamental trees on-site that could be used for nesting by birds. However, when removing trees or vegetation, in compliance with California Fish and Game Code Sections 3503, 3503.5, 3513, and 3800, the proposed project is required to avoid the incidental loss of fertile eggs or nestlings or nest abandonment. The proposed project would be required to comply with the Migratory Bird Treaty Act (MBTA) (US Code, Title 16, §§ 703 to 712), which governs the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests. It prohibits the take, possession, import, export, transport, sale, purchase, barter, or offering of these activities, except under a valid permit or as permitted in the implementing regulations. USFWS administers permits to take migratory birds in accordance with the MBTA. Unlike the federal Endangered Species Act, which clearly applies to the incidental and unintentional take of listed species, neither the MBTA nor its legislative history addresses whether the law was intended to prohibit the incidental and unintentional take of migratory birds, or only hunting and other forms of direct, intentional take. As of December 3, 2021, the incidental take of protected migratory birds is prohibited, and violations are subject to discretionary enforcement by the USFWS. The proposed project would implement Mitigation Measure BIO-1, which would require the preparation of preconstruction avian surveys. This requirement is included as a mitigation measure to ensure that the proposed project does not interfere substantially with the movement of any native resident or wildlife species or with established native resident or migratory wildlife corridors. Construction outside the nesting season (between September 1 and January 31) does not require preconstruction nesting bird surveys. The project site contains trees and grasslands expected to provide nesting habitat for birds, and implementation of Mitigation Measure BIO-1 would ensure that impacts are reduced to a less than significant level.

Mitigation Measure

BIO-1 Preconstruction Avian Survey. If project construction-related activities take place during the nesting season (February through August), preconstruction surveys for nesting birds and raptors (birds of prey) within the existing trees onsite, which would be removed during construction, shall be conducted by a qualified biologist 14 days prior to the commencement of the tree removal or site grading activities. If any bird listed under the Migratory Bird Treaty Act is found to be nesting within the project site or within the area of construction-related activities, an adequate protective buffer zone shall be established by a qualified biologist to protect the nesting site. This buffer shall be a minimum of 75 feet from the project activities for passerine birds and a minimum of 200 feet for raptors. The distance shall be determined by a qualified biologist based on the site conditions (topography, if the nest is in a line of sight of the construction, and the sensitivity of the birds nesting). Additional protective measures

shall include establishment of clearly delineated exclusion zones (i.e., demarcated by identifiable fencing, such as orange construction fencing or equivalent) around each nest location as determined by a qualified biologist, taking into account the species of birds nesting, their tolerance for disturbance, and proximity to existing development. The nest site(s) shall be monitored by a qualified biologist periodically to see if the birds are stressed by the construction activities and if the protective buffer needs to be increased. Once the young have fledged and are flying well enough to avoid project construction zones (typically by August), the project can proceed without further regard to the nest site(s).

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The City of Stanton does not have any local policies or ordinances protecting biological resources such as trees within the City General Plan nor municipal code that are applicable to the proposed project. The City of Stanton Parks Master Plan does contain Goal 6.1, which seeks to increase the urban canopy to provide shade and reduce heat island effect within existing parks and other areas within the City (Stanton 2023a). Although all sixteen trees on the project site could be removed, a total of 73 various trees would be planted thereby addressing Goal 6.1 by adding to the urban campy in the City. Therefore, no impact would occur.

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. The project site is within the Orange County Transportation Authority (OCTA) Habitat Conservation Plan, Natural Community Conservation Plan (NCCP/HCP) (CDFW 2024b). The project site is not in the oversight of OCTA, and the NCCP/HCP would not apply. The project site contains disturbed natural grass field, mature ornamental trees and vegetation, which do not constitute native habitat nor high quality habitat. No impact would occur.

3.5 CULTURAL RESOURCES

The analysis in this section is based in part on the following technical studies, included as Appendix B to this Initial Study/Mitigated Negative Declaration (IS/MND):

- *Record Search Results for the Norm Ross Sports Park Joint Use Project,* South Central Coastal Information Center, April 26, 2023

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
V. CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?				X

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?		X		
c) Disturb any human remains, including those interred outside of dedicated cemeteries?			X	

a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

No Impact. Section 15064.5 defines historic resources as resources listed or determined to be eligible for listing by the State Historical Resources Commission, a local register of historical resources, or the lead agency. Generally a resource is considered "historically significant" if it meets one of the following criteria:

i) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

ii) Is associated with the lives of persons important in our past;

iii) 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;

iv) Has yielded, or may be likely to yield, information important in prehistory or history.

The project site is within the Carver Early Education Center and was developed as a joint use sports park in 1983. A records search of files and maps was performed by the South-Central Coastal Information Center (SCCIC). The records search indicated the project site is not listed in the Office of Historic Preservation's Listed California Historical Resources, California Points of Historical Interest, California Historical Landmarks, California Register of Historical Resources, and not in the National Register of Historic Places (SCCIC 2023). Implementation of the proposed project would not cause a substantial adverse change in the significance of a historical resource. No impact would occur.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less Than Significant Impact With Mitigation Incorporated. Based on the SCCIC record search, the project site does not contain any known archaeological resources. However, two built environmental resources and three resources listed on the Office of Historic Preservation Built Environment Resources Directory listings exist within a quarter-mile of the project site (SCCIC 2023). Project construction would occur within the boundaries of the project site and would not impact the identified resources. Implementation of the proposed project would require ground-disturbing activities. New ground-disturbing activities could have the potential to uncover previously unknown archaeological resources, and therefore, could result in a potentially significant impact. Implementation of Mitigation Measure CUL-1 would ensure that if resources are discovered

during ground disturbing activities, that resources would be recovered in accordance with state and federal requirements. In the event that archaeological resources are discovered, a halt-work condition would be implemented, and a qualified archaeologist would be retained to assess such findings. Implementation of Mitigation Measure CUL-1 would reduce impacts to archaeological resources to a less than significant level.

Mitigation Measure

CUL-1 Prior to issuance of grading permits, a qualified archaeological monitor shall be identified to be on call during ground-disturbing activities. If archeological resources are discovered during excavation and/or construction activities, construction shall stop within 25 feet of the find, and the qualified archaeologist shall be consulted to determine whether the resource requires further study. The archaeologist shall make recommendations to the applicant to protect the discovered resources. Archaeological resources recovered shall be provided to the South Central Coast Information Center (SCCIC) or any other local museum or repository willing and able to accept and house the resource to preserve for future scientific study.

c) Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact. There are no known human remains or cemeteries on the project site or adjoining properties. As described previously, the project site has been previously developed and disturbed with park uses and the surrounding land uses are fully developed; the likelihood that human remains would be discovered during site clearing and grading activities is low. Nonetheless, due to ground-disturbing activities, there could be a potential for discovering unknown human remains.

In the unlikely event that the project applicant discovers human remains during ground-disturbing activities, California Health and Safety Code Section 7050.5 requires that disturbance of the site shall be halted. The County Coroner shall investigate the circumstances, manner, and cause of any death and recommend the treatment and disposition of the human remains to the person responsible for the excavation or to his or her authorized representative, in the manner provided in Section 5097.98 of the California Public Resources Code. The coroner is required to determine within two working days of notification of the discovery of the human remains. If the coroner determines that the remains are not subject to his or her authority or has reason to believe the human remains to be those of a Native American, he or she shall contact, by telephone within 24 hours, the Native American Heritage Commission (NAHC) so that NAHC can contact the "most likely descendant." The most likely descendant shall receive access to the discovery and will provide recommendations or preferences for treatment of the remains within 48 hours of accessing the discovery site. Disposition of human remains and any associated grave goods, if encountered, shall be treated in accordance with procedures and requirements set forth in Sections 5097.94 and 5097.98 of the Public Resources Code; Section 7050.5 of the California Health and Safety Code; and CEQA Guidelines Section 15064.5. Compliance with existing law regarding the discovery of human remains would ensure that potential impacts would be less than significant.

3.6 ENERGY

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VI. ENERGY. Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. The following discusses the potential energy demands from construction activities associated with the construction and operation of the proposed project.

Short-Term Construction Impacts

Construction of the proposed project would create temporary increased demands for electricity and vehicle fuels compared to existing conditions and would result in short-term transportation-related energy use.

Electrical Energy

The majority of construction equipment would be gas- or diesel-powered, and electricity would not be used to power most of the construction equipment. Electricity use during construction would vary during different phases of construction. Later construction phases could result in the use of electric-powered equipment for interior construction and architectural coatings (if applicable). It is anticipated that the majority of electric-powered construction equipment would be hand tools (e.g., power drills, table saws) and lighting, which would result in minimal electricity usage during construction activities. Therefore, project-related construction activities would not result in wasteful or unnecessary electricity demands, and impacts would be less than significant.

Natural Gas Energy

It is not anticipated that construction equipment used for the proposed project would be powered by natural gas, and no natural gas demand is anticipated during construction. Therefore, impacts would be less than significant with respect to natural gas usage.

Transportation Energy

Transportation energy use during construction of the proposed project would come from delivery vehicles, haul trucks, and construction employee vehicles. In addition, transportation energy demand would come from use of off-road construction equipment. It is anticipated that the majority of off-road construction equipment, such as those used during demolition and grading, would be gas or diesel powered.

3. Environmental Analysis

The use of energy resources by vehicles and equipment would fluctuate according to the phase of construction and would be temporary. In addition, all construction equipment would cease operating upon completion of project construction. Thus, impacts related to transportation energy use during construction would be temporary and would not require expanded energy supplies or the construction of new infrastructure. Furthermore, to limit wasteful and unnecessary energy consumption, the construction contractors are anticipated to minimize nonessential idling of construction equipment during construction, in accordance with Section 2449 of the California Code of Regulations, Title 13, Article 4.8, Chapter 9.

Construction trips would also not result in unnecessary use of energy since the project site is centrally located and is served by numerous regional freeway systems (e.g., I-5, I-405, SR 91, SR22) that provide the most direct routes from various areas of the region. Thus, energy use during construction of the project would not be considered inefficient, wasteful, or unnecessary. Impacts would be less than significant.

Long-Term Impacts During Operation

Operation of the proposed project would generate new demand for electricity, natural gas, and transportation energy on the project site. Operational use of energy would include heating, cooling, and ventilation of buildings; water heating; operation of electrical systems, use of on-site equipment and appliances; and indoor and outdoor lighting.

Electrical Energy

Operation of the proposed project would consume electricity for various purposes, including, but not limited to heating, cooling, and ventilation of buildings as well as operation of electrical systems, lighting, and use of on-site equipment and appliances. Electrical service to the proposed project would be provided by Southern California Edison (SCE) through connections to existing off-site electrical lines and new on-site infrastructure. As shown in Table 6, *Electricity Consumption*, implementation of the proposed project would result in a new electricity demand of 82,467 kilowatt hours (kWh) of electricity use per year from use of the community building and field lighting.

Table 6 Electricity Consumption

Land Use	Electricity (kWh/year)
Community Building[1,2,3]	47,964
Field Lighting	34,503
Electricity Consumption	**82,467**

Source: CalEEMod Version 2022.1. Appendix A.
Note: kWh = kilowatt hour(s)

1 Estimated electricity consumption based on health club energy rates from EDFZ 7 from CalEEMod Appendix G, *Default Data Tables*, as an approximation since CalEEMod "City Park" land use default rates do not account for electricity use.

2 Calculations based on Musco Lighting Plan for the proposed field lighting as provided by the City. Modeling assumes field lighting will be used every day of the year (365 days) for an average of 3 hours per day.

3 For CalEEMod modeling, a 5,000-square-foot building was modeled which is larger than the proposed 3,588-square-foot buildings (2,533-square-foot park building and 1,055-square-foot garden storage building) and provides a conservative analysis.

While the proposed project would result in new electricity demand on the project site, it would be required to comply with the applicable Building Energy Efficiency Standards and California Green Building Standards Code (CALGreen) requirements. In addition, the Building Energy Efficiency Standards mandate an increase in building energy efficiency every three years, therefore the new building would be designed to be more energy efficient.

In addition to the proposed building energy efficiency, SCE is required to comply with the state's renewable portfolios standard (RPS), which mandates utilities to procure a certain proportion of electricity from eligible renewable and carbon-free sources and increasing the proportion through the coming years with an ultimate procurement requirement of 100 percent by 2045. The RPS requirements would support use of electricity by the proposed project that is generated from renewable or carbon-free sources. Overall, the proposed project would generally be consistent with the goals outlined in Appendix F of the CEQA Guidelines regarding increasing energy efficiency, decreasing reliance on fossil fuels, and increasing renewable energy sources.

Compliance with these standards would contribute to minimizing inefficient energy use by the proposed community building and field lighting. Therefore, operation of the proposed project would not result in wasteful or unnecessary electricity demands and would not result in a significant impact related to electricity.

Natural Gas Energy

Table 7, *Operation-Related Natural Gas Consumption*, shows the natural gas demand associated with the proposed project would be 214,010 kilo-British thermal units per year. While the proposed project would result in new natural gas demand on the project site, the proposed community building would be consistent with the requirements of the Building Energy Efficiency Standards. Compliance with the Building Energy Efficiency Standards would include installation of a high efficiency heating, ventilation, and air conditioning system and thermal envelope (e.g., insulation materials), which would contribute to reducing natural gas demands and decreasing overall reliance on fossil fuels. Therefore, operation of the proposed project would result in less than significant impacts with respect to natural gas usage.

3. Environmental Analysis

Table 7 Operation-Related Natural Gas Consumption

Land Use	Natural Gas (kBTU/year)[1, 2]
Community Building	214,010

Source: CalEEMod Version 2022.1. Appendix A.
Note: kBTU=kilo-British thermal units.
[1] Estimated natural gas consumption based on health club energy rates from EDFZ 7 from CalEEMod Appendix G, *Default Data Tables*, as an approximation since CalEEMod "City Park" land use default rates do not account for natural gas use.
[2] For CalEEMod modeling, a 5,000-square-foot building was modeled which is larger than the proposed 3,588-square-foot buildings (2,533-square-foot park building and 1,055-square-foot garden storage building) and provides a conservative analysis.

Transportation Energy

The proposed project would consume transportation energy during operations from the use of motor vehicles associated with visitors to the proposed project. The efficiency of the motor vehicles in use (average miles per gallon) is unknown and highly variable. Thus, estimates of transportation energy use are based on the overall VMT and related transportation energy use. The project-related VMT would primarily come from visitors. The proposed project would redevelop the existing Norm Ross Sports Park and would continue to be a locally serving use.

Fuel efficiency of vehicles after buildout would on average improve compared to vehicle fuel efficiencies experienced under existing conditions, thereby resulting in a lower per capita fuel consumption assuming travel distances, travel modes, and trip rates remain the same. The improvement in fuel efficiency would be attributable to the statewide fuel reduction strategies and regulatory compliances (e.g., CAFE standards), resulting in new cars that are more fuel efficient and the attrition of older, less fuel-efficient vehicles. The CAFE standards are not directly applicable to land use development projects, but to car manufacturers. Thus, the visitors do not have direct control in determining the fuel efficiency of vehicles manufactured and that are made available. However, compliance with the CAFE standards by car manufacturers would ensure that vehicles produced in future years have greater fuel efficiency and would generally result in an overall benefit of reducing fuel usage by providing the population of the project site's region more fuel-efficient vehicle options.

Lastly, as electricity consumed in California is required to meet the increasing renewable energy mix requirements under the State's RPS and accelerated by SB 100, greater and greater proportions of electricity consumed for transportation energy demand envisioned under the proposed project would continue to be sourced from renewable energy sources rather than fossil fuels. Since vehicle fuel efficiencies would improve year over year through the buildout and result in a decrease in overall per capita transportation energy consumption, impacts would be less than significant with respect to operation-related fuel usage.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Less Than Significant Impact. The following evaluates consistency of the proposed project with California's Renewables Portfolio Standard program and the SCAG's RTP/SCS.

California Renewables Portfolio Standard Program

The state's electricity grid is transitioning to renewable energy under California's Renewable Energy Program. Renewable sources of electricity include wind, small hydropower, solar, geothermal, biomass, and biogas. Electricity production from renewable sources is generally considered carbon neutral. Executive Order S-14-08, signed in November 2008, expanded the state's (RPS to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). Senate Bill 350 (de Leon) was signed into law September 2015 and establishes tiered increases to the RPS—40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. Senate Bill 350 also set a new goal to double the energy-efficiency savings in electricity and natural gas through energy efficiency and conservation measures.

On September 10, 2018, Governor Brown signed SB 100, which supersedes the SB 350 requirements. Under SB 100, the RPS for public owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. Additionally, SB 100 also established a new RPS requirement of 50 percent by 2026. The bill also established a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under SB 100 the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

The statewide RPS goal is not directly applicable to individual development projects, but to utilities and energy providers such as SCE, which is the utility that would provide all of electricity needs for the proposed project. Compliance of SCE in meeting the RPS goals would ensure the State in meeting its objective in transitioning to renewable energy. In addition, the proposed project would be required to comply with the applicable Building Energy Efficiency Standards and CALGreen requirements. Therefore, implementation of the proposed project would not conflict with or obstruct implementation of California's RPS Program and impacts would be less than significant.

SCAG's Regional Transportation Plan / Sustainable Communities Strategy

SCAG adopted the 2020-2045 RTP/SCS, Connect SoCal, in September 2020 (SCAG 2020). Connect SoCal finds that land use strategies that focus on new housing and job growth in areas rich with destinations and mobility options would be consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategy in Connect SoCal is to plan for the southern California region to grow in more compact communities in transit priority areas and priority growth areas; provide neighborhoods with efficient and plentiful public transit; establish abundant and safe opportunities to walk, bike, and pursue other forms of active transportation; and preserve more of the region's remaining natural lands and farmlands (SCAG 2020). Connect SoCal's transportation projects help more efficiently distribute population, housing, and employment growth, and forecast development is generally consistent with regional-level general plan data to promote active transportation and reduce energy consumption.

As described in Section 3.14*, Population and Housing*, the proposed project would not propose new homes and would serve the existing population in Stanton. Therefore, the proposed project would not induce substantial unplanned population growth in the area directly or indirectly. Thus, the proposed project would not exceed

the growth projections described in SCAG's RTP/SCS. Furthermore, the proposed project would continue to be a locally serving land use and would bring greater efficiency to the existing transportation network by redirecting the existing baseball-related traffic to one location in the City. As shown in Section 3.17, *Transportation*, the proposed project would generate up to 438 trips per day, which would be below the VMT threshold of 500 trips per day from the Orange County Transportation Implementation Manual. Therefore, impacts to VMT would be less than significant and implementation of the proposed project would not interfere with implementation of Connect SoCal, and impacts would be less than significant.

3.7 GEOLOGY AND SOILS

The analysis in this section is based in part on the following technical studies, included as Appendix C and D to this IS/MND:

- *Geotechnical Investigation, Norm Ross Sports Park Proposed Park Building and Bridge Over Storm Channel,* John R. Byerly Inc., April 14, 2023 (Appendix C)
- *Geologic Hazards Report, Proposed Park Building and Storm Channel Bridge Norm Ross Park,* Terra Geosciences, April 11, 2023. (Appendix C)
- Paleontological Resources Records Search, Paleontological resources for the Norm Ross Sports Park Joint Use Project. March 26, 2023. (Appendix D)

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VII. GEOLOGY AND SOILS. Would the project:				
a) Directly or indirectly cause 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.				X
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				
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?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?			X	

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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?				X
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		

Would the project:

a) Directly or indirectly cause 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. Fault rupture occurs when an active fault displaces during an earthquake. Fault rupture hazards depend on a property's proximity to an active or potentially active fault and the designation of the site in an Alquist-Priolo Special Study Zone, as defined by the Alquist-Priolo Earthquake Fault Zone Act of 1962. The project site is not located within a fault-rupture hazard zone and there are no Alquist-Priolo Earthquake Fault Zones located within the City of Stanton (DOC 2021, Stanton 2008). Surface rupture on the project site is unlikely to occur since no faults have been identified in the City's boundaries. The nearest mapped fault that is not zoned as "active" is the Anaheim Fault approximately 0.9 miles to the northeast of the project site (Terra Geosciences 2023). Therefore, project development would not subject people or structures to hazards arising from surface rupture of a known active fault. No impact would occur.

ii) Strong seismic ground shaking?

Less Than Significant Impact. As stated in the City of Stanton General Plan's Community Health & Safety Element, there are no Alquist-Priolo Earthquake Fault Zones located within the City, but there are several potentially active faults within proximity of the City (Stanton 2008). As is typical of Southern California, the proposed project is anticipated to experience ground shaking due to earthquakes. It is anticipated that major earthquake ground shaking would occur during the lifetime of the proposed project from the seismically active Newport-Inglewood fault located approximately 6.5 miles southwest of the project site (John R. Byerly Inc. 2023). The intensity of ground shaking on the project site would depend on the magnitude of the earthquake, the distance to the epicenter, and the geology of the area between the epicenter and the project site.

The proposed project would be designed in accordance with the seismic requirements of the California Building Code (CBC) (California Code of Regulations, Title 24), including a development-specific

subsurface exploration and laboratory testing prior to the design and construction of any structures, and recommendations contained therein would be implemented as required. Additionally, the proposed project would not include any habitable structures other than a community building. Compliance with the requirements of the CBC for structural safety during a seismic event would reduce hazards from strong seismic ground shaking. Impacts from strong seismic ground shaking would be less than significant.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction is a phenomenon that occurs when soil undergoes a transformation from a solid state to a liquified condition. It refers to loose, saturated sand or silt deposits that behave as a liquid and lose their load-supporting capability when strongly shaken. Loose granular soils and silts that are saturated by relatively shallow groundwater are susceptible to liquefaction. When subjected to seismic ground shaking, affected soils lose strength during liquefaction and foundation failure can occur.

According to the California Department of Conservation, Division of Mines and Geology, and the Anaheim and Newport Beach 7.5 Minute Quadrangle, the entire city is in a liquefaction hazard zone (Stanton 2008, DOC 2021). According to the geotechnical study, free groundwater was encountered at depths of 18.8 feet, 19.9 feet, and 24.7 feet during borings. Historic high ground water level is estimated to be at a depth of approximately 8 feet below surface grade (John R. Byerly Inc. 2023). The geotechnical study assumed that the upper seven feet of soil would be over excavated and replaced with engineered fill and that the bottom of over excavation would be scarified to a depth of 12 inches. The geotechnical study determined that the silts would behave as clay under seismic conditions and neither liquefaction nor seismically induced dry settlement would result from the construction of the proposed community building (John R. Byerly Inc. 2023). The proposed project would be subjected to the seismic requirements of the CBC. Therefore, compliance with the established standards and implementation of the recommendations based on the geotechnical investigation would ensure that impacts from liquefaction are less than significant.

iv) Landslides?

No Impact. Landslides are the downslope movement of geologic materials. Slope failures in the form of landslides are common during strong seismic shaking in areas of steep hills. The potential for landslides to occur at the project site is very low, since the project site and its surroundings are relatively flat and not within a landslide hazard area as identified by the California Geologic Survey (DOC 2021). Therefore, geologic hazards associated with landslides are not anticipated at the project site. No impact would occur.

b) Result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. Soil erosion increases substantially by earth-moving activities if erosion control measures are not used. The following is a discussion of the potential erosion impacts resulting from the proposed project's construction and operational phases.

Construction

Construction of the proposed project would result in excavation and exposure of underlying soils that could result in soil erosion. Construction of the proposed project would involve earthwork, such as grading and excavating, and construction equipment and vehicle use that could track soil off-site. Additionally, natural processes, such as wind and rain, could further lead to soil erosion during construction. However, construction of the proposed project would be required to comply with federal, state, and local codes regulating construction activities and soil erosion.

The proposed project would be required to obtain a CGP issued by the State Water Resources Control Board (SWRCB). The CGP is a requirement that minimizes water pollution from construction activities, including erosion. Since the proposed project activities would occur on greater than 1 acre (approximately 4.2 acres) of land, the proposed improvements at the project site would be subject to the NPDES permitting regulations, including the development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The proposed project's construction contractor would be required to prepare and implement a SWPPP and associated BMPs in compliance with the CGP during grading and construction. Further, consistent with Stanton Municipal Code Section 6.20.040, Control of Urban Runoff, the proposed project would be required to adhere to the Orange County drainage area management plan (DAMP), which includes BMPs for non-residential construction projects, and any conditions or requirements established by the planning department. Adherence with existing state and local laws regulating construction activities would minimize soil erosion from project-related construction activities. Therefore, soil erosion impacts from project construction would be less than significant.

Operation

The proposed project includes the operation of a park with sport fields, landscaping, hard top courts, dog park, community building, community garden, walking paths, and pedestrian bridge. The proposed project would include pervious and impervious surfaces and would include a infiltration basin or a bioretention basin without underdrain onsite that would capture and treat stormwater runoff. Compared to existing conditions, the proposed project would increase impervious surfaces on the project site. With the development of the proposed project, the project site would not contain unmaintained, bare soil that would have the potential for erosion. The onsite treatment system would be sized according to County low impact development requirements. With the incorporation of stormwater infrastructure onsite, impervious surfaces, maintained landscaping and turf areas, and compliance with applicable permits (such as MS4 permit), operation of the proposed project would not result in substantial erosion. Therefore, potential impacts related to potential for soil erosion would be 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 Impact. As discussed in Section 3.7(a)(iii) and (a)(iv), impacts from liquefaction and landslide would result in less than significant impact.

3. Environmental Analysis

Lateral spreading is a phenomenon where large blocks of intact, non-liquefied soil move downslope on a large, liquefied substratum. The mass moves toward an unconfined area, such as a descending slope or stream-cut bluff and has been known to move on slope gradients as little as one degree. The potential for lateral spreading or lurching is highest in areas underlain by soft, saturated materials, especially where bordered by steep banks or adjacent hard ground. The topography of the site is relatively flat, with no embankments within the vicinity; therefore, there is no potential for lateral spreading (Terra Geosciences 2023). No impact would occur.

Subsidence of basins attributed to overdraft of groundwater aquifers or over pumping of petroleum reserves has been reported in various parts of southern California. The project site is located in the areas of recorded subsidence (USGS 2023). However, subsidence is not expected to be an issue for the project site, as discussed below. Additionally, the proposed project would be designed to achieve seismic safety as required by CBC, including design recommendations contained in the geotechnical study. Therefore, impacts would be less than significant level.

According to the geotechnical study, the project site has a potential for 2.5 to 3.2 percent hydroconsolidation in the upper soil, which is considered to have a very low expansion potential (John R. Byerly 2023). Typically, soil collapse occurs when loose, dry, sandy soils become saturated and settle. The upper soil includes soft sandy silts with clay, loose to medium dense silty sands with variable amounts of clay, sand, and gravel (Terra Geosciences 2023). Underlying these surficial sediments are medium dense to very dense silty sands and sands, and medium stiff to very stiff sandy silts with clay and clayey silts with sand, to a depth of at least 76 feet. Therefore, the potential for chemically induced soil collapse to occur exists. The geotechnical study assumed that the upper seven feet of soil would be over excavated and replaced with engineered fill and that the bottom of over excavation would be scarified to a depth of 12 inches in the area of the community building and pedestrian bridge. The geotechnical study determined that the silts would behave as clay under seismic conditions and seismically induced dry settlement would result from the construction of the proposed community building (John R. Byerly Inc. 2023). Additionally, the proposed project would be designed to achieve seismic safety as required by CBC, including design recommendations contained in the geotechnical study. Therefore, impacts from collapsible soil would be reduced to a less than significant level.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less Than Significant Impact. Expansive soils are characterized by their ability to undergo significant volume change (shrink or swell) due to variations in moisture content. The geotechnical study indicates that the near-surface soils are granular and non-plastic and are considered to have a very low expansion potential (John R Byerly 2023). Furthermore, it is anticipated that the upper seven feet of soil would be over excavated and replaced with engineered fill for the community building and pedestrian bridge construction to ensure safety from any unstable soil, including expansive soil. The proposed project would also be required to comply with the requirements of the CBC. Therefore, impacts would be 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. The project site would be served by the existing sewer system and would not use septic tanks or other alternative wastewater disposal systems. No impact would occur.

f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact With Mitigation Incorporated. According to a paleontological resources search conducted by the Los Angeles County Natural History Museum (see Appendix D), there are no fossil localities that lie directly on the project site, but there are fossil localities nearby from the same sedimentary deposits, within the project site. As the proposed project would include ground disturbing activities, Mitigation Measure GEO-1 would be implemented to reduce impacts to a less than significant level.

Mitigation Measure

GEO-1 Prior to construction, the City shall identify a qualified paleontologist to be on-call. If unique paleontological resources are discovered during excavation and/or construction activities, construction shall stop within 25 feet of the find, and the qualified paleontologist shall be consulted to determine whether the resource requires further study. The paleontologist shall make recommendations to the City to protect the discovered resources. Any paleontological resources recovered shall be provided to the South-Central Coastal Information Center, Los Angeles County Natural History Museum, or repository willing and able to accept and house the resource to preserve for future scientific study.

3.8 GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as greenhouse gases (GHGs), into the atmosphere. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHGs—water vapor, carbon dioxide (CO2), methane (CH4), and O3—that are the likely cause of an increase in global average temperatures observed within the 20th and 21st centuries. Other GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N2O), sulfur hexafluoride (SF6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons[2].

[2] 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, but part of the feedback loop rather than a primary cause of change.

3. Environmental Analysis

Information on manufacture of cement, steel, and other "life cycle" emissions that would occur as a result of the project are not applicable and are not included in the analysis[3]. Black carbon emissions are not included in the GHG analysis because the CARB does not include this pollutant in the state's Senate Bill 32 (SB 32) and Assembly Bill 1279 (AB 1279) inventory and treats this short-lived climate pollutant separately[4]. A background discussion on the GHG regulatory setting and GHG modeling can be found in Appendix A to this IS/MND.

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII. GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact. 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.

[3] 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 (CNRA 2018). 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).

[4] Particulate matter emissions, which include black carbon, are analyzed in Section 3.3, 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 2017).

Project-related construction and operation-phase GHG emissions are shown in Table 8, *Project-Related Operation GHG Emissions*. As identified in Section 3.17, *Transportation*, and in Appendix F, the proposed project would generate 279 non-summer weekday vehicle trips and 415 summer weekday vehicle trips[5] and 438 weekend vehicle trips (Garland and Associates 2023). Furthermore, operation of the proposed project would result in additional water demand, wastewater and solid waste generation, refrigerant use, area sources (e.g., consumer cleaning products), and energy usage (i.e., electricity and natural gas). Annual average construction emissions from construction activities were amortized over 30 years and included in the emissions inventory to account for one-time GHG emissions from the construction phase of the proposed project. Overall, development and operation of the proposed project would not generate annual GHG emissions that exceed the South Coast AQMD Working Group bright-line threshold of 3,000 metric tons of carbon dioxide equivalent ($MTCO_2e$) per year for development projects (South Coast AQMD 2010). In addition, GHG emissions from building energy use would be minimized because the proposed community building would be designed to be more energy-efficient in order to meet the current California Building and Energy Efficiency Standards. Therefore, the proposed project's cumulative contribution to GHG emissions would be less than significant.

Table 8 Project-Related Operation GHG Emissions

Source[1]	GHG Emissions ($MTCO_2e$/Year)	Percentage of Total Emissions
Mobile[2]	376	90%
Area	<1	<1%
Energy[3]	24	6%
Water[4]	3	1%
Solid Waste	<1	<1%
Refrigerants	<1	<1%
Amortized Construction Emissions[5]	12	3%
Total	416	100%
South Coast AQMD Bright-Line Threshold	3,000 $MTCO_2e$/Yr	NA
Exceeds Bright-Line Threshold?	**No**	NA

Source: CalEEMod, Version 2022.1.

Notes: $MTCO_2e$: metric ton of carbon dioxide equivalent

1 For CalEEMod modeling, a 5,000-square-foot building was modeled which is larger than the proposed 3,588-square-foot buildings (2,533-square-foot park building and 1,055-square-foot garden storage building) and provides a conservative analysis.

2 Vehicle trips provided by Garland and Associates in Appendix E (Garland and Associates 2023).

3 Estimated electricity and natural gas consumption based on health club energy rates from EDFZ 7 from CalEEMod Appendix G, Default Data Tables, as an approximation since CalEEMod "City Park" land use default rates do not account for electricity or natural gas use.

4 Estimated indoor water use based on health club water rates from EDFZ 7 from CalEEMod Appendix G, Default Data Tables, as an approximation since CalEEMod "City Park" land use default rates do not account for indoor water use.

5 Total construction emission are amortized over 30 years per South Coast AQMD Working Group methodology.

[5] Modeling assumed an average of 313 weekday vehicle trips based on summer weekday trips occurring during 25 percent of the year and non-summer weekday trips occurring over 75 percent of the year.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. Applicable plans adopted for the purpose of reducing GHG emissions include CARB's Scoping Plan and the SCAG's RTP/SCS. A consistency analysis with these plans is presented below.

CARB Scoping Plan

CARB's latest Climate Change Scoping Plan (2022) outlines the State's strategies to reduce GHG emissions in accordance with the targets established under AB 32, SB 32, and AB 1279 (CARB 2022). The 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.

Statewide strategies to reduce GHG emissions in the 2022 Climate Change Scoping Plan include: implementing SB 100, which expands the RPS to 60 percent by 2030; expanding the Low Carbon Fuel Standards (LCFS) to 18 percent by 2030; implementing the Mobile Source Strategy to deploy zero-electric vehicle buses and trucks; implementing the Sustainable Freight Action Plan; implementing the Short-Lived Climate Pollutant Reduction Strategy, which reduces methane and hydrofluorocarbons to 40 percent below 2013 levels by 2030 and black carbon emissions to 50 percent below 2013 levels by 2030; continuing to implement SB 375; creating a post-2020 Cap-and-Trade Program; and developing an Integrated Natural and Working Lands Action Plan to secure California's land base as a net carbon sink.

Statewide strategies to reduce GHG emissions include the low carbon fuel standards, California Appliance Energy Efficiency regulations, California Renewable Energy Portfolio standard, changes in the CAFE standards, and other early action measures as necessary to ensure the State is on target to achieve the GHG emissions reduction goals of AB 32, SB 32, and AB 1279. In addition, new developments are required to comply with the current Building Energy Efficiency Standards and CALGreen. The proposed project would comply with these GHG emissions reduction measures since they are statewide strategies. The proposed project GHG emissions would be further reduced from compliance with statewide measures that have been adopted since AB 32, SB 32, and AB 1279 were adopted. Therefore, the proposed project would not obstruct implementation of the 2022 Scoping Plan, and impacts would be less than significant.

SCAG's Regional Transportation Plan/Sustainable Communities Strategy

SCAG adopted the 2020-2045 RTP/SCS (Connect SoCal) in September 2020 (SCAG 2020). Connect SoCal identifies that land use strategies that focus on new housing and job growth in areas rich with destinations and mobility options are consistent with a land use development pattern that supports and complements the proposed transportation network. The overarching strategy in Connect SoCal is to plan for the southern California region to grow in more compact communities in transit priority areas and priority growth areas; provide neighborhoods with efficient and plentiful public transit; establish abundant and safe opportunities to walk, bike, and pursue other forms of active transportation; and preserve more of the region's remaining natural lands and farmlands (SCAG 2020). Connect SoCal's transportation projects help more efficiently distribute

population, housing, and employment growth, and forecast development is generally consistent with regional-level general plan data to promote active transportation and reduce GHG emissions. The projected regional development, when integrated with the proposed regional transportation network in Connect SoCal, would reduce per-capita GHG emissions related to vehicular travel and achieve the GHG reduction per capita targets for the SCAG region.

The Connect SoCal Plan does not require that local general plans, specific plans, or zoning be consistent with the SCS, but provides incentives for consistency for governments and developers. The proposed project would continue to be a local-serving land use and would provide new internal circulation improvements throughout for pedestrians and emergency vehicles. Furthermore, as stated in Section 3.17, *Transportation*, the proposed project would generate up to 438 trips per day, which would be below the VMT threshold of 500 trips per day from the Orange County Transportation Implementation Manual. In addition, the proposed project would bring greater efficiency to the existing transportation network by redirecting the existing baseball-related traffic to one location in the City. The proposed project would also improve coordination of land uses, which would reduce average distance traveled and VMT. As the proposed project would allow little league games to occur regularly on site compared to hosting these games across various locations throughout the Stanton area, it would create greater efficiency of land uses. In addition, the proposed project would include multiple features at and near the project site that can accommodate bicycle and pedestrian travel, such as bike racks and improved pedestrian paths to promote non-motorized means of travel to the project site. Therefore, the proposed project would not interfere with SCAG's ability to implement the regional strategies outlined in the Connect SoCal Plan, and impacts would be less than significant.

3.9 HAZARDS AND HAZARDOUS MATERIALS

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
IX. 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?			X	
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or the environment?			X	

3. Environmental Analysis

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
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 or excessive noise for people residing or working in the project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

a) Create a significant hazard to the public or the environment through the routine transport, use or disposal of hazardous materials?

Less Than Significant Impact.

Construction of the proposed project would require small amounts of hazardous materials during construction, such as vehicle fuels, lubricants, grease and transmission fluids, and paints and coatings. The handling, use, transport, and disposal of hazardous materials during the construction phase of the proposed project would comply with existing regulations of several agencies—the Environmental Protection Agency (EPA), California Division of Occupational Safety and Health, US Occupational Safety and Health Administration , and US Department of Transportation).

Operation of the proposed project would transport, use, store and dispose of small amounts of hazardous materials typical of park facilities such as cleaning and maintenance supplies (cleaners, gasoline, paint and pesticides). The proposed project includes a community building, community garden and a large and small dog park that would use cleaners and other chemicals in relatively small quantities, which is not typically considered hazardous materials that could result in a significant hazard to the public or the environment. No manufacturing, industrial, or other uses utilizing large amounts of hazardous materials would occur within the campus. Compliance with applicable federal and state laws and regulations governing the use, storage, transport, and disposal of hazardous materials would ensure that all potentially hazardous materials are used and handled in an appropriate manner and would minimize the potential for safety impacts to occur. Therefore, the proposed project would not create substantial hazards to the public or the environment. Impacts would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. The project site is currently developed with the existing Norm Ross Sports Park. Five environmental lists were searched for hazardous materials site on the project site (listed below). Table 9, *Hazardous Waste Sites within 0.25 Mile*, shows results from the database search.

- **GeoTracker.** State Water Resources Control Board (SWRCB 2024)
- **EnviroStor.** Department of Toxic Substances Control (DTSC 2024)
- **EJScreen.** US Environmental Protection Agency (EPA 2024a)
- **EnviroMapper.**US Environmental Protection Agency (EPA 2024b)
- **Solid Waste Information System (SWIS).** California Department of Resources Recovery and Recycling (Cal Recycle 2024a).

3. Environmental Analysis

Table 9 Hazardous Waste Sites within 0.25 Mile

Site Address	Database	Identifier	Cleanup Status	Proximity to Site
11151 Beach Boulevard Staton, CA 90680	Geo Tracker	LUST Cleanup Site	Completed – Case Closed	100 feet East
11100 Cedar Staton Street Stanton, CA 90680	Geo Tracker	LUST Cleanup Site	Completed – Case Closed	390 feet Northwest
7910 Katella Avenue, Stanton, CA 90680 (Food 4 Less)	Enviromapper	Waste Aerosols, Non-RCRA Hazardous Waste (consumer Products)	Active	500 feet North
7752 Ruthmann Ave, Stanton, CA 90680	Enviromapper	Asbestos	Inactive (11/14/2018)	850 feet Southwest
7850 Katella Avenue, Stanton, CA 90680	Enviromapper	N/A	Inactive (5/6/2019)	925 feet Northwest
11001 Beach Boulevard, Stanton, CA 90680 (Dental office of Sahawneh Dental group)	Enviromapper	N/A	Active	950 feet Northeast
26 Greenbrier Court, Stanton, CA 90680	Enviromapper	N/A	Inactive (6/30/2009)	1,050 feet Northwest
10961 Beach Boulevard, Stanton, CA 90680 (G&M Oil Co 50)	Enviromapper	Non-RCRA Hazardous Waste (Rags absorbent and debus impacted with petroleum hydrocarbons	Active	1,200 feet Northwest
11250 Beach Boulevard, Stanton, CA 90680	Enviromapper	NA	Inactive (6/30/2018)	1,200 feet west

Source: SWRCB 2024, USEPA 2024b

According to Geotracker, two Leaking Underground Storage Tanks (LUST) cleanup are sites are located within 0.25 miles of the project site. However, both are considered completed-case closed meaning they no longer pose a potential risk to the area or project site. According to Enviromapper there are a total of three active hazardous sites within 1,200 feet of the project site. The active hazardous waste site at 7910 Katella Avenue, is a Food 4 Less a grocery store, which has a permanent ID to dispose of the typical hazardous consumer product waste the store sells. These active sites are permitted uses and dispose of hazardous waste in accordance to state and federal policy. Thus these sites would not affect the proposed project. The project site and its surroundings are not identified in any of the other databases and are not identified as a hazardous materials site.

As discussed in Section 3.9(a), construction activities would require small amounts of hazardous materials; which include vehicle fuels, lubricants, grease and transmission fluids as well as paints and coatings. The use, transportation and disposal of hazardous materials would be in accordance with regulatory standards and manufactures' specifications. Hazardous materials would be used in small quantities and properly stored, so they do not pose health and safety hazards. Operation of the proposed project would transport, use, store and dispose of small amounts of hazardous materials typical of parks and community gardens such as cleaning and

maintenance supplies (such as cleaners, gasoline, paint and pesticides). Operation of the proposed project would use cleaners and other chemicals in relatively small quantities, which is not typically considered hazardous materials that could result in a significant hazard to the public or the environment. Compliance with applicable federal and state laws and regulations governing the use, storage, transport, and disposal of hazardous materials would ensure impacts would be less than significant.

The proposed project would be required to be constructed in accordance with the SWPPP which includes BMPs to reduce or eliminate pollutants in stormwater discharges. BMPs for hazardous materials may include, but are not limited to, offsite refueling, placement of generators on impervious surfaces, establishing cleanout areas for cement, etc. Adherence to existing regulations would ensure compliance with safety standards related to the use and storage of hazardous materials and with the safety procedures mandated by applicable federal, state, and local laws and regulations. Therefore, impacts would be 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 Impact. The project site is part of an existing Early Education Center and is already developed as a joint use park. The project site is currently developed as a park/sports complex and is not currently in use with the exception of the community garden. The proposed project would use typical chemicals and materials typical of construction (during the construction phase) and typical of park use and maintenance (during the operation phase). As discussed under Section 3.9(a), construction and operation of the proposed project would handle small amounts of hazardous materials typical of construction activities and those used in the operation of school facilities. The use, transport, and storage of such hazardous materials would be required to comply with all applicable state and federal regulations that would ensure the proper handling of such materials. As discussed under Section 3.9(b), there is no evidence that a hazardous materials release or threatened release has occurred on the project site. No significant hazard from hazardous materials is expected at the project site. Therefore, impacts would be 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 Impact. As discussed in Section 3.9(b), the project site is not listed on GeoTracker, EnviroStor, EJScreen, EnviroMapper, nor SWIS databases. The nearest listing to the project site, is a LUST Cleanup Site at 11151 Beach (approximately 100 feet northeast of the project site), is identified as case closed/completed as of 1994 (SWRCB 2024). As the project site is not listed on a hazardous materials site, a less than significant impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles or a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The nearest public use airport to the project site is the Fullerton Municipal Airport, approximately 4.8 miles north of the project site. As such, the proposed project would not result in safety hazards or excessive noise. No impact would occur.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less than Significant Impact. The City has an Emergency Operations Plan that establishes policies and procedures that guide the City during emergency situations and provides coordination between various members of emergency staff and service elements. Further, emergency evacuations are coordinated by the Orange County Sheriff's Department, which would provide law enforcement, traffic controls, and activation of any public warning system (Stanton 2008). The proposed project would not conflict with adopted emergency response or evacuation plans. The surrounding roadways would continue to provide emergency access to the project site and surrounding properties during construction and operation. As discussed in Section 3.17(d), emergency access will continue to be provided by an existing gated driveway located at the southeast corner of the project site that connects to Ruthann Avenue. The existing and proposed access and circulation features at the project site would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. The proposed project would improve emergency access by developing concrete paved path from the southwest corner of the project site along the eastern boundary to the northern portion of the project site (see Figure 4, *Proposed Site Plan*). The proposed project would improve emergency access compared to existing conditions; therefore, a less than significant impact shall occur.

g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

No Impact. The project site and surroundings are not within a Very High Fire Hazard Severity Zone (VHFHZ) (CAL FIRE 2022). The project site is located in an urbanized area. As such, the proposed project would not expose people or structures to wildland fires. No impact would occur.

3.10 HYDROLOGY AND WATER QUALITY

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
X. HYDROLOGY AND WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?			X	

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) result in a substantial erosion or siltation on- or off-site;			X	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;			X	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
iv) impede or redirect flood flows?			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact. The project site is within the jurisdiction of the Santa Ana Regional Water Quality Control Board . Drainage and surface water discharge during construction and operation of the proposed project would not violate any water quality standards or waste discharge requirements.

Construction

Site preparation and other soil-disturbing activities during construction of the proposed project could temporarily increase the amount of soil erosion and siltation entering the local stormwater drainage system. Clearing, grading, excavation, and construction activities associated with the proposed project have the potential to impact water quality through soil erosion and increasing the amount of silt and debris carried in runoff. Additionally, the use of construction materials such as fuels, solvents, and paints may present a risk to surface water quality.

The proposed project would disturb approximately 4.2 acres. Pursuant to Section 402 of the Clean Water Act, the EPA has established regulations under the NPDES program and is responsible for developing permitting requirements. The NPDES program regulates industrial pollutant discharges, including construction activities for sites larger than one acre. Since implementation of the proposed project would disturb more than one acre, the proposed project would be subject to the NPDES CGP requirements (Order No. 2009-0009-DWQ). As

part of the NPDES permit, the proposed project would be required to develop and implement a SWPPP. The proposed project's construction contractor would be required to prepare and implement a SWPPP and associated BMPs in compliance with the CGP during grading and construction. The proposed project would be required to comply with the MS4 permit. The MS4 permit requires implementation of a stormwater management program to control the quality of stormwater discharged into the storm drains. Further, consistent with Stanton Municipal Code Section 6.20.040, *Control of Urban Runoff,* the proposed project would be required to adhere to the Orange County DAMP, which includes BMPs for non-residential construction projects, and any conditions or requirements established by the planning department. With adherence to regulatory requirements and incorporation of BMPs, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface water. A less than significant impact would occur.

According to the geotechnical study, free groundwater was encountered at depths of 18.8 feet, 19.9 feet, and 24.7 feet during borings. The three borings took place in the immediate vicinity of the proposed new garden storage building, park building, and bridge site on Stanton Park, respectively. Historic high ground water level is estimated to be at a depth of approximately 8 feet below surface grade (John R. Byerly 2023). The geotechnical study identifies earth work to a maximum depth of up to 16 feet for the pier-type foundations for the pedestrian bridge. Other earthwork includes removal of artificial fill and loose soils to provide the proper base and foundation for the proposed building and hardscape/paved walkways and anticipates earthwork, including overexcavation, to depths between 1 to 7 feet (see Appendix C). Therefore, there is a potential that that earthwork may encounter groundwater in the area of the community building and pedestrian bridge. However, construction of the proposed project would be required to adhere to the State Water Resources Control Board (SWRCB) General Waste Discharge Requirements for discharges to land with a low threat to water quality. SWRCB Order No. 2003-0003-DWQ establishes minimum standards for discharges to land with a low threat to water quality (such as small/temporary dewatering projects). Dischargers are also required to file a report of waste discharge. Additionally, construction activities would be required to adhere to the DAMP, which outlines various construction BMPs, including a BMP for dewatering operations. In accordance with the DAMP, the construction contractor must select, install, and maintain appropriate BMPs. The use and selection of BMPs is site specific to address the conditions of the site. Consistent with Stanton Municipal Code Section 6.20.040, prior to the issuance of a grading permit or building permit, the engineering department shall review the project plans and impose terms, conditions, and requirements on the project in accordance with the DAMP and any conditions or requirements established by the planning department. All construction work would be required to adhere to NPDES CGP, SWPPP, and implement BMPs. With adherence with regulatory requirements, the proposed project would result in a less than significant impact related to groundwater quality.

Operation

Activities typical of parks are anticipated for the proposed project during operation. These include day-to-day activities, such as recreation, lounging, gardening, sports, exercising, landscaping/irrigation, and other park-related activities. Also, the proposed project would daily generate typical park-related waste, such as landscaping/gardening debris, food, paper and plastic wrappers/products, and recyclable materials. These materials would be disposed of in on-site trash enclosures and removed for disposal. Considering these typical park activities, potential pollutants generated by the proposed project could include suspended-solid/sediments,

nutrients, heavy metals, pathogens (bacteria/virus), pesticides, oil and grease, and trash and debris, which is typical of park uses. As discussed in Section 1.4, *Project Description,* the majority of stormwater generated by the proposed project would either be captured and treated in an onsite infiltration basin or a bioretention basin without underdrain or, similar to existing conditions, percolate into pervious ground surfaces. With the use of the proposed stormwater infrastructure and typical best management practices (such as maintaining appropriate trash enclosures), the proposed project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality. Further, the proposed project would also be required to comply with applicable federal, state, and local regulations. Therefore, the proposed project would not substantially degrade water quality. Therefore, operational impacts related to water quality standards would be less than significant.

b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less than Significant Impact. According to the geotechnical study, free groundwater was encountered at depths of 18.8 feet, 19.9 feet, and 24.7 feet during borings. Historic high ground water level is estimated to be at a depth of approximately 8 feet below surface grade (John R. Byerly 2023). The geotechnical study assumed that the upper seven feet of soil would be over excavated and replaced with engineered fill and that the bottom of over excavation would be scarified to a depth of 12 inches in the area of the proposed community building and pedestrian bridge. Therefore, there is a potential that that groundwork may encounter groundwater the area of the community building and pedestrian bridge. However, as discussed above under Section (a) in this section, construction of the proposed project would be required to adhere to the SWRCB General Waste Discharge Requirements for discharges to land with a low threat to water quality and comply with DAMP which requirements implementation of BMPs. All construction work would be required to adhere to NPDES CGP and implement BMPs. With adherence with regulatory requirements, construction in this area would not substantially decrease or interfere with groundwater recharge compared to existing conditions.

Further, while the proposed project would increase the imperviousness of the project site, most of the project site would remain pervious. The proposed project does not propose groundwater wells that would extract groundwater from an aquifer, nor would the proposed project affect recharge capabilities for the basin, as there are no wetlands onsite. The proposed project would not impact the drainage channel to the north of the site. The proposed project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. As such, less than significant impact would occur.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i) Result in a substantial erosion or siltation on- or off-site?

Less Than Significant Impact. The proposed project would not alter the course of a stream or river. The proposed project includes the construction of a new pedestrian bridge over the existing stormwater channel along the northern side of the project site; however, the footings for the pedestrian bridge would

be entirely outside of the channel and the bridge would extend over the channel. Construction of the proposed project would increase the potential for erosion and siltation during construction and operation. As discussed above, the proposed project would be required to comply with the NPDES program, MS4, and DAMP requirements during construction and operation. Compliance with these regulations would ensure that substantial erosion or siltation would not occur during the construction and operation of the proposed project. The construction and operation of the proposed project would include BMPs, which would reduce runoff. Further, during operation, the proposed project would capture and treat stormwater runoff in an onsite infiltration basin or a bioretention basin without underdrain, which would maintain a portion of stormwater runoff onsite. Therefore, the proposed project would not result in substantial erosion on or offsite. Therefore, a less than significant impact would occur.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite?

Less Than Significant Impact. The project site is developed with the existing Norm Ross Sports Park and is within Zone X (FEMA Map ID # 06059C0136J) (FEMA 2009). Zone X are areas of 0.2 percent annual chance of flood, areas of 1 percent change of flood with an average depth of less than one foot or with drainage areas of less than one square mile. As such, the proposed project is not within the boundaries of a designated 100-year flood zone. As discussed in Section 1.4, *Project Description*, the proposed project would increase impervious surfaces on the project site, which could increase the amount of runoff compared to existing conditions. However, as discussed above, the proposed project would be required to comply with the NPDES program, MS4 permit, and DAMP requirements during construction and operation. Compliance with these regulations would ensure that substantial runoff would not occur during the construction and operation of the proposed project. The construction and operation of the proposed project would include BMPs, which would reduce runoff. Further, during operation, the proposed project would capture and treat stormwater runoff in an onsite infiltration basin or a bioretention basin without underdrain, which would maintain a portion of stormwater runoff onsite. Therefore, the proposed project would not substantially increase the rate or amount of surface runoff in a manner which would result in flooding. Therefore, a less than significant impact would occur.

iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. As discussed in Section 1.4, *Project Description*, the proposed project would increase impervious surfaces on the project site, which could increase the amount of runoff compared to existing conditions. However, as discussed above, the proposed project would be required to comply with the NPDES program, MS4 permit, and DAMP requirements during construction and operation. Compliance with these regulations would ensure that substantial runoff would not occur during the construction and operation of the proposed project. The construction and operation of the proposed project would include BMPs, which would reduce runoff. Further, during operation, the proposed project would capture and treat stormwater runoff in an onsite infiltration basin or a bioretention basin without underdrain. Therefore, the proposed project would not create or contribute runoff water which would

exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Therefore, a less than significant impact would occur.

iv) Impede or redirect flood flows?

Less Than Significant Impact. The project site is developed with the existing Norm Ross Sports Park and is within Zone X (FEMA Map ID # 06059C0136J) (FEMA 2009). Zone X are areas of 0.2 percent annual chance of flood, areas of 1 percent change of flood with an average depth of less than one foot or with drainage areas of less than one square mile. As such, the proposed project is not within a 100-year flood zone. The proposed project includes the construction of a new pedestrian bridge over the existing stormwater channel along the northern side of the project site; however, the footings for the pedestrian bridge would be entirely outside of the channel and the bridge would extend over the channel. Therefore, the proposed project would not interfere with water flows within the existing drainage channel. Since the likelihood of floods in the project site is low and the proposed project would not interfere with the drainage channel, the proposed project would have a less than significant impact on impeding or redirecting flood flows.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less than Significant Impact. The proposed project would not keep substantial amounts of hazards materials; potentially hazards materials (such as gasoline and fertilizer for landscaping and gardening needs and park maintenance) would be stored and handled in accordance with manufacturer instructions, which would not pose a risk to the accidental release of pollutants.

As discussed under Section 3.10(c)(iv), the project site is located within a FEMA Flood Insurance Rate Map Zone X, which has a low risk of flooding. Less than significant impact would occur. According to the Terra Geosciences report (contained in Appendix C) and based on the City of Stanton "Prado Dam Potential Inundation Areas" map, the project site is shown to be located within the flooding limits for the Prado Dam failure, which is located approximately 21 miles to the east-northeast of the project site. Additionally, the Terra Geosciences report further indicates that the project site is within the potential inundation occurring from failure of the Carbon Canyon Dam, approximately 12 miles northeast of the project site. While the project site could experience inundation due to dam failure (in extremely rare conditions), the proposed project would be required to be designed to comply with the CBC, and the project civil engineer and City engineer would require appropriate site-specific measures to reduce flood impacts to the project site. While the proposed project is expected to use small amounts of hazardous materials during construction and operation (e.g., paints, cleaners, oils, etc.), the construction and operation of the proposed project would be required to comply with applicable regulations for proper handling, usage, and storage of potentially hazardous materials (see Section 3.9, *Hazards and Hazardous Materials*). Therefore, the proposed project would not release pollutants due to project inundation. A seiche is a surface wave created when a body of water is shaken, usually by earthquake activity. Seiches are of concern relative to water storage facilities because inundation from a seiche can occur if the wave overflows a containment wall, such as the wall of a reservoir, water storage tank, dam, or other artificial body of water. Although there are no large water tanks in the area that could impact the project site, there are dams in the region that could create flooding impacts. The nearest dam to the project site is the Yorba Dam approximately

11.4 miles northeast of the project site (DWR 2023). Based on the far distance of large, open bodies of water and the elevation of the site with respect to sea level, the possibility of seiches is considered nil. No impact would occur related to seiches.

A tsunami is earthquake-induced flooding that is created from a large displacement of the ocean flood. The project site is 7.2 miles northeast of the Pacific Ocean; therefore, the likelihood of a tsunami impacting the project site is not likely. No impact would occur related to tsunami.

Given that standard BMPs will be implemented and the proposed project will adhere to proper handling and storage of hazardous materials, the proposed project would not substantially degrade water quality. As such, no impact would occur related to release of pollutants due to project inundation from flood, tsunami or seiches.

e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. The proposed project would not obstruct or conflict with the implementation of a water quality control plan or sustainable water management plan. The proposed project would comply with the water quality and use requirements of these plans, such as the DAMP, through the implementation of BMPs. Therefore, impacts would be less than significant.

3.11 LAND USE AND PLANNING

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XI. LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?				X
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

a) Physically divide an established community?

No Impact. The project site is part of an existing Early Education Center and is already developed as a joint use park. The proposed project would occur within these existing sport park boundaries and no established community would be physically divided. No impact would occur.

b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. The project site is part of an existing Early Education Center and is already developed as a joint use park. The proposed project would extend the hours used by the public per the updated

joint use agreement, but would not change the current use of the project site as a joint use park. It would rehabilitate and improve the existing park amenities. The proposed project would not require any amendments to applicable land use plan, policy, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Impacts would be less than significant.

3.12 MINERAL RESOURCES

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XII. 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?				X
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?				X

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?

No Impact. The project site is part of an existing Early Education Center and is already developed as a joint use park. The project site is not used for mineral extraction. According to the California Division of Mines and Geology the project site is within Mineral Resource Zone 4 (MRZ-4), areas where available information is inadequate for assignment to any other MRZ zone (California Division of Mines and Geology 1975). The City of Stanton is in an urban environment and does not have any zoned areas for mineral resource extraction (i.e. mining sites) (Staton 2008). Therefore, there is no known area of mineral resources within the City of Stanton. The proposed project would not change the existing recreational use of the project site and would not result in a loss of any known mineral resources. No impact would occur.

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. The City of Stanton General Plan does not designate any locally important mineral resource recovery site within the city (Stanton 2008). The project site is part of an existing Early Education Center and is already developed as a joint use park; therefore, no locally important mineral resource recovery site would be lost due to implementation of the proposed project. No impact would occur.

3.13 NOISE

Would the project result in:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIII. NOISE. Would the project result in:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
b) Generation of excessive groundborne vibration or groundborne noise levels?		X		
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X

Noise Fundamentals

Noise is defined as unwanted sound and, when over-exposed to it, is known to have several adverse effects on people, including hearing loss, speech and sleep interference, physiological responses, and annoyance. Based on these known adverse effects of noise, federal, state, and city governments have established criteria to protect public health and safety and to prevent the disruption of certain human activities, such as classroom instruction, communication, or sleep. Additional information on noise and vibration fundamentals and applicable regulations are contained in Appendix E.

Environmental Setting

The proposed project site is an existing recreational Stanton Community Garden and Norm Ross Sports Park. Single-family residences are located directly south, adjacent to the project site. Additionally, adjacent to the project site to the southeast is the Jade Palace Hotel, and approximately 43 feet to the north of the project site across the Stanton Storm Channel is Stanton Park. Carver Early Education Center bounds the project site to the west.

Existing Noise Traffic Modelling Setting

Existing traffic noise conditions were modeled using a version of the Federal Highway Administration (FHWA) RD-77-108 Highway Traffic Noise Prediction Model. Average daily traffic (ADT) was obtained from the Website provided by Caltrans. Existing 24-hour community noise equivalent levels (CNEL) at 50 feet and the distances to the 60, 65, and 70 dBA CNEL contours along State Route 39 (Beach Boulevard) from the model are tabulated in Table 10, *Existing Traffic Noise Levels*, to present existing noise levels from major roadways. Detailed calculations can be found in Appendix E.

Table 10 Existing Traffic Noise Levels

Roadway Segment	Existing ADT	CNEL at 50 feet, dBA	Distance to Noise Contour in Feet		
			70 CNEL Contour	65 CNEL Contour	60 CNEL Contour
SR 39 – south of Katella Avenue	64,600	81.3	283	610	1315

Source: Caltrans Annual Average Daily Traffic, 2019.

The edge of the project site to the centerline of State Route 39 (Beach Boulevard) is approximately 280 feet west with the furthest edge of the project site from the centerline being approximately 687 feet west. Therefore, residences adjacent to the project site as well as the project site itself, without considering any natural or manmade obstruction, would face noise levels of approximately 64.0 to 70.99 dBA CNEL as they approach closer to Beach Boulevard. The Jade Palace Hotel is within the 70 dBA CNEL contour of SR-39.

Ambient Noise Monitoring

Short Term

To determine a baseline noise level at different environments within the project area, ambient noise monitoring was conducted in the vicinity of Norm Ross and Stanton Park. Staff conducted noise monitoring at a nearby neighborhoods of the project site on June 6, 2023. Noise measurements consisted of three short-term (15-minute each) measurements at representative noise-sensitive receiver locations.

The primary noise source at all measurement locations is traffic or park activity. Urban, school, and residential activity (such as barking dogs, car doors shutting, and conversations of passersby) also contributed to the overall noise environment. Meteorological conditions during the measurement periods were favorable for outdoor sound measurements and were noted to be representative of the typical conditions for the season. Generally, conditions included clear skies with temperatures varying between 78-85 degrees Fahrenheit (°F) with winds ranging between 3 and 6 miles per hour (mph). The sound level meter was equipped with a windscreen during all measurements.

The short-term sound level meter used (Larson Davis LxT) for noise monitoring satisfies the American National Standards Institute standard for Type 1 instrumentation. The short-term sound level meter was set to "slow" response and "A" weighting (dBA). The meter was calibrated prior to and after each monitoring period. All measurements were at 5 feet above the ground and away from reflective surfaces. Short-term measurement locations are described below and shown in Figure 8, *Approximate Noise Monitoring Locations,* and results are summarized in Table 11*, Short-Term Noise Measurements Summary in A-weighted Sound Levels*.

- **Short-Term Location 1 (ST-1)** was conducted in the parking lot in front of Stanton Park behind the Food 4 Less. A 15-minute noise measurement began at 12:06 PM on Tuesday, June 6, 2023. The noise environment is characterized primarily by cars passing by as well as children playing within Stanton Park.

- **Short-Term Location 2 (ST-2)** was next to 7901 Ruthann Avenue (residence). A 15-minute noise measurement began at 12:51 PM on Tuesday, June 6, 2023. The noise environment is characterized

primarily by residential noise and bird chirping activity within the neighborhood and traffic along Beach Boulevard.

- **Short-Term Location 3 (ST-3)** was in front of 11226 Ale Lane (residence). A 15-minute noise measurement began at 1:13 PM on Tuesday, June 6, 2023. The noise environment is characterized primarily by cars passing by.

Table 11 Short-Term Noise Measurements Summary in A-weighted Sound Levels

Monitoring Location	Description	15-minute Noise Level, dBA						
		L_{eq}	L_{max}	L_{min}	L50	L25	L8	L2
ST-1	Located in the Stanton Park - Parking Lot behind the Food 4 Less 6/06/2023, 12:06 PM	53.4	94.0	45.8	52.6	54.4	58.4	67.5
ST-2	Next to 7901 Ruthann Avenue (residence) 6/06/2023, 12:51 PM	54.1	65.5	47.6	52.9	54.3	56.6	60.8
ST-3	Next to 11226 Ale Lane (residence) 6/06/2023, 1:13 PM	51.7	74.0	45.0	50.0	51.4	53.4	55.2

Sensitive Receptors

Certain land uses are particularly sensitive to noise and vibration. These uses include residences, schools, hospital facilities, houses of worship, and open space/recreation areas where quiet environments are necessary for the enjoyment, public health, and safety of the community. The nearest sensitive receptors to the project site include the Stanton Park located 43 feet north, the single-family residences located directly adjacent to the project site immediately to the south, and the Jade Palace Hotel which is located immediately to the southeast of the project site. Additionally, to the immediate west of the project site is the Carver Early Education Center.

Applicable Standards

California Building Code

The State of California's noise insulation standards for non-residential uses are codified in the California Code of Regulations, Title 24, Building Standards Administrative Code, Part 11, CALGreen. CALGreen noise standards are applied to new or renovation construction projects in California to control interior noise levels resulting from exterior noise sources. Proposed projects may use either the prescriptive method (Section 5.507.4.1) or the performance method (Section 5.507.4.2) to show compliance. Under the prescriptive method, a project must demonstrate transmission loss ratings for the wall and roof-ceiling assemblies and exterior windows when located within a noise environment of 65 dBA CNEL or higher. Under the performance method, a project must demonstrate that interior noise levels do not exceed 50 dBA Leq(1hr).

City of Stanton Municipal Code

Exterior/Stationary Noise Standards

Stationary sources of noise are governed under Stanton Municipal Code, Chapter 9.28, Noise Control (Stanton 2023b). Section 9.28.050 states that no person shall, within the City, create any sound, radiated for extended periods from any premises which produces a sound pressure level at any point on the property in excess of 55 dBA from the hours of 7:00 a.m. to 10:00 p.m. and 50 dBA from the hours of 10:00 p.m. to 7:00 a.m. to any residential property. Section 9.28.070 of the municipal code also exempts certain noise sources from the provisions of this code, including activities conducted on any park or playground if it is a publicly owned entity, sound created by emergency activities and sound created by governmental units, and noise from temporary construction, repair, or demolition from this chapter's noise standards between the hours of 7:00 am and 8:00 pm. Section 9.28.080 states it is unlawful for any person to create any noise that would cause noise levels to exceed noise levels standards in 9.28.050 which are applied to residences to also now be applied to nearby schools, churches, and hospitals when they are in use.

Vibration

The City of Stanton does not have specific limits or thresholds for vibration. The Federal Transit Administration (FTA) provides criteria for acceptable levels of ground-borne vibration for various types of buildings. The FTA criteria were utilized for this analysis. Structures that amplify groundborne vibration and wood-frame buildings, such as typical residential structures, are more affected by ground vibration than heavier buildings. 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, shown in Table 12, *Groundborne Vibration Criteria*.

Table 12 Groundborne Vibration Criteria

	Building Category	PPV (in/sec)
I.	Reinforced concrete, steel, or timber (no plaster)	0.5
II.	Engineered concrete and masonry (no plaster)	0.3
III.	Nonengineered timber and masonry buildings	0.2
IV.	Buildings extremely susceptible to vibration damage	0.12

Source: FTA 2018.
PPV = peak particle velocity

Federal Transit Administration

The City of Stanton does not have a quantified threshold for temporary construction noise. Therefore, to determine impact significance, the FTA criterion of 80 dBA L_{eq} for daytime residential uses is used in this analysis.

Figure 8 - Approximate Noise Monitoring Locations

Project Boundary

ST-X Short-Term Noise Measurement Locations (3)

0 170
Scale (Feet)

Source: NearMap 2023.

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3. Environmental Analysis

Would the project result in:

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

Less Than Significant Impact. Following is a discussion of the temporary and permanent noise impacts as a result of the proposed project's construction and operational phases.

Construction Noise

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 on the project site.

Construction Vehicles

The transport of workers and materials to and from the construction site would incrementally increase noise levels along site access roadways. Individual construction vehicle pass-bys may create momentary noise levels of up to approximately 85 dBA L_{max} at 50 feet from the worker and vendor vehicles. However, these occurrences would generally be infrequent and lasting only a short period of time.

Worker and vendor trips would total a maximum of approximately 97 daily trips and a total of 2 haul trips during overlapping construction activity phases. Site access would be through Ruthann Avenue, which currently has an existing ADT volume of more than 2,000. The addition of 99 daily construction trips would result in a temporary noise increase of 0.2 dBA CNEL or less, which would not be substantial nor permanent. The proposed project would limit construction vehicles traversing residential streets to the extent feasible, to limit the disturbances to nearby residential uses. Therefore, construction-vehicle noise impacts would be considered less than significant, and no mitigation measures are necessary.

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 equipment. The dominant equipment noise source is typically 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 while accounting for the ongoing time-variations of noise emissions. Heavy equipment, such as a dozer or a loader, can have maximum, short-duration noise levels of up to 85 dBA L_{max} at 50 feet. However, overall noise emissions vary considerably, depending on the specific activity performed at any given moment. 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 receptor. Since noise from construction equipment is intermittent and

diminishes at a rate of at least 6 dBA per doubling of distance (conservatively ignoring other attenuation effects from air absorption, ground effects, and shielding effects), the average noise levels at noise-sensitive receptors could vary considerably, because mobile construction equipment would move around the project site with different loads and power requirements.

On-site Construction Noise

Average noise levels from project-related construction activities are calculated by modeling the three loudest pieces of equipment per activity phase. Equipment for grading, site preparation, and demolition is modeled at spatially averaged distances (i.e., from the acoustical center of the general construction site to the property line of the nearest receptors) because the area around the center of construction activities best represents the potential average construction-related noise levels at the various off-site sensitive receptors for mobile equipment. Similarly, construction noise from paving activities is modeled from the center of proposed hardcourt areas. Construction equipment for building construction and architectural coating is modeled from the edge of the proposed building to the nearest sensitive receptors. Lastly, finishing and landscaping finishing could occur throughout the project site, and so it is measured from the center of the project site.

The proposed project's expected construction equipment mix was categorized by construction activity using the FHWA Roadway Construction Noise Model (RCNM). The associated, aggregate sound levels—grouped by construction activity—are summarized in Table 13, *Project-Related Construction Noise, dBA Leq*. RCNM modeling input and output worksheets are included in Appendix E.

As shown in Table 13, on-site construction-related noise levels would not exceed the 80 dBA L_{eq} threshold at the nearest off-site sensitive receptors. Therefore, construction-equipment noise impacts would be considered less than significant.

Table 13 Project-Related Construction Noise, dBA Leq

Construction Activity Phase	RCNM Reference Noise Level	Residence at 35 Juniper Court	Jade Palace Motel to the east at 11231 Beach Boulevard	Residence at 7872 Ruthann Avenue	Residence at 11205 Mario Lane
Distance in feet	50	710	260	225	540

3. Environmental Analysis

Table 13 Project-Related Construction Noise, dBA Leq

Construction Activity Phase	RCNM Reference Noise Level	Residence at 35 Juniper Court	Jade Palace Motel to the east at 11231 Beach Boulevard	Residence at 7872 Ruthann Avenue	Residence at 11205 Mario Lane
Demolition	85	62	71	72	64
Site Preparation	83	60	69	70	62
Rough Grading	85	62	71	72	64
Distance in feet	50	470	420	350	510
Building Construction	83	64	65	66	63
Architectural Coating	74	55	56	57	54
Distance in feet	50	570	410	320	500
Paving	85	64	67	69	65
Distance in feet	50	710	260	225	540
Finish and Landscaping	77	54	63	64	56
Utility Trenching	82	59	68	69	61
Maximum dBA Leq		**64**	**71**	**72**	**65**
Exceed 80 Leq dBA Threshold?		**No**	**No**	**No**	**No**

Notes: Calculations performed with the FHWA RCNM software are included in Appendix E.

Operational Noise

Mobile Noise

A project will normally have a significant effect on the environment related to noise if it substantially increases the ambient noise levels for adjoining areas. Most people can detect changes in sound levels of approximately 3 dBA under normal, quiet conditions, and changes of 1 to 3 dBA under quiet, controlled conditions. Changes of less than 1 dBA are usually indiscernible. A change of 5 dBA is readily discernible to most people in an outdoor environment. Noise levels above 65 dBA CNEL are normally unacceptable at sensitive receptor locations such as residences, and noise environments in these areas would be considered degraded. Based on this, a significant impact would occur if the following traffic noise increases occur relative to the existing noise environment:

- For project-related traffic noise, the proposed project causes the ambient noise levels measured at the property line of affected uses to increase by 3 dBA to or within the "normally unacceptable" or "clearly unacceptable" categories; or

- The proposed project causes the ambient noise levels measured at the property line of affected uses to increase by 5 dBA or more within the "normally acceptable" or "conditionally acceptable" categories.

ADT was provided by Garland Associates (2023) for two roadways which include Beach Boulevard and Katella Avenue. ADT data provided existing, existing plus project, future, and future plus project. Modelling for the four scenarios as shown in Table 14, *Project Net Traffic Noise Increases*, the noise increase from the proposed project would result in less than one dBA increase in existing and future conditions. A 1 dBA increase as stated before is barely perceptible as the human ear can only detect changes at 3 dBA or more in an outdoor

environment. Therefore, impacts related to traffic increase from the proposed project would be less than significant.

Table 14 Project Net Traffic Noise Increases

Roadway Segment	Average Daily Traffic Volumes				dBA CNEL Increase		
	Existing No Project	Existing Plus Project	Future No Project	Future Plus Project	Project Noise Increase	Cumulative Increase	Project Cumulative Contribution
Beach Boulevard - North of Katella Avenue	66,000	66,104	66,700	66,804	0.01	0.05	0.01
Beach Boulevard - South of Katella Avenue to Park Exit	66,000	66,208	66,700	66,908	0.01	0.06	0.01
Beach Boulevard - South of Park Exit to U-turn	66,000	66,415	66,700	67,115	0.03	0.07	0.03
Beach Boulevard - North of Orangewood Avenue	66,000	66,104	66,700	66,804	0.01	0.05	0.01
Katella Avenue - West of Cedar Street	31,200	31,304	31,500	31,604	0.01	0.06	0.01
Katella Avenue - Cedar Street to Beach Boulevard	31,200	31,408	31,500	31,708	0.03	0.07	0.03
Katella Avenue - East of Beach Boulevard	25,000	25,104	31,500	31,604	0.02	1.02	0.01

Source: Garland Associates 2023

Mechanical Equipment Noise

Heating, ventilation, and air conditioning (HVAC) systems are anticipated to be installed on the roof of the proposed building. The nearest sensitive receptor property line to the new proposed community building is approximately 360 feet to the south. Typical HVAC equipment generates noise levels ranging up to 72 dBA at distance of 3 feet. At a distance of 360 feet from the proposed building, noise levels would attenuate to 30 dBA and would, therefore, not exceed the City of Stanton's stationary noise standard of 55 dBA or 50 dBA at daytime or nighttime hours, respectively. Therefore, impacts would be less than significant impact and no mitigation measures are necessary.

Outdoor Recreational Noise

The proposed project includes reconfiguration of the existing community garden and the little league baseball field. The proposed project would include new hardcourts and dog park on the northern portion of the project site, and a new playground on the northwest portion (see Figure 4, *Proposed Site Plan*).

Outdoor recreational noise that characterizes the area includes the community gardens uses on-site, and surrounding playfields/hardcourts at Carver Early Education Center and Stanton Park to the west and the north, respectively. . Reconfiguration of existing outdoor recreational spaces under the proposed project would not result in a significant noise increase above existing conditions. However, the basketball court and the little league baseball field would include field lighting which would mean these areas would potentially operate into the nighttime hours.

Reference noise measurements were conducted in the past to record noise levels from typical outdoor activities. A baseball/softball game typically produces noise levels of 52 dBA L_{eq} at 72 feet, and a basketball game produces 60 dBA L_{eq} at 20 feet. Therefore, when measuring from the edge of the basketball court to the nearest

residences approximately 330 feet to the south, noise levels would approach 35 dBA L_{eq}. Thus, noise associated with the basketball court would be below the City of Stanton's 55 dBA L_{eq} daytime threshold and nighttime 50 dBA L_{eq} threshold at the nearest off-site residences. When measuring noise level at the proposed batting area of the little league field to the nearest residence approximately 85 feet to the south, noise levels would approach up to 55 dBA L_{eq}. This would meet the City of Stanton daytime stationary threshold of 55 dBA L_{eq} but would exceed the nighttime threshold of 50 dBA L_{eq}. However, the residences to the south have a 6-foot-high backyard wall abutting the property boundary, and the proposed project would replace the southern wall with a 8-foot high CMU wall to the south and the east; typically, an 8foot-high wall provides a 6 dBA reduction. Therefore, the actual exterior noise the residents to the south may experience from the baseball field is 49 dBA L_{eq} and 29 dBA L_{eq} from the basketball court. Therefore, the operation of the proposed park would be below the City of Stanton's stationary noise threshold of 55 dBA L_{eq} for daytime and 50 dBA L_{eq} for nighttime noise sources.

b) Generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact With Mitigation Incorporated.

Construction Vibration

Construction operations can generate varying degrees of ground vibration, depending on the construction procedures and equipment. The operation of construction equipment generates vibrations that spread through the ground and diminish with distance from the source. The effect on buildings in the vicinity of the construction site varies depending on soil type, ground strata, and receptor-building construction. The effects from vibration can range from no perceptible effects at the lowest vibration levels to low rumbling sounds and perceptible vibrations at moderate levels, to slight structural damage at the highest levels. Vibration from construction activities rarely reaches the levels that can damage structures.

For reference, a vibration level of 0.20 in/sec peak velocity (PPV) is used as the limit for non-engineered timber and masonry buildings, which would conservatively apply to the surrounding residential structures, and the 0.30 in/sec PPV is used as the limit for engineered concrete and masonry structures which will apply to the surrounding commercial buildings (FTA 2018). To determine potential vibration-induced architectural damage, the distance from the vibration source (construction equipment) to the vibration-sensitive structures is measured from the edge of the construction site to the nearest building façade. Vibration-induced architectural damage is assessed in terms of PPV. As shown in Table 15, *Vibration Damage levels for Typical Construction Equipment,* PPV levels for typical construction equipment would not exceed the 0.20 in/sec PPV standard at the nearest residences to the south of the project site. However, the 0.30 in/sec PPV threshold for commercial buildings would be exceeded for the commercial building approximately 10 feet to the east. At that distance, a vibratory roller and a large bulldozer would exceed the applicable threshold. However, with the incorporation of mitigation measure N-1, vibration impacts would be below the applicable threshold, and vibration damage impacts would be reduced to less than significant.

Table 15 Vibration Damage Levels for Typical Construction Equipment

Equipment	PPV (in/sec)				
	FTA Reference at 25 feet	Commercial Building to the North at 50 feet	Commercial Building to the East at 10 feet	Residence to the South at 30 feet	Institutional Building to the West at 50 feet
Vibratory Roller	0.21	0.074	0.830	0.160	0.074
Static Roller	0.05	0.018	0.198	0.038	0.018
Large Bulldozer	0.089	0.031	0.352	0.068	0.031
Loaded Trucks	0.076	0.027	0.300	0.058	0.027
Jackhammer	0.035	0.012	0.138	0.027	0.012
Small Bulldozer	0.003	0.001	0.012	0.002	0.001

Sources: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual,* September 2018.
NA= Not Applicable
Bold = Threshold exceedance

Implementation of Mitigation Measure N-1 would reduce project-related construction vibration impacts to the surrounding structures to a less than significant level. Specifically, alternative gravel compaction methods and the use of a static roller would reduce vibration levels associated with paving. A static roller is estimated to generate vibration levels of approximately 0.05 in/sec PPV at a distance of 25 feet (New Zealand Transport Agency 2012). Earthwork equipment used for grading shall be limited to equipment with 100 horsepower or less as detailed in Mitigation Measure N-1. With incorporation of Mitigation Measure N-1, the proposed projects construction groundborne vibration and groundborne noise levels shall be reduced to a less than significant impact with mitigation incorporated.

Mitigation Measure:

N-1 The City and its construction contractor shall implement the following measures during all ground-disturbing activities:

- Vibratory compaction that is within 10 to 25 feet of any surrounding structure shall be conducted with the use of a static roller in lieu of a vibratory roller. At a distance greater than 25 feet, a vibratory roller would no longer exceed 0.20 inches per second (in/sec) peak particle velocity PPV and would be allowed for use. Therefore, a static roller shall be used within 25 feet where levels would be reduced to 0.20 in/sec PPV or less and mitigate vibration damage.

- Paving activities within 10 feet of a structure shall employ self-compacting pea gravel for the base and a concrete finish as to not require vibratory compaction.

- Demolitions activities within 10 feet of adjacent structures shall be conducted with off-road equipment that is limited to 100 horsepower or less and the use of small dozer/tractor is to be used in lieu of a larger dozer.

Vibration Annoyance

Groundborne vibration is rarely annoying to people who are outdoors, so it is usually evaluated in terms of indoor receivers. For annoyance, vibration is typically noticed nearby when objects in a building generate noise from rattling windows or picture frames. Since construction activities are distributed throughout the project site, vibration annoyance impacts are typically based on average vibration levels (levels that would be experienced by sensitive receptors most of the time). Unlike vibration damage where exceedance of thresholds is measured from the edge of the project site; vibration annoyance is measured from the center of the project site to the nearest sensitive receptor (residences) in order to determine if the project would cause long term annoyance. For vibration annoyance the FTA set forth a vibration limit of 72 velocity decibels (VdB) as the max threshold for daily events at a residence. As shown in the modeling which can be found in Appendix E, the nearest residence is approximately 240 feet to the south from the center of the existing Norm Ross Park. At that distance, the vibration annoyance levels would range anywhere from 28.5 up to 64.5 VdB. This represents a highly conservative calculation, as the southern area closest to the residences would remain largely untouched except for new walking paths, landscaping, and field light installation. Therefore, vibration annoyance thresholds would be below those set forth by the FTA and would be considered less than significant.

Operational Vibration

The proposed project is not the type of project that would generate extensive vibration (such as certain industrial uses or result in an installation or increased usage of railroads). The operation of the proposed project would not include any substantial long-term vibration sources. Further, any minor vibrations, such as walking, would quickly dissipate and would not expand beyond the project site. Thus, no significant vibration impacts from operation of the proposed project would occur.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The nearest public airport to the project site is Fullerton Municipal Airport, approximately 4.8 miles to the northeast. Additionally, the nearest private airstrip is the Los Alamitos Army Airfield which is located approximately 2.15 miles to the west of the project site. The proposed project would not expose people residing or working in the project area to excessive aircraft noise levels. Therefore, no impact would occur, and no mitigation measures are necessary.

3.14 POPULATION AND HOUSING

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIV. POPULATION AND HOUSING. Would the project:				
a) Induce substantial unplanned 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)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

a) Induce substantial unplanned 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. The proposed project would redevelop an existing joint-use sports park in an urbanized area. The project site is already served with roads and other infrastructure. The proposed project would serve the existing population in Stanton and would not induce substantial unplanned population growth in the area directly or indirectly. No impact would occur.

b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The proposed project would redevelop the existing joint-use sports park in an urbanized area. No housing or people would be displaced, and no replacement housing construction would be necessary. No impact would occur.

3.15 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:

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Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XV. PUBLIC SERVICES. Would the project:				
a) 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:				
Fire protection?			X	
Police protection?			X	
Schools?			X	
Parks?			X	
Other public facilities?			X	

Service informational request letters and questionnaires were mailed to Orange County Fire Authority (OCFA) and Orange County Sheriff's Department (OCSD) on January 5, 2024. No responses were received.

a) Fire protection?

Less Than Significant Impact. Fire protection and emergency medical services are provided to the City by the OCFA. The City is served by one fire station, which is Station 46 at 7871 Pacific Street, approximately 0.7 miles north of the project site. Daily staffing of Station 46 includes one fire captain, one fire apparatus engineer, and three firefighters. Total staffing of Station 46 includes 15 firefighters. Station 46 has one fire engine and one medical apparatus (OCFA 2023).

As discussed in Section 3.14(a), the proposed project would not directly or indirectly increase population within the City of Station. The proposed project would serve existing populations of the City. However, since the project site is currently closed and not in use (except for the community garden), the proposed project could result in a slight increase in calls for fire protection and emergency medical service at the project site due to the increase of people onsite. Nevertheless, since the proposed project would not affect population growth in the city, the proposed project's demand for fire protection services would be within OCFA Station 46's existing service capacity. Further, the proposed project would maintain the existing fire access point on the southeast corner of the project site off of Ruthann Avenue. Emergency access can also be provided from the parking lot on in Stanton Park. Development of the proposed project is required to comply with the most current adopted fire codes, building codes, and nationally recognized fire and life safety standards, which impose design standards and requirements that seek to minimize and mitigate fire risk. As part of the project design review process, OCFA and DSA would review and approve project plans to ensure adequate fire access. Therefore, since proposed project is not a growth-inducing project, and it would not adversely affect OCFA's ability to provide adequate service nor require new or expanded fire facilities that could result in adverse environmental impacts, impacts would be less than significant.

b) Police protection?

Less Than Significant Impact. The OCSD has provided police protection services to the City of Stanton since 1988. The OCSD Stanton Station is located at 11100 Cedar Street in the City of Stanton, approximately 0.1 mile north of the project site (OCSD 2023). Stanton Station is equipped with five sergeants, 20 patrol deputies, one motor deputy, two deputies assigned to the City's Community Enhancement Team, two investigators, two investigative assistants, two office specialists, and a part time cadet. Community programs provided by the Stanton Station include gang reduction and intervention partnership program, neighborhood watch, business watch, homeless outreach and community events. The OCSD also provides street and regional narcotics suppression programs, a gang enforcement team, a mounted unit, a special weapons and tactics team, the hazardous devices squad, hostage negotiations, numerous special investigation units, helicopter patrols, the "drug use is life abuse" drug education program, Stanton sheriff's explorers, and a large complement of professional service and patrol trained reserve deputy sheriffs that are available to serve the City (OCSD 2023).

The project site is within the boundaries of the existing Carver Early Education Center and currently is developed as a sports complex that is not currently in use with the exception of the community garden. As discussed in Section 3.14(a), the proposed project would not directly or indirectly increase population within the City of Station. The proposed project would serve existing populations of the City. However, since the project site is currently closed and not in use (except for the community garden), the proposed project could result in a slight increase in calls for police protection services at the project site due to the increase of people onsite. Nevertheless, since the proposed project would not affect population growth in the city, the proposed project's demand for police protection services would be within Stanton Station's existing service capacity. Therefore, since proposed project is not a growth-inducing project, and it would not adversely affect OCSD's ability to provide adequate service nor require new or expanded police facilities that could result in adverse environmental impacts, impacts would be less than significant.

c) Schools?

Less Than Significant Impact. As discussed in Section 3.14(a), the proposed project would not directly or indirectly increase population within the City of Station. As such, the proposed project would not increase the demand for schools and would not require construction of new or expanded school facilities. The proposed project is a joint-use park on the Garden Grove USD's Carver Early Childhood Center property. The project site has been used as a joint use sports park since the agreement was signed in 1983. The project site has been closed and is not currently in use. The proposed project would not impact the existing operation of the Carver Early Childhood Center and would not increase or otherwise impact demand for school services. The proposed project would not induce population growth in the area, either directly or indirectly. The proposed project would be a benefit to the city residents and students. Therefore, impacts would be less than significant.

d) Parks?

Less Than Significant Impact. Demand for parks and recreational facilities in an area are usually determined by the area's population. The proposed project does not include the development of new homes, which typically results in the need for additional park and recreational amenities. The proposed project would provide necessary improvements to the existing Norm Ross Sports Park which has not been in use due to its dilapidated condition.

The proposed project would not create demands for parks, but instead provide and improve amenities. Physical impacts from development of the proposed project are addressed in this IS/MND, and no additional impacts beyond what is addressed in this IS/MND would occur. Impacts would be less than significant.

e) Other public facilities?

Less than Significant Impact. Physical impacts to public services are usually associated with population in-migration and growth, which increase the demand for public services and facilities. As discussed in Section 3.14(a), the proposed project would not directly or indirectly increase population within the City of Station. The project would not result in impacts associated with the provision of other new or physically altered public facilities (e.g., libraries, hospitals, childcare, teen or senior centers). The project would not induce population growth. Less than significant impacts to other public facilities would occur.

3.16 RECREATION

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI. RECREATION.				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			X	
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?			X	

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated?

Less Than Significant Impact. Demand for parks and recreational facilities in an area are usually determined by the area's population. As stated in Section 3.14(a), the proposed project does not include the development of new homes and would not generate population growth, which typically result in the need for additional park and recreation facilities. The project site, which is currently developed with the Norm Ross Sports Park is closed and not currently in use with the exception of the community garden. The existing Norm Ross Sports Park is on the Carver Early Education Center property and operates under a joint-use agreement with the City of Stanton. The proposed project would continue to have a joint-use agreement between both agencies, and with development of the proposed project, the project site would be reopened for general use. Therefore, since the proposed project would not induce population growth, the proposed project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that physical deterioration of the facility would occur. The proposed project would be beneficial for the existing neighborhood recreational facilities by increasing park amenities in the area. Therefore, impacts would be less than significant.

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 Impact. As discussed under Threshold 3.16(a), above, the proposed project involves the redevelopment of a joint-use park to serve the existing community. The environmental effects associated with construction and operation of the proposed project are evaluated throughout this IS/MND. The proposed project would not result in physical environmental impacts to other recreational facilities. Therefore, impacts would be less than significant.

3.17 TRANSPORTATION

The analysis in this section is based in part on the following technical studies, included as Appendix F to this IS/MND:

- *Traffic/Transportation Analysis, For the proposed Norm Ross Sports Park Improvement Project,* Garland Associates., December, 2023

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVII. TRANSPORTATION. Would the project:				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d) Result in inadequate emergency access?				X

Street, Sidewalk and Crosswalk Networks

The streets that provide access to the park site include Katella Avenue, Beach Boulevard, Cedar Street, and Ruthann Avenue. The following paragraphs provide a brief description of the characteristics of these streets.

Street Network

Katella Avenue

Katella Avenue is a six lane east-west arterial street located approximately 800 feet north of the park site. It has sidewalks on both sides of the street and parking is prohibited on both sides of the street in the vicinity of the project site. Katella Avenue is a divided highway with raised medians. Access to the park site is provided from Katella Avenue via Cedar Street. The speed limit on Katella Avenue is 45 miles per hour (mph).

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Beach Boulevard/State Route 39

Beach Boulevard/State Route 39 is an eight lane north-south arterial street located approximately 200 feet east of the park site. It has sidewalks on both sides of the street and parking is prohibited on both sides of the street in the vicinity of the project site. Beach Boulevard is a divided highway with raised medians. Egress from the parking lot on the north side of the park site is provided on Beach Boulevard. The speed limit on Beach Boulevard is 45 mph.

Cedar Street

Cedar Street is a two lane north-south street that provides a link between Katella Avenue and the parking lot on the north side of the project site. It has sidewalks on both sides of the street and parking is provided on the west side of the street. The speed limit on Cedar Street is 25 mph.

Ruthann Avenue

Ruthann Avenue is a two lane east-west local residential street located approximately 60 feet south of the park site. It has sidewalks and parking on both sides of the street. A gated emergency access driveway is provided from Ruthann Avenue to the park on the southeast corner of the project site. The speed limit on Ruthann Avenue is 25 mph.

Intersections Near the Park Site

The intersections that are near the park site and the types of traffic control at each intersection are shown in Table 16, *Intersections near the Project Site*. The locations of the existing crosswalks are also shown. The crosswalks at the signalized intersections are equipped with pedestrian push buttons and pedestrian WALK signals.

Table 16 Intersections near the Project Site

Intersection	Traffic Control	Crosswalks
Beach Boulevard at Katella Avenue	Traffic Signal	On All Four Sides
Katella Avenue at Rose Street	Traff Signal	On North & East Sides
Katella Avenue at Cedar Street	Traffic Signal	On East & South Sides
Cedar Street at Parking Garage North Driveway	3-Way Stop Signs	On South & West Sides
Cedar Street at Parking Garage North Driveway	Stop Sign at Driveway Exit	On West Side at Driveway

Sources: Garland Associates, 2023 (See Appendix E)

Bike Lanes

There are no marked bike lanes on the streets in the immediate vicinity of the project site. Bike racks are provided at the Stanton City Hall on the west side of Cedar Street and at the Stanton Branch of the Orange County Library on the east side of Cedar Street.

Public Transportation

OCTA operates Routes 29, 29A, and 529 on Beach Boulevard. Routes 29 and 29A run from Huntington Beach to La Habra. Route 529 is a weekday-only express bus that runs from Huntington Beach to Fullerton. These bus routes have northbound and southbound bus stops at Katella Avenue. OCTA also operates Route 50 on Katella Avenue. It runs from Long Beach to Orange and has eastbound and westbound bus stops at Beach Boulevard and Cedar Street. These bus routes offer a convenient public transportation option for patrons of the park.

a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Less Than Significant Impact.

Construction

Construction of the project would entail large construction equipment, transportation of equipment to and from the project site, and worker vehicles. Construction vehicles would access the project site from the existing driveway on Ruthann Avenue. Construction work and vehicle on and to the project site would be temporary, and all construction activity and staging areas would be on the project site. Therefore, the proposed project would not obstruct traffic lanes and would not conflict with the circulation system. A less than significant impact would occur during construction.

Operation

Project Generated Vehicle Trips

The volumes of traffic expected to be generated by the proposed sports park were determined in order to estimate the impacts of the project on the study area streets. Table 17, *Project-Generated Traffic*, shows the

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estimated volumes of project generated traffic for the morning and afternoon peak hours and for an entire day and shows the anticipated traffic volumes for three scenarios: a weekday during non-summer times of the year when there would be two little league games on a given day, a weekday during the summer months when there would be four games per day, and a Saturday when there would be five games per day. The trip generation rates for the park are from the Institute of Transportation Engineers Trip Generation Manual (2021). The trip rates for the little league games are based on the assumption that each team will have 15 players and two coaches and that each of them will travel to and from the sports park in a single vehicle (with players driven by parents). It is highly likely that there would be multiple players traveling in many of the vehicles, which would reduce the traffic volumes shown in the table. The numbers shown in the table, therefore, represent a worst-case scenario.

Table 17 shows the anticipated traffic volumes for three scenarios: a weekday during non-summer times of the year when there would be two little league games on a given day, a weekday during the summer months when there would be four games per day, and a Saturday when there would be five games per day.

Table 17 Project-Generated Traffic

Land Use	AM Peak Hour			PM Peak Hour			Daily Traffic
	Total	In	Out	Total	In	Out	
Trip Generation Rates							
Public Park (trips per acre)	4.50	59%	41%	3.50	55%	45%	34.0
Little League Baseball (trips per player and coach per game)	0	0	0	2	1	1	2
Generated Traffic Volumes							
Public Park – 4.2 acres	19	11	8	15	8	7	143
Baseball – Weekday Non-Summer (2 games, 15 players & 2 coaches per team = 60 players & 8 coaches per day)	0	0	0	68	34	34	136
Baseball – Weekday Summer (4 games, 15 players & 2 coaches per team = 120 players & 16 coaches per day)	0	0	0	68	34	34	272
Baseball – Saturday (5 games, 15 players & 2 coaches per team = 150 players & 20 coaches per day)	0	0	0	68	34	34	340
TOTAL – Park + Baseball							
Weekday Non-Summer	19	11	8	83	42	41	279
Weekday Summer	19	11	8	83	42	41	415
Saturday	19	11	8	83	42	41	483

NOTE: The trip generation rates for little league baseball are based on the worst-case assumption that each player will be driven to the park in a separate vehicle by parents. The PM peak hour traffic volumes for the baseball games involves two teams arriving and two teams departing during the one-hour period.
Sources: Garland Associates, 2023 (See Appendix E)

Table 17 indicates that the public park (exclusive of the baseball games) would generate an estimated 19 vehicle trips during the morning peak hour (11 inbound and 8 outbound), 15 trips during the afternoon peak hour (8 inbound and 7 outbound), and approximately 143 vehicle trips per day. On weekdays when little league baseball games would occur, the project site would generate an estimated 83 trips during the afternoon peak hour (42 inbound and 41 outbound). This level of project generated traffic is applicable to non-summer and summer times of year as well as Saturdays. The morning peak hour would remain unchanged and would only involve

park traffic because little league games would not occur at that time of day. Table 17 indicates that the proposed project would generate 279 daily trips on non-summer weekdays, 415 daily trips on a summer weekday, and 483 daily trips on a Saturday.

It should be noted that the traffic volumes shown in Table 17 do not necessarily introduce new traffic to the overall roadway network but instead represent the traffic that would be re-directed to the project site from other existing parks, because the little league games take place at other locations in the Stanton area. Most of the baseball-related traffic would be traveling on the roadway network regardless of the proposed project. It has been assumed for the traffic analysis, however, that the additional site-generated traffic would be new traffic on the roadway network.

To quantify the increases in traffic volumes on each of the most-directly affected arterial streets resulting from the proposed project, the project generated traffic was geographically distributed onto the street network using directional percentages that are based on the layout of the street network, the existing traffic patterns, and the anticipated geographical distribution of the patrons of the park facilities.

Table 18, *Project Impacts on Daily Traffic Volumes*, shows the existing and projected daily traffic volumes on various segments of Beach Boulevard and Katella Avenue. The table shows the existing traffic volume, the anticipated volume of project generated traffic, the "existing plus project" traffic volume, the projected future traffic volume for the year 2024 (without the project), and the "future with project" traffic volume for each street segment.

Table 18 Project Impacts on Daily Traffic Volumes

Street Segment	Existing ADT	Project Traffic	Existing + Project	Future with Project
Beach Boulevard				
North of Katella Avenue	66,000	104	66,104	66,808
South of Katella Avenue to Park Exit	66,000	208	66,208	66,908
South of Park Exit to U-Turn	66,000	415	66,415	67,115
North of Orange wood Avenue	66,000	104	66,104	66,804
Katella Avenue				
West of Cedar Street	31,200	104	31,304	31,604
Cedar Street to Beach Boulevard	31,200	208	31,408	31,708
East of Beach Boulevard	25,000	104	25,104	31,604

Sources: Garland Associates, 2023 (See Appendix E)

Table 18 indicates that the increases in daily traffic volumes generated by the proposed park would be negligible compared to the existing and projected traffic volumes on Beach Boulevard and Katella Avenue. The proposed project would not generate an inefficient transportation network. The proposed project would support Stanton General Plan Goal ICS-1.1, "Provide an efficient, coherent, and well-maintained transportation network that supports the General plan Land Use Concept."

Further, the proposed project would support Goal ICS-1.2, "Encourage alternatives to the private automobile by increasing access and opportunities to public transit, as well as to other alternative modes of transportation,

such as biking and walking" (Stanton 2008). The proposed project would bring greater efficiency to the existing transportation network by redeveloping the Norm Ross Sports Park with new facilities and reopening the park to the public. The proposed project would provide park facilities and recreational opportunities near walking distance of residences and commercial uses which would promote walking and biking.

Non-Motorized Transportation and Transit

The proposed project would generate an increased demand for non-motorized travel as some park patrons and little league participants would travel to and from the project site as pedestrians or on bicycles. The streets in the vicinity of the park site have sidewalks along both sides of the street and the nearby intersections are equipped with painted crosswalks. The signalized intersections have pedestrian push buttons and pedestrian WALK signals. While there are no bike lanes on the nearby streets, little league players could potentially ride their bikes on the sidewalks of these major arterial routes. Nearby bike racks are available at City Hall and the Stanton Branch of the Orange County Library and bike racks would be provided at the project site. So there are multiple features at and near the project site that can accommodate bicycle and pedestrian travel.

With regard to public transit, some park patrons, little league baseball players, and coaches could potentially use the OCTA buses to travel to and/or from the park site. OCTA operates Routes 29, 29A, and 529 on Beach Boulevard and Route 50 on Katella Avenue in the vicinity of the project site. The project's impact on the operation and ridership levels on these bus routes would be negligible.

The proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The Infrastructure and Community Services Element of the Stanton General Plan includes various goals and policies to maintain and improve the infrastructure and public service systems (i.e. parks) within the City to ensure community safety and public health (Stanton 2008). As discussed above, the proposed project would support Goal ICS 1.2, which encourages use of public transit and non-motorized transit (i.e. biking and walking), and Goal ICS 4.1, which aims to maintain public parks and ensure they are accessible to all residents. The project site is not currently in use with the exception of the community garden; however, the proposed project would improve park facilities and install a new pedestrian bridge, so residents are able to use and access the park. The proposed project will be accessible to the public and host little league baseball games, which would use existing bike racks and pedestrian paths for non-motorized transportation to and from the project site.

Additionally, the SCAG's Connect SoCal plan connects land use and transportation to increase mobility options and achieve a more sustainable growth patten within the SCAG region (SCAG 2020). Connect SoCal includes 10 goals and 7 guiding principles to implement the Connect SoCal plan. While Connect SoCal is not directly applicable to a single park project, the proposed project would support SCAG's Connect SoCal goals. The proposed project would redevelop an existing sports complex that has been closed to the public and reopen the park. This would provide park and recreational opportunities within walking distance of surrounding residential, commercial, and academic uses, which reduces the need for single-occupancy vehicles and encourages alternatives forms of transportation (such as walking and bicycling). Thus, the proposed project would support Connect SoCal Goals 4, "increase person and goods movement and travel choices within the

transportation system", 5, "reduce greenhouse gas emissions and improve air quality", and 6, "support healthy and equitable communities" (SCAG 2020).

The proposed project would not adversely affect traffic conditions on the study area roadway network or the performance of any transit, pedestrian, or bicycle facilities. The proposed project would support the goals and policies related to transit, pedestrian, and bicycle travel within Stanton's General Plan and SCAG's Connect SoCal plan. The proposed project would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, bicycle and pedestrian facilities; thus, a less than significant impact would occur.

b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?

Less Than Significant Impact. Vehicle delays and levels of service (LOS) have historically been used as the basis for determining the significance of traffic impacts as standard practice in CEQA documents. On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changed transportation impact analyses as part of CEQA compliance. SB 743 eliminates auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)). Pursuant to SB 743, the California Natural Resources Agency adopted revisions to the CEQA Guidelines on December 28, 2018, to implement SB 743. CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed after SB 743. Under the new Guidelines, metrics related to VMT are required beginning July 1, 2020, to evaluate the significance of transportation impacts under CEQA for development projects, land use plans, and transportation infrastructure projects. The State provided an "opt-in period" and did not require lead agencies to apply a VMT metric until July 1, 2020. However, in January 2020, State courts stated that under the Public Resources Code Section 21099, subdivision (b)(2), "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment" under CEQA, except for roadway capacity projects.

As stated in the Orange County "Transportation Implementation Manual" and the "Guidelines for Evaluating Vehicle Miles Traveled Under CEQA", a project that generates 500 or fewer ADT may be assumed to result in a less than significant transportation impact and can be screened from a CEQA VMT analysis because it falls into the small project category (Garland 2023). As the traffic that would be generated by the proposed project is below the VMT threshold of 500 trips per day (see Table 17, *Project-Generated Traffic)*, it can be screened from any further CEQA VMT analysis and would not result in a significant impact relative to VMT.

In addition, the Orange County guidelines state that the development of public facilities, which includes institutional/government and public service uses, can be screened from a CEQA VMT analysis. As the proposed sports park project is included in the public facilities category, it can be screened in accordance with the Orange County guidelines. Therefore, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and impacts would be less than significant.

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

No Impact. The proposed project would not provide any on- or off-site access or circulation features that would create or increase any design hazards or incompatible uses. Access to the park site for vehicles, bicyclists, and pedestrians would continue to occur via properly designed streets, driveways, sidewalks, and on-site pedestrian pathways and a new pedestrian bridge would be constructed across the Stanton Storm Channel to improve pedestrian access to the proposed project. The streets, intersections, driveways, and on-site circulation system are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have historically been accommodating park-related traffic on a daily basis. These facilities would continue to be compatible with the design and operation of a park.

As the proposed project would not result in any adverse changes to the access or circulation features at the project site or on the surrounding streets, there would be no increased hazards due to a geometric design feature or incompatible uses. No impact would occur.

d) Result in inadequate emergency access?

No Impact. Emergency access will continue to be provided by an existing gated driveway located at the southeast corner of the project site that connects to Ruthann Avenue. In addition, emergency vehicles can also access the parking lot to the north side of the project site via Cedar Street. The existing and proposed access and circulation features at the project site would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. The proposed project would improve emergency access by developing concrete paved path from the southwest corner of the project site along the eastern boundary to the northern portion of the project site (see Figure 4, *Proposed Site Plan*). The proposed project would improve emergency access compared to existing conditions; therefore, a less than significant impact shall occur.

3.18 TRIBAL CULTURAL RESOURCES

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XVIII. TRIBAL CULTURAL RESOURCES.				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			X	

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Less than Significant Impact. The project site is within the Carver Early Education Center and is currently developed with an existing sports complex. The project site is not listed as a historical resource in the Office of Historic Preservation's Listed California Historical Resources, California Points of Historical Interest, California Historical Landmarks, California Register of Historical Resources, and is not in the National Register of Historic Places (SCCIC 2023). Implementation of the proposed project would not cause a substantial adverse change in the significance of a historical resource. The project site does not meet the historic resource criteria and does not meet the definition of a historic resource pursuant to CEQA. Implementation of the proposed project would not result in any substantial adverse change in a tribal cultural resource defined pursuant to PRC Section 5024.1 or PRC Section 5020.1(k). A less than significant impact would occur.

ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact With Mitigation Incorporated. The records search performed by the South-Central Coastal Information Center indicated the project site is not listed in the Office of Historic Preservation's Listed California Historical Resources, California Points of Historical Interest, California Historical Landmarks, California Register of Historical Resources, or in the National Register of Historic Places (SCCIC 2023). The project site does not contain any known tribal resources pursuant to PRC section 5024.1.

3. Environmental Analysis

In accordance with Public Resources Code Section 21080.1(d), and pursuant to AB 52, the City mailed and emailed tribal consultation letters to the following tribes: Gabrieleño Band of Mission Indians – Kizh Nation, Manzanita Band of Kumeyaay Nation, Cahuilla Band of Indians, Gabrielino-Tongva Tribe, Juaneño Band of Mission Indians Acjachemen Nation, Juaneño Band of Mission Indians Acjachemen Nation – Belardes, Juaneño Band of Mission Indians Acjachemen Nation 84A, Gabrielino Tongva Indians of California Tribal Council, Ewiiaapaayp Tribal Office, Pala Band of Mission Indians, Gabrielino/Tongva nation, Mesa Grande Band of Diegueno Mission Indians, Sycuan Band of Kumeyaay Nation, Campo Band of Diegueno Mission Indians, Gabrieleno/Tongva San Gabriel Band of Mission Indians, La Posta Band of Diegueno Mission Indians, Santa Rosa Band of Cahuilla Indians, and Soboba Band of Luiseno Indians.

The Pala Band of Mission Indians, Santa Rosa Band of Cahuilla Indians, and the Gabrieleño Band of Mission Indians – Kizh Nation responded. The Pala Band of Mission Indians notified the City that the project site is not within the boundaries of the recognized Pala Indian Reservation, and beyond the territory that the tribe considers its traditional use area. The Pala Band of Mission Indians have declined AB-52 consultation. The Santa Rosa Band of Cahuilla Indians declined consultation. The Gabrieleño Band of Mission Indians – Kizh Nation requested consultation with the City in accordance with AB 52. The City and the Gabrieleño Band of Mission Indians – Kizh Nation conducted consultation and agreed to mitigation measures TCR-1 though TCR-3, which require the presence of a tribal monitor during earthwork activities and provides procedures in the event that a tribal cultural resources is encountered during construction. The mitigation measures would ensure that impacts to tribal cultural resources are less than significant. With the incorporation of mitigation measures TCR-1 through TCR-3, a less than significant impact would occur.

Mitigation Measure

TCR-1 Retain a Native American Monitor Prior to Commencement of Ground-Disturbing Activities

A. The City shall retain a Native American Monitor from or approved by the Gabrieleño Band of Mission Indians – Kizh Nation. The monitor shall be retained prior to the commencement of any "ground-disturbing activity" for the subject project at all project locations (i.e., both on-site and any off-site locations that are included in the project description/definition and/or required in connection with the project, such as public improvement work). "Ground-disturbing activity" shall include, but is not limited to, demolition, pavement removal, potholing, auguring, grubbing, tree removal, boring, grading, excavation, drilling, and trenching.

B. A copy of the executed monitoring agreement shall be submitted to the City prior to the earlier of the commencement of any ground-disturbing activity, or the issuance of any permit necessary to commence a ground-disturbing activity.

C. The monitor will complete daily monitoring logs that will provide descriptions of the relevant ground-disturbing activities, the type of construction activities performed, locations of ground-disturbing activities, soil types, cultural-related materials, and any other facts, conditions, materials, or discoveries of significance to the Tribe. Monitor logs will identify and

describe any discovered TCRs, including but not limited to, Native American cultural and historical artifacts, remains, places of significance, etc., (collectively, tribal cultural resources, or "TCR"), as well as any discovered Native American (ancestral) human remains and burial goods. Copies of monitor logs will be provided to the City upon written request to the Tribe.

D. On-site tribal monitoring shall conclude upon the earlier of the following (1) written confirmation to the Kizh from a designated point of contact for the City that all ground-disturbing activities and phases that may involve ground-disturbing activities on the project site or in connection with the project are complete; or (2) a determination and written notification by the Kizh to the City that no future, planned construction activity and/or development/construction phase at the project site possesses the potential to impact Kizh TCRs.

TCR-2 Unanticipated Discovery of Tribal Cultural Resources Objects (Non-Funerary/Non-Ceremonial)

Upon discovery of any TCRs, all construction activities in the immediate vicinity of the discovery shall cease (i.e., not less than the surrounding 50 feet) and shall not resume until the discovered TCR has been assessed by the Kizh monitor or Kizh archaeologist. The Kizh will recover and retain all discovered TCRs in the form and/or manner the Tribe deems appropriate, in the Tribe's sole discretion, and for any purpose the Tribe deems appropriate, including for educational, cultural and/or historic purposes.

TCR-3 Unanticipated Discovery of Human Remains and Associated Funerary or Ceremonial Objects

A. Native American human remains are defined in PRC 5097.98 (d)(1) as an inhumation or cremation, and in any state of decomposition or skeletal completeness. Funerary objects, called associated grave goods in Public Resources Code Section 5097.98, are also to be treated according to this statute.

B. If Native American human remains and/or grave goods are discovered or recognized on the project site, then Public Resource Code 5097.9 as well as Health and Safety Code Section 7050.5 shall be followed.

C. Human remains and grave/burial goods shall be treated alike per California Public Resources Code section 5097.98(d)(1) and (2).

D. Preservation in place (i.e., avoidance) is the preferred manner of treatment for discovered human remains and/or burial goods.

E. Any discovery of human remains/burial goods shall be kept confidential to prevent further disturbance.

3.19 UTILITIES AND SERVICE SYSTEMS

Would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XIX. UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact. The proposed project involves the redevelopment of the Norm Ross Sports Park. The project site is on a school campus in an urbanized area. The project site is presently served by water, stormwater, electrical power and telecommunication facilities. Since there are no restrooms or buildings onsite, the project site is not currently served by wastewater infrastructure. Since park uses do not have a need for natural gas, the project site is also not currently served by natural gas. The proposed project would include the construction of park and sport facilities that would connect to existing utility lines, including water, wastewater, electric power, and natural gas, that currently serve the school campus and surrounding urban area. The connection and extension of the utility lines would not cause significant environmental effects since the project site is in a highly urbanized area.

As discussed in Section 1.4, Project Description, the proposed project includes new stormwater infrastructure, such as a infiltration basin or a bioretention basin without underdrain. The implementation of the stormwater infrastructure onsite would ensure that the proposed project's stormwater does not exceed the capacity of the stormwater infrastructure on public rights of way and Carver Elementary School.

Further, the proposed project includes the construction and operation of a sports park that would serve the existing community. The proposed project would not increase population growth in the city. The proposed project would also be designed in accordance with the latest CBC, which includes requirements for water flow and energy use. Therefore, the proposed project would be adequately served by existing utilities. The proposed project would not require the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. Therefore, impacts would be less than significant.

b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact. The project site is currently not in use except for the community garden, and the proposed project would increase park goers to the project site. As such the proposed project would be expected to result in a slight increase in water demand at the project site. However, the proposed project would not result in direct or indirect population growth. Further, compared to existing conditions, the proposed project would increase the amount of hardscape surfaces, which does not need to be watered. Therefore, the proposed project would not result in a substantial increase in water demand. The project site is within the service boundary of the Golden State Water Company (GSWC) – West Orange. According to the 2020 Urban Water Management Plan, GSWC – West Orange has reliable supplies to meet its retail customer demands in normal, single-dry, and multiple-dry years through 2045 (GSWC 2021). GSWC's contract with Municipal Water District of Orange County and groundwater supplies from the Orange County Groundwater Basin ensure resiliency during dry conditions. As such, GSWC – West Orange would not be faced with shortages during normal or dry years through the planning horizon of the 2020 Urban Water Management Plan (GSWC 2021). The project site is currently developed with the Norm Ross Sports Park, and the proposed project would improve the facilities onsite. While the proposed project may result in a minimal increase in water use, it would not generate population growth and would be within the projections of the 2020 Urban Water Management Plan. GSWC – West Orange would not have water supply shortages through the planning horizon of the plan. Therefore, the proposed project's impact would be less than significant.

c) Result in a determination by the waste water treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. Wastewater is collected by the City of Stanton Public Works Department and then treated by the Orange County Sanitation District (OC SAN). OC SAN has two operating facilities that treat wastewater from residential, commercial, and industrial sources, which treated approximately 179 million gallons per day in the 2021-2022 year (OC SAN 2023). The proposed project would improve an existing sports complex. The project site is currently not in use except for the community garden, and the proposed project would increase park goers to the project site. As such the proposed project would be expected to result in an increase in wastewater generation at the project site. However, the proposed project would not result in direct or indirect population growth and would not result in a substantial increase in wastewater generation. The increase would be nominal and would not exceed the capacity of the existing treatment facilities. Therefore, impact would be less than significant.

d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Less Than Significant Impact. The project site is currently not in use except for the community garden, and the proposed project would increase park goers to the project site. As such the proposed project would be expected to result in an increase in solid waste generation at the project site. However, the proposed project would not result in direct or indirect population growth and would not result in a substantial increase in solid waste generation. Solid waste generation from the proposed project would be similar to existing conditions, as the proposed project would not result in a change in the use of the site. Solid waste from the project site would be transferred to the Frank R. Bowerman Sanitary Landfill located at 11002 Bee Canyon Access Road in Irvine. The landfill has a maximum permitted throughput of 11,500 tons per day, a remaining capacity of 205,000,000 cubic yards, and a cease date of December 31, 2053 (CalRecycle 2024b). Since the proposed project would not generate substantial amounts of solid waste, the proposed project would result in a less than significant impact.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Less Than Significant Impact. Solid waste would be generated during construction and operation of the proposed project. The Solid Waste Ruse and Recycling Access Act of 1991 requires that adequate areas be provided for collecting and loading recyclable materials such as paper, products, glass, and other recyclables. Chapter 6.04, Integrated Waste Management, of the City's Municipal Code, provides provisions for the collection and storage of solid waste, including construction and demolition waste management. Additionally, the proposed project would comply with solid waste disposal requirements, including requirements to divert solid waste to landfills through recycling. During construction, the proposed project would comply with CALGreen, which requires recycling and/or salvaging for reuse a minimum of 65 percent of the nonhazardous construction and demolition waste generated during most "new construction" projects (CALGreen Sections 4.408 and 5.408). As such, the impact would be less than significant.

3.20 WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XX. WILDFIRE. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?				X

a) Substantially impair an adopted emergency response plan or emergency evacuation plan?

No Impact. The project site and surroundings are in a heavily urbanized area and are not within nor near a VHFHSZ (CAL FIRE 2022). The nearest VHSHSZ is approximately 7 miles to the north of the project site. The OCFA would review development plans to ensure adequate emergency access. Emergency access to the site would continue to be provided via Ruthann Avenue. Additionally, the proposed project would be required to comply with the most current CBC and CFC regulations, which would ensure adequate access. The proposed project would not substantially impair an adopted emergency response plan or emergency evacuation plan. No impact would occur.

b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The project site is not in, adjacent to, nor within proximity of a VHFHSZ. The nearest VHSHSZ is approximately 7 miles to the north of the project site. The project site and its surroundings are in a heavily urbanized area. Therefore, the proposed project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. No impact would occur.

c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact. The project site is not in, adjacent to or within proximity of a VHFHSZ. The nearest VHSHSZ is approximately 7 miles to the north of the project site. The project site is in an urbanized area with existing utilities lines onsite and surrounding the site. New utility lines would be installed per the requirements of the utility providers. Therefore, the proposed project would not require the installation of new infrastructure that may exacerbate fire risk. No impact would occur.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The project site is not in, adjacent to or within proximity of a VHFHSZ. The nearest VHSHSZ is approximately 7 miles to the north of the project site. The project site is already developed with a sports complex and is currently unused. As indicated in Section 3.7 and Section 3.10, above, the project site is not within a landslide hazard zone and the site is within flood Zone X. Therefore, the proposed project would not result in runoff, postfire slope instability, or drainage changes (see Section 3.7, *Geology and Soils*, and Section 3.10, *Hydrology and Water Quality*, respectively. No impact would occur.

3.21 MANDATORY FINDINGS OF SIGNIFICANCE

Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
XXI. MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?			X	
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)			X	
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact. As discussed in Section 3.4, *Biological Resources*, the proposed project site is currently developed with park/sport complex uses that is closed and unused with the exception of the community garden. It does not contain any special-status or sensitive biological resources. The proposed project would not substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a sensitive plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal.

As discussed in Section 3.5, *Cultural Resources*, and Section 3.18, Tribal Cultural Resources, the proposed project site is currently developed with park/sport complex uses that is closed and unused with the exception of the community garden. The project site does not contain built environment resources and no known archaeological nor tribal cultural resources. The proposed project therefore would not eliminate important examples of the major periods of California history and would not have an adverse impact on California's prehistoric cultural resources. Further, the proposed project would incorporate Mitigation Measures CUL-1, TCR-1, TCR-2, and TCR-3, which provides procedures in the event of an accidental archaeological find, which would ensure that impacts related to cultural and tribal cultural resources are less than significant.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Less Than Significant Impact. The proposed project would redevelop an existing sports complex/park. As discussed throughout this Initial Study, the proposed project would have no impact, a less than significant impact, or a less than significant with mitigation measures to aesthetics, agricultural/forestry resources, air quality, biological resources, cultural resources, energy, geology/soils, greenhouse gas emissions, hazards and hazardous materials, hydrology/water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, transportation, tribal cultural resources, utilities and service systems, and wildfire. For this reason, the proposed project would not result in significant cumulative impacts to any resources. Therefore, all impacts are individually limited and would not result in any cumulatively significant impact. Impacts would be less than significant.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact. The proposed project would redevelop an existing sports complex/park. Thus, the proposed project would provide opportunities for recreation, exercise, and gathering. As discussed in the previous analyses, the proposed project would not result in significant direct or indirect adverse impacts or result in substantial adverse effects on human beings. Impacts would be less than significant.

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Appendix A Air Quality, Greenhouse Gas, and Energy

Air Quality and Greenhouse Gas Background and Modeling Data

AIR QUALITY

Air Quality Regulatory Setting

The proposed project has the potential to release gaseous emissions of criteria pollutants and dust into the ambient air; therefore, it falls under the ambient air quality standards promulgated at the local, state, and federal levels. The project site is in the SoCAB and is subject to the rules and regulations imposed by the South Coast Air Quality Management District (South Coast AQMD). However, South Coast AQMD reports to California Air Resources board (CARB), and all criteria emissions are also governed by the California and national Ambient Air Quality Standards (AAQS). Federal, state, regional, and local laws, regulations, plans, or guidelines that are potentially applicable to the proposed project are summarized below.

AMBIENT AIR QUALITY STANDARDS

The Clean Air Act (CAA) 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 CAA allows states to adopt more stringent standards or to include other pollution species. The California Clean Air Act (CCAA), 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, based on even greater health and welfare concerns.

These National AAQS 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.

Both California and the federal government have established health-based AAQS for seven air pollutants. As shown in Table 1, *Ambient Air Quality Standards for Criteria Pollutants*, these pollutants include 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. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety.

Table 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	
Respirable Coarse Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/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 µg/m^3	150 µg/m^3	
Respirable Fine Particulate Matter ($PM_{2.5}$)[4]	Annual Arithmetic Mean	12 µg/m^3	12 µg/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 µg/m^3	
Lead (Pb)	30-Day Average	1.5 µg/m^3	*	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
	Calendar Quarter	*	1.5 µg/m^3	
	Rolling 3-Month Average	*	0.15 µg/m^3	
Sulfates (SO_4)[5]	24 hours	25 µg/m^3	*	Industrial processes.
Visibility Reducing Particles	8 hours	ExCo =0.23/km visibility of 10≥ miles	No Federal Standard	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.

Table 1 Ambient Air Quality Standards for Criteria Pollutants

Pollutant	Averaging Time	California Standard[1]	Federal Primary Standard[2]	Major Pollutant Sources
Hydrogen Sulfide	1 hour	0.03 ppm	No Federal Standard	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 hours	0.01 ppm	No Federal Standard	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 2016.
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 ambient air quality standards 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 retained 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 retained. 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 and Energy Efficiency Standards
- Title 24, Part 11, CCR: Green Building Standards Code

AIR POLLUTANTS OF CONCERN

Criteria Air Pollutants

The air pollutants emitted into the ambient air by stationary and mobile sources are regulated by federal and state law. Air pollutants are categorized as primary or secondary pollutants. Primary air pollutants are those that are emitted directly from sources and include CO, VOC, NO_2, SO_X, PM_{10}, $PM_{2.5}$, and Pb. Of these, CO, SO_2, NO_2, PM_{10}, and $PM_{2.5}$ are "criteria air pollutants," which means that ambient air quality standards (AAQS) have been established for them. VOC and oxides of nitrogen (NO_x) are air pollutant precursors that form secondary criteria pollutants through chemical and photochemical reactions in the atmosphere. Ozone (O_3) and NO_2 are the principal secondary pollutants. A description of each of the primary and secondary criteria air pollutants and their known health effects is presented below.

Carbon Monoxide (CO) is a colorless, odorless, toxic 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. Because CO is emitted directly from internal combustion, engines and motor vehicles operating at slow speeds are the primary source of CO in the SoCAB. 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 (South Coast AQMD 2005; US EPA 2023). The SoCAB is designated as being in attainment under the California AAQS and attainment (serious maintenance) under the National AAQS (CARB 2023a).

Volatile Organic Compounds (VOC) 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 (South Coast AQMD 2005). There are no AAQS for VOCs. However, because they contribute to the formation of O_3, South Coast AQMD has established a significance threshold (South Coast AQMD 2019). The health effects for ozone are described later in this section.

Nitrogen Oxides (NO_X) 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 (South Coast AQMD 2005; USEPA 2023a). On February 21, 2019, CARB's Board approved the separation of the area that runs along the State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for state nonattainment designation purposes. The Board designated this corridor as nonattainment.[1] The remainder of the SoCAB is designated in attainment (maintenance) under the National AAQS and attainment under the California AAQS (CARB 2023a).

Sulfur Dioxide (SO_2) 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 processes at plants and refineries. Gasoline and natural gas have very low sulfur content and do not release

[1] CARB is proposing to redesignate SR-60 Near-Road Portion of San Bernardino, Riverside, and Los Angeles Counties in the SoCAB as attainment for NO_2 at the February 24, 2022 Board Hearing (CARB 2023d).

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 (South Coast AQMD 2005; US EPA 2023). The SoCAB is designated as attainment under the California and National AAQS (CARB 2023a).

Suspended Particulate Matter (PM_{10} and $PM_{2.5}$) 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., ≤0.01 millimeter). Inhalable fine particles, or $PM_{2.5}$, have an aerodynamic diameter of 2.5 microns or less (i.e., ≤0.002.5 millimeter). 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) (South Coast AQMD 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., ≤0.0001 millimeter) have human health implications because their toxic components may initiate or facilitate biological processes that may lead to adverse effects to the heart, lungs, and other organs (South Coast AQMD 2013). However, the EPA and the California Air Resources Board (CARB) have not adopted AAQS to regulate these particulates. Diesel particulate matter is classified by CARB as a carcinogen (CARB 2023e). Particulate matter can also cause environmental effects such as visibility impairment,[2] environmental damage,[3] and aesthetic damage[4] (South Coast AQMD 2005; US EPA 2023). 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 2023a).[5]

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

[3] Particulate matter can be carried over long distances by wind and then 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.

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

[5] CARB approved the South Coast AQMD'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}

Ozone (O_3) is a key ingredient of "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 (South Coast AQMD 2005; US EPA 2023). The SoCAB is designated extreme nonattainment under the California AAQS (1-hour and 8-hour) and National AAQS (8-hour) (CARB 2023a).

Lead (Pb) 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 (South Coast AQMD 2005; USEPA 2018). 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 more strict lead standards, and special monitoring sites immediately downwind of lead sources recorded very localized violations of the new state and federal standards.[6] As a result of these violations, the Los Angeles County portion of the SoCAB is designated as nonattainment under the National AAQS for lead (South Coast AQMD 2012; CARB 2023a). However, lead concentrations in this nonattainment area have been below the level of the federal standard since December 2011 (South Coast AQMD 2012). CARB's State Implementation Plan (SIP) revision was submitted to the EPA for approval. Because emissions of lead are found only in projects that are permitted by South Coast AQMD, lead is not a pollutant of concern for the proposed project.

standards from 2004 to 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.

[6] 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 (South Coast AQMD 2012).

Toxic Air Contaminants

The public's exposure to air pollutants classified as toxic air contaminants (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 these contaminants to protect the public health. 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." A substance that is listed as a hazardous air pollutant (HAP) pursuant to Section 112(b) of the federal Clean Air Act (42 United States Code §7412[b]) is a toxic air contaminant. Under state law, the California Environmental Protection Agency (Cal/EPA), acting through CARB, is authorized to identify a substance as a TAC if it determines that the substance is an air pollutant that may cause or contribute to an increase in mortality or to an increase in serious illness, or may pose a present or potential hazard to human health.

California regulates TACs primarily through Assembly Bill (AB) 1807 (Tanner Air Toxics Act) and AB 2588 (Air Toxics "Hot Spot" Information and Assessment Act of 1987). The Tanner Air Toxics Act sets forth 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 designated TACs. 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, all of which are identified as having no safe threshold.

Air toxics from stationary sources are also regulated in California under the Air Toxics "Hot Spot" Information and Assessment Act of 1987. Under AB 2588, toxic air contaminant 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 in the form of notices and public meetings.

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 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 particulate emissions from diesel-fueled engines (diesel PM) as a TAC. Previously, the individual chemical compounds in diesel exhaust were considered TACs. Almost all diesel exhaust particle mass is 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 lung.

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

- 13 CCR Chapter 10, Section 2485, Airborne Toxic Control Measure to Limit Diesel-Fueled Commercial Motor Vehicle Idling

- 13 CCR Chapter 10, Section 2480, Airborne Toxic Control Measure to Limit School Bus Idling and Idling at Schools

- 13 CCR Section 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

Community Risk

In addition, 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 placing sensitive receptors near existing pollution sources. CARB's recommendations on the siting of new sensitive land uses 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 to air pollution sources substantially increases exposure and the potential for adverse health effects. There are three carcinogenic toxic air contaminants that 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

The South Coast AQMD is the agency responsible for improving air quality in the SoCAB and ensuring that the National and California AAQS are attained and maintained. South Coast AQMD 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.

2022 AQMP

South Coast AQMD adopted the 2022 AQMP on December 2, 2022, which serves as an update to the 2017 AQMP. On October 1, 2015, the EPA strengthened the National AAQS for ground-level ozone, lowering the primary and secondary ozone standard levels to 70 parts per billion (ppb) (2015 Ozone National AAQS.). The SoCAB is currently classified as an "extreme" nonattainment for the 2015 Ozone National AAQS. Meeting the 2015 federal ozone standard requires reducing NO_x emissions, the key pollutant that creates ozone, by 67 percent more than is required by adopted rules and regulations in 2037. The only way to achieve the required NO_x reductions is through extensive use of zero emission (ZE) technologies across all stationary and mobile sources. South Coast AQMD's primary authority is over stationary sources which account for approximately 20 percent of NO_x emissions. The overwhelming majority of NO_x emissions are from heavy-duty trucks, ships and other State and federally regulated mobile sources that are mostly beyond the South Coast AQMD's control. The region will not meet the standard absent significant federal action. In addition to

federal action, the 2022 AQMP requires substantial reliance on future deployment of advanced technologies to meet the standard. The control strategy for the 2022 AQMP includes aggressive new regulations and the development of incentive programs to support early deployment of advanced technologies. The two key areas for incentive programs are (1) promoting widespread deployment of available ZE and low-NO_x technologies and (2) developing new ZE and ultra-low NO_x technologies for use in cases where the technology is not currently available. South Coast AQMD is prioritizing distribution of incentive funding in Environmental Justice areas and seeking opportunities to focus benefits on the most disadvantaged communities (South Coast AQMD 2022).

Lead State Implementation Plan

In 2008, EPA designated the Los Angeles County portion of the SoCAB nonattainment under the federal lead (Pb) classification due to the addition of source-specific monitoring under the new federal regulation. This designation was based on two source-specific monitors in Vernon and the City of Industry exceeding the new standard. The rest of the SoCAB, outside the Los Angeles County nonattainment area remains in attainment of the new standard. On May 24, 2012, CARB approved the 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 EPA for approval.

South Coast AQMD PM2.5 Redesignation Request and Maintenance Plan

In 1997, the EPA adopted the 24-hour fine $PM_{2.5}$ standard of 65 micrograms per cubic meter ($\mu g/m^3$). In 2006, this standard was lowered to a more health-protective level of 35 $\mu g/m^3$. The SoCAB is designated nonattainment for both the 65 and 35 $\mu g/m^3$ 24-hour $PM_{2.5}$ standards (24-hour $PM_{2.5}$ standards). In 2020, monitored data demonstrated that the SoCAB attained both 24-hour $PM_{2.5}$ standards. The South Coast AQMD has developed the 2021 Redesignation Request and Maintenance Plan for the 1997 and 2006 24-hour $PM_{2.5}$ Standards demonstrating that the SoCAB has met the requirements to be redesignated to attainment for the 24-hour $PM_{2.5}$ standards (South Coast AQMD 2021b).

AB 617, Community Air Protection Program

Assembly Bill (AB) 617 (C. Garcia, Chapter 136, Statutes of 2017) requires local air districts to monitor and implement air pollution control strategies that reduce localized air pollution in communities that bear the greatest burdens. In response to AB 617, CARB has established the Community Air Protection Program.

Air districts are required to host workshops to help identify disadvantaged communities disproportionately affected by poor air quality. Once the criteria for identifying the highest priority locations have been identified and the communities have been selected, new community monitoring systems would be installed to track and monitor community-specific air pollution goals. In 2018 CARB prepared an air monitoring plan (Community Air Protection Blueprint), that evaluates the availability and effectiveness of air monitoring technologies and existing community air monitoring networks. Under AB 617, the Blueprint is required to be updated every five years.

Under AB 617, CARB is also required to prepare a statewide strategy to reduce TACs and criteria pollutants in impacted communities; provide a statewide clearinghouse for best available retrofit control technology;

adopt new rules requiring the latest best available retrofit control technology for all criteria pollutants for which an area has not achieved attainment of California AAQS; and provide uniform, statewide reporting of emissions inventories. Air districts are required to adopt a community emissions reduction program to achieve reductions for the communities impacted by air pollution that CARB identifies.

Existing Conditions

CLIMATE/METEOROLOGY

South Coast Air Basin

The project site lies in the South Coast Air Basin (SoCAB), which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. The SoCAB is in a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean in the southwest quadrant, with high mountains forming the remainder of the perimeter. The general region lies in the semi-permanent 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 (South Coast AQMD 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 with temperature data is the Anaheim, California Monitoring Station (ID No. 040192). The lowest average temperature is reported at 46.9°F in December, and the highest average temperature is 87.1°F in August (WRCC 2023).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all rain falls from October 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 14.09 inches per year in the vicinity of the area (WRCC 2023).

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence 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 (South Coast AQMD 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, both in 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 (South Coast AQMD 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 (South Coast AQMD 2005).

AREA DESIGNATIONS

The AQMP provides the framework for air quality basins to achieve attainment of the state and federal ambient air quality standards through the State Implementation Plan (SIP). Areas are classified as attainment or nonattainment areas for particular pollutants, depending on whether they meet ambient air quality standards. Severity classifications for ozone nonattainment range in magnitude from marginal, moderate, and serious to 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 CAAQS 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 a state 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 2, *Attainment Status of Criteria Pollutants in the South Coast Air Basin*.

Table 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
$PM_{2.5}$	Nonattainment	Nonattainment[2]
CO	Attainment	Attainment
NO_2	Nonattainment (SR-60 Near Road only)[1]	Attainment/Maintenance
SO_2	Attainment	Attainment
Lead	Attainment	Nonattainment (Los Angeles County only)[3]
All others	Attainment/Unclassified	Attainment/Unclassified

Source: CARB 2023c.

1 On February 21, 2019, CARB's Board approved the separation of the area that runs along State Route 60 corridor through portions of Riverside, San Bernardino, and Los Angeles counties from the remainder of the SoCAB for State nonattainment designation purposes. The Board designated this corridor as nonattainment. The remainder of the SoCAB remains in attainment for NO_2 (CARB 2019a). CARB is proposing to redesignate SR-60 Near-Road Portion of San Bernardino, Riverside, and Los Angeles Counties in the SoCAB as attainment for NO_2 at the February 24, 2022 Board Hearing (CARB 2023c).

2 The SoCAB is pending a resignation request from nonattainment to attainment for the 24-hour federal $PM_{2.5}$ standards. The 2021 $PM_{2.5}$ Redesignation Request and Maintenance Plan demonstrates that the South Coast meets the requirements of the CAA to allow US EPA to redesignate the SoCAB to attainment for the 65 µg/m^3 and 35 µg/m^3 24-hour $PM_{2.5}$ standards. CARB will submit the 2021 $PM_{2.5}$ Redesignation Request to the US EPA as a revision to the California SIP (CARB 2021).

3 In 2010, the Los Angeles portion of the SoCAB was designated nonattainment for lead under the new 2008 federal AAQS as a result of large industrial emitters. Remaining areas in the SoCAB are unclassified.

EXISTING AMBIENT AIR QUALITY

Existing levels of ambient air quality and historical trends and projections in the vicinity of the project site are best documented by measurements taken by the South Coast AQMD. The project site is located within Source Receptor Area (SRA) 16: North Orange County. The air quality monitoring station closest to the proposed project is the Anaheim – Pampas Lane Monitoring Station, which is one of 31 monitoring stations South Coast AQMD operates and maintains within the SoCAB.[7] Data from this station includes O_3, NO_2, PM_{10}, and $PM_{2.5}$ and is summarized in Table 3, *Ambient Air Quality Monitoring Summary*. The data show regular violations of the state and federal O_3, state PM_{10}, and federal $PM_{2.5}$ standards in the last five years.

[7] Locations of the SRAs and monitoring stations are shown here: http://www.aqmd.gov/docs/default-source/default-document-library/map-of-monitoring-areas.pdf.

Table 3 Ambient Air Quality Monitoring Summary

Pollutant/Standard	Number of Days Threshold Were Exceeded and Maximum Levels during Such Violations[1,2]				
	2017	2018	2019	2020	2021
Ozone (O_3)					
State 1-Hour ≥ 0.09 ppm (days exceed threshold)	0	4	1	6	0
State & Federal 8-hour ≥ 0.070 ppm (days exceed threshold)	4	1	1	15	0
Max. 1-Hour Conc. (ppm)	0.090	0.112	0.096	0.142	0.089
Max. 8-Hour Conc. (ppm)	0.076	0.071	0.082	0.097	0.068
Nitrogen Dioxide (NO_2)					
State 1-Hour ≥ 0.18 ppm (days exceed threshold)	0	0	0	0	0
Max. 1-Hour Conc. (ppb)	0.0812	0.0660	0.0594	0.0709	0.0671
Coarse Particulates (PM_{10})					
State 24-Hour > 50 µg/m³ (days exceed threshold)	5	2	4	5	1
Federal 24-Hour > 150 µg/m³ (days exceed threshold)	0	0	0	0	0
Max. 24-Hour Conc. (µg/m³)	95.7	94.6	127.1	74.5	63.3
Fine Particulates ($PM_{2.5}$)					
Federal 24-Hour > 35 µg/m³ (days exceed threshold)	8	7	4	12	10
Max. 24-Hour Conc. (µg/m³)	53.9	63.1	36.1	60.2	54.4

Source: CARB 2023xx.
Notes: ppm = parts per million; ppb = parts per billion; µg/m³ = micrograms per cubic meter; * = Data not available
[1] Data obtained from the Anaheim – Pampas Lane Monitoring Station.
[2] Most recent data available as of February 2023.

MULTIPLE AIR TOXICS EXPOSURE STUDY V

The Multiple Air Toxics Exposure Study (MATES) is a monitoring and evaluation study on existing ambient concentrations of TACs and the potential health risks from air toxics in the SoCAB. In April 2021, South Coast AQMD released the latest update to the MATES study, MATES V. The first MATES analysis, MATES I, began in 1986 but was limited because of the technology available at the time. Conducted in 1998, MATES II was the first MATES iteration to include a comprehensive monitoring program, an air toxics emissions inventory, and a modeling component. MATES III was conducted in 2004 to 2006, with MATES IV following in 2012 to 2013.

MATES V uses measurements taken during 2018 and 2019, with a comprehensive modeling analysis and emissions inventory based on 2018 data. The previous MATES studies quantified the cancer risks based on the inhalation pathway only. MATES V includes information on the chronic noncancer risks from inhalation and non-inhalation pathways for the first time. Cancer risks and chronic noncancer risks from MATES II through IV measurements have been re-examined using current Office of Environmental Health Hazards Assessment (OEHHA) and CalEPA risk assessment methodologies and modern statistical methods to examine the trends over time.

The MATES V study showed that cancer risk in the SoCAB decreased to 454 in a million from 997 in a million in the MATES IV study. Overall, air toxics cancer risk in the SoCAB decreased by 54 percent since 2012 when MATES IV was conducted. MATES V showed the highest risk locations near the Los Angeles International Airport and the Ports of Long Beach and Los Angeles. Diesel particulate matter continues to be

the major contributor to air toxics cancer risk (approximately 72 percent of the total cancer risk). Goods movement and transportation corridors have the highest cancer risk. Transportation sources account for 88 percent of carcinogenic air toxics emissions, and the remainder is from stationary sources, which include large industrial operations such as refineries and power plants as well as smaller businesses such as gas stations and chrome-plating facilities. (South Coast AQMD 2021a).

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 cardio-respiratory diseases.

Residential areas are also considered to be sensitive receptors 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. Schools are also considered sensitive receptors, as children are present for extended durations and engage in regular outdoor activities. 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 and commercial areas are considered the least sensitive to air pollution. Exposure periods are relatively short and intermittent, as the majority of the workers tend to stay indoors most of the time. In addition, the working population is generally the healthiest segment of the public.

The nearest offsite sensitive receptors are the single- and multi-family residences along West Arlington Avenue to the north, West Brewster Avenue to the east, West Romneya Drive to the south, and North Lombard Drive to the west of the project site.

Thresholds of Significance

The analysis of the proposed project's air quality impacts follows the guidance and methodologies recommended in South Coast AQMD's *CEQA Air Quality Handbook* and the significance thresholds on South Coast AQMD's website (South Coast AQMD 1993). 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. South Coast AQMD has established thresholds of significance for regional air quality emissions for construction activities and project operation. In addition to the daily thresholds listed above, projects are also subject to the AAQS. These are addressed though an analysis of localized CO impacts and localized significance thresholds (LSTs).

REGIONAL SIGNIFICANCE THRESHOLDS

The South Coast AQMD has adopted regional construction and operational emissions thresholds to determine a project's cumulative impact on air quality in the SoCAB. Table 4, *South Coast AQMD Significance Thresholds*, lists South Coast AQMD's regional significance 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 or CARB have not yet adopted AAQS to regulate ultrafine particulates; therefore, South Coast AQMD has not developed thresholds for them.

Table 4 South Coast AQMD Significance Thresholds

Air Pollutant	Construction Phase	Operational Phase
Reactive Organic Gases (ROGs)/ Volatile Organic Compounds (VOCs)	75 lbs/day	55 lbs/day
Nitrogen Oxides (NO_X)	100 lbs/day	55 lbs/day
Carbon Monoxide (CO)	550 lbs/day	550 lbs/day
Sulfur Oxides (SO_X)	150 lbs/day	150 lbs/day
Particulates (PM_{10})	150 lbs/day	150 lbs/day
Particulates ($PM_{2.5}$)	55 lbs/day	55 lbs/day

Source: South Coast AQMD 2019.

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)
- 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 ($PM_{2.5}$) (South Coast AQMD 2015a)

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 responsible for a 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 (South Coast AQMD 2015b).

South Coast AQMD is the primary agency responsible for ensuring the health and welfare of sensitive individuals exposed to elevated concentrations of air pollutants in the SoCAB and has established thresholds that would be protective of these individuals. To achieve the health-based standards established by the EPA, South Coast AQMD prepares an AQMP that details regional programs to attain the AAQS. Mass emissions thresholds shown in Table 4 are not correlated with concentrations of air pollutants but contribute to the cumulative air quality impacts in the SoCAB. These thresholds are based on the trigger levels for the federal

New Source Review Program, which was created to ensure projects are consistent with attainment of health-based federal AAQS. 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 previously. Projects that do not exceed the South Coast AQMD regional significance thresholds in Table 4 would not violate any air quality standards or contribute substantially to an existing or projected air quality violation.

If projects exceed the emissions levels presented in Table 4, then those emissions would cumulatively contribute to the nonattainment status of the air basin and would contribute to elevating health effects associated with these criteria air pollutants. Known health effects related to ozone include worsening of bronchitis, asthma, and emphysema and a decrease in lung function. Health effects associated with particulate matter include premature death of people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, decreased lung function, and increased respiratory symptoms. Reducing emissions would contribute to reducing possible health effects related to criteria air pollutants. However, for projects that exceed the emissions in Table 4, it is speculative to determine how exceeding the regional thresholds would affect the number of days the region is in nonattainment, because mass emissions are not correlated with concentrations of emissions or how many additional individuals in the air basin would be affected by the health effects cited previously.

South Coast AQMD has not provided methodology to assess the specific correlation between mass emissions generated and the effect on health to address the issue raised in *Sierra Club v. County of Fresno* (Friant Ranch, L.P.) (2018) 6 Cal.5th 502, Case No. S21978. South Coast AQMD currently does not have methodologies that would provide the District with a consistent, reliable, and meaningful analysis to correlate specific health impacts that may result from a Proposed Project's mass emissions.[8] Ozone concentrations are dependent on a variety of complex factors, including the presence of sunlight and precursor pollutants, natural topography, nearby structures that cause building downwash, atmospheric stability, and wind patterns. Because of the complexities of predicting ground-level ozone concentrations in relation to the National and California AAQS, and the absence of modeling tools that could provide statistically valid data and meaningful additional information regarding health effects from criteria air pollutants generated by individual projects, it is not possible to link specific health risks to the magnitude of emissions exceeding the significance thresholds. However, if a project in the SoCAB exceeds the regional significance thresholds, the project could contribute to an increase in health effects in the basin until the attainment standards are met in the SoCAB.

[8] In April 2019, the Sacramento Metropolitan Air Quality Management District (SMAQMD) published an Interim Recommendation on implementing Sierra Club v. County of Fresno (2018) 6 Cal.5th 502 ("Friant Ranch") in the review and analysis of proposed projects under CEQA in Sacramento County. Consistent with the expert opinions submitted to the court in Friant Ranch by the San Joaquin Valley Air Pollution Control District (SJVAPCD) and South Coast AQMD, the SMAQMD guidance confirms the absence of an acceptable or reliable quantitative methodology that would correlate the expected criteria air pollutant emissions of projects to likely health consequences for people from project-generated criteria air pollutant emissions. The SMAQMD guidance explains that while it is in the process of developing a methodology to assess these impacts, lead agencies should follow the Friant Court's advice to explain in meaningful detail why this analysis is not yet feasible. Since this interim memorandum SMAQMD has provided methodology to address health impacts. However, a similar analysis is not available for projects within the South Coast AQMD region.

CO HOTSPOTS

Areas of vehicle congestion have the potential to create pockets of CO called hot spots. 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 ambient air quality standards is typically demonstrated through an analysis of localized CO concentrations. Hot spots 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, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the SoCAB and in the state have steadily declined.

In 2007, the SoCAB was designated in attainment for CO under both the California AAQS and National AAQS. The CO hotspot analysis conducted for the attainment by the South Coast AQMD for busiest intersections in Los Angeles during the peak morning and afternoon periods plan did not predict a violation of CO standards.[9] As identified in the South Coast AQMD's 2003 AQMP and the 1992 Federal Attainment Plan for Carbon Monoxide (1992 CO Plan), peak carbon monoxide concentrations in the SoCAB in previous years, prior to redesignation, were a result of unusual meteorological and topographical conditions and not a result of congestion at a particular intersection. Under existing and future vehicle emission rates, a project would have to increase traffic volumes at a single intersection to more than 44,000 vehicles per hour—or 24,000 vehicles per hour where vertical and/or horizontal air does not mix—in order to generate a significant CO impact (BAAQMD 2017).

LOCALIZED SIGNIFICANCE THRESHOLDS

The South Coast AQMD developed LSTs for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at the project site (offsite mobile-source emissions are not included in the LST analysis). LSTs represent the maximum emissions at a project site that are not expected to cause or contribute to an exceedance of the most stringent federal or state AAQS and are shown in Table 5, *South Coast AQMD Localized Significance Thresholds*.

Table 5 South Coast AQMD Localized Significance Thresholds

Air Pollutant (Relevant AAQS)	Concentration
1-Hour CO Standard (CAAQS)	20 ppm
8-Hour CO Standard (CAAQS)	9.0 ppm
1-Hour NO_2 Standard (CAAQS)	0.18 ppm
Annual NO_2 Standard (CAAQS)	0.03 ppm
24-Hour PM_{10} Standard – Construction (South Coast AQMD)[1]	10.4 µg/m^3
24-Hour $PM_{2.5}$ Standard – Construction (South Coast AQMD)[1]	10.4 µg/m^3
24-Hour PM_{10} Standard – Operation (South Coast AQMD)[1]	2.5 µg/m^3

[9] The four intersections were: Long Beach Boulevard and Imperial Highway; Wilshire Boulevard and Veteran Avenue; Sunset Boulevard and Highland Avenue; and La Cienega Boulevard and Century Boulevard. The busiest intersection evaluated (Wilshire and Veteran) had a daily traffic volume of approximately 100,000 vehicles per day with LOS E in the morning peak hour and LOS F in the evening peak hour.

24-Hour $PM_{2.5}$ Standard – Operation (South Coast AQMD)[1]	2.5 µg/m^3

Source: South Coast AQMD 2019.
ppm – parts per million; µg/m^3 – micrograms per cubic meter
[1] Threshold is based on South Coast AQMD 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 irrelevant.

To assist lead agencies, South Coast AQMD developed screening-level LSTs to back-calculate the mass amount (lbs. per day) of emissions generated onsite that would trigger the levels shown in Table 5 for projects under 5-acres. These "screening-level" LSTs tables are the localized significance thresholds for all projects of five acres and less; however, it 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.

In accordance with South Coast AQMD's LST methodology, the screening-level construction LSTs are based on the acreage disturbed per day based on equipment use. The screening-level construction LSTs for the project site in SRA 16 are shown in Table 6, *South Coast AQMD Screening-Level Localized Significance Thresholds,* for sensitive receptors within 82 feet (25 meters) of the project site.

Table 6 South Coast AQMD Screening-Level Localized Significance Thresholds

	Threshold (lbs/day)[1]			
Acreage Disturbed	Nitrogen Oxides (NO_X)	Carbon Monoxide (CO)	Coarse Particulates (PM_{10})	Fine Particulates ($PM_{2.5}$)
≤1.00 Acre Disturbed Per Day	103	522	4.00	3.00
1.31 Acres Disturbed Per Day	**117**	**597**	**4.62**	**3.31**
1.50 Acres Disturbed Per Day	125	642	5.00	3.50
1.81 Acres Disturbed Per Day	139	717	5.62	3.81
2.50 Acres Disturbed Per Day	159	853	6.83	4.33
4.31 Acres Disturbed Per Day	159	853	6.83	4.33

Source: South Coast AQMD 2008 and 2011.
[1] LSTs are based on sensitive receptors within 82 feet (25 meters) of the project site in Source Receptor Area (SRA) 16.

HEALTH RISK

Whenever a project would require use of chemical compounds that have been identified in South Coast AQMD Rule 1401, placed on CARB's air toxics list pursuant to AB 1807, or placed on the EPA's National Emissions Standards for Hazardous Air Pollutants, a health risk assessment is required by the South Coast AQMD. Table 7, *South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds*, lists the TAC incremental risk thresholds for operation of a project. The type of land uses that typically generate substantial quantities of criteria air pollutants and TACs from operations include industrial (stationary sources) and warehousing (truck idling) land uses (CARB 2005). School uses do not use substantial quantities of TACs, thus these thresholds are typically applied to new industrial projects only. Additionally, 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)).

Table 7 South Coast AQMD Toxic Air Contaminants Incremental Risk Thresholds

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

Source: South Coast AQMD 2019.

GREENHOUSE GAS EMISSIONS

Scientists have concluded that human activities are contributing to global climate change by adding large amounts of heat-trapping gases, known as GHG, to the atmosphere. Climate change is the variation of Earth's climate over time, whether due to natural variability or as a result of human activities. The primary source of these GHG is fossil fuel use. The Intergovernmental Panel on Climate Change (IPCC) has identified four major GHG—water vapor,[10] carbon (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 GHG identified by the IPCC that contribute to global warming to a lesser extent include nitrous oxide (N_2O), sulfur hexafluoride (SF_6), hydrofluorocarbons, perfluorocarbons, and chlorofluorocarbons (IPCC 2001).[11] The major GHG 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 combustion of fossil fuels and solid waste.

- **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

[10] 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, but part of the feedback loop rather than a primary cause of change.

[11] 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 2017a). However, state and national GHG inventories do not yet include black carbon due to ongoing work resolving the precise global warming potential of black carbon. Guidance for CEQA documents does not yet include black carbon.

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 ozone. These gases are also ozone-depleting gases and 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 HFCs, to the 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 global warming potential.

- ***Sulfur Hexafluoride (SF_6)*** is a colorless gas soluble in alcohol and ether, 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 ozone-depleting substances, they are less potent at destroying stratospheric ozone than CFCs. They have been introduced as temporary replacements for CFCs and are also GHGs.

- ***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 2001; USEPA 2022).

GHGs are dependent on the lifetime or persistence of the gas molecule in the atmosphere. Some GHGs have stronger greenhouse effects than others. These are referred to as high GWP gases. The GWP of GHG emissions are shown in Table 8, *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 MT of CH_4 would be equivalent to 250 MT of CO_2.[12]

Table 8 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report (SAR) Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO_2[1]	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO_2[1]

[12] The global warming potential of a GHG is dependent on the lifetime, or persistence, of the gas molecule in the atmosphere.

Table 8 GHG Emissions and Their Relative Global Warming Potential Compared to CO_2

GHGs	Second Assessment Report (SAR) Global Warming Potential Relative to CO_2[1]	Fourth Assessment Report (AR4) Global Warming Potential Relative to CO_2[1]	Fifth Assessment Report (AR5) Global Warming Potential Relative to CO_2[1]
Carbon Dioxide (CO_2)	1	1	1
Methane[2] (CH_4)	21	25	28
Nitrous Oxide (N_2O)	310	298	265

Source: IPCC 1995, 2007, 2013.

Notes: The IPCC published updated GWP values in its Fifth Assessment Report (AR5) that reflect new information on atmospheric lifetimes of GHGs and an improved calculation of the radiative forcing of CO_2. However, GWP values identified in AR4 are used by South Coast AQMD to maintain consistency in statewide GHG emissions modeling. In addition, the 2017 Scoping Plan Update was based on the GWP values in AR4.

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.

GHG Regulatory Setting

REGULATION OF GHG EMISSIONS ON A NATIONAL LEVEL

The US 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 do not in and of themselves impose any emission reduction requirements but allow 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 AQMD 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_2 per year are required to submit an annual report.

Update to Corporate Average Fuel Economy Standards (2021 to 2026)

The federal government issued new Corporate Average Fuel Economy (CAFE) standards in 2012 for model years 2017 to 2025, which required a fleet average of 54.5 miles per gallon in 2025. On March 30, 2020, the EPA finalized an updated CAFE and GHG emissions standards for passenger cars and light trucks and established new standards covering model years 2021 through 2026, known as the Safer Affordable Fuel Efficient (SAFE) Vehicles Final Rule for Model Years 2021 to 2026. Under SAFE, the fuel economy

standards will increase 1.5 percent per year compared to the 5 percent per year under the CAFE standards established in 2012. Overall, SAFE requires a fleet average of 40.4 MPG for model year 2026 vehicles (85 Federal Register 24174 (April 30, 2020)).

On December 21, 2021, under direction of Executive Order (EO) 13990 issued by President Biden, the National Highway Traffic Safety Administration repealed Safer Affordable Fuel Efficient Vehicles Rule Part One, which had preempted state and local laws related to fuel economy standards. In addition, on March 31, 2022, the National Highway Traffic Safety Administration finalized new fuel standards in response to EO 13990. Fuel efficiency under the standards proposed will increase 8 percent annually for model years 2024 to 2025 and 10 percent annual for model year 2026. Overall, the new CAFE standards require a fleet average of 49 MPG for passenger vehicles and light trucks for model year 2026, which would be a 10 MPG increase relative to model year 2021 (NHTSA 2022).

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

Pursuant to its authority under the Clean Air Act, the EPA has developed regulations for new, large, stationary sources of emissions, such as power plants and refineries. Under former President Obama's 2013 Climate Action Plan, the EPA was directed to develop regulations for existing stationary sources as well. On June 19, 2019, the EPA issued the final Affordable Clean Energy (ACE) rule, which became effective on August 19, 2019. The ACE rule was crafted under the direction of President Trump's Energy Independence EO. It officially rescinded the Clean Power Plan rule issued during the Obama Administration and set emissions guidelines for states in developing plans to limit CO_2 emissions from coal-fired power plants. The Affordable Clean Energy rule was vacated by the United States Court of Appeals for the District of Columbia Circuit on January 19, 2021. The Biden Administration is assessing options on potential future regulations.

REGULATION OF GHG EMISSIONS ON A STATE LEVEL

Current State of California guidance and goals for reductions in GHG emissions are generally embodied in EO S-03-05 and EO B-30-15, EO B-55-18, Assembly Bill 32 (AB 32), Senate Bill 32 (SB 32), and SB 375.

Executive Order S-3-05

Executive Order S-3-05, signed June 1, 2005. Executive Order S-3-05 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)

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 EO S-03-05. CARB prepared the 2008 Scoping Plan to outline a plan to achieve the GHG emissions reduction targets of AB 32.

Executive Order B-30-15

EO B-30-15, signed April 29, 2015, set a goal of reducing GHG emissions within the state to 40 percent of 1990 levels by year 2030. EO B-30-15 also directed 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 EO 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 SB 32 and AB 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 the CARB to prioritize direction emissions reductions rather than the market-based cap-and-trade program for large stationary, mobile, and other sources.

Executive Order B-55-18

Executive Order B-55-18, signed September 10, 2018, set a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." Executive Order B-55-18 directs CARB to work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning that not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions should be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Assembly Bill 1279

AB 1279, signed by Governor Newsom in September 2022, codified the carbon neutrality targets of EO B-55-18 for year 2045 and sets a new legislative target for year 2045 of 85 percent below 1990 levels for anthropogenic GHG emissions. SB 1279 also requires CARB to update the Scoping Plan to address these new targets.

Draft 2022 Climate Change Scoping Plan

CARB adopted the *2022 Scoping Plan for Achieving Carbon Neutrality* (2022 Scoping Plan) on December 15, 2022, which lays out a path to achieve carbon neutrality by 2045 or earlier and to reduce the State's anthropogenic GHG emissions (CARB 2022). The Scoping Plan provides updates to the previously adopted 2017 Scoping Plan and addresses the carbon neutrality goals of EO B-55-18 (discussed below) and the ambitious GHG reduction target as directed by AB 1279. Previous Scoping Plans focused on specific GHG reduction targets for our industrial, energy, and transportation sectors—to meet 1990 levels by 2020, and then the more aggressive 40 percent below that for the 2030 target. The 2022 Scoping Plan updates the target of reducing anthropogenic emissions to 85 percent below 1990 levels by 2045. Carbon neutrality takes it one

step further by expanding actions to capture and store carbon including through natural and working lands and mechanical technologies, while drastically reducing anthropogenic sources of carbon pollution at the same time.

The path forward was informed by the recent Sixth Assessment Report (AR6) of the IPCC and the measures would achieve 85 percent below 1990 levels by 2045 in accordance AB 1279. CARB's 2022 Scoping Plan identifies strategies as shown in Table 11, *Priority Strategies for Local Government Climate Action Plans*, that would be most impactful at the local level for ensuring substantial process towards the State's carbon neutrality goals.

Table 11 Priority Strategies for Local Government Climate Action Plans

Priority Area	Priority Strategies
Transportation Electrification	Convert local government fleets to zero-emission vehicles (ZEV) and provide EV charging at public sites.
	Create a jurisdiction-specific ZEV ecosystem to support deployment of ZEVs statewide (such as building standards that exceed state building codes, permit streamlining, infrastructure siting, consumer education, preferential parking policies, and ZEV readiness plans).
VMT Reduction	Reduce or eliminate minimum parking standards.
	Implement Complete Streets policies and investments, consistent with general plan circulation element requirements.
	Increase access to public transit by increasing density of development near transit, improving transit service by increasing service frequency, creating bus priority lanes, reducing or eliminating fares, microtransit, etc.
	Increase public access to clean mobility options by planning for and investing in electric shuttles, bike share, car share, and walking
	Implement parking pricing or transportation demand management pricing strategies.
	Amend zoning or development codes to enable mixed-use, walkable, transit-oriented, and compact infill development (such as increasing allowable density of the neighborhood).
	Preserve natural and working lands by implementing land use policies that guide development toward infill areas and do not convert "greenfield" land to urban uses (e.g., green belts, strategic conservation easements)
Building Decarbonization	Adopt all-electric new construction reach codes for residential and commercial uses.
	Adopt policies and incentive programs to implement energy efficiency retrofits for existing buildings, such as weatherization, lighting upgrades, and replacing energy-intensive appliances and equipment with more efficient systems (such as Energy Star-rated equipment and equipment controllers).
	Adopt policies and incentive programs to electrify all appliances and equipment in existing buildings such as appliance rebates, existing building reach codes, or time of sale electrification ordinances.
	Facilitate deployment of renewable energy production and distribution and energy storage on privately owned land uses (e.g., permit streamlining, information sharing).
	Deploy renewable energy production and energy storage directly in new public projects and on existing public facilities (e.g., solar photovoltaic systems on rooftops of municipal buildings and on canopies in public parking lots, battery storage systems in municipal buildings).

Source: CARB 2022

Based on Appendix D of the 2022 CARB Climate Change Scoping Plan, for residential and mixed-use development projects, CARB recommends first demonstrating that these land use development projects are aligned with State climate goals based on the attributes of land use development that reduce operational

GHG emissions while simultaneously advancing fair housing. Attributes that accommodate growth in a manner consistent with the GHG and equity goals of SB 32 have all the following attributes:

- Transportation Electrification
  - Provide EV charging infrastructure that, at a minimum, meets the most ambitious voluntary standards in the California Green Building Standards Code at the time of project approval.

- VMT Reduction
  - Is located on infill sites that are surrounded by existing urban uses and reuses or redevelops previously undeveloped or underutilized land that is presently served by existing utilities and essential public services (e.g., transit, streets, water, sewer).
  - Does not result in the loss or conversion of the State's natural and working lands;
  - Consists of transit-supportive densities (minimum of 20 residential dwelling units/acre), or is in proximity to existing transit stops (within a half mile), or satisfies more detailed and stringent criteria specified in the region's Sustainable Communities Strategy (SCS);
  - Reduces parking requirements by:
    - Eliminating parking requirements or including maximum allowable parking ratios (i.e., the ratio of parking spaces to residential units or square feet); or
    - Providing residential parking supply at a ratio of <1 parking space per dwelling unit; or
    - For multifamily residential development, requiring parking costs to be unbundled from costs to rent or own a residential unit.
  - At least 20 percent of the units are affordable to lower-income residents;
  - Result in no net loss of existing affordable units.

- Building Decarbonization
  - Use all electric appliances without any natural gas connections and does not use propane or other fossil fuels for space heating, water heating, or indoor cooking (CARB 2022).

If the first approach to demonstrating consistency is not applicable (such as in the case of this school modernization project), the second approach to project-level alignment with state climate goals is to achieve net zero GHG emissions. The third approach to demonstrating project-level alignment with state climate goals is to align with GHG thresholds of significance, which many local air quality management (AQMDs) and air pollution control districts (APCDs) have developed or adopted (CARB 2022).

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 VMT and vehicle trips. Specifically, SB 375 required CARB to establish GHG emissions reduction targets for each of the 18 metropolitan planning organizations (MPO). The Southern California Association of Governments (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 is 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).

2017 Update to the SB 375 Targets

CARB is required to update the targets for the MPOs every eight years. CARB adopted revised SB 375 targets for the MPOs in March 2018. The updated targets became effective in October2018. All SCSs adopted after October 1, 2018, are subject to these new targets. CARB's updated SB 375 targets for the SCAG region were an 8 percent per capita GHG reduction in 2020 from 2005 levels (unchanged from the 2010 target) and a 19 percent per capita GHG reduction in 2035 from 2005 levels (compared to the 2010 target of 13 percent) (CARB 2018).

The targets consider the need to further reduce VMT, as identified in the 2017 Scoping Plan Update (for SB 32), while balancing the need for additional and more flexible revenue sources to incentivize positive planning and action toward sustainable communities. Like the 2010 targets, the updated SB 375 targets are in units of "percent per capita" reductions in GHG emissions from automobiles and light trucks relative to 2005; this excludes reductions anticipated from implementation of state technology and fuels strategies and any potential future state strategies, such as statewide road user pricing. The proposed targets call for greater per-capita GHG emission reductions from SB 375 than are currently in place, which for 2035 translate into proposed targets that either match or exceed the emission reduction levels in the MPOs' currently adopted SCSs to achieve the SB 375 targets. CARB foresees that the additional GHG emissions reductions in 2035 may be achieved from land use changes, transportation investment, and technology strategies (CARB 2018).

SCAG's Regional Transportation Plan / Sustainable Communities Strategy

SB 375 requires each MPO to prepare a sustainable communities strategy in its regional transportation plan. For the SCAG region, the 2020-2045 RTP/SCS (Connect SoCal) was adopted on September 3, 2020, and is an update to the 2016-2040 RTP/SCS. In general, the SCS outlines a development pattern for the region that,

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.

Connect SoCal focuses on the continued efforts of the previous RTP/SCSs to integrate transportation and land use strategies in development of the SCAG region through horizon year 2045 (SCAG 2020). Connect SoCal forecasts that the SCAG region will meet its GHG per capita reduction targets of 8 percent by 2020 and 19 percent by 2035. Additionally, Connect SoCal also forecasts that implementation of the plan will reduce VMT per capita in year 2045 by 4.1 percent compared to baseline conditions for that year. Connect SoCal includes a "Core Vision" that centers on maintaining and better managing the transportation network for moving people and goods while expanding mobility choices by locating housing, jobs, and transit closer together and increasing investments in transit and complete streets (SCAG 2020).

Transportation Sector Specific Regulations

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 years 2017 through 2025 light-duty vehicles. (See also the discussion on the update to the Corporate Average Fuel Economy standards at the beginning of this Section 5.5.2 under "Federal.") 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 GHGs with 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 less GHG emissions and 75 percent less smog-forming emissions.

Executive Order S-01-07

On January 18, 2007, the state set a new LCFS for transportation fuels sold in the state. Executive Order S-01-07 sets a declining standard for GHG emissions measured in CO_2e gram per unit of fuel energy sold in California. The LCFS required 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 uses market-based mechanisms to allow these providers to choose how they reduce emissions during the "fuel cycle" using the most economically feasible methods.

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 directed 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 to 80 percent below 1990 levels.

Executive Order N-79-20

On September 23, 2020, Governor Newsom signed Executive Order N-79-20, whose goal is that 100 percent of in-state sales of new passenger cars and trucks will be ZE by 2035. Additionally, the fleet goals for trucks are that 100 percent of drayage trucks are ZE by 2035, and 100 percent of medium- and heavy-duty vehicles in the state are ZE by 2045, where feasible. The Executive Order's goal for the State is to transition to 100 percent ZE off-road vehicles and equipment by 2035, where feasible.

Renewables Portfolio: Carbon Neutrality Regulations

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

A major component of California's Renewable Energy Program is the renewables portfolio standard 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, signed in November 2008, expanded the state's renewable energy standard to 33 percent renewable power by 2020. This standard was adopted by the legislature in 2011 (SB X1-2). 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 and establishes tiered increases to the RPS—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.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100. Under SB 100, the RPS for public-owned facilities and retail sellers consist of 44 percent renewable energy by 2024, 52 percent by 2027, and 60 percent by 2030. SB 100 also established a new RPS requirement of 50 percent by 2026. Furthermore, the bill establishes an overall state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Senate Bill 1020

Senate Bill 1020 was signed into law on September 16, 2022. It requires renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent by 2040. Additionally, SB 1020 requires all state agencies to procure 100 percent of electricity from renewable energy and zero-carbon resources by 2035.

Energy Efficiency Regulations

California Building Code: Building Energy Efficiency Standards

Energy conservation standards for new residential and nonresidential buildings were adopted by the California Energy Resources Conservation and Development Commission (now the CEC) in June 1977 (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 August 11, 2021, the CEC adopted the 2022 Building Energy Efficiency Standards, which were subsequently approved by the California Building Standards Commission in December 2021. The 2022 standards went into effect on January 1, 2023, replacing the existing 2019 standards. The 2022 standards would require mixed-fuel single-family homes to be electric-ready to accommodate replacement of gas appliances with electric appliances. In addition, the new standards also include prescriptive photovoltaic system and battery requirements for high-rise, multifamily buildings (i.e., more than three stories) and noncommercial buildings such as hotels, offices, medical offices, restaurants, retail stores, schools, warehouses, theaters, and convention centers (CEC 2021).

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.[13] The mandatory provisions of CALGreen became effective January 1, 2011. In 2021, the CEC approved the 2022 CALGreen, which went into effect on January 1, 2023, replacing the existing 2019 standards.

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.

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

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 Diversion Regulations

AB 939: Integrated Waste Management Act of 1989

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

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. Section 5.408 of CALGreen 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.

AB 1327

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.

AB 1826

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 and multifamily residential dwellings with 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 with food waste.

Water Efficiency Regulations

SBX7-7

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 required 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.

AB 1881: Water Conservation in Landscaping Act

The Water Conservation in Landscaping Act of 2006 (AB 1881) requires local agencies to adopt the updated DWR model ordinance or an 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.

Short-Lived Climate Pollutant Reduction Strategy

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 the incomplete combustion of fuels. SB 1383 required the state board, no later than January 1, 2018, to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants 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. The bill also established targets for reducing organic waste in landfills. On March 14, 2017, CARB adopted the Short-Lived Climate Pollutant Reduction 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 2017a). In-use on-road rules were expected to reduce black carbon emissions from on-road sources by 80 percent between 2000 and 2020. South Coast AQMD is one of the air districts that requires air pollution control technologies for chain-driven broilers, which reduces particulate emissions from these charbroilers by over 80 percent (CARB 2017a). Additionally, South Coast AQMD Rule 445 limits installation of new fireplaces in the South Coast Air Basin.

Existing Conditions

CALIFORNIA'S GREENHOUSE GAS SOURCES AND RELATIVE CONTRIBUTION

In 2021, the statewide GHG emissions inventory was updated for 2000 to 2019 emissions using the GWPs in IPCC's AR4 (IPCC 2013). Based on these GWPs, California produced 418.2 $MMTCO_2e$ GHG emissions in 2019. California's transportation sector was the single largest generator of GHG emissions, producing 39.7 percent of the state's total emissions. Industrial sector emissions made up 21.1 percent, and electric power generation made up 14.1 percent of the state's emissions inventory. Other major sectors of GHG emissions include commercial and residential (10.5 percent), agriculture and forestry (7.6 percent), high GWP (4.9 percent), and recycling and waste (2.1 percent) (CARB 2021).

Since the peak level in 2004, California's GHG emission shave generally followed a decreasing trend. In 2016, California statewide GHG emissions dropped below the AB 32 target for year 2020 of 431 $MMTCO_2e$ and have remained below this target since then. In 2019, emissions from routine GHG-emitting activities statewide were almost 13 $MMTCO_2e$ lower than the AB 32 target for year 2020. Per-capita GHG emissions in California have dropped from a 2001 peak of 14.0 $MTCO_2e$ per person to 10.5 $MTCO_2e$ per person in 2019, a 25 percent decrease.

Transportation emissions continued to decline in 2019 statewide as they had done in 2018, with even more substantial reductions due to a significant increase in renewable diesel. Since 2008, California's electricity sector has followed an overall downward trend in emissions. In 2019, solar power generation continued its rapid growth since 2013. Emissions from high-GWP gases comprised 4.9 percent of California's emissions in 2019. This continues the increasing trend as the gases replace ozone-depleting substances being phased out under the 1987 Montreal Protocol. Overall trends in the inventory also demonstrate that the carbon intensity of California's economy (the amount of carbon pollution per million dollars of gross domestic product) has declined 45 percent since the 2001 peak, though the state's gross domestic product grew 63 percent during this period (CARB 2021).

Thresholds of Significance

The CEQA Guidelines recommend that a lead agency consider the following when assessing the significance of impacts from GHG emissions on the environment:

1. The extent to which the project may increase (or reduce) GHG emissions as compared to the existing environmental setting;

2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project;

3. The extent to which the project complies with regulations or requirements adopted to implement an adopted statewide, regional, or local plan for the reduction or mitigation of GHG emissions.[14]

SOUTH COAST AQMD WORKING GROUP

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

[14] The Governor's Office of Planning and Research recommendations include a requirement that such a plan must be adopted through a public review process and include specific requirements that reduce or mitigate the project's incremental contribution of GHG emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable, notwithstanding compliance with the adopted regulations or requirements, an EIR must be prepared for the project.

- **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.

- **Tier 3.** If GHG emissions are less than the screening-level threshold, 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, South Coast AQMD requires an assessment of GHG emissions. The South Coast AQMD Working Group identified a 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. These bright-line thresholds are 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 4.** If emissions exceed the screening threshold, a more detailed review of the project's GHG emissions is warranted.

  The South Coast AQMD Working Group has identified an efficiency target for projects that exceed the screening threshold 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 projects (e.g., program-level projects such as general plans) for the year 2020.[15] 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.

The bright-line screening-level criterion of 3,000 $MTCO_2e$/yr is used as the significance threshold for this project. Therefore, if the project operation-phase emissions exceed the 3,000 $MTCO_2e$/yr threshold, GHG emissions would be considered potentially significant in the absence of mitigation measures.

[15] It should be noted that the Working Group also considered efficiency targets for 2035 for the first time in this Working Group meeting.

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Appendix

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Appendix B Cultural Resource – Records Search

South Central Coastal Information Center
California State University, Fullerton
Department of Anthropology MH-426
800 North State College Boulevard
Fullerton, CA 92834-6846
657.278.5395
California Historical Resources Information System
Los Angeles, Orange, Ventura and San Bernardino Counties
sccic@fullerton.edu

4/26/2023 SCCIC File #: 24642.10802

Re: Record Search Results for the Norm Ross Sports Park Joint Use Project

The South Central Coastal Information Center received your records search request for the project area referenced above, located on the Los Alamitos and Anaheim, CA USGS 7.5' quadrangle(s). The following summary reflects the results of the records search for the project area and a ½-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. In addition, the California Points of Historical Interest (SPHI), the California Historical Landmarks (SHL), the California Register of Historical Resources (CAL REG), the National Register of Historic Places (NRHP), and the California State Built Environment Resources Directory (BERD) listings were reviewed for the above referenced project site and a ¼-mile radius. Due to the sensitive nature of cultural resources, archaeological site locations are not released.

RECORDS SEARCH RESULTS SUMMARY

Archaeological Resources* (*see Recommendations section)	Within project area: 0 Within project radius: 0
Built-Environment Resources	Within project area: 0 Within project radius: 2
Reports and Studies	Within project area: 0 Within project radius: 3
OHP Built Environment Resources Directory (BERD) 2022	Within project area: 0 Within ¼-mile radius: 3
California Points of Historical Interest (SPHI) 2022	Within project area: 0 Within ¼-mile radius: 0
California Historical Landmarks (SHL) 2022	Within project area: 0 Within ¼-mile radius: 0
California Register of Historical Resources (CAL REG) 2022	Within project area: 0 Within ¼-mile radius: 0
National Register of Historic Places (NRHP) 2022	Within project area: 0 Within ¼-mile radius: 0

HISTORIC MAP REVIEW - Anaheim, CA (1896, 1942) and Downey 1943 15' USGS historic maps indicate that in 1896 there was one road within the project area. There were three roads and three building within the project search radius which was located within the historic place name of Los Alamitos. In 1942, there was one road and one building within the project area. There were several additional roads and buildings within the project search radius. Major road names included Stanton Avenue, Katella Avenue. The Southern Pacific Los Alamitos Branch rail road ran through the western and northern portions of the project search radius. The Pacific Electric rail line ran northeast of the project area.

RECOMMENDATIONS

**When we report that no archaeological resources are recorded in your project area or within a specified radius around the project area; that does not necessarily mean that nothing is there. It may simply mean that the area has not been studied and/or that no information regarding the archaeological sensitivity of the property has been filed at this office. The reported records search result does not preclude the possibility that surface or buried artifacts might be found during a survey of the property or ground-disturbing activities.*

The archaeological sensitivity of the project location is unknown because there are no previous studies for the subject property. Additionally, the natural ground-surface appears to be obscured by urban development; consequently, surface artifacts would not be visible during a survey. While there are currently no recorded archaeological sites within the project area, buried resources could potentially be unearthed during project activities. Therefore, customary caution and a halt-work condition should be in place for all ground-disturbing activities. In the event that any evidence of cultural resources is discovered, all work within the vicinity of the find should stop until a qualified archaeological consultant can assess the find and make recommendations. Moving or extraction of potential cultural resources should not be attempted by anyone other than a qualified cultural resources consultant. It is also recommended that the Native American Heritage Commission be consulted to identify if any additional traditional cultural properties or other sacred sites are known to be in the area. The NAHC may also refer you to local tribes with particular knowledge of potential sensitivity. The NAHC and local tribes may offer additional recommendations to what is provided here and may request an archaeological monitor. Finally, if the built-environment resources on the property are 45 years or older, a qualified architectural historian should be retained to study the property and make recommendations regarding those structures.

For your convenience, you may find a professional consultant**at www.chrisinfo.org. Any resulting reports by the qualified consultant should be submitted to the South Central Coastal Information Center as soon as possible.

**The SCCIC does not endorse any particular consultant and makes no claims about the qualifications of any person listed. Each consultant on this list self-reports that they meet current professional standards.

If you have any questions regarding the results presented herein, please contact the office at 657.278.5395 Monday through Thursday 9:00 am to 3:30 pm. Should you require any additional information for the above referenced project, reference the SCCIC number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System,

Stacy St. James

Digitally signed by Stacy St. James
Date: 2023.04.26 17:22:54 -07'00'

Isabela Kott
Assistant Coordinator, GIS Program Specialist

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

Appendix

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Appendix C Geotechnical Report

John R. Byerly
INCORPORATED

GEOTECHNICAL INVESTIGATION

APRIL 14, 2023

NORM ROSS SPORTS

PROPOSED PARK BUILDING AND BRIDGE OVER STORM CHANNEL

11111 CEDAR STREET

STANTON, CALIFORNIA

CLIENT:

PBK ARCHITECTS

600 ANTON BOULEVARD, SUITE 1375

COSTA MESA, CALIFORNIA 92626

ATTENTION: JOSE' VALLARTA, LEED™ GA

DISTRIBUTION:
(1) PBK ARCHITECTS

RPT. NO.: 7650-a
FILE NO.: S-14556

GEOTECHNICAL ENGINEERS • TESTING AND INSPECTION
2257 South Lilac Ave., Bloomington, CA 92316-2903
Bloomington (909) 877-1324 Riverside (909) 783-1910 Fax (909) 877-5210

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Enclosures:

(1) Plot Plan

(2) Test Boring Logs

(3) Maximum Density Determinations

(4) Consolidation Test Results

(5) Direct Shear Test Results

(6) Atterberg Limits Results

(7) Specifications for Aggregate Base

(8) Liquefaction and Dynamic Settlement Analysis

(9) Geologic Hazards Report

INTRODUCTION

During January and February of 2023, an investigation of the soil conditions underlying the proposed park building, garden storage building, and bridge site at the existing Norm Ross Sports Complex was conducted by this firm. The purpose of our investigation was to evaluate the surface and subsurface conditions at the site with respect to safe and economical foundation types, vertical and lateral bearing values, liquefaction and seismic settlement potential, support of concrete slabs-on-grade, and site preparation. Included in the recommendations are the seismic design parameters as required by the 2022 California Building Code and the ASCE Standard 7-16. Recommendations are also provided for design of asphalt concrete and portland cement concrete pavement for the proposed fire lane access road, and for design of portland cement concrete pavement for areas to receive only pedestrian traffic. A geologic hazards report was prepared in our behalf by our consulting engineering geologist, Terra Geosciences, for submission to the California Geologic Survey for review. The geologic hazards report is presented herewith as Enclosure 9. A shear-wave survey of the subsurface material was performed by our consulting geophysicist, Terra Geosciences. The shear-wave survey is presented as "Appendix A" in the geologic hazards report by Terra Geosciences. A site-specific ground motion analysis was conducted to determine the seismic design parameters as required by the 2022 edition of the California Building Code and ASCE Standard 7-16. The site-specific ground motion analysis is presented as "Appendix B" in the geologic hazards report by Terra Geosciences. Our geotechnical investigation, together with our conclusions and recommendations, is discussed in detail in the following report.

This report has been prepared for the exclusive use of PBK Architects and their design consultants for specific application to the project described herein. Should the project be modified, the conclusions and recommendations presented in this report should be reviewed by the geotechnical engineer. Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted engineering principles and practices. This warranty is in lieu of all other warranties, express or implied.

PROJECT DESCRIPTION

For the preparation of this report, we reviewed the project floor plan and site plan provided by PBK Architects. We understand that planned improvements to the existing Norm Ross Sports Complex will consist of a new park building and garden storage building that will have footprint areas of about 2,650 square feet and 142 square feet, respectively. The proposed buildings will be single-story structures of wood-frame construction, and will incorporate concrete slab-on-grade floors. The buildings will impose relatively light foundation loads on the underlying soils. We also understand that a bridge is proposed, which will extend from the existing Stanton Park to the Norm Ross Sports Complex, and will span across the Orange County's flood control channel. This bridge will serve as the main sports complex access for pedestrians, and for service and emergency vehicles. Lastly, we understand that a fire lane access road will be constructed. The site for the proposed park building appears to be at the approximate desired grade, and no significant additional cuts and fills seem likely. The site configuration is illustrated on Enclosure 1.

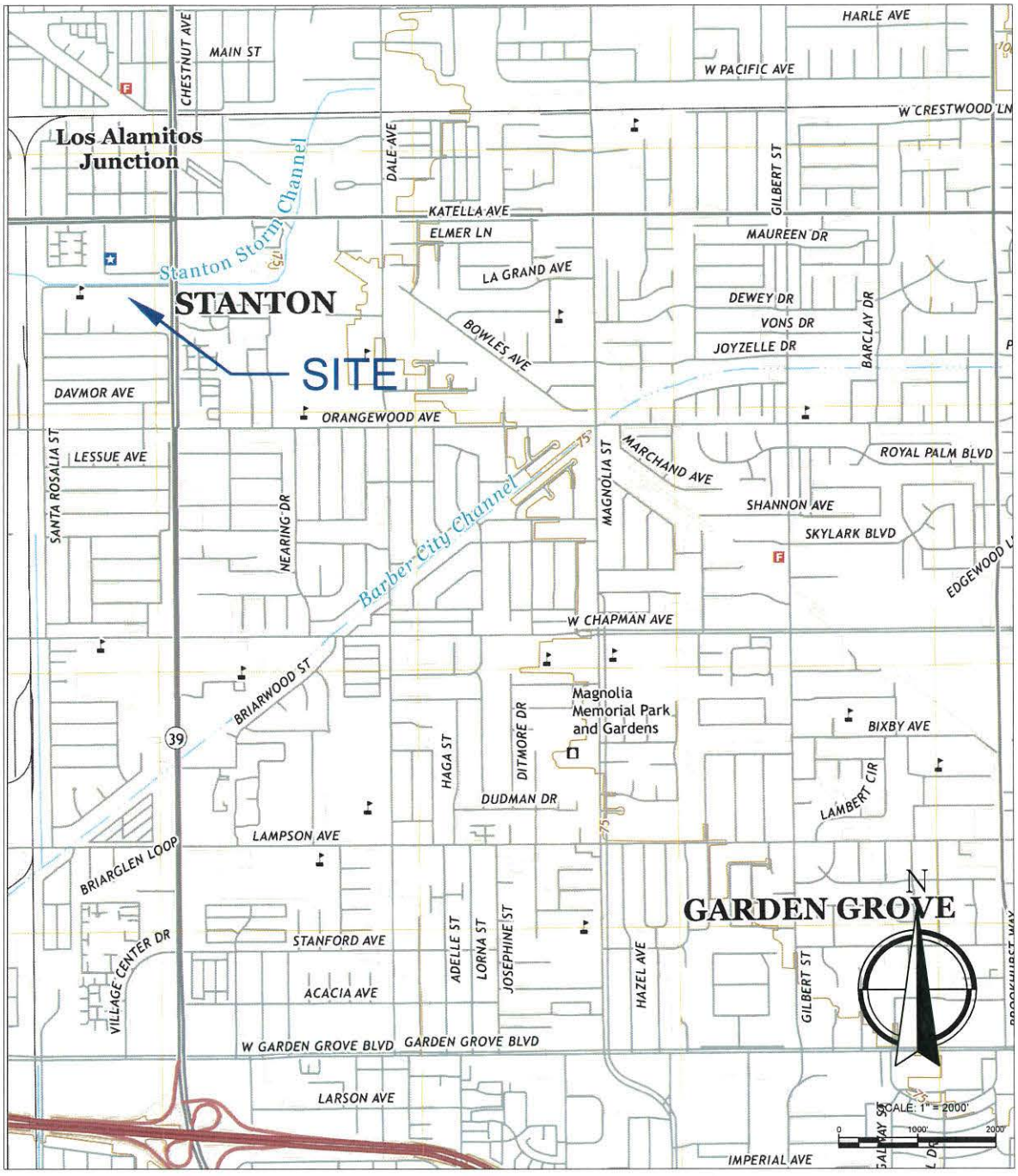
SITE CONDITIONS

The existing Norm Ross Sports Complex is located at the south terminus of Cedar Street and west of Beach Boulevard in the city of Stanton. An Index Map showing the general vicinity of the site is presented on the following page. The coordinates of the site are latitude 33.8004° N and longitude -117.9952° W (World Geodetic System of 1984). The sports complex is currently occupied by the Stanton Community Garden, and a softball field area. The areas to be developed for the new park building and garden storage building are presently occupied by the Stanton Community Garden, and are also grass- and dirt-covered. The Stanton Storm Channel is adjacent to the sports complex's northern property boundary. The channel is concrete lined, trapezoidal in cross section, and about 10 feet in depth. Commercial development is located to the east of the site. Carver Elementary School is situated to the west, and single-family residences occupy the properties to the south. The area topography is generally flat, and the site slopes downward to the southwest at an average gradient of less than 1 percent.

FIELD AND LABORATORY INVESTIGATION

The underlying soils in the immediate vicinity of the new park building, garden storage building, and bridge sites were explored by three test borings drilled with a limited-access track-mounted

INDEX MAP



SOURCE DOCUMENTS: USGS ANAHEIM QUADRANGLE, CALIFORNIA, 7.5 MINUTE SERIES, 2018

TOWNSHIP AND RANGE: SECTION 26, T4S, R11W

LATITUDE: 33.8004° N

LONGITUDE: -117.9952° W

John R. Byerly INCORPORATED

Rpt. No.: 7650-a
File No.: S-14556

flight-auger to depths of up to 76 feet below the existing ground surface. The approximate locations of the test borings are indicated on Enclosure 1. The soils encountered were examined and visually classified by one of our field engineers. A summary of the soil classifications appears as Enclosure 2. The exploration logs show subsurface conditions at the dates and locations indicated, and may not be representative of other locations and times. The stratification lines presented on the logs represent the approximate boundaries between soil types, and the transitions may be gradual. A hollow-stem auger with an outside diameter of 7.9 inches was utilized. The inside diameter of the auger was 4.3 inches.

Bulk and relatively undisturbed samples were obtained at selected levels within the explorations and delivered to our laboratory for testing and evaluation. The driving energy or blow counts required to advance the sampler at each sample interval were also noted. Relatively undisturbed soil samples were recovered at various intervals in the borings with a California sampler. The California sampler was a 2.9-inch outside diameter, 2.5-inch inside diameter, split-barrel sampler lined with brass tubes. The sampler was 18 inches long. The sampler conformed to the requirements of ASTM D 3550. A 140-pound automatic trip hammer was lifted hydraulically and was dropped 30 inches for each blow. Standard penetration tests were performed as Boring 1 was advanced. The standard penetration test blow counts are shown on the log for Boring 1. Standard penetration testing was performed with a 2.0-inch outside diameter, 1.5-inch inside diameter, split-barrel sampler. The sampler was 18 inches long and was unlined. The sampler conformed to the requirements of ASTM D1586. A 140-pound automatic trip hammer was lifted hydraulically and was dropped 30 inches for each blow. An efficiency value of 1.0 was assumed for the automatic trip hammer.

Included in our laboratory testing were moisture/density determinations on all undisturbed samples. Optimum moisture content/maximum dry density relationships were established for typical soil types so that the relative compaction of the subsoils could be determined. Consolidation testing was conducted on selected samples to evaluate the compressibility characteristics of the soil. Direct shear testing was conducted on a selected sample to determine its strength parameters. Atterberg limits testing was conducted on selected samples to measure the plasticity of the soil. The moisture/density data are presented on the boring logs presented in Enclosure 2. The maximum density and consolidation test results appear on Enclosures 3 and 4, respectively. The results of direct shear and Atterberg limits testing appear on Enclosures 5 and 6, respectively. Chemical testing, comprised of pH, soluble sulfate, chloride, redox potential,

and resistivity testing, was also performed. These test results are presented in the "Chemical Test Results" section of this report.

SOIL CONDITIONS

The upper soils encountered in our test borings consisted of loose to medium dense silty sands, silty sands with traces of gravel, silty sands with traces of clay, and sands; and soft sandy silts with clay. The loose and soft soils extended to depths ranging from about 5.0 feet to 8.0 feet. The deeper soils consisted of medium dense to very dense silty sands and sands; and medium stiff to very stiff sandy silts with clay and clayey silts with sand. Consolidation tests indicate a potential for 2.5 to 3.2 percent hydroconsolidation in the upper soil. Free ground water was encountered in Borings 1, 2, and 3 at depths of 18.8 feet, 19.9 feet, and 24.7 feet, respectively. Bedrock was not noted at our boring locations. The near-surface soils observed in our test borings are granular and non-plastic, and are considered to have a very low expansion potential in accordance with ASTM D4829.

LIQUEFACTION AND DYNAMIC SETTLEMENT

Liquefaction is a phenomenon that occurs when a soil undergoes a transformation from a solid state to a liquefied condition due to the effects of increased pore-water pressure. Loose saturated soils with particle sizes in the medium sand to silt range are particularly susceptible to liquefaction when subjected to seismic ground shaking. Affected soils lose all strength during liquefaction, and foundation failure can occur.

Free ground water was encountered in Borings 1, 2, and 3 at depths of 18.8 feet, 19.9 feet, and 24.7 feet, respectively. Based on ground water data, our consulting engineering geologist estimates that the shallowest historic depth to ground water is expected to have been deeper than 8 feet below existing grade. For the purpose of our liquefaction analysis, we have conservatively assumed an historic high ground water level at a depth of 8 feet.

It is anticipated that major earthquake ground shaking will occur during the lifetime of the proposed development from the seismically active Newport-Inglewood fault located approximately 6.5 miles southwest of the site. This fault would create the most significant earthshaking event. Based on an earthquake magnitude of 7.2, a peak horizontal ground acceleration of 0.65g is assigned to the site. To evaluate the potential for liquefaction and seismically induced settlement of the

subsoils, the soils were analyzed for relative density. The most effective measurement of relative density of sands with respect to liquefaction potential is standard penetration resistance. Standard penetration tests were performed as Boring 1 was advanced to a depth of 76 feet. The standard penetration test "N" values are presented on the logs for Boring 1.

Using the information presented in Table 3 of Page 73 of the publication by Idriss and Boulanger (Soil Liquefaction During Earthquakes, Idriss and Boulanger, MNO-12, 2008) an analysis was conducted to determine the sampler correction factor Cs. The SPT sampler is machined to fit liners, therefore a correction factor of 1.0 may not be appropriate. Throughout the test boring, a calculation was performed to determine the average $(N_1)_{60}$ value from which Cs was subsequently determined. An average Cs value of 1.2 was calculated and used in the analysis.

The standard penetration data provided input for the LiquefyPro Version 4.3 program for liquefaction and seismically induced settlement. As indicated in Special Publication 117A (Revised) Release, "Guidelines for Evaluating and Mitigating Seismic Hazards in California, March 2009," a safety factor of 1.3 was used in this analysis. We have assumed that the upper 7 feet of soil will be overexcavated and replaced as engineered fill, and that the bottom of overexcavation would be scarified to a depth of 12 inches. The engineered fill was assumed to have an "N" value of 30. The results of this evaluation are shown on Enclosure 8. This analysis reveals a total potential dynamic settlement of 1.50 inches in Boring 1. The total settlement will occur over a large area and will not affect local buried utilities. Within the building area, we would estimate the differential dynamic settlement would be about one-half the total. Based on a minimum park building dimension of about 60 feet, a maximum angular distortion of about 1/960 is calculated, which is within tolerable limits. In addition, the result of the Atterberg testing indicate the silts will behave as clay under seismic conditions. It is our judgment that neither liquefaction nor seismically induced dry settlement need be a consideration in the design of the presently proposed park building or bridge.

SEISMIC SHEAR-WAVE SURVEY

One 161-foot-long seismic line was performed near the proposed construction area. The results of the seismic shear-wave survey conducted by Terra Geosciences revealed that the average shear-wave velocity ("weighted average") in the upper 100 feet of the subject survey area is 675.7 feet per second. The report states that: ""This average velocity classifies the underlying soils to that of Site Class "D" (Stiff Soil profile), which has a velocity range from 600 to 1,200 feet/second (ASCE, 2017; Table 20.3-1)."" The report also states that: ""The "weighted average" velocity is computed from a formula that is used by the ASCE (2017; Section 20.4, Equation 20.4-1) to determine the average shear-wave velocity for the upper 100 feet of the subsurface (V100)."" Lastly, the report states that: "The detailed shear-wave model displays these calculated layer boundaries/depths and associated velocities (feet/second) for the 144-foot profile where locally measured." The shear-wave survey is presented as "Appendix A" in the geologic hazards report by Terra Geosciences, Enclosure 9.

CONCLUSIONS

The upper soils encountered in our explorations are loose and soft to depths ranging from about 5.0 feet to 8.0 feet below the presently existing ground surface. These loose soil layers encountered in our test borings are subject to significant hydroconsolidation. To assure uniform and acceptable foundation conditions, we recommend that the loose and soft upper soils within the new structure areas and new footing excavations be densified by subexcavation and recompaction where existing improvements will allow. Complete stabilization of the existing soil under pavement areas would require removal and recompaction of the existing loose soil. The cost of complete removal and recompaction of the existing loose soil within pavement areas does not appear to be warranted. Substantial stabilization can be obtained by removal and recompaction of the upper 3 feet of soil within pavement areas. Recommendations for foundation design and slabs-on-grade are provided below for a very low expansion potential (Expansion Index of 0 to 20). Subsequent to site preparation, the new structures may be safely founded on conventional continuous and isolated footings bearing entirely on compacted fill. The bridge will likely be supported by drilled cast-in-place piers. Detailed recommendations are provided below.

RECOMMENDATIONS

SHALLOW FOUNDATION DESIGN

Where the site is prepared as recommended, the new park building and garden storage building may be founded on conventional shallow footings. The footings should be at least 12 inches wide and should be placed at least 12 inches below the lowest final adjacent grade. These footings should be designed for a maximum safe soil bearing pressure of 2,000 pounds per square foot for dead plus live loads. Increasing the footing embedment depth to 18 inches would allow the utilization of a maximum soil bearing pressure of 2,500 pounds per square foot. These values may be increased by one-third for wind and seismic loading.

Continuous footings should be reinforced with at least two No. 4 bars, one placed near the top and one near the bottom of the footings. This recommendation for foundation reinforcement is based on geotechnical considerations. Structural design may require additional foundation reinforcement.

FOUNDATION DESIGN FOR PIERS

We anticipate that the bridge will likely be supported by pier-type foundations. For piers with embedment depths of 10 feet to 16 feet, an allowable average skin friction of 200 pounds per square foot to 295 pounds per square foot may be assumed. Intermediate values may be determined by interpolation. These values may be increased by one-third for wind or seismic loading. Lateral load capacity of the pier footings may be computed using any accepted pole footing formula assuming an allowable lateral earth pressure of 350 pounds per square foot per foot of depth to a maximum of 3,000 pounds per square foot.

SEISMIC DESIGN PARAMETERS

The development of the seismic ground motion parameters is described in detail in the geologic hazards report performed in our behalf by Terra Geosciences (Enclosure 9). In summary, the 2022 California Building Code and the ASCE Standard 7-16 coefficients and factors are provided in the following table:

Factor or Coefficient	*Value*
Latitude	33.8004° N
Longitude	-117.9952° W
S_S	1.423g
S_1	0.503g
F_a	1.0
F_v	1.797
S_{DS}	0.990g
S_{D1}	1.050g
S_{MS}	1.484g
S_{M1}	1.573g
T_L	8 seconds
PGA	0.65g
Site Class	D

LATERAL LOADING

For level backfill surface and cantilever retaining wall conditions, we recommend an active fluid pressure of 35 pounds per square foot per foot of depth, exclusive of surcharge loads. For braced walls with level backfill surface conditions, we recommend an at-rest fluid pressure of 60 pounds per square foot per foot of depth, exclusive of surcharge loads. For shallow footings, resistance to lateral loads will be provided by passive earth pressure and basal friction. For footings bearing against compacted fill, passive earth pressure may be considered to develop at a rate of 300 pounds per square foot per foot of depth. Basal friction may be computed at 0.35 times the normal dead load. The resistance from basal friction and passive earth pressure may be combined directly without reduction. Retaining walls should be provided with a backdrain system or weep holes to prevent buildup of hydrostatic pressure behind the walls. Retaining wall backfill should exhibit very low expansion potential, and should be densified to a relative compaction of at least 90 percent (ASTM D1557).

SLABS-ON-GRADE

Concrete slab-on-grade design recommendations are listed below. The slab-on-grade recommendations assume underlying utility trench backfills and pad subgrade soils have been densified to a relative compaction of at least 90 percent (ASTM D1557).

1. It is our opinion that the recommended compacted fill soils should provide adequate support for concrete slabs-on-grade without the use of a gravel base. The final pad surface should be rolled to provide a smooth dense surface upon which to place the concrete.

2. Slab-on-grade floors should be at least 4 inches thick – structural considerations may require a thicker slab. The concrete slabs-on-grade may be designed using a modulus of subgrade reaction of 250 pounds per cubic inch.

3. It is recommended that concrete slabs-on-grade be reinforced with No. 3 bars at 16 inches on-center each way in the middle third of the slab. All slab reinforcement should be supported by chairs or precast concrete blocks to ensure positioning of reinforcement in the slab. Lifting of unsupported reinforcement during concrete placement should not be allowed.

4. Slabs to receive moisture-sensitive floor coverings should be underlain with a moisture vapor retardant membrane, such as 15-mil Stego Wrap or equivalent. The moisture vapor retardant membrane should conform to ASTM E 1745-11 (Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs). The moisture vapor retardant membrane should be lapped into the footing excavations to provide full coverage of the subgrade soils. Punctures and/or holes cut for plumbing should be taped to minimize moisture emissions through the membrane. The project superintendent or a representative of the geotechnical engineer should inspect the placement of the moisture vapor retardant membrane prior to covering. Installation of the moisture vapor retardant membrane should be performed in accordance with ASTM E 1643-11 (Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill under Concrete Slabs).

5. A 2-inch layer of clean sand (SE>30, no more than 7 percent passing the No. 200 sieve) should be placed over the moisture vapor retardant membrane to promote uniform setting of the concrete. Concrete should be placed on the sand blanket when the sand is damp. Excess moisture should not be allowed to accumulate within the sand blanket prior to concrete placement. At the time of concrete placement, the moisture content of the sand blanket above the moisture vapor retardant membrane should not exceed 2 percent below the optimum moisture content.

6. In lieu of placing the sand blanket described above and to further minimize future moisture vapor emissions through the slabs-on-grade, the slab concrete may be placed directly on the moisture vapor retardant membrane. Placing concrete directly on the moisture vapor retardant membrane will increase shrinkage and curling forces and make finishing more difficult. To accommodate these concerns, the structural engineer should provide appropriate mix design criteria for concrete placed directly on the moisture vapor retardant membrane.

7. We recommend a maximum water-cement ratio of 0.50 for all building slab concrete. Architectural or structural considerations may require the utilization of a lower water-cement ratio. Where slab concrete is placed directly on the moisture vapor retardant membrane without the presence of an intervening layer of absorptive sand, a lower maximum water-cement ratio may be needed.

8. Preparation of the concrete floor slabs should conform to ASTM F 710-11 (Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring) and the manufacturer's recommendations. Moisture vapor emission tests should be performed to verify acceptable moisture emission rates prior to flooring installation.

SITE PREPARATION

We assume that the site will be prepared in accordance with the California Building Code and the current City of Stanton Grading Ordinance. The recommendations presented below are to establish additional grading criteria. These recommendations should be considered preliminary and are subject to modification or expansion based on a geotechnical review of the project foundation and grading plans.

- All areas to be graded should be stripped of organic matter, man-made obstructions, and other deleterious materials. Underground utilities should be removed and/or relocated. All cavities created during site clearing should be cleaned of loose and disturbed soil, shaped to provide access for construction equipment, and backfilled with fill placed and compacted as described below.

- Soil disturbed during demolition of the existing structures and utilities should be overexcavated below all areas to receive improvements, including structure, pavement, and hardscape areas.

- Any existing artificial fill should be removed from the proposed improvement areas, including structure, pavement, and hardscape areas. The removals should extend beyond the structure areas a horizontal distance at least equal to the depth of removal or 5 feet, whichever distance is greater. Organic matter and other unsuitable debris should be separated from the removed fill and hauled from the site. The removed artificial fill should be stockpiled pending replacement or be placed in areas previously prepared.

- Overexcavation

    - New park building and garden storage building areas – Subsequent to removal of any undocumented fill, the upper soil underlying the new structure areas, including roof overhang footings, should be overexcavated to a depth of at least 7 feet below the presently existing ground surface or final ground surface. The soil exposed in subexcavated surfaces should be evaluated by a representative of the geotechnical engineer. The overexcavation should extend beyond the structure area a horizontal distance at least equal to the depth of overexcavation below the bottom of the footings or 5 feet, whichever is greater. The slope of the backcut should be at a gradient no steeper than 1H:1V. The representative of the geotechnical engineer should evaluate the conditions encountered and determine where the overexcavation can be terminated.

    - In order to not damage the existing Orange County's flood control channel walls, slot cutting should be performed within 10 feet of the existing flood control channel walls. Slot cutting should be performed in alternate segments with a maximum

width of 10 feet as measured parallel to the existing flood control channel walls. The recommended limits of overexcavation and recompaction should be followed for the initial segments. Subsequent to completion of the initial segments, the intermediate 10-foot segments should be prepared. The use of a sheepsfoot roller on the end of a backhoe boom would be acceptable within 6 feet of the existing flood control channel walls.

- In lieu of replacing the overexcavated soil with engineered fill, the void created from the slot cut overexcavation may be backfilled with a sand slurry containing at least 2 sacks of cement per cubic yard. Each slot should be backfilled with slurry the same day it is excavated. No slot should be allowed to stand open overnight. The adjacent slots should be excavated no sooner than 4 hours following the placement of the slurry in the preceding slot. The excavation of the loose and soft upper natural soils, and the placement of the engineered fill soils or slurry backfill should be monitored by the representative of the geotechnical engineer.

- Pavement and hardscape areas – Loose soil underlying pavement and hardscape areas should be removed to a minimum depth of 3 feet. Should competent natural soil be encountered at a depth of less than 3 feet below asphalt concrete and portland cement concrete pavement areas, the overexcavation can be terminated at that depth. The soils exposed in the subexcavated surface should be scarified to a depth of at least 12 inches. The scarified soil should be moisture conditioned to near the optimum moisture content, and densified to a relative compaction of at least 90 percent (ASTM D1557).

- Subexcavated surfaces and all other surfaces to receive fill should be scarified to a minimum depth of 12 inches, moisture conditioned to near the optimum moisture content, and densified to a minimum relative compaction of 90 percent (ASTM D1557).

- The on-site soils should provide adequate quality fill material provided they are free from significant organic matter and other deleterious materials, and are at acceptable moisture contents. Any asphalt and portland cement concrete removed during site clearing may be pulverized into fragments not exceeding 3 inches in greatest dimension and incorporated into the fill at all levels in the building area. Import fill should be inorganic, granular, non-

expansive soil free from rocks or lumps greater than 8 inches in maximum dimension, and should exhibit a very low expansion potential (expansion index less than 21), negligible sulfate content (less than 1,000 ppm soluble sulfate by dry weight of soil), and low corrosion potential. Prior to bringing import fill to the site, the contractor should obtain certification to verify that the proposed import meets the State of California Department of Toxic Substance Control (DTSC) environmental standards. Proposed import should be sampled at the source and tested by this firm for expansion index, soluble sulfate content, and corrosion potential.

- All fill should be placed in 8-inch or less lifts. Each lift of fill should be moisture conditioned to near the optimum moisture content, and densified to a minimum relative compaction of 90 percent (ASTM D1557). Where the horizontal limits of overexcavation cannot be achieved, the engineered fill should be densified to a relative compaction of at least 95 percent.

- The surface of the site should be graded to provide positive drainage away from the structure. Drainage should be directed to established swales and then to appropriate drainage structures to minimize the possibility of erosion. Water should not be allowed to pond adjacent to footings.

SHRINKAGE AND SUBSIDENCE

Volume change in going from cut to fill conditions is anticipated where near-surface grading will occur. Assuming the fill will be compacted to an average relative compaction of 93 percent, an average cut-fill shrinkage of 10 to 15 percent is estimated. Further volume loss will occur through subsidence during preparation of the natural ground surface. Although the contractor's methods and equipment utilized in preparing the natural ground will have a significant effect on the amount of natural ground subsidence that will occur, our experience indicates as much as 0.10 to 0.15 foot of subsidence in areas prepared to receive fill should be anticipated. These values are exclusive of losses due to stripping or removal of subsurface obstructions.

ASPHALT CONCRETE AND PORTLAND CEMENT CONCRETE PAVEMENT

Our Boring 2 was drilled in the vicinity of the proposed fire lane access road and encountered silty sand in the upper soils. We estimate this soil will exhibit an "R" value of at least 40. We assume that the fire lane access road pavement will need to support an 80,000-pound fire truck visiting the site on average twice a year. Based on these parameters, we recommend the pavement section for the new fire lane access road consist of 3.0 inches of asphalt concrete over 6.5 inches of aggregate base. We also recommend portland cement concrete (PCC) pavement for the new fire lane access road should be at least 6.0 inches in thickness. This thickness is for unreinforced concrete placed directly on the compacted subgrade soil. Aggregate base is not geotechnically required for the PCC pavement sections; however, if aggregate base is to be utilized for the PCC pavement, we recommend a minimum of 4 inches of aggregate base placed over the 12 inches of compacted subgrade soil. The design engineer may wish to provide some level of reinforcement to minimize the width of shrinkage cracks.

For hardscape areas to receive only pedestrian traffic, we recommend the PCC pavement be at least 3.5 inches in thickness and be placed directly on the compacted subgrade soil. Prior to the placement of hardscape concrete, we recommend that the final subgrade surface be scarified to a depth of at least 12 inches, moisture conditioned to near the optimum moisture content, and densified to a minimum relative compaction of 90 percent (ASTM D1557). There are no geotechnical conditions indicating the need for reinforcement of the concrete pavement. The design engineer may wish to provide some level of reinforcement to minimize the width of shrinkage cracks.

Concrete should be proportioned for a maximum slump of 4 inches and to achieve a minimum compressive strength of 3,000 psi at 28 days. If additional workability is desired, a plasticizing or water-reducing admixture should be utilized in lieu of increasing the water content. Control joints for the 3.5-inch-thick pavement should be spaced no more than 10.5 feet on-center each way. The control joints for the 6.0-inch-thick pavement should be spaced no more than 18.0 feet on-center each way. Control joints should be established either by hand groovers, plastic inserts, or saw-cutting as soon as the concrete can be cut without dislodging aggregate. Cutting the control joints the day after the concrete pour will likely result in uncontrolled shrinkage cracks. Concrete should not be placed in hot and windy weather. Water curing should commence immediately after the final finishing and should continue for at least 7 days.

The above designs are preliminary and for estimating purposes only. We recommend that during the process of rough grading, observation and additional testing of the actual subgrade soils should be performed. Final pavement design sections can then be determined. The foregoing pavement sections assume that utility trench backfill below all proposed pavement areas will be compacted to at least 90 percent relative compaction. Prior to the placement of aggregate base, we recommend that the final subgrade surface be scarified to a depth of at least 12 inches, moisture conditioned to near optimum moisture content, and compacted to a relative compaction of at least 90 percent (ASTM D1557). Aggregate base should be densified to at least 95 percent relative compaction. Suggested specifications for aggregate base material are presented on Enclosure 7. The preparation of the subgrade and compaction of the aggregate base should be monitored by a representative of the geotechnical engineer.

CHEMICAL TEST RESULTS

The chemical test results from a sample taken from Boring 1 between the ground surface and a depth of 5 feet are shown on the following table:

Analysis	Result	Units
Saturated Resistivity	2500	ohm-cm
Chloride	50	ppm
Sulfate	50	ppm
pH	7.7	pH units
Redox Potential	125	mV

The chemical test results from a sample taken from Boring 3 between the ground surface and a depth of 5 feet are shown on the following table:

Analysis	Result	Units
Saturated Resistivity	4600	ohm-cm
Chloride	ND (Not Detected)	ppm
Sulfate	10	ppm
pH	7.8	pH units
Redox Potential	210	mV

The soil tested in Borings 1 and 3 exhibited negligible soluble sulfate content; therefore, sulfate-resistant concrete will not be required for this project. In addition, the results of the corrosivity testing indicate that the soils tested are not detrimentally corrosive to ferrous-metal pipes.

FOUNDATION AND GRADING PLAN REVIEW

The project foundation and grading plans should be reviewed by the geotechnical engineer. Additional recommendations may be required at that time.

CONSTRUCTION OBSERVATIONS

All grading operations, including the preparation of the natural ground surface, should be observed and compaction tests performed by this firm. No fill should be placed on any prepared surface until that surface has been evaluated by the representative of the geotechnical engineer. The footing excavations for the new structure should be evaluated by a representative of the geotechnical engineer.prior to placement of reinforcing steel or forms. A representative of the geotechnical engineer should be present during the excavation of the pier-type footings to verify correlation of the soil conditions encountered with those anticipated, to verify embedment depths.

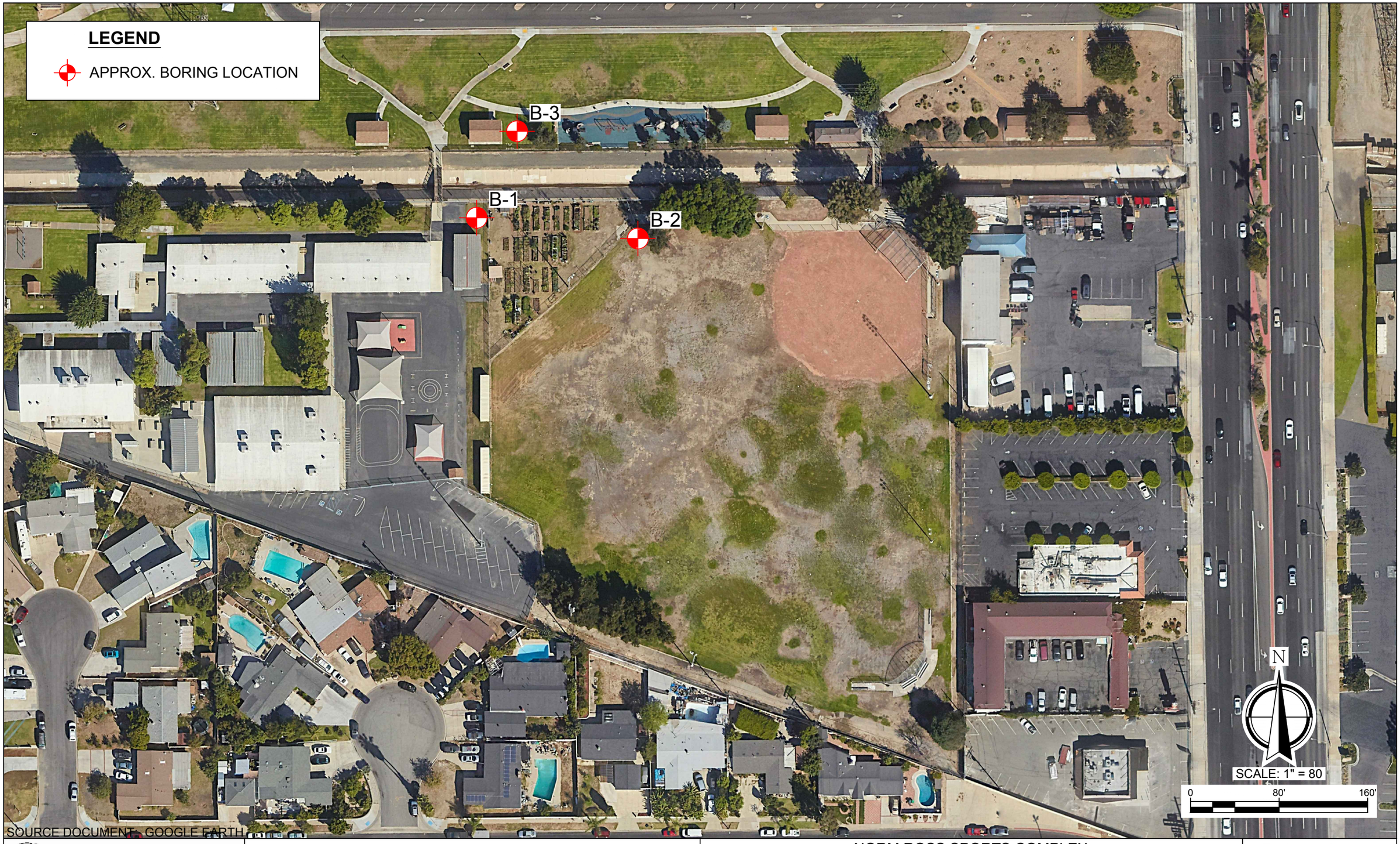
The conclusions and recommendations presented in this report are based upon the field and laboratory investigation described herein and represent our best engineering judgment. Should conditions be encountered in the field that appear different from those described in this report, we should be contacted immediately in order that appropriate recommendations might be prepared.

Respectfully submitted,

JOHN R. BYERLY, INC.

John R. Byerly, Geotechnical Engineer
President

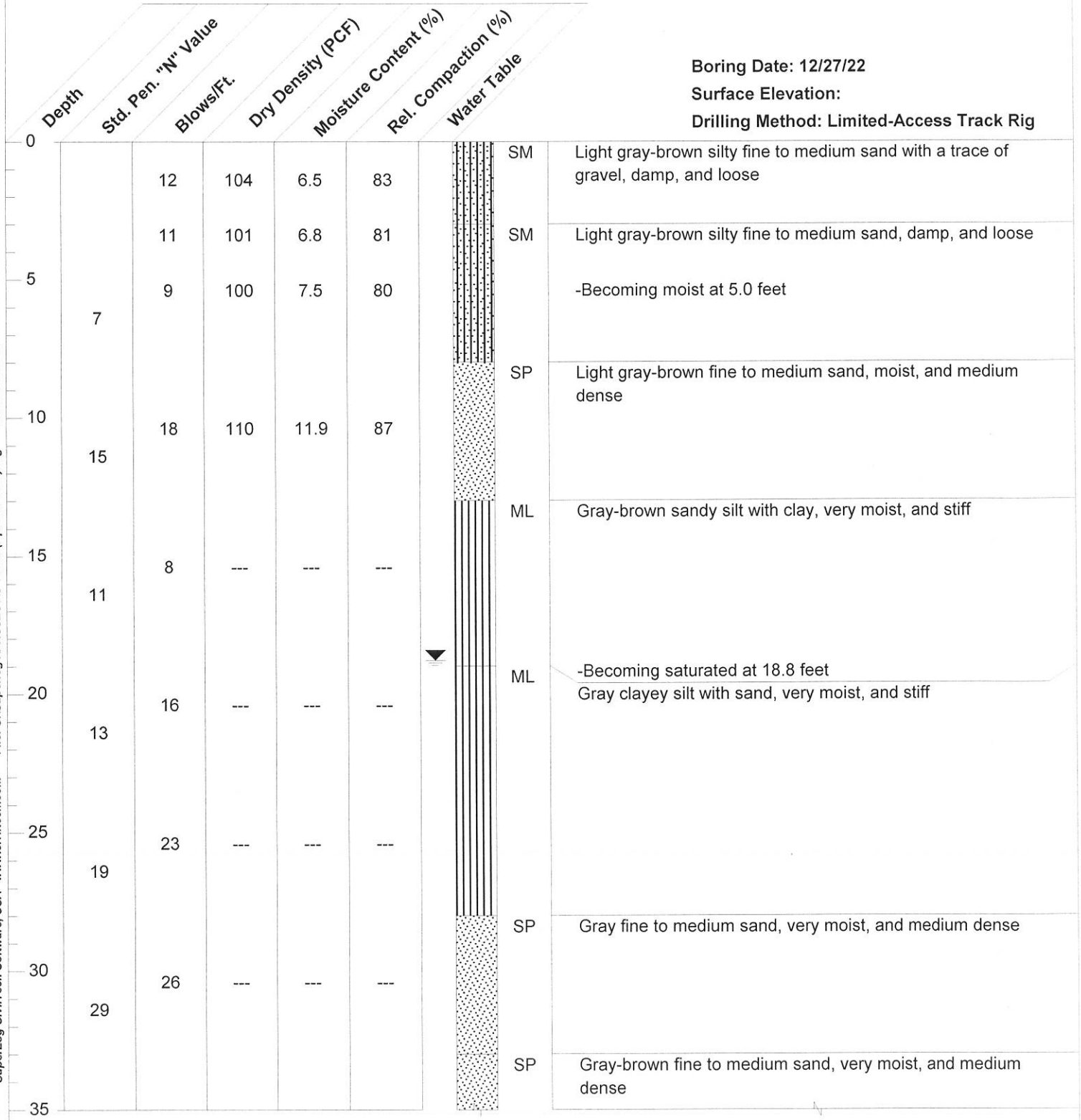
JRB:MLL:st
Enclosures: (1) Plot Plan
(2) Test Boring Logs
(3) Maximum Density Determinations
(4) Consolidation Test Results
(5) Direct Shear Test Results
(6) Atterberg Limits Results
(7) Specifications for Aggregate Base
(8) Liquefaction and Dynamic Settlement Analysis
(9) Geologic Hazards Report



SOURCE DOCUMENT: GOOGLE EARTH

John R. Byerly INCORPORATED	GEOTECHNICAL INVESTIGATION	NORM ROSS SPORTS COMPLEX 11111 CEDAR STREET STANTON, CALIFORNIA	Enclosure 1 Rpt. No.: 7650-a File No.: S-14556

B-1



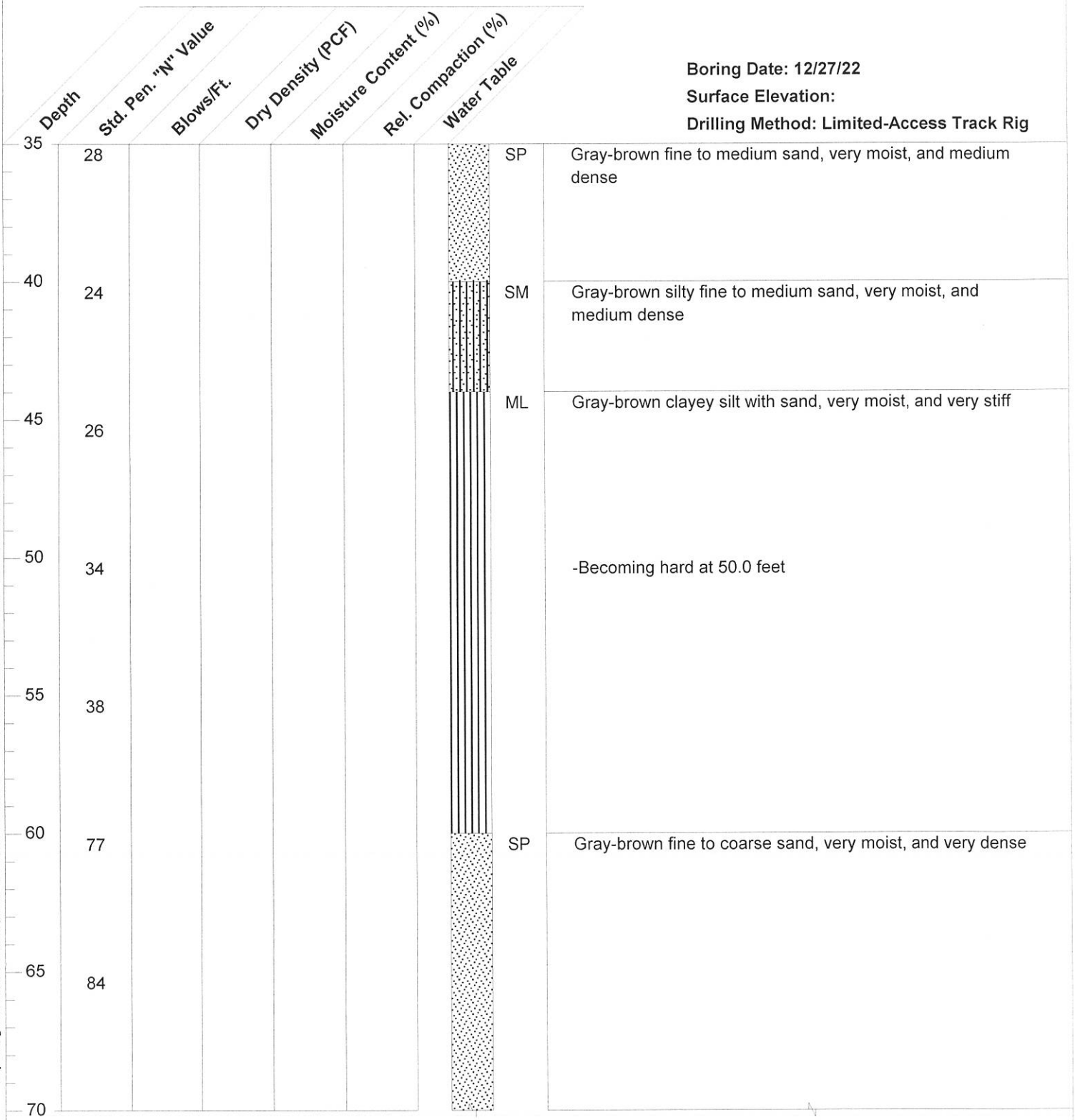
Boring Date: 12/27/22
Surface Elevation:
Drilling Method: Limited-Access Track Rig

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECTS-14556 (Rpt No. 7650).log Date: 4/17/2023

LOG OF BORING

John R. Byerly, Inc.	**Norm Ross Sports Complex** **Stanton, California**	**Enclosure 2, Page 1** **Rpt. No.: 7650-a** **File No.: S-14556**

B-1



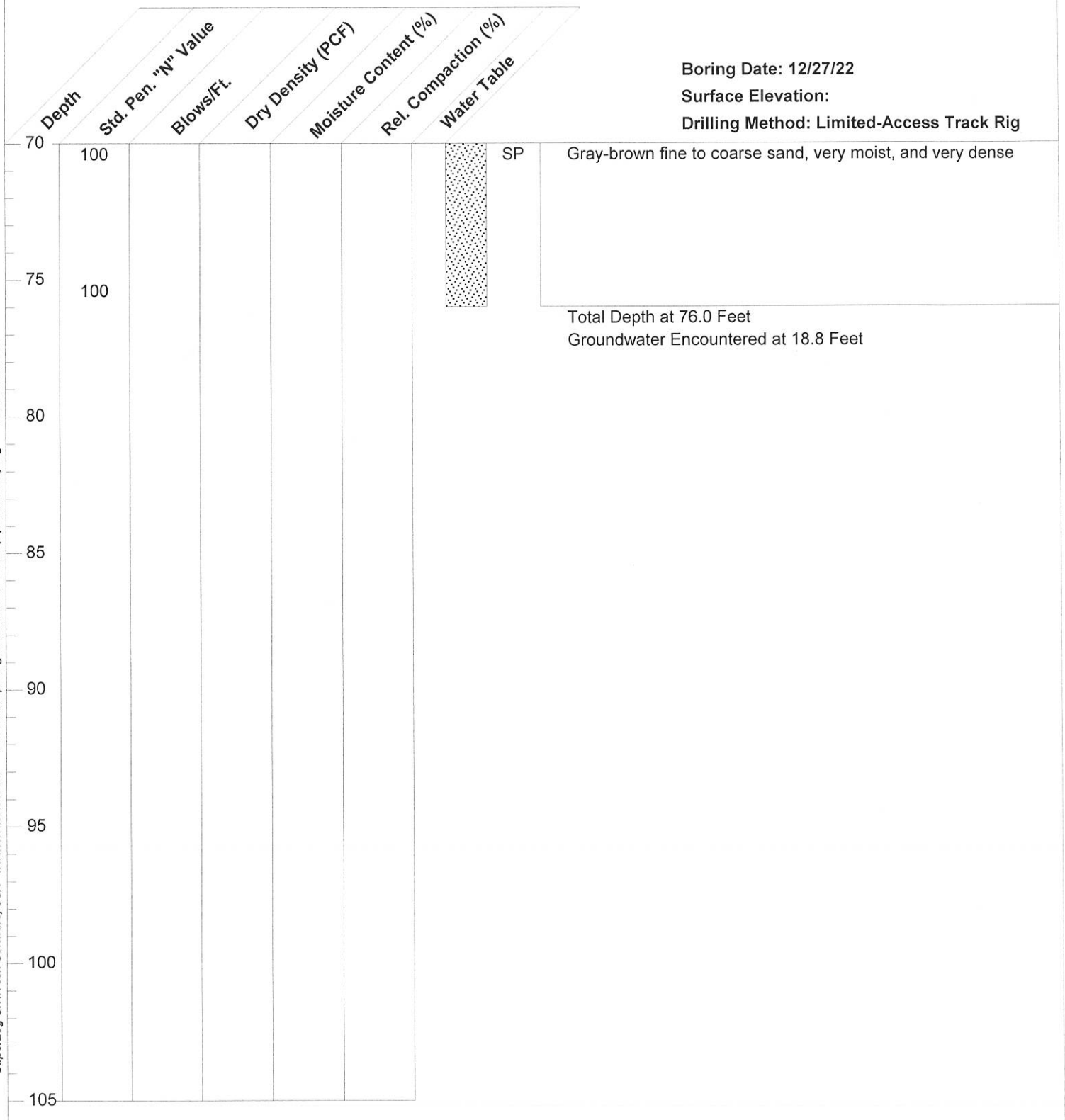
Boring Date: 12/27/22
Surface Elevation:
Drilling Method: Limited-Access Track Rig

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECTS-14556 (Rpt No. 7650).log Date: 4/17/2023

LOG OF BORING

John R. Byerly, Inc.	**Norm Ross Sports Complex** **Stanton, California**	Enclosure 2, Page 2 Rpt. No.: 7650-a File No.: S-14556

B-1



Boring Date: 12/27/22
Surface Elevation:
Drilling Method: Limited-Access Track Rig

SuperLog CivilTech Software, USA www.civiltech.com File: C:\Superlog4\PROJECTS-14556 (Rpt No. 7650).log Date: 4/17/2023

LOG OF BORING

John R. Byerly, Inc.	**Norm Ross Sports Complex** **Stanton, California**	Enclosure 2, Page 3 Rpt. No.: 7650-a File No.: S-14556

B-2

Boring Date: 12/28/22
Surface Elevation:
Drilling Method: Limited-Access Track Rig

Depth	Std. Pen. "N" Value Blows/Ft.	Dry Density (PCF)	Moisture Content (%)	Rel. Compaction (%)	Water Table		
0	26	110	5.2	88		SM	Light brown silty fine to medium sand, damp, and medium dense
	10	100	6.1	80			-Becoming loose at 3.0 feet
5	12	103	6.5	82		SM	Brown silty fine to medium sand, damp, and loose
	18	109	7.9	86		SP	Light brown fine to medium sand, moist, and medium dense
10	16	108	10.3	85			
						ML	Gray-brown sandy silt with clay, very moist, and medium stiff
15	10	94	21.9	81			
20	14	95	24.2	84	▼	ML	-Becoming saturated at 19.9 feet Gray clayey silt with sand, very moist, and medium stiff to stiff
25	12	93	21.4	82			
						SP	Gray fine to medium sand, very moist, and medium dense
30	25	110	18.2	87			Total Depth at 31.0 Feet Groundwater Encountered at 19.9 Feet
35							

LOG OF BORING

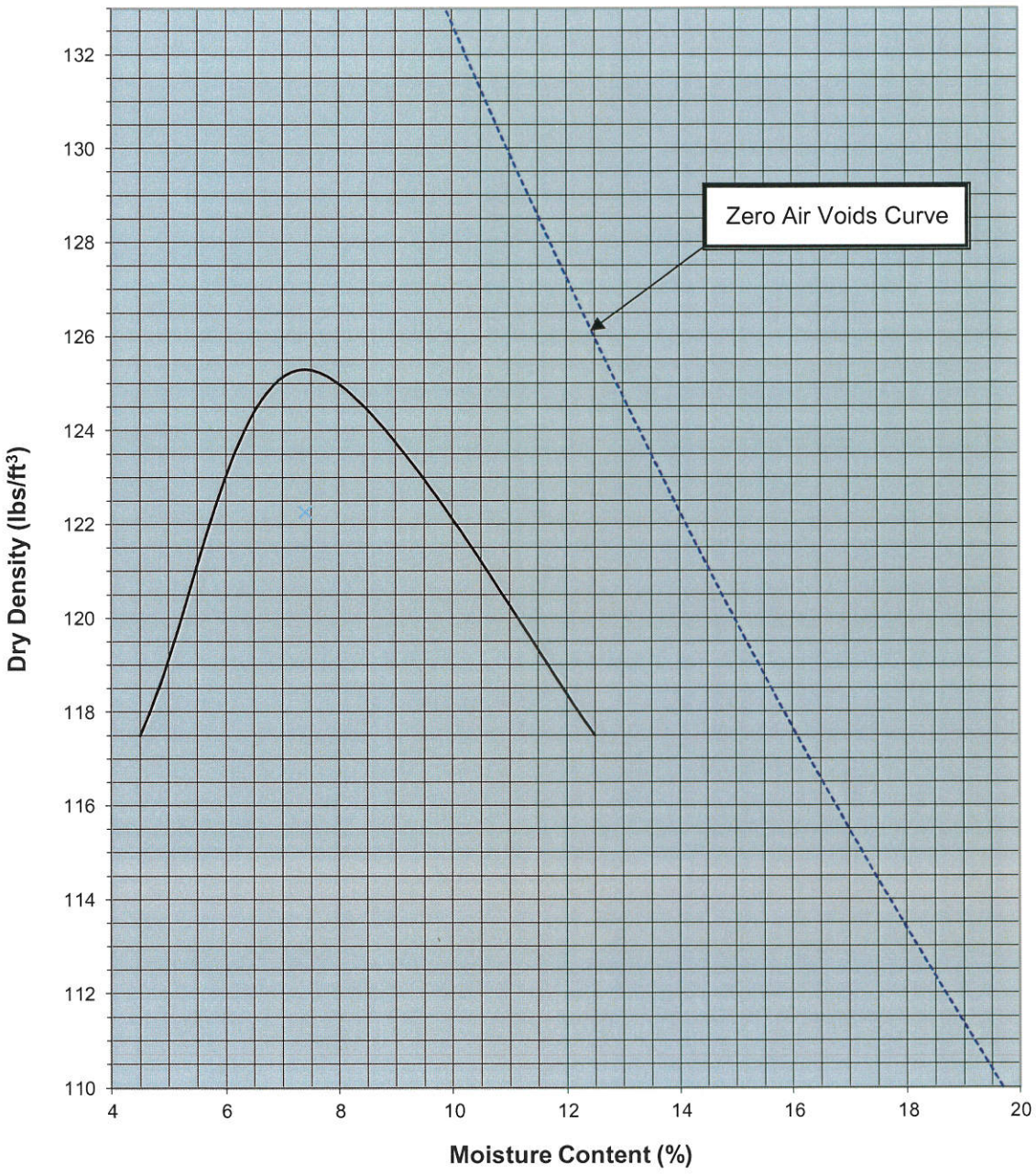
B-3

Boring Date: 12/28/22
Surface Elevation:
Drilling Method: Limited-Access Track Rig

Depth	Std. Pen. "N" Value Blows/Ft.	Dry Density (PCF)	Moisture Content (%)	Rel. Compaction (%)	Water Table		
0	11	103	11.2	82		SM	Brown silty fine to medium sand with a trace of clay, moist, and loose
	11	91	21.7	79		ML	Brown sandy silt with clay, very moist, and soft
5	14	105	12.0	84		SM	Gray-brown silty fine to medium sand, moist, and loose
	15	107	11.8	85			-Becoming medium dense at 7.0 feet
						SP	Light brown fine to medium sand, damp, and medium dense
10	17	110	6.4	87			
						ML	Gray-brown sandy silt with clay, very moist, and medium stiff
15	7	94	24.1	81			
20	11	96	23.5	83		ML	Gray-brown sandy silt with clay, very moist, and medium stiff to stiff
					▼		
25	9	93	26.4	82		ML	-Becoming saturated at 24.7 feet Gray clayey silt with sand, very moist, and medium stiff to stiff
30	12	---	---	---			
							Total Depth at 31.0 Feet Groundwater Encountered at 24.7 Feet
35							

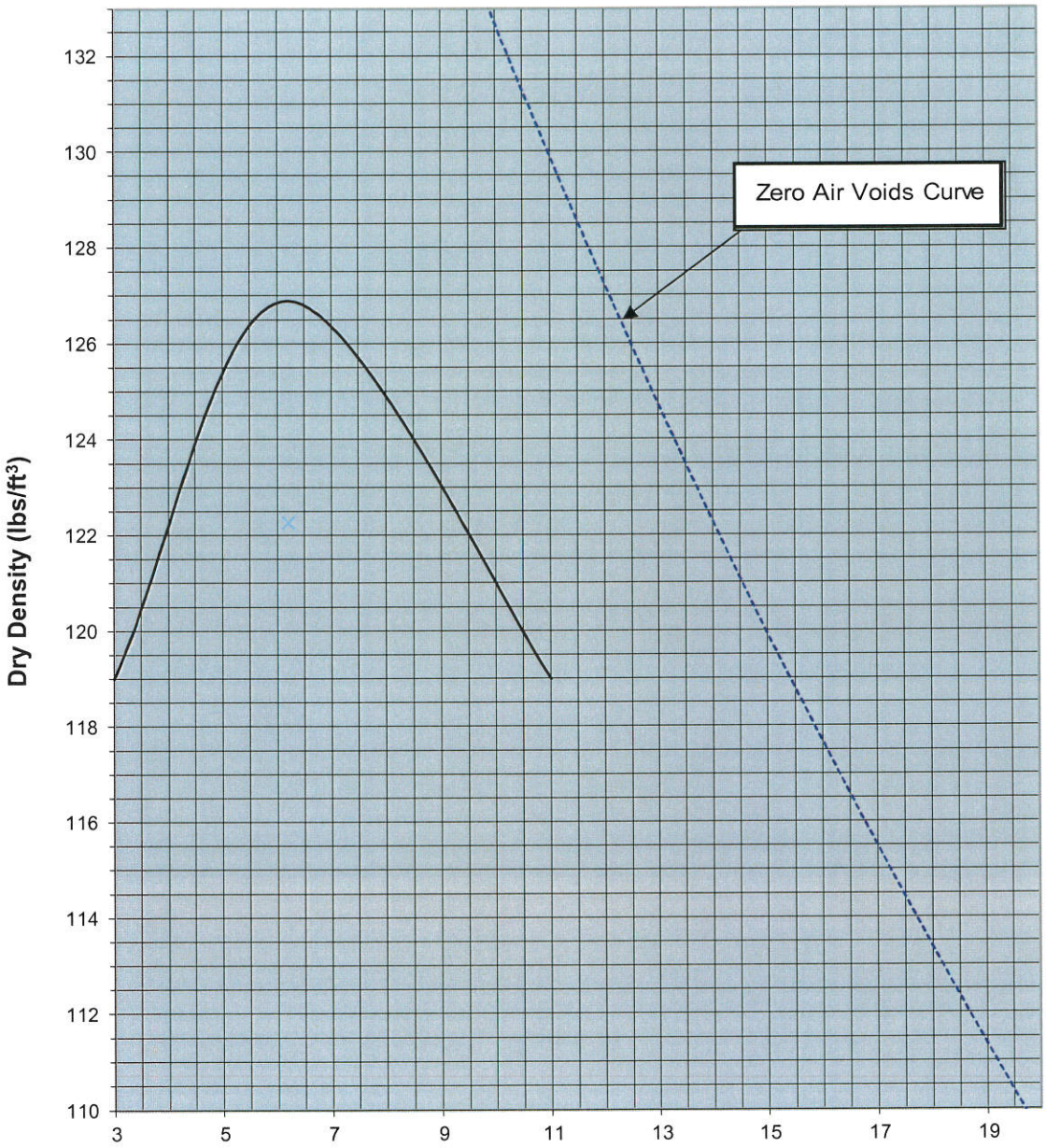
LOG OF BORING

Moisture/Density Relationship
ASTM D1557 (Method A)



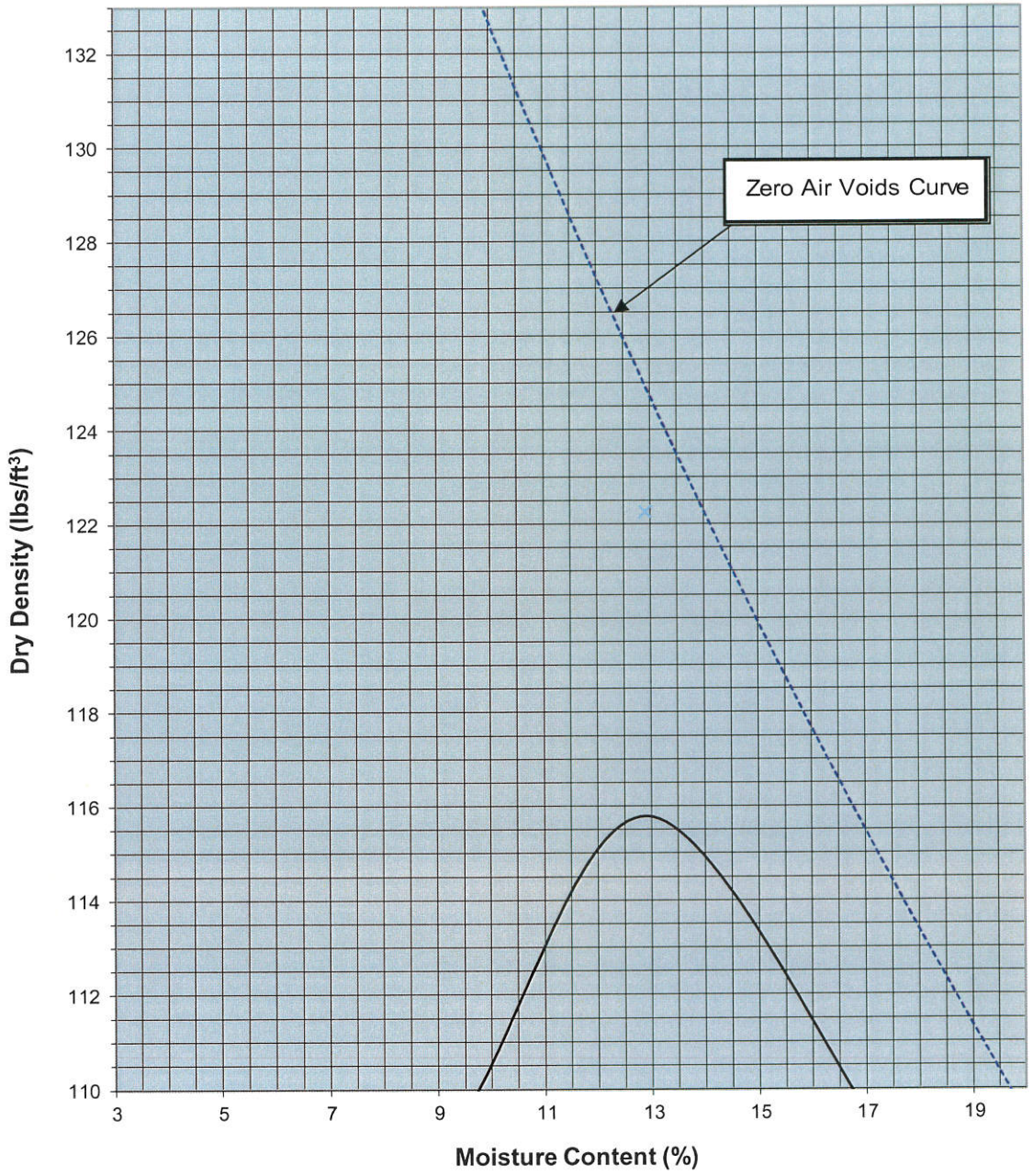
Boring No.	B-1
Depth (ft.)	5.0
Optimum Moisture (%)	7.4
Maximum Dry Density (pcf)	125.3
Soil Classification	Light gray-brown silty fine to medium sand (SM)

Moisture/Density Relationship
ASTM D1557 (Method A)



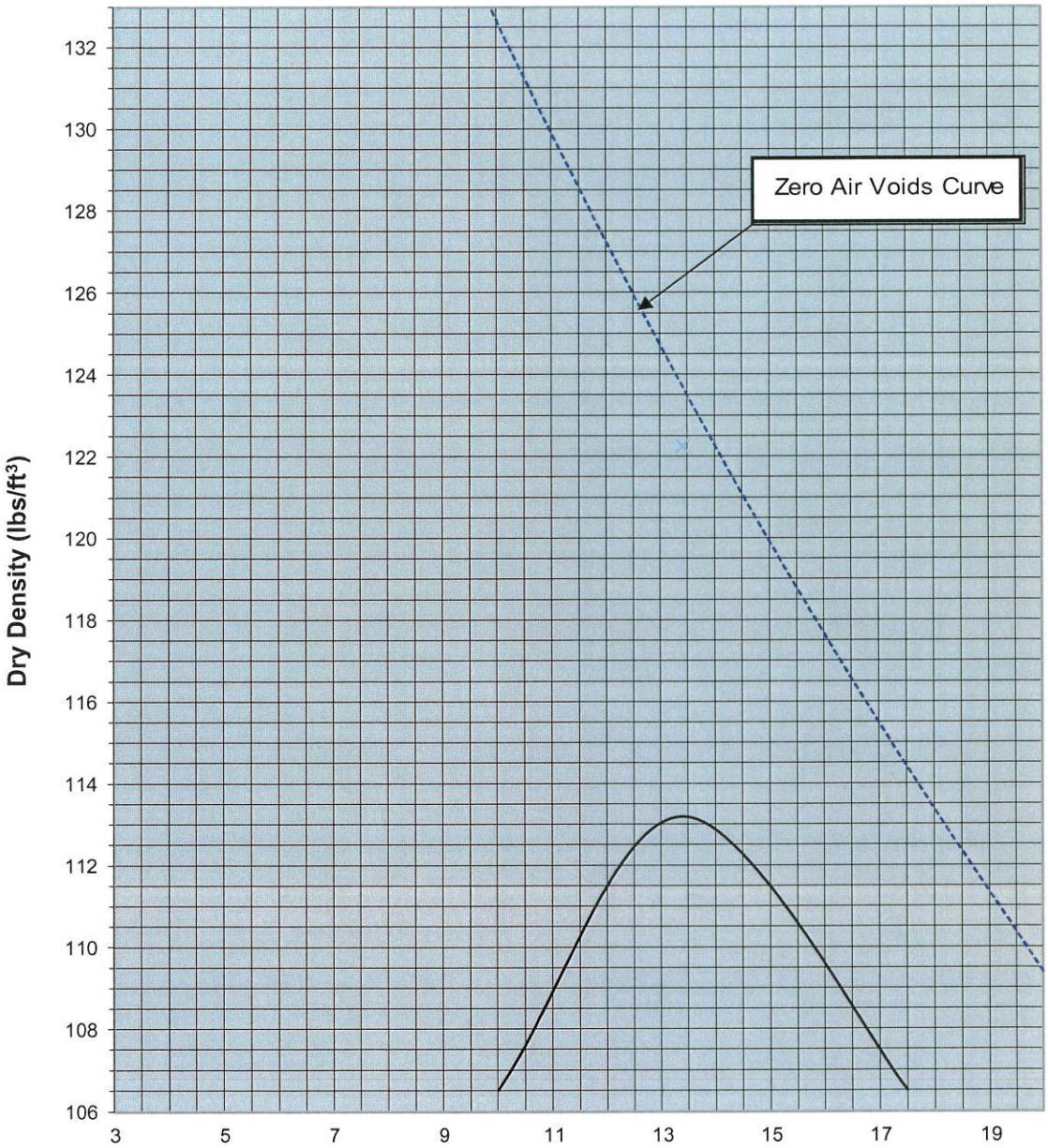
Boring No.	B-2
Depth (ft.)	7.0
Optimum Moisture (%)	6.2
Maximum Dry Density (pcf)	126.9
Soil Classification	Light brown fine to medium sand (SP)

Moisture/Density Relationship
ASTM D1557 (Method A)



Boring No.	B-1
Depth (ft.)	15.0
Optimum Moisture (%)	12.9
Maximum Dry Density (pcf)	115.8
Soil Classification	Gray-brown sandy silt with clay (ML)

Moisture/Density Relationship
ASTM D1557 (Method A)



Boring No.	B-2
Depth (ft.)	20.0
Optimum Moisture (%)	13.4
Maximum Dry Density (pcf)	113.2
Soil Classification	Gray clayey silt with sand (ML)

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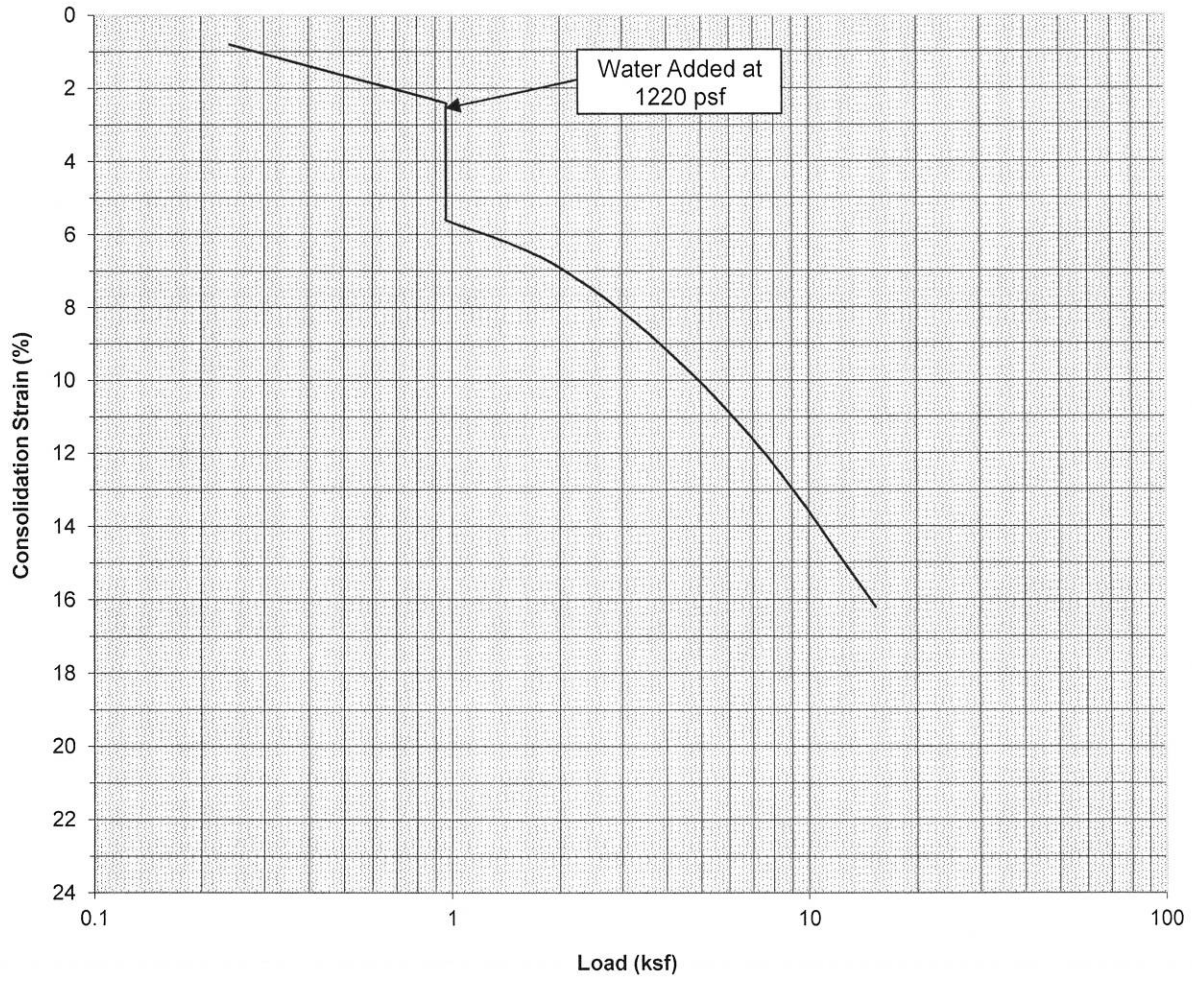
Consolidation Test Results



Classification: SM

Boring Number:	B-1	Initial Moisture Content (%)	6.8
Depth (ft)	3.0	Final Moisture Content (%)	25.0
Specimen Diameter (in)	2.4	Initial Dry Density (pcf)	101
Specimen Thickness (in)	1.0		

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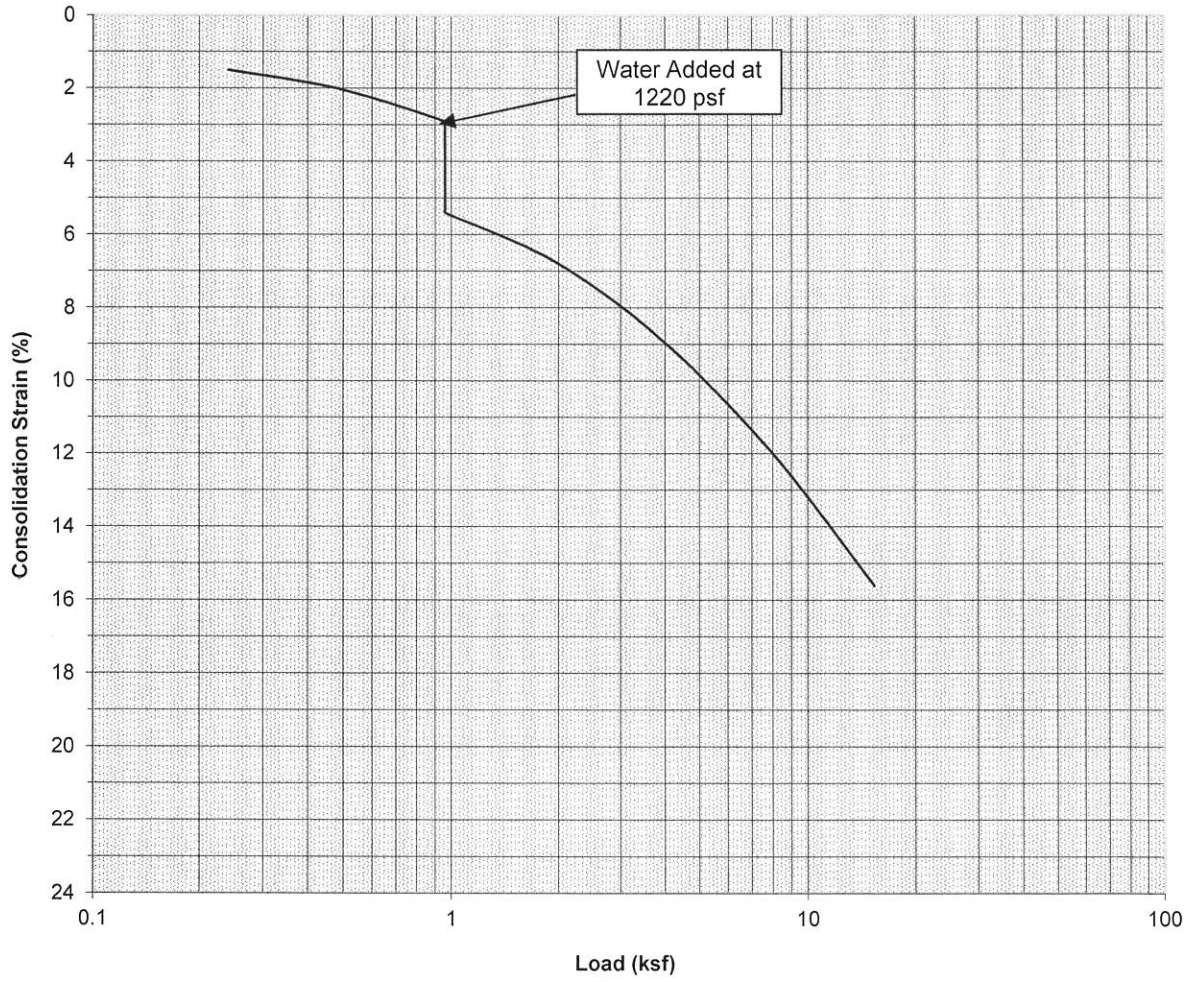
Consolidation Test Results



Classification: SM

Boring Number:	B-2	Initial Moisture Content (%)	6.5
Depth (ft)	5.0	Final Moisture Content (%)	20.6
Specimen Diameter (in)	2.4	Initial Dry Density (pcf)	103
Specimen Thickness (in)	1.0		

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DIRECT SHEAR TESTS

Test Boring No.	Depth of Sample (Ft.)	Angle of Internal Friction (°)	Cohesion (PSF)
B-1	3.0	30	80

Enclosure 5
Rpt. No.: 7650-a
File No.: S-14556

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PLASTIC INDEX TESTS

Test Boring No.	Depth of Sample (Feet)	Liquid Limit (%)	Plastic Limit (%)	Plastic Index
B-1	21.0	32.3	19.5	12.8
B-1	45.0	32.8	18.1	14.7
B-1	55.0	33.0	17.7	15.3

Enclosure 6
Rpt. No.: 7650-a
File No.: S-14556

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SUGGESTED SPECIFICATIONS FOR CLASS II BASE

Sieve Size	Percent Finer Than
1 Inch	100
3/4 Inch	90 - 100
No. 4	35 - 60
No. 30	10 - 30
No. 200	2 - 9
Sand Equivalent (Minimum)	25
"R" Value (minimum) at 300 psi Exudation	78

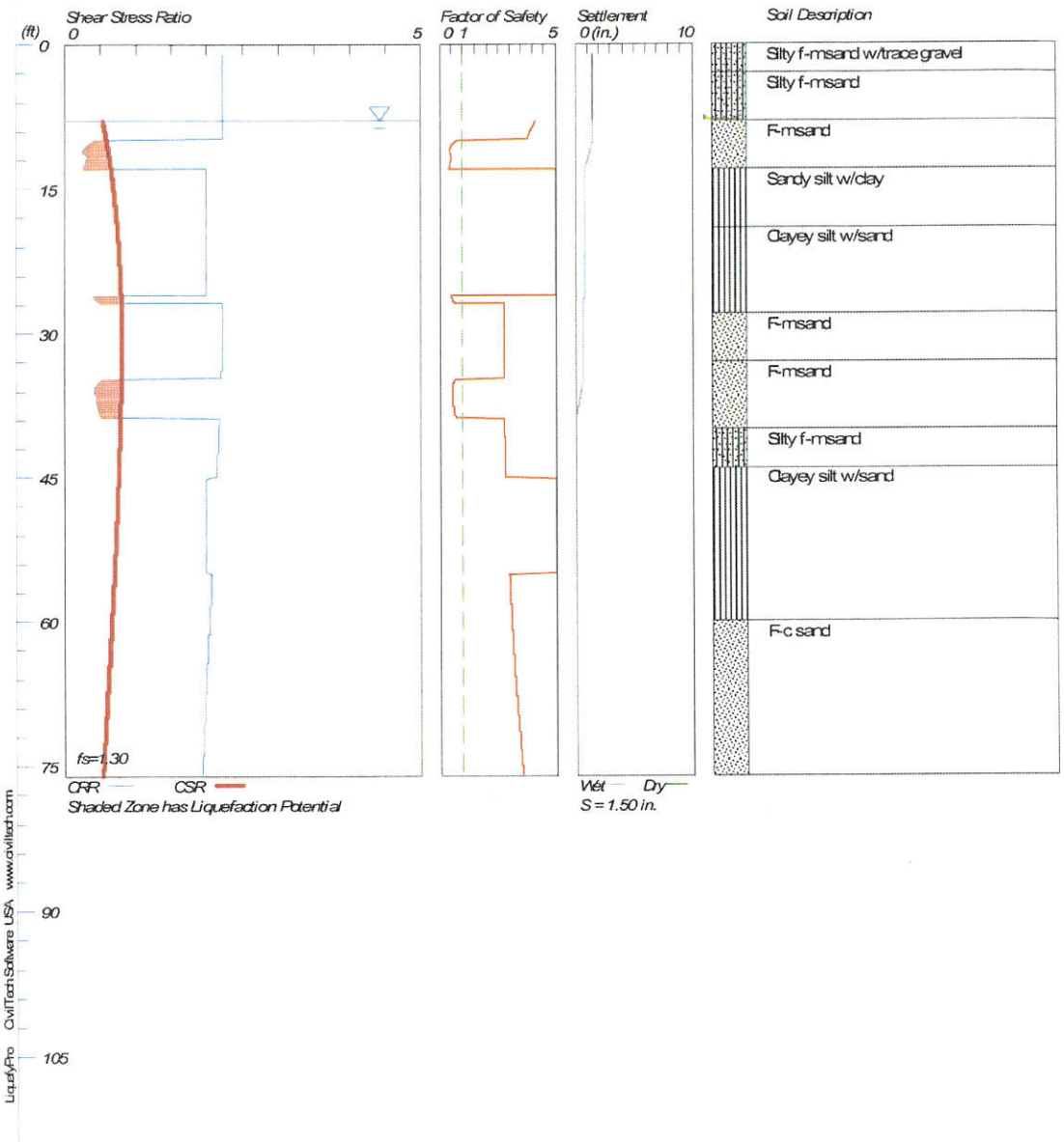
Enclosure 7
Rpt. No.: 7650-a
File No.: S-14556

LIQUEFACTION ANALYSIS

NORM ROSS SPORTS COMPLEX - PROPOSED PARK BUILDING

Hole No.=B-1 Water Depth=8.0 ft Surface Elev.=61 feet AMSL

Magnitude=7.2
Acceleration=0.65g



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S-14556

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LIQUEFACTION ANALYSIS CALCULATION SHEET

Version 4.3

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Input File Name: T:\Liquefy4\S-14556.1a.liq
Title: NORM ROSS SPORTS COMPLEX - PROPOSED PARK BUILDING
Subtitle: S-14556

Surface Elev.=61 feet AMSL
Hole No.=B-1
Depth of Hole= 76.0 ft
Water Table during Earthquake= 8.0 ft
Water Table during In-Situ Testing= 18.8 ft
Max. Acceleration= 0.65 g
Earthquake Magnitude= 7.2
User defined factor of safty (applied to CSR) User fs=1.3
fs=user, Plot one CSR (fs=user)

Hammer Energy Ratio, Ce=1
Borehole Diameter, Cb=1.15
Sampeling Method, Cs=1.2
SPT Fines Correction Method: Stark/Olson et al.*
Settlement Analysis Method: Ishihara / Yoshimine*
Fines Correction for Liquefaction: Stark/Olson et al.*
Fine Correction for Settlement: Post-Liq. Correction *
Average Input Data: Smooth*
* Recommended Options

Input Data:

Depth ft	SPT	Gamma pcf	Fines %
1.0	30.0	130.0	25.0
3.0	30.0	130.0	30.0
6.0	30.0	130.0	30.0
8.0	30.0	130.0	1.0
11.0	15.0	123.1	1.0
13.0	11.0	120.0	NoLiq
16.0	11.0	120.0	NoLiq
21.0	13.0	120.0	NoLiq
26.0	19.0	120.0	NoLiq
31.0	29.0	125.0	1.0
35.0	28.0	125.0	1.0
40.0	24.0	125.0	30.0
45.0	26.0	125.0	NoLiq
50.0	34.0	125.0	NoLiq
55.0	38.0	125.0	NoLiq
60.0	77.0	135.0	1.0
65.0	84.0	135.0	1.0
70.0	100.0	135.0	1.0
75.0	100.0	135.0	1.0

Output Results:

Settlement of saturated sands=1.46 in.
Settlement of dry sands=0.04 in.
Total settlement of saturated and dry sands=1.50 in.
Differential Settlement=0.750 to 0.990 in.

Depth ft	CRRm	CSRfs w/fs	F.S.	S_sat. in.	S_dry in.	S_all in.
1.00	2.22	0.55	5.00	1.46	0.04	1.50
2.00	2.22	0.55	5.00	1.46	0.04	1.50
3.00	2.22	0.55	5.00	1.46	0.04	1.50
4.00	2.22	0.54	5.00	1.46	0.04	1.49
5.00	2.22	0.54	5.00	1.46	0.03	1.49
6.00	2.22	0.54	5.00	1.46	0.03	1.49
7.00	2.22	0.54	5.00	1.46	0.02	1.48
8.00	2.22	0.54	4.12	1.46	0.00	1.46
9.00	2.22	0.57	3.91	1.46	0.00	1.46
10.00	0.42	0.59	0.71*	1.45	0.00	1.45
11.00	0.25	0.62	0.41*	1.25	0.00	1.25
12.00	0.31	0.64	0.48*	1.00	0.00	1.00
13.00	2.00	0.66	5.00	0.75	0.00	0.75
14.00	2.00	0.67	5.00	0.75	0.00	0.75
15.00	2.00	0.69	5.00	0.75	0.00	0.75
16.00	2.00	0.70	5.00	0.75	0.00	0.75
17.00	2.00	0.71	5.00	0.75	0.00	0.75
18.00	2.00	0.73	5.00	0.75	0.00	0.75
19.00	2.00	0.74	5.00	0.75	0.00	0.75
20.00	2.00	0.75	5.00	0.75	0.00	0.75
21.00	2.00	0.76	5.00	0.75	0.00	0.75
22.00	2.00	0.76	5.00	0.75	0.00	0.75
23.00	2.00	0.77	5.00	0.75	0.00	0.75
24.00	2.00	0.78	5.00	0.75	0.00	0.75
25.00	2.00	0.79	5.00	0.75	0.00	0.75
26.00	2.00	0.79	5.00	0.75	0.00	0.75
27.00	2.22	0.80	2.78	0.61	0.00	0.61
28.00	2.22	0.80	2.77	0.61	0.00	0.61
29.00	2.22	0.81	2.75	0.61	0.00	0.61
30.00	2.22	0.81	2.74	0.61	0.00	0.61
31.00	2.22	0.81	2.74	0.61	0.00	0.61
32.00	2.23	0.81	2.76	0.61	0.00	0.61
33.00	2.22	0.80	2.76	0.61	0.00	0.61
34.00	2.21	0.80	2.76	0.61	0.00	0.61
35.00	0.50	0.80	0.62*	0.58	0.00	0.58
36.00	0.43	0.80	0.54*	0.43	0.00	0.43
37.00	0.44	0.79	0.56*	0.28	0.00	0.28
38.00	0.48	0.79	0.60*	0.12	0.00	0.12
39.00	2.18	0.78	2.78	0.00	0.00	0.00
40.00	2.17	0.78	2.78	0.00	0.00	0.00
41.00	2.16	0.78	2.79	0.00	0.00	0.00
42.00	2.16	0.77	2.80	0.00	0.00	0.00
43.00	2.15	0.77	2.81	0.00	0.00	0.00
44.00	2.14	0.76	2.82	0.00	0.00	0.00
45.00	2.14	0.76	2.83	0.00	0.00	0.00
46.00	2.00	0.75	5.00	0.00	0.00	0.00
47.00	2.00	0.75	5.00	0.00	0.00	0.00
48.00	2.00	0.74	5.00	0.00	0.00	0.00
49.00	2.00	0.73	5.00	0.00	0.00	0.00
50.00	2.00	0.73	5.00	0.00	0.00	0.00
51.00	2.00	0.72	5.00	0.00	0.00	0.00
52.00	2.00	0.72	5.00	0.00	0.00	0.00
53.00	2.00	0.71	5.00	0.00	0.00	0.00

54.00	2.00	0.71	5.00	0.00	0.00	0.00
55.00	2.00	0.70	5.00	0.00	0.00	0.00
56.00	2.07	0.69	2.99	0.00	0.00	0.00
57.00	2.06	0.69	3.01	0.00	0.00	0.00
58.00	2.06	0.68	3.03	0.00	0.00	0.00
59.00	2.05	0.67	3.05	0.00	0.00	0.00
60.00	2.04	0.66	3.07	0.00	0.00	0.00
61.00	2.04	0.66	3.10	0.00	0.00	0.00
62.00	2.03	0.65	3.12	0.00	0.00	0.00
63.00	2.02	0.64	3.15	0.00	0.00	0.00
64.00	2.02	0.64	3.17	0.00	0.00	0.00
65.00	2.01	0.63	3.20	0.00	0.00	0.00
66.00	2.00	0.62	3.23	0.00	0.00	0.00
67.00	2.00	0.61	3.26	0.00	0.00	0.00
68.00	1.99	0.61	3.29	0.00	0.00	0.00
69.00	1.98	0.60	3.32	0.00	0.00	0.00
70.00	1.98	0.59	3.35	0.00	0.00	0.00
71.00	1.97	0.58	3.38	0.00	0.00	0.00
72.00	1.97	0.58	3.42	0.00	0.00	0.00
73.00	1.96	0.57	3.45	0.00	0.00	0.00
74.00	1.95	0.56	3.49	0.00	0.00	0.00
75.00	1.95	0.55	3.52	0.00	0.00	0.00
76.00	1.94	0.55	3.54	0.00	0.00	0.00

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* F.S.<1, Liquefaction Potential Zone
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Units Depth = ft, Stress or Pressure = tsf (atm), Unit Weight = pcf, Settlement = in.

CRRm	Cyclic resistance ratio from soils
CSRfs	Cyclic stress ratio induced by a given earthquake (with user request factor of safety)
F.S.	Factor of Safety against liquefaction, F.S.=CRRm/CSRfs
S_sat	Settlement from saturated sands
S_dry	Settlement from dry sands
S_all	Total settlement from saturated and dry sands
NoLiq	No-Liquefy Soils

****

LIQUEFACTION ANALYSIS CALCULATION SHEET

Version 4.3

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****

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Input File Name: T:\Liquefy4\S-14556.1a.liq
Title: NORM ROSS SPORTS COMPLEX - PROPOSED PARK BUILDING
Subtitle: S-14556

Input Data:

Surface Elev.=61 feet AMSL
Hole No.=B-1
Depth of Hole=76.0 ft
Water Table during Earthquake= 8.0 ft
Water Table during In-Situ Testing= 18.8 ft
Max. Acceleration=0.65 g
Earthquake Magnitude=7.2
User defined factor of safty (applied to CSR) User fs=1.3
fs=user, Plot one CSR (fs=user)

Hammer Energy Ratio, Ce=1
Borehole Diameter, Cb=1.15
Sampeling Method, Cs=1.2
SPT Fines Correction Method: Stark/Olson et al.*
Settlement Analysis Method: Ishihara / Yoshimine*
Fines Correction for Liquefaction: Stark/Olson et al.*
Fine Correction for Settlement: Post-Liq. Correction *
Average Input Data: Smooth*
* Recommended Options

Depth ft	SPT	Gamma pcf	Fines %
1.0	30.0	130.0	25.0
3.0	30.0	130.0	30.0
6.0	30.0	130.0	30.0
8.0	30.0	130.0	1.0
11.0	15.0	123.1	1.0
13.0	11.0	120.0	NoLiq
16.0	11.0	120.0	NoLiq
21.0	13.0	120.0	NoLiq
26.0	19.0	120.0	NoLiq
31.0	29.0	125.0	1.0
35.0	28.0	125.0	1.0
40.0	24.0	125.0	30.0
45.0	26.0	125.0	NoLiq
50.0	34.0	125.0	NoLiq
55.0	38.0	125.0	NoLiq
60.0	77.0	135.0	1.0
65.0	84.0	135.0	1.0
70.0	100.0	135.0	1.0
75.0	100.0	135.0	1.0

Output Results: (Interval = 1.00 ft)

CSR Calculation:

Depth ft	gamma pcf	sigma tsf	gamma' pcf	sigma' tsf	rd	CSR	fs (user)	CSRfs w/fs
1.00	130.0	0.065	130.0	0.065	1.00	0.42	1.3	0.55
2.00	130.0	0.130	130.0	0.130	1.00	0.42	1.3	0.55
3.00	130.0	0.195	130.0	0.195	0.99	0.42	1.3	0.55
4.00	130.0	0.260	130.0	0.260	0.99	0.42	1.3	0.54
5.00	130.0	0.325	130.0	0.325	0.99	0.42	1.3	0.54
6.00	130.0	0.390	130.0	0.390	0.99	0.42	1.3	0.54
7.00	130.0	0.455	130.0	0.455	0.98	0.42	1.3	0.54
8.00	130.0	0.520	67.6	0.520	0.98	0.41	1.3	0.54
9.00	127.7	0.584	65.3	0.553	0.98	0.44	1.3	0.57
10.00	125.4	0.648	63.0	0.585	0.98	0.46	1.3	0.59
11.00	123.1	0.710	60.7	0.616	0.97	0.47	1.3	0.62
12.00	121.5	0.771	59.1	0.646	0.97	0.49	1.3	0.64
13.00	120.0	0.832	57.6	0.676	0.97	0.50	1.3	0.66
14.00	120.0	0.892	57.6	0.704	0.97	0.52	1.3	0.67
15.00	120.0	0.952	57.6	0.733	0.97	0.53	1.3	0.69
16.00	120.0	1.012	57.6	0.762	0.96	0.54	1.3	0.70
17.00	120.0	1.072	57.6	0.791	0.96	0.55	1.3	0.71
18.00	120.0	1.132	57.6	0.819	0.96	0.56	1.3	0.73
19.00	120.0	1.192	57.6	0.848	0.96	0.57	1.3	0.74
20.00	120.0	1.252	57.6	0.877	0.95	0.57	1.3	0.75
21.00	120.0	1.312	57.6	0.906	0.95	0.58	1.3	0.76
22.00	120.0	1.372	57.6	0.935	0.95	0.59	1.3	0.76
23.00	120.0	1.432	57.6	0.963	0.95	0.59	1.3	0.77
24.00	120.0	1.492	57.6	0.992	0.94	0.60	1.3	0.78
25.00	120.0	1.552	57.6	1.021	0.94	0.60	1.3	0.79
26.00	120.0	1.612	57.6	1.050	0.94	0.61	1.3	0.79
27.00	121.0	1.672	58.6	1.079	0.94	0.61	1.3	0.80
28.00	122.0	1.732	59.6	1.108	0.93	0.62	1.3	0.80
29.00	123.0	1.794	60.6	1.139	0.93	0.62	1.3	0.81
30.00	124.0	1.855	61.6	1.169	0.93	0.62	1.3	0.81
31.00	125.0	1.918	62.6	1.200	0.92	0.62	1.3	0.81
32.00	125.0	1.980	62.6	1.231	0.91	0.62	1.3	0.81
33.00	125.0	2.043	62.6	1.263	0.91	0.62	1.3	0.80
34.00	125.0	2.105	62.6	1.294	0.90	0.62	1.3	0.80
35.00	125.0	2.168	62.6	1.325	0.89	0.61	1.3	0.80
36.00	125.0	2.230	62.6	1.357	0.88	0.61	1.3	0.80
37.00	125.0	2.293	62.6	1.388	0.87	0.61	1.3	0.79
38.00	125.0	2.355	62.6	1.419	0.86	0.61	1.3	0.79
39.00	125.0	2.418	62.6	1.450	0.86	0.60	1.3	0.78
40.00	125.0	2.480	62.6	1.482	0.85	0.60	1.3	0.78
41.00	125.0	2.543	62.6	1.513	0.84	0.60	1.3	0.78
42.00	125.0	2.605	62.6	1.544	0.83	0.59	1.3	0.77
43.00	125.0	2.668	62.6	1.576	0.82	0.59	1.3	0.77
44.00	125.0	2.730	62.6	1.607	0.82	0.59	1.3	0.76
45.00	125.0	2.793	62.6	1.638	0.81	0.58	1.3	0.76
46.00	125.0	2.855	62.6	1.670	0.80	0.58	1.3	0.75
47.00	125.0	2.918	62.6	1.701	0.79	0.57	1.3	0.75
48.00	125.0	2.980	62.6	1.732	0.78	0.57	1.3	0.74
49.00	125.0	3.043	62.6	1.763	0.78	0.57	1.3	0.73
50.00	125.0	3.105	62.6	1.795	0.77	0.56	1.3	0.73
51.00	125.0	3.168	62.6	1.826	0.76	0.56	1.3	0.72
52.00	125.0	3.230	62.6	1.857	0.75	0.55	1.3	0.72
53.00	125.0	3.293	62.6	1.889	0.74	0.55	1.3	0.71
54.00	125.0	3.355	62.6	1.920	0.73	0.54	1.3	0.71

55.00	125.0	3.418	62.6	1.951	0.73	0.54	1.3	0.70
56.00	127.0	3.481	64.6	1.983	0.72	0.53	1.3	0.69
57.00	129.0	3.545	66.6	2.016	0.71	0.53	1.3	0.69
58.00	131.0	3.610	68.6	2.050	0.70	0.52	1.3	0.68
59.00	133.0	3.676	70.6	2.084	0.69	0.52	1.3	0.67
60.00	135.0	3.743	72.6	2.120	0.69	0.51	1.3	0.66
61.00	135.0	3.810	72.6	2.156	0.68	0.51	1.3	0.66
62.00	135.0	3.878	72.6	2.193	0.67	0.50	1.3	0.65
63.00	135.0	3.945	72.6	2.229	0.66	0.49	1.3	0.64
64.00	135.0	4.013	72.6	2.265	0.65	0.49	1.3	0.64
65.00	135.0	4.080	72.6	2.302	0.65	0.48	1.3	0.63
66.00	135.0	4.148	72.6	2.338	0.64	0.48	1.3	0.62
67.00	135.0	4.215	72.6	2.374	0.63	0.47	1.3	0.61
68.00	135.0	4.283	72.6	2.411	0.62	0.47	1.3	0.61
69.00	135.0	4.350	72.6	2.447	0.61	0.46	1.3	0.60
70.00	135.0	4.418	72.6	2.483	0.60	0.45	1.3	0.59
71.00	135.0	4.485	72.6	2.519	0.60	0.45	1.3	0.58
72.00	135.0	4.553	72.6	2.556	0.59	0.44	1.3	0.58
73.00	135.0	4.620	72.6	2.592	0.58	0.44	1.3	0.57
74.00	135.0	4.688	72.6	2.628	0.57	0.43	1.3	0.56
75.00	135.0	4.755	72.6	2.665	0.56	0.42	1.3	0.55
76.00	135.0	4.823	72.6	2.701	0.56	0.42	1.3	0.55

CSR is based on water table at 8.0 during earthquake

CRR Calculation from SPT or BPT data:

Depth ft	SPT	Cebs	Cr	sigma'	Cn	(N1)60	Fines %	d(N1)60	(N1)60f	CRR7.5
1.00	30.00	1.38	0.75	0.065	1.70	52.78	25.0	4.80	57.58	2.00
2.00	30.00	1.38	0.75	0.130	1.70	52.78	27.5	5.40	58.18	2.00
3.00	30.00	1.38	0.75	0.195	1.70	52.78	30.0	6.00	58.78	2.00
4.00	30.00	1.38	0.75	0.260	1.70	52.78	30.0	6.00	58.78	2.00
5.00	30.00	1.38	0.75	0.325	1.70	52.78	30.0	6.00	58.78	2.00
6.00	30.00	1.38	0.75	0.390	1.60	49.72	30.0	6.00	55.72	2.00
7.00	30.00	1.38	0.75	0.455	1.48	46.03	15.5	2.52	48.55	2.00
8.00	30.00	1.38	0.75	0.520	1.39	43.06	1.0	0.00	43.06	2.00
9.00	25.00	1.38	0.85	0.584	1.31	38.36	1.0	0.00	38.36	2.00
10.00	20.00	1.38	0.85	0.648	1.24	29.15	1.0	0.00	29.15	0.38
11.00	15.00	1.38	0.85	0.710	1.19	20.88	1.0	0.00	20.88	0.23
12.00	13.00	1.38	0.85	0.771	1.14	17.37	51.0	7.20	24.57	0.28
13.00	11.00	1.38	0.85	0.832	1.10	14.15	NoLiq	7.20	21.35	0.23
14.00	11.00	1.38	0.85	0.892	1.06	13.67	NoLiq	7.20	20.87	0.23
15.00	11.00	1.38	0.95	0.952	1.03	14.78	NoLiq	7.20	21.98	0.24
16.00	11.00	1.38	0.95	1.012	0.99	14.34	NoLiq	7.20		

21.54	0.23								
	17.00	11.40	1.38	0.95	1.072	0.97	14.44	NoLiq	7.20
21.64	0.24								
	18.00	11.80	1.38	0.95	1.132	0.94	14.54	NoLiq	7.20
21.74	0.24								
	19.00	12.20	1.38	0.95	1.185	0.92	14.69	NoLiq	7.20
21.89	0.24								
	20.00	12.60	1.38	0.95	1.214	0.91	14.99	NoLiq	7.20
22.19	0.24								
	21.00	13.00	1.38	0.95	1.243	0.90	15.29	NoLiq	7.20
22.49	0.25								
	22.00	14.20	1.38	0.95	1.272	0.89	16.51	NoLiq	7.20
23.71	0.26								
	23.00	15.40	1.38	0.95	1.300	0.88	17.70	NoLiq	7.20
24.90	0.28								
	24.00	16.60	1.38	0.95	1.329	0.87	18.88	NoLiq	7.20
26.08	0.30								
	25.00	17.80	1.38	0.95	1.358	0.86	20.02	NoLiq	7.20
27.22	0.32								
	26.00	19.00	1.38	0.95	1.387	0.85	21.15	NoLiq	7.20
28.35	0.35								
	27.00	21.00	1.38	0.95	1.416	0.84	23.14	81.0	7.20
30.34	2.00								
	28.00	23.00	1.38	1.00	1.445	0.83	26.40	61.0	7.20
33.60	2.00								
	29.00	25.00	1.38	1.00	1.475	0.82	28.40	41.0	7.20
35.60	2.00								
	30.00	27.00	1.38	1.00	1.506	0.81	30.36	21.0	3.84
34.20	2.00								
	31.00	29.00	1.38	1.00	1.537	0.81	32.28	1.0	0.00
32.28	2.00								
	32.00	28.75	1.38	1.00	1.568	0.80	31.68	1.0	0.00
31.68	2.00								
	33.00	28.50	1.38	1.00	1.600	0.79	31.10	1.0	0.00
31.10	2.00								
	34.00	28.25	1.38	1.00	1.631	0.78	30.53	1.0	0.00
30.53	2.00								
	35.00	28.00	1.38	1.00	1.662	0.78	29.97	1.0	0.00
29.97	0.45								
	36.00	27.20	1.38	1.00	1.694	0.77	28.84	6.8	0.43
29.28	0.39								
	37.00	26.40	1.38	1.00	1.725	0.76	27.74	12.6	1.82
29.56	0.40								
	38.00	25.60	1.38	1.00	1.756	0.75	26.66	18.4	3.22
29.87	0.44								
	39.00	24.80	1.38	1.00	1.787	0.75	25.60	24.2	4.61
30.21	2.00								
	40.00	24.00	1.38	1.00	1.819	0.74	24.56	30.0	6.00
30.56	2.00								
	41.00	24.40	1.38	1.00	1.850	0.74	24.76	44.2	7.20
31.96	2.00								
	42.00	24.80	1.38	1.00	1.881	0.73	24.95	58.4	7.20
32.15	2.00								
	43.00	25.20	1.38	1.00	1.913	0.72	25.15	72.6	7.20
32.35	2.00								
	44.00	25.60	1.38	1.00	1.944	0.72	25.34	86.8	7.20
32.54	2.00								
	45.00	26.00	1.38	1.00	1.975	0.71	25.53	NoLiq	7.20
32.73	2.00								
	46.00	27.60	1.38	1.00	2.007	0.71	26.89	NoLiq	7.20
34.09	2.00								
	47.00	29.20	1.38	1.00	2.038	0.70	28.23	NoLiq	7.20
35.43	2.00								

	48.00	30.80	1.38	1.00	2.069	0.70	29.55	NoLiq	7.20
36.75	2.00								
	49.00	32.40	1.38	1.00	2.100	0.69	30.85	NoLiq	7.20
38.05	2.00								
	50.00	34.00	1.38	1.00	2.132	0.68	32.14	NoLiq	7.20
39.34	2.00								
	51.00	34.80	1.38	1.00	2.163	0.68	32.65	NoLiq	7.20
39.85	2.00								
	52.00	35.60	1.38	1.00	2.194	0.68	33.16	NoLiq	7.20
40.36	2.00								
	53.00	36.40	1.38	1.00	2.226	0.67	33.67	NoLiq	7.20
40.87	2.00								
	54.00	37.20	1.38	1.00	2.257	0.67	34.17	NoLiq	7.20
41.37	2.00								
	55.00	38.00	1.38	1.00	2.288	0.66	34.67	NoLiq	7.20
41.87	2.00								
	56.00	45.80	1.38	1.00	2.320	0.66	41.49	81.0	7.20
48.69	2.00								
	57.00	53.60	1.38	1.00	2.353	0.65	48.22	61.0	7.20
55.42	2.00								
	58.00	61.40	1.38	1.00	2.387	0.65	54.84	41.0	7.20
62.04	2.00								
	59.00	69.20	1.38	1.00	2.421	0.64	61.37	21.0	3.84
65.21	2.00								
	60.00	77.00	1.38	1.00	2.457	0.64	67.78	1.0	0.00
67.78	2.00								
	61.00	78.40	1.38	1.00	2.493	0.63	68.52	1.0	0.00
68.52	2.00								
	62.00	79.80	1.38	1.00	2.530	0.63	69.24	1.0	0.00
69.24	2.00								
	63.00	81.20	1.38	1.00	2.566	0.62	69.95	1.0	0.00
69.95	2.00								
	64.00	82.60	1.38	1.00	2.602	0.62	70.66	1.0	0.00
70.66	2.00								
	65.00	84.00	1.38	1.00	2.639	0.62	71.36	1.0	0.00
71.36	2.00								
	66.00	87.20	1.38	1.00	2.675	0.61	73.58	1.0	0.00
73.58	2.00								
	67.00	90.40	1.38	1.00	2.711	0.61	75.76	1.0	0.00
75.76	2.00								
	68.00	93.60	1.38	1.00	2.748	0.60	77.93	1.0	0.00
77.93	2.00								
	69.00	96.80	1.38	1.00	2.784	0.60	80.06	1.0	0.00
80.06	2.00								
	70.00	100.00	1.38	1.00	2.820	0.60	82.17	1.0	0.00
82.17	2.00								
	71.00	100.00	1.38	1.00	2.856	0.59	81.65	1.0	0.00
81.65	2.00								
	72.00	100.00	1.38	1.00	2.893	0.59	81.14	1.0	0.00
81.14	2.00								
	73.00	100.00	1.38	1.00	2.929	0.58	80.63	1.0	0.00
80.63	2.00								
	74.00	100.00	1.38	1.00	2.965	0.58	80.14	1.0	0.00
80.14	2.00								
	75.00	100.00	1.38	1.00	3.002	0.58	79.65	1.0	0.00
79.65	2.00								
	76.00	100.00	1.38	1.00	3.038	0.57	79.18	1.0	0.00
79.18	2.00								

CRR is based on water table at 18.8 during In-Situ Testing

S-14556.1a.cal

Factor of Safety, - Earthquake Magnitude= 7.2:

Depth ft	sigC' tsf	CRR7.5 tsf	Ksigma	CRRv	MSF	CRRm	CSRfs w/fs	F.S. CRRm/CSRfs
1.00	0.04	2.00	1.00	2.00	1.11	2.22	0.55	5.00
2.00	0.08	2.00	1.00	2.00	1.11	2.22	0.55	5.00
3.00	0.13	2.00	1.00	2.00	1.11	2.22	0.55	5.00
4.00	0.17	2.00	1.00	2.00	1.11	2.22	0.54	5.00
5.00	0.21	2.00	1.00	2.00	1.11	2.22	0.54	5.00
6.00	0.25	2.00	1.00	2.00	1.11	2.22	0.54	5.00
7.00	0.30	2.00	1.00	2.00	1.11	2.22	0.54	5.00
8.00	0.34	2.00	1.00	2.00	1.11	2.22	0.54	4.12
9.00	0.38	2.00	1.00	2.00	1.11	2.22	0.57	3.91
10.00	0.42	0.38	1.00	0.38	1.11	0.42	0.59	0.71 *
11.00	0.46	0.23	1.00	0.23	1.11	0.25	0.62	0.41 *
12.00	0.50	0.28	1.00	0.28	1.11	0.31	0.64	0.48 *
13.00	0.54	0.23	1.00	0.23	1.11	2.00	0.66	5.00
14.00	0.58	0.23	1.00	0.23	1.11	2.00	0.67	5.00
15.00	0.62	0.24	1.00	0.24	1.11	2.00	0.69	5.00
16.00	0.66	0.23	1.00	0.23	1.11	2.00	0.70	5.00
17.00	0.70	0.24	1.00	0.24	1.11	2.00	0.71	5.00
18.00	0.74	0.24	1.00	0.24	1.11	2.00	0.73	5.00
19.00	0.77	0.24	1.00	0.24	1.11	2.00	0.74	5.00
20.00	0.79	0.24	1.00	0.24	1.11	2.00	0.75	5.00
21.00	0.81	0.25	1.00	0.25	1.11	2.00	0.76	5.00
22.00	0.83	0.26	1.00	0.26	1.11	2.00	0.76	5.00
23.00	0.85	0.28	1.00	0.28	1.11	2.00	0.77	5.00
24.00	0.86	0.30	1.00	0.30	1.11	2.00	0.78	5.00
25.00	0.88	0.32	1.00	0.32	1.11	2.00	0.79	5.00
26.00	0.90	0.35	1.00	0.35	1.11	2.00	0.79	5.00
27.00	0.92	2.00	1.00	2.00	1.11	2.22	0.80	2.78
28.00	0.94	2.00	1.00	2.00	1.11	2.22	0.80	2.77
29.00	0.96	2.00	1.00	2.00	1.11	2.22	0.81	2.75
30.00	0.98	2.00	1.00	2.00	1.11	2.22	0.81	2.74
31.00	1.00	2.00	1.00	2.00	1.11	2.22	0.81	2.74
32.00	1.02	2.00	1.00	2.01	1.11	2.23	0.81	2.76
33.00	1.04	2.00	1.00	2.00	1.11	2.22	0.80	2.76
34.00	1.06	2.00	1.00	1.99	1.11	2.21	0.80	2.76
35.00	1.08	0.45	0.99	0.45	1.11	0.50	0.80	0.62 *
36.00	1.10	0.39	0.99	0.38	1.11	0.43	0.80	0.54 *
37.00	1.12	0.40	0.99	0.40	1.11	0.44	0.79	0.56 *
38.00	1.14	0.44	0.98	0.43	1.11	0.48	0.79	0.60 *
39.00	1.16	2.00	0.98	1.96	1.11	2.18	0.78	2.78
40.00	1.18	2.00	0.98	1.96	1.11	2.17	0.78	2.78
41.00	1.20	2.00	0.97	1.95	1.11	2.16	0.78	2.79
42.00	1.22	2.00	0.97	1.94	1.11	2.16	0.77	2.80
43.00	1.24	2.00	0.97	1.94	1.11	2.15	0.77	2.81
44.00	1.26	2.00	0.97	1.93	1.11	2.14	0.76	2.82
45.00	1.28	2.00	0.96	1.93	1.11	2.14	0.76	2.83
46.00	1.30	2.00	0.96	1.92	1.11	2.00	0.75	5.00
47.00	1.32	2.00	0.96	1.91	1.11	2.00	0.75	5.00
48.00	1.34	2.00	0.95	1.91	1.11	2.00	0.74	5.00
49.00	1.37	2.00	0.95	1.90	1.11	2.00	0.73	5.00
50.00	1.39	2.00	0.95	1.90	1.11	2.00	0.73	5.00
51.00	1.41	2.00	0.95	1.89	1.11	2.00	0.72	5.00
52.00	1.43	2.00	0.94	1.89	1.11	2.00	0.72	5.00
53.00	1.45	2.00	0.94	1.88	1.11	2.00	0.71	5.00
54.00	1.47	2.00	0.94	1.87	1.11	2.00	0.71	5.00
55.00	1.49	2.00	0.93	1.87	1.11	2.00	0.70	5.00
56.00	1.51	2.00	0.93	1.86	1.11	2.07	0.69	2.99
57.00	1.53	2.00	0.93	1.86	1.11	2.06	0.69	3.01
58.00	1.55	2.00	0.93	1.85	1.11	2.06	0.68	3.03
59.00	1.57	2.00	0.92	1.85	1.11	2.05	0.67	3.05

60.00	1.60	2.00	0.92	1.84	1.11	2.04	0.66	3.07
61.00	1.62	2.00	0.92	1.83	1.11	2.04	0.66	3.10
62.00	1.64	2.00	0.91	1.83	1.11	2.03	0.65	3.12
63.00	1.67	2.00	0.91	1.82	1.11	2.02	0.64	3.15
64.00	1.69	2.00	0.91	1.82	1.11	2.02	0.64	3.17
65.00	1.72	2.00	0.91	1.81	1.11	2.01	0.63	3.20
66.00	1.74	2.00	0.90	1.80	1.11	2.00	0.62	3.23
67.00	1.76	2.00	0.90	1.80	1.11	2.00	0.61	3.26
68.00	1.79	2.00	0.90	1.79	1.11	1.99	0.61	3.29
69.00	1.81	2.00	0.89	1.79	1.11	1.98	0.60	3.32
70.00	1.83	2.00	0.89	1.78	1.11	1.98	0.59	3.35
71.00	1.86	2.00	0.89	1.78	1.11	1.97	0.58	3.38
72.00	1.88	2.00	0.89	1.77	1.11	1.97	0.58	3.42
73.00	1.90	2.00	0.88	1.77	1.11	1.96	0.57	3.45
74.00	1.93	2.00	0.88	1.76	1.11	1.95	0.56	3.49
75.00	1.95	2.00	0.88	1.75	1.11	1.95	0.55	3.52
76.00	1.97	2.00	0.87	1.75	1.11	1.94	0.55	3.54

* F.S.<1: Liquefaction Potential Zone. (If above water table: F.S.=5)
(F.S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

CPT convert to SPT for Settlement Analysis:
Fines Correction for Settlement Analysis:

Depth ft	Ic	qc/N60	qc1 tsf	(N1)60	Fines %	d(N1)60	(N1)60s
1.00	-	-	-	52.78	25.0	2.19	54.97
2.00	-	-	-	52.78	27.5	2.38	55.16
3.00	-	-	-	52.78	30.0	2.56	55.35
4.00	-	-	-	52.78	30.0	2.56	55.35
5.00	-	-	-	52.78	30.0	2.56	55.35
6.00	-	-	-	49.72	30.0	2.56	52.28
7.00	-	-	-	46.03	15.5	1.41	47.45
8.00	-	-	-	43.06	1.0	0.10	43.16
9.00	-	-	-	38.36	1.0	0.10	38.46
10.00	-	-	-	29.15	1.0	0.10	29.25
11.00	-	-	-	20.88	1.0	0.10	20.98
12.00	-	-	-	17.37	51.0	3.93	21.29
13.00	-	-	-	14.15	NoLiq	0.00	14.15
14.00	-	-	-	13.67	NoLiq	0.00	13.67
15.00	-	-	-	14.78	NoLiq	0.00	14.78
16.00	-	-	-	14.34	NoLiq	0.00	14.34
17.00	-	-	-	14.44	NoLiq	0.00	14.44
18.00	-	-	-	14.54	NoLiq	0.00	14.54
19.00	-	-	-	14.69	NoLiq	0.00	14.69
20.00	-	-	-	14.99	NoLiq	0.00	14.99
21.00	-	-	-	15.29	NoLiq	0.00	15.29
22.00	-	-	-	16.51	NoLiq	0.00	16.51
23.00	-	-	-	17.70	NoLiq	0.00	17.70
24.00	-	-	-	18.88	NoLiq	0.00	18.88
25.00	-	-	-	20.02	NoLiq	0.00	20.02
26.00	-	-	-	21.15	NoLiq	0.00	21.15
27.00	-	-	-	23.14	81.0	5.26	28.40
28.00	-	-	-	26.40	61.0	4.45	30.85
29.00	-	-	-	28.40	41.0	3.32	31.72
30.00	-	-	-	30.36	21.0	1.87	32.23
31.00	-	-	-	32.28	1.0	0.10	32.38
32.00	-	-	-	31.68	1.0	0.10	31.78
33.00	-	-	-	31.10	1.0	0.10	31.19
34.00	-	-	-	30.53	1.0	0.10	30.62
35.00	-	-	-	29.97	1.0	0.10	30.07
36.00	-	-	-	28.84	6.8	0.64	29.49

37.00	-	-	-	27.74	12.6	1.16	28.90
38.00	-	-	-	26.66	18.4	1.66	28.32
39.00	-	-	-	25.60	24.2	2.12	27.72
40.00	-	-	-	24.56	30.0	2.56	27.12
41.00	-	-	-	24.76	44.2	3.52	28.28
42.00	-	-	-	24.95	58.4	4.32	29.27
43.00	-	-	-	25.15	72.6	4.96	30.10
44.00	-	-	-	25.34	86.8	5.44	30.77
45.00	-	-	-	25.53	NoLiq	0.00	25.53
46.00	-	-	-	26.89	NoLiq	0.00	26.89
47.00	-	-	-	28.23	NoLiq	0.00	28.23
48.00	-	-	-	29.55	NoLiq	0.00	29.55
49.00	-	-	-	30.85	NoLiq	0.00	30.85
50.00	-	-	-	32.14	NoLiq	0.00	32.14
51.00	-	-	-	32.65	NoLiq	0.00	32.65
52.00	-	-	-	33.16	NoLiq	0.00	33.16
53.00	-	-	-	33.67	NoLiq	0.00	33.67
54.00	-	-	-	34.17	NoLiq	0.00	34.17
55.00	-	-	-	34.67	NoLiq	0.00	34.67
56.00	-	-	-	41.49	81.0	5.26	46.75
57.00	-	-	-	48.22	61.0	4.45	52.67
58.00	-	-	-	54.84	41.0	3.32	58.17
59.00	-	-	-	61.37	21.0	1.87	63.24
60.00	-	-	-	67.78	1.0	0.10	67.88
61.00	-	-	-	68.52	1.0	0.10	68.61
62.00	-	-	-	69.24	1.0	0.10	69.33
63.00	-	-	-	69.95	1.0	0.10	70.05
64.00	-	-	-	70.66	1.0	0.10	70.76
65.00	-	-	-	71.36	1.0	0.10	71.46
66.00	-	-	-	73.58	1.0	0.10	73.67
67.00	-	-	-	75.76	1.0	0.10	75.86
68.00	-	-	-	77.93	1.0	0.10	78.02
69.00	-	-	-	80.06	1.0	0.10	80.16
70.00	-	-	-	82.17	1.0	0.10	82.27
71.00	-	-	-	81.65	1.0	0.10	81.75
72.00	-	-	-	81.14	1.0	0.10	81.24
73.00	-	-	-	80.63	1.0	0.10	80.73
74.00	-	-	-	80.14	1.0	0.10	80.24
75.00	-	-	-	79.65	1.0	0.10	79.75
76.00	-	-	-	79.18	1.0	0.10	79.27

Settlement of Saturated Sands:
Settlement Analysis Method: Ishihara / Yoshimine*

Depth ft	CSRfs w/fs	F.S.	Fines %	(N1)60s	Dr %	ec %	dsz in.	dsv in.	S in.
75.95	0.55	3.54	1.0	79.30	100.00	0.000	0.000	0.000	0.000
75.00	0.55	3.52	1.0	79.75	100.00	0.000	0.000	0.000	0.000
74.00	0.56	3.49	1.0	80.24	100.00	0.000	0.000	0.000	0.000
73.00	0.57	3.45	1.0	80.73	100.00	0.000	0.000	0.000	0.000
72.00	0.58	3.42	1.0	81.24	100.00	0.000	0.000	0.000	0.000
71.00	0.58	3.38	1.0	81.75	100.00	0.000	0.000	0.000	0.000
70.00	0.59	3.35	1.0	82.27	100.00	0.000	0.000	0.000	0.000

69.00	0.60	3.32	1.0	80.16	100.00	0.000	0.000	0.000	0.000
68.00	0.61	3.29	1.0	78.02	100.00	0.000	0.000	0.000	0.000
67.00	0.61	3.26	1.0	75.86	100.00	0.000	0.000	0.000	0.000
66.00	0.62	3.23	1.0	73.67	100.00	0.000	0.000	0.000	0.000
65.00	0.63	3.20	1.0	71.46	100.00	0.000	0.000	0.000	0.000
64.00	0.64	3.17	1.0	70.76	100.00	0.000	0.000	0.000	0.000
63.00	0.64	3.15	1.0	70.05	100.00	0.000	0.000	0.000	0.000
62.00	0.65	3.12	1.0	69.33	100.00	0.000	0.000	0.000	0.000
61.00	0.66	3.10	1.0	68.61	100.00	0.000	0.000	0.000	0.000
60.00	0.66	3.07	1.0	67.88	100.00	0.000	0.000	0.000	0.000
59.00	0.67	3.05	21.0	63.24	100.00	0.000	0.000	0.000	0.000
58.00	0.68	3.03	41.0	58.17	100.00	0.000	0.000	0.000	0.000
57.00	0.69	3.01	61.0	52.67	100.00	0.000	0.000	0.000	0.000
56.00	0.69	2.99	81.0	46.75	100.00	0.000	0.000	0.000	0.000
55.00	0.70	5.00	NoLiq	34.67	100.00	0.000	0.000	0.000	0.000
54.00	0.71	5.00	NoLiq	34.17	100.00	0.000	0.000	0.000	0.000
53.00	0.71	5.00	NoLiq	33.67	99.01	0.000	0.000	0.000	0.000
52.00	0.72	5.00	NoLiq	33.16	97.69	0.000	0.000	0.000	0.000
51.00	0.72	5.00	NoLiq	32.65	96.39	0.000	0.000	0.000	0.000
50.00	0.73	5.00	NoLiq	32.14	95.10	0.000	0.000	0.000	0.000
49.00	0.73	5.00	NoLiq	30.85	92.01	0.000	0.000	0.000	0.000
48.00	0.74	5.00	NoLiq	29.55	89.04	0.000	0.000	0.000	0.000
47.00	0.75	5.00	NoLiq	28.23	86.19	0.000	0.000	0.000	0.000
46.00	0.75	5.00	NoLiq	26.89	83.42	0.000	0.000	0.000	0.000
45.00	0.76	2.83	NoLiq	25.53	80.74	0.000	0.000	0.000	0.000
44.00	0.76	2.82	86.8	30.77	91.83	0.000	0.000	0.000	0.000
43.00	0.77	2.81	72.6	30.10	90.29	0.000	0.000	0.000	0.000
42.00	0.77	2.80	58.4	29.27	88.44	0.000	0.000	0.000	0.000
41.00	0.78	2.79	44.2	28.28	86.30	0.000	0.000	0.000	0.000
40.00	0.78	2.78	30.0	27.12	83.90	0.000	0.000	0.000	0.000
39.00	0.78	2.78	24.2	27.72	85.13	0.000	0.000	0.000	0.000
38.00	0.79	0.60	18.4	28.32	86.38	1.305	0.008	0.121	

0.121	37.00	0.79	0.56	12.6	28.90	87.63	1.307	0.008	0.157
0.278	36.00	0.80	0.54	6.8	29.49	88.91	1.284	0.008	0.156
0.434	35.00	0.80	0.62	1.0	30.07	90.21	1.050	0.006	0.145
0.579	34.00	0.80	2.76	1.0	30.62	91.48	0.000	0.000	0.030
0.609	33.00	0.80	2.76	1.0	31.19	92.82	0.000	0.000	0.000
0.609	32.00	0.81	2.76	1.0	31.78	94.22	0.000	0.000	0.000
0.609	31.00	0.81	2.74	1.0	32.38	95.70	0.000	0.000	0.000
0.609	30.00	0.81	2.74	21.0	32.23	95.33	0.000	0.000	0.000
0.609	29.00	0.81	2.75	41.0	31.72	94.09	0.000	0.000	0.000
0.609	28.00	0.80	2.77	61.0	30.85	92.01	0.000	0.000	0.000
0.609	27.00	0.80	2.78	81.0	28.40	86.55	0.000	0.000	0.000
0.609	26.00	0.79	5.00	NoLiq	21.15	72.61	0.000	0.000	0.139
0.747	25.00	0.79	5.00	NoLiq	20.02	70.58	0.000	0.000	0.000
0.747	24.00	0.78	5.00	NoLiq	18.88	68.51	0.000	0.000	0.000
0.747	23.00	0.77	5.00	NoLiq	17.70	66.38	0.000	0.000	0.000
0.747	22.00	0.76	5.00	NoLiq	16.51	64.16	0.000	0.000	0.000
0.747	21.00	0.76	5.00	NoLiq	15.29	61.84	0.000	0.000	0.000
0.747	20.00	0.75	5.00	NoLiq	14.99	61.26	0.000	0.000	0.000
0.747	19.00	0.74	5.00	NoLiq	14.69	60.67	0.000	0.000	0.000
0.747	18.00	0.73	5.00	NoLiq	14.54	60.38	0.000	0.000	0.000
0.747	17.00	0.71	5.00	NoLiq	14.44	60.17	0.000	0.000	0.000
0.747	16.00	0.70	5.00	NoLiq	14.34	59.97	0.000	0.000	0.000
0.747	15.00	0.69	5.00	NoLiq	14.78	60.85	0.000	0.000	0.000
0.747	14.00	0.67	5.00	NoLiq	13.67	58.62	0.000	0.000	0.000
0.747	13.00	0.66	5.00	NoLiq	14.15	59.60	0.000	0.000	0.000
0.747	12.00	0.64	0.48	51.0	21.29	72.86	2.067	0.012	0.253
1.001	11.00	0.62	0.41	1.0	20.98	72.30	2.092	0.013	0.248
1.249	10.00	0.59	0.71	1.0	29.25	88.38	1.004	0.006	0.198
1.447	9.00	0.57	3.91	1.0	38.46	100.00	0.000	0.000	0.009
1.456	8.00	0.54	4.12	1.0	43.16	100.00	0.000	0.000	0.000
1.456									

Settlement of Saturated Sands=1.456 in.
dsz is per each segment: dz=0.05 ft
dsv is per each print interval: dv=1 ft
S is cumulated settlement at this depth

Settlement of Dry Sands:

Depth	sigma'	sigC'	(N1)60s	CSRfs	Gmax	g*Ge/Gm	g_eff	ec7.5	Cec	ec
dsz	dsv	S								
ft	tsf	tsf		w/fs	tsf			%		%
in.	in.	in.								
7.95	0.52	0.34	43.36	0.54	909.4	3.1E-4	0.4643	0.1468	0.98	0.1444
1.7E-3	0.002	0.002								
7.00	0.46	0.30	47.45	0.54	879.3	2.8E-4	0.1653	0.0523	0.98	0.0514
6.2E-4	0.019	0.021								
6.00	0.39	0.25	52.28	0.54	840.8	2.5E-4	0.0770	0.0244	0.98	0.0239
2.9E-4	0.008	0.029								
5.00	0.33	0.21	55.35	0.54	782.3	2.3E-4	0.0498	0.0157	0.98	0.0155
1.9E-4	0.004	0.034								
4.00	0.26	0.17	55.35	0.54	699.7	2.0E-4	0.0394	0.0125	0.98	0.0122
1.5E-4	0.003	0.037								
3.00	0.20	0.13	55.35	0.55	606.0	1.8E-4	0.0402	0.0127	0.98	0.0125
1.5E-4	0.003	0.040								
2.00	0.13	0.08	55.16	0.55	494.2	1.4E-4	0.0274	0.0087	0.98	0.0085
1.0E-4	0.002	0.043								
1.00	0.07	0.04	54.97	0.55	349.1	1.0E-4	0.0206	0.0065	0.98	0.0064
7.7E-5	0.002	0.045								

Settlement of Dry Sands=0.045 in.
dsz is per each segment: dz=0.05 ft
dsv is per each print interval: dv=1 ft
S is cumulated settlement at this depth

Total Settlement of Saturated and Dry Sands=1.501 in.
Differential Settlement=0.750 to 0.990 in.

Units Depth = ft, Stress or Pressure = tsf (atm), Unit Weight = pcf, Settlement = in.

SPT	Field data from Standard Penetration Test (SPT)
BPT	Field data from Becker Penetration Test (BPT)
qc	Field data from Cone Penetration Test (CPT)
fc	Friction from CPT testing
Gamma	Total unit weight of soil
Gamma'	Effective unit weight of soil
Fines	Fines content [%]
D50	Mean grain size
Dr	Relative Density
sigma	Total vertical stress [tsf]
sigma'	Effective vertical stress [tsf]
sigC'	Effective confining pressure [tsf]
rd	Stress reduction coefficient
CSR	Cyclic stress ratio induced by earthquake
fs	User request factor of safety, apply to CSR
w/fs	With user request factor of safety inside
CSRfs	CSR with User request factor of safety
CRR7.5	Cyclic resistance ratio (M=7.5)

Ksigma	Overburden stress correction factor for CRR7.5
CRRv	CRR after overburden stress correction, CRRv=CRR7.5 * Ksigma
MSF	Magnitude scaling factor for CRR (M=7.5)
CRRm	After magnitude scaling correction CRRm=CRRv * MSF
F.S.	Factor of Safety against liquefaction F.S.=CRRm/CSRfs
Cebs	Energy Ratio, Borehole Dia., and Sample Method Corrections
Cr	Rod Length Corrections
Cn	Overburden Pressure Correction
(N1)60	SPT after corrections, (N1)60=SPT * Cr * Cn * Cebs
d(N1)60	Fines correction of SPT
(N1)60f	(N1)60 after fines corrections, (N1)60f=(N1)60 + d(N1)60
Cq	Overburden stress correction factor
qc1	CPT after Overburden stress correction
dqc1	Fines correction of CPT
qc1f	CPT after Fines and Overburden correction, qc1f=qc1 + dqc1
qc1n	CPT after normalization in Robertson's method
Kc	Fine correction factor in Robertson's Method
qc1f	CPT after Fines correction in Robertson's Method
Ic	Soil type index in Suzuki's and Robertson's Methods
(N1)60s	(N1)60 after seattlement fines corrections
ec	Volumetric strain for saturated sands
ds	Settlement in each Segment dz
dz	Segment for calculation, dz=0.050 ft
Gmax	Shear Modulus at low strain
g_eff	gamma_eff, Effective shear Strain
g*Ge/Gm	gamma_eff * G_eff/G_max, Strain-modulus ratio
ec7.5	Volumetric Strain for magnitude=7.5
Cec	Magnitude correction factor for any magnitude
ec	Volumetric strain for dry sands, ec=Cec * ec7.5
NoLiq	No-Liquefy Soils

References:

NCEER Workshop on Evaluation of Liquefaction Resistance of Soils. Youd, T.L., and Idriss, I.M., eds., Technical Report NCEER 97-0022.

SP117. Southern California Earthquake Center. Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California. University of Southern California. March 1999.

TERRA GEOSCIENCES

GEOLOGIC HAZARDS REPORT

PROPOSED PARK BUILDING AND STORM CHANNEL BRIDGE

NORM ROSS SPORTS COMPLEX

11111 CEDAR STREET, STANTON, CALIFORNIA

Project No. 233932-1

April 11, 2023

Prepared for:

John R. Byerly, Inc.
2257 South Lilac Avenue
Bloomington, CA 92316

John R. Byerly, Inc.
2257 South Lilac Avenue
Bloomington, CA 92316

Attention: Mr. John R. Byerly

Regarding: Geologic Hazards Report
Proposed Park Building and Storm Channel Bridge
Norm Ross Sports Complex
11111 Cedar Street, Stanton, California
JRB File No. S-14556

At your request, this firm has prepared a geologic hazards report for the proposed park building and storm channel bridge, within the existing Norm Ross Sports Complex, as referenced above. The purpose of this study was to evaluate the existing geologic conditions of the property and any corresponding potential geologic and/or seismic hazards, with respect to the proposed development from a geologic standpoint. This report has been prepared utilizing the suggested "Checklist for the Review of Engineering Geology and Seismology Reports for California Public Schools, Hospitals, and Essential Services Buildings" (CGS Note 48, 2022), along with the Geologic portion of the "*Factors to Be Included in the Geological and Environmental Hazards Report*," which is included as Appendix H of the "School Site Selection and Approval Guide," prepared by the School Facility Planning Division, California Department of Education (2021), and the Geohazard Reports requirements outlined by the DSA (2021). The scope of services provided for this evaluation included the following:

- ***Review of available published and unpublished geologic/seismic data in our files pertinent to the site, including the provided site-specific boring logs.***
- ***Performing a seismic surface-wave survey by a licensed State of California Professional Geophysicist that included one traverse for shear-wave velocity analysis purposes.***
- ***Evaluation of the local and regional tectonic setting and historical seismic activity, including performing a site-specific CBC ground motion analysis.***
- ***Preparation of this report presenting our findings, conclusions, and recommendations from a geologic standpoint.***

Accompanying Maps, Illustrations, and Appendices

Plate 1 - Regional Geologic Map
Plate 2 - Seismic Hazards Zone Map
Plate 3 - Google™ Earth Imagery Map
Plate 4 - Park Plan
Appendix A - Shear-Wave Survey
Appendix B - Site-Specific Ground Motion Analysis
Appendix C - References

PROJECT SUMMARY

We understand that this report will be appended to your current geotechnical investigation, therefore, some descriptive sections such as site description, proposed development, etc., have been purposely omitted as they have been described in detail in your referenced report. No grading plans were available for this evaluation, and no field or subsurface exploration was performed by this firm. Only a review of available geologic and geotechnical data in our files was undertaken, including the geotechnical Investigation of the subject site performed by John R. Byerly, Inc. (JRB, 2023), including performing a seismic shear-wave survey.

GEOLOGIC SETTING

The subject property is located in southwestern California, within a natural geomorphic province known as the Peninsular Ranges. The Peninsular Ranges is generally characterized by steep, elongated ranges and valleys that trend northwesterly. The northern end of this province includes the Los Angeles Basin, which is a northwest-trending alluvial lowland plain about 50 miles long and 20 miles wide. The Los Angeles Basin is, in turn, comprised of several structural blocks or subdivisions which are separated by major zones of faulting or flexures in the basement rock.

More specifically, the site is located within the Central Block of the Los Angeles Basin, which is wedge-shaped and approximately 55 miles long from northwest to southeast, ranging from 10 to 20 miles wide. This block is generally bounded by the Santa Monica Mountains to the north, the Whittier Fault Zone to the northeast, the Newport-Inglewood Fault Zone to the southwest, and the San Joaquin Hills to the southeast. This block contains a maximum thickness of 32,000 feet of marine and non-marine clastic sedimentary rocks of late Cretaceous through Pleistocene age.

Locally, as mapped by Morton (2006), the site is shown to be underlain by Quaternary age (Holocene to late Pleistocene) young alluvial fan deposits comprised mostly of unconsolidated to moderately consolidated silt, sand, pebbly cobbly sand, and bouldery alluvial-fan deposits having slightly to moderately dissected surfaces, as shown on Plate 1 (map symbol Qyf). Additionally, mapping by the California Geological Survey (2010) also indicates the site to be underlain by Holocene to late Pleistocene age earth materials generally characterized as unconsolidated- to slightly-consolidated boulder, cobble, gravel, sand, and silt deposits having undissected to slightly dissected surfaces.

Site-specific subsurface exploration performed by JRB (2023), indicates the proposed construction area in the upper 8± feet to be mantled by soft sandy silts with clay, loose to medium dense silty sands with variable amounts of clay, sand, and gravel. Underlying these surficial sediments are medium dense to very dense silty sands and sands, and medium stiff to very stiff sandy silts with clay and clayey silts with sand, to a depth of at least 76 feet.

FAULTING

There are at least forty-one major late Quaternary active/potentially active faults that are located within a 100-kilometer (62 mile) radius of the subject school site (Blake, 1989-2000a). Of these, there are no known active faults that traverse the site based on available published literature, nor was there any surficial geomorphic that was suggestive of faulting. The subject site is not located within a State of California "Alquist-Priolo Earthquake Fault Zone" for fault rupture hazard (California Geological Survey, 2018).

The nearest mapped (zoned) “active” fault is for the Newport-Inglewood Fault (On-shore), which is shown to be located approximately 6½ miles to the southwest (C.D.M.G., 1986). The Newport-Inglewood Fault (mapped on-shore segment) is approximately 65.5± kilometers in length and has an estimated rupture area of 980.5± square kilometers. This fault is characterized by right-lateral, strike-slip movement, with an associated slip-rate of 1 ±0.5 mm/year, and a characteristic return interval of 1,006 years, with an estimated Maximum Moment Magnitude Earthquake of M_W7.2. The "maximum moment” (M_W) earthquake is the maximum earthquake that is specific to that source based on estimated rupture dimensions for that segment of the design fault. Values for the “maximum moment magnitude” earthquake and associated fault data as outlined above have been compiled from data provided by the C.D.M.G. (1996); Cao et al. (2003); and Petersen et al. (2008).

The Newport-Inglewood Fault Zone consists of a series of northwest-trending, right-lateral strike-slip faults and form short, discontinuous, generally left-stepping en-echelon patterns when at or near the surface (Bryant, 1988). Within this zone, there are associated northwest- to west-trending, right-stepping anticlinal folds and numerous short subsidiary normal and reverse faults. This fault zone is seismically active of which the M6.3 1933 Long Beach Earthquake occurred, located 13± miles to the south.

The nearest mapped fault that is not zoned as “active” by the California Geological Survey is the Anaheim Fault (Field et al., 2013), located approximately 0.9± miles to the northeast. This fault is a reverse fault that dips 71 degrees to the northeast, with an estimated Maximum Moment Magnitude Earthquake of M_W6.4.

FLOODING

According to the Federal Emergency Management Agency (FEMA, 2009), the subject property is not shown to be located within the boundaries of a designated 100-year flood (Community Panel Number 06059C0136J, December 3, 2009). This map indicates that the site is located within "Zone X" which is defined as “Areas of 0.2% Annual Chance Flood.” According to the City of Stanton’s Flood Map (2008, Exhibit 6-3), the subject site is also shown to be located within “Areas of 0.2% Annual Chance Flood.”

GROUND MOTION ANALYSIS

According to California Geological Survey Note 48 (CGS, 2022), a site-specific ground motion analysis is required for the subject site (CBC, 2022, Section 1613A and as also required by ASCE 7-16, Chapter 21), the detailed results of which are presented within Appendix B. Additionally, a seismic shear-wave survey was conducted for this study by our firm as presented within Appendix A of this report for purposes of determining the soil Site Classification and V_{S30} input values for the ground motion analysis.

Geographically, the subject construction area is centrally located at Latitude 33.8004 and Longitude -117.9952 and (World Geodetic System of 1984 coordinates). The mapped spectral acceleration parameters, coefficients, and other related seismic parameters, were evaluated using the OSHPD Seismic Design Maps (OSHPD, 2023) and the California Building Code criteria (CBC, 2022), with the site-specific ground motion analysis being performed following Section 21 of the ASCE 7-16 Standard (2017). The results of this site-specific analysis have been summarized and are tabulated below:

TABLE 1 – SUMMARY OF SEISMIC DESIGN PARAMETERS

Factor or Coefficient	Value
S_S	**1.423g**
S_1	**0.503g**
F_a	**1.0**
F_v	**1.797**
S_{DS}	**0.990g**
S_{D1}	**1.050g**
S_{MS}	**1.484g**
S_{M1}	**1.573g**
T_L	**8 Seconds**
MCEG PGA	**0.65g**
Shear-Wave Velocity (V100)	**675.7 ft/sec**
Site Classification	**D**
Risk Category	**III**

HISTORIC SEISMICITY

A computerized search, based on Southern California historical earthquake catalogs, has been performed using the computer program EQSEARCH (Blake, 1989-2000b) and the ANSS Comprehensive Earthquake Catalog (U.S.G.S., 2023a). The following table and discussion summarizes the historic seismic events (greater than or equal to M4.0) that have been estimated and/or recorded during the time period of 1800 to April 2023, within a 100-kilometer radius of the site.

TABLE 1 - HISTORIC SEISMIC EVENTS; 1800-2023 (100-kilometer radius)

Richter Magnitude (M)	No. of Events
4.0 - 4.9	467
5.0 - 5.9	56
6.0 - 6.9	15
7.0 - 7.9	1
8.0+	0

It should be noted that pre-instrumental seismic events (generally before 1932) have been estimated from isoseismal maps (Toppozada, et al., 1981 and 1982). These data have been compiled generally based on the reported intensities throughout the region, thus focusing in on the most likely epicentral location. Instrumentation beyond 1932 has greatly increased the accuracy of locating earthquake epicenters. A summary of the historic earthquake data is as follows:

- The nearest estimated significant historic earthquake epicenter (pre-1932) was approximately 14 miles to the northwest (December 25, 1903, M5.0).

- The nearest recorded significant historic earthquake epicenter was a magnitude 5.0 event, located 2± miles to the south (M5.0), which occurred on March 11, 1933.

- The largest estimated historical earthquake magnitude was a M7.0 event of September 24, 1827 (approximately 59 miles west-northwest).

- The largest recorded historical earthquake was the M6.7 Northridge event, located approximately 42 miles to the northwest (January 17, 1994).

- The largest estimated ground acceleration to have been experienced at the site was 0.183g which resulted from the M6.3 Long Beach earthquake of March 14, 1933, which was located approximately 13 miles to the south (Blake, 1989-2000b).

An Earthquake Epicenter Map which includes magnitudes 4.0 and greater for a 100-kilometer radius from the site (central blue dot), is shown below as Figure 1. This map was prepared using the ANSS Comprehensive Earthquake Catalog (U.S.G.S., 2023) of instrumentally recorded events from the period of 1932 to April 2023.

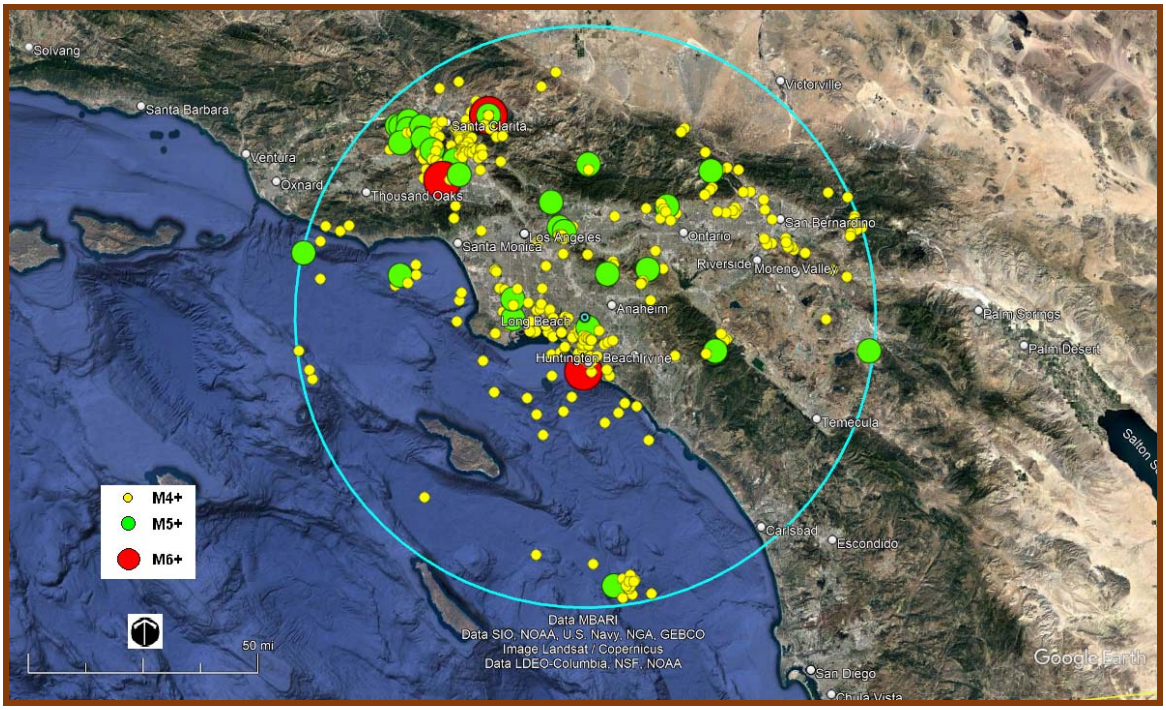


FIGURE 1- Earthquake Epicenter Map showing events of M4.0+ within a 100-kilometer radius.

GROUNDWATER

The subject site is located within the Coastal Plain of Orange County Basin (Orange County Basin), which underlies the coastal alluvial plain in the northwestern portion of Orange County. The basin is bounded by the Puente and Chino Hills to the north, the east by the Santa Ana Mountains, the south by in the San Joaquin Hills, the Pacific Ocean on the southwest, and by a low topographic divide approximated by the Orange County - Los Angeles County line on the northwest. This basin is a deep structural depression which contains a thick accumulation of fresh water-bearing interbedded marine and continental sand, silt, and clay deposits. Recharge to the basin is derived from percolation, infiltration of precipitation, and injection into wells.

Using the U.S.G.S. water well database (U.S.G.S., 2023c), the nearest known measured water well is located approximately 1,500± feet to the northwest (State Well No. 04S11W26B001S). This well indicates that groundwater levels have ranged from 26± to 44± feet in depth between the years 1969 to 1997. Seismic hazard mapping prepared by the California Division of Mines and Geology (2018), shows the site to be located with a zone of potential liquefaction, which generally indicates present or historic groundwater levels of 50-feet or less, as presented on the Seismic Hazards Map, Plate 2. Subsurface exploration performed by JRB (2023), encountered groundwater as shallow as 19± feet in depth. High groundwater contour data prepared by the California Geological Survey (1997) indicates that historic groundwater levels have been as high as 8± feet in depth.

SECONDARY SEISMIC HAZARDS

Secondary permanent or transient seismic hazards that are generally associated with severe ground shaking during an earthquake include ground rupture, liquefaction, seiches or tsunamis, flooding (water storage facility failure), ground lurching/lateral spreading, landsliding, rockfalls, and seismically-induced settlement. These hazards are discussed below.

Ground Rupture- Ground rupture is generally considered most likely to occur along pre-existing faults. Since no known active faults are believed to traverse the subject site, the probability of ground rupture is considered very low.

Ground Lurching/Lateral Spreading- Ground lurching is the horizontal movement of soil, sediments, or fill located on relatively steep embankments or scarps as a result of seismic activity, forming irregular ground surface cracks. The potential for lateral spreading or lurching is highest in areas underlain by soft, saturated materials, especially where bordered by steep banks or adjacent hard ground. Due to the flat-lying nature of the site, distance from embankments, the potential for ground lurching and/or lateral spreading is nil.

Flooding (Water Storage Facility Failure)- Based on the City of Stanton "Prado Dam Potential Inundation Areas" map (2008, Exhibit 6-4), the subject site is shown to be located within the "Limits of the Flood Due to Dam Failure", associated with Prado Dam", which is located approximately 21¼± miles to the east-northeast. Additionally, the United States Army Corp of Engineers (2023) also indicates the site to be located within a flood inundation zone from failure of Prado Dam, along with potential inundation occurring from failure of the Carbon Canyon Dam, located approximately 11¾± miles to the northeast. Therefore, the potential for flooding due to water storage facility failure is considered possible.

Seiches/Tsunamis- Based on the far distance of large, open bodies of water and the elevation of the site with respect to sea level, the possibility of seiches/tsunamis is considered nil. Additionally, mapping by the California Geological Survey (2014) does not indicate the site to be located within a tsunami inundation zone.

Liquefaction- In general, liquefaction is a phenomenon that occurs where there is a loss of strength or stiffness in the soils from repeated disturbances of saturated cohesionless soil that can result in the settlement of buildings, ground failures, or other such related hazards. The main factors generally contributing to this phenomenon are: 1) cohesionless, granular soils having relatively low densities (usually of Holocene age); 2) shallow groundwater (generally less than 40 feet); and 3) moderate-high seismic ground shaking. The California Geological Survey (2018) indicates the subject property to be located within a mapped zone for liquefaction potentials (1998 Seismic Hazards

Zone Map), as shown on Plate 2. In addition, the City of Stanton (2008) also indicates the site to be located within a potential liquefaction zone (Potential Liquefaction Areas; Exhibit 6-2). Based on this zoning, the shallow groundwater encountered during site exploration (JRB, 2023), high regional seismic potentials, and the unconsolidated nature of the alluvial sediments, there appears to be a moderate to high potential for liquefaction to occur.

Landsliding- Due to the relatively low-lying relief of the site, landsliding due to seismic shaking is considered nil. The California Geological Survey (2018) does not indicate the subject school site to be located within a mapped zone for landslide potentials (1998 Seismic Hazards Zone Map, see Plate 2).

Rockfalls- The site lies upon a relatively flat-lying alluvial plain. Since no large rock outcrops are present at or adjacent to the site, the possibility of rockfalls during seismic shaking is nil.

Seismically-Induced Settlement- Seismically-induced settlement generally occurs within areas of loose granular soils. The proposed construction area is locally mantled in the upper 8± feet by interbedded, soft sandy silts with clay, loose to medium dense silty sands with variable amounts of clay, sand, and gravel. Underlying these surficial sediments are medium dense to very dense silty sands and sands, and medium stiff to very stiff sandy silts with clay and clayey silts with sand, to a depth of at least 76 feet. Therefore, there may be a potential for seismically-induced settlement to occur, especially in the upper near-surface sediments.

OTHER GEOLOGIC HAZARDS

There are other potential geologic hazards not necessarily associated with seismic activity that occur statewide. These hazards include; natural hazardous materials (such as methane gas, hydrogen-sulfide gas, and tar seeps); Radon-222 gas (EPA, 1993); naturally occurring asbestos; volcanic hazards (Martin, 1982); and regional subsidence. Of these hazards, there are none that appear to impact the site.

CONCLUSIONS AND RECOMMENDATIONS

General:

Based on our review of available pertinent published and unpublished geologic/seismic literature, construction of the proposed park building and storm channel bridge, within the existing Norm Ross Sports Complex, appears to be feasible from a geologic standpoint, providing our recommendations are considered during planning and construction.

Conclusions:

1. Based on available published geologic data and review of the provided boring logs, the site is underlain by Quaternary age (Holocene to late Pleistocene) young alluvial fan deposits comprised mostly of unconsolidated- to slightly-consolidated boulder, cobble, gravel, sand, and silt deposits having undissected to slightly dissected surfaces. Site-specific exploration by JRB indicates the proposed construction site to be mantled within the upper 8± feet by soft sandy silts with clay, loose to medium dense silty sands with variable amounts of clay, sand, and gravel. Underlying these surficial sediments are medium dense to very dense silty sands and sands, and medium stiff to very stiff sandy silts with clay and clayey silts with sand, to a depth of at least 76 feet.

2. Groundwater was encountered within the exploratory excavations performed by JRB as shallow as 19± feet. Based on available published data, historic groundwater levels have ranged from 26± to 44± feet in depth from a well located approximately 1,500± feet to the northwest. High groundwater contour data prepared by the California Geological Survey indicates that historic groundwater levels have been as high as 8± feet in depth.

3. Based on our literature research, there are no active faults that are known to traverse the subject construction area. The nearest zoned active fault is associated with the active Newport-Inglewood Fault located approximately 6½± miles to the southwest that has an estimated maximum moment magnitude of M_W 7.2. The nearest fault that is not zoned as "active" by the California Geological Survey is the Anaheim Fault located approximately 0.9± miles to the southwest, with an estimated Maximum Moment Magnitude Earthquake of M_W6.4.

4. The primary geologic hazard that exists at the site is that of ground shaking, which accounts for nearly all earthquake losses. Moderate to severe ground shaking could be anticipated during the life of the proposed development.

5. Based on our review of available geologic and geotechnical literature and reports, there may be a potential for liquefaction, secondary seismic settlement, and flood inundation from dam failure to occur. No other permanent and/or transient secondary seismic hazards are expected to occur within the proposed construction area.

Recommendations:

1. The potential for flooding due to catastrophic failure of Prado and Carbon Canyon Dams should be properly evaluated by the project Civil Engineer. Appropriate site-specific mitigation measures, should be implemented as recommended, if warranted.

2. The potential for liquefaction and seismically-induced settlement should be properly evaluated by the project Geotechnical Engineer. A high groundwater level of 8-feet should be used for analysis purposes. Appropriate site-specific mitigation measures, should be implemented as recommended, if warranted.

3. It is recommended that all structures be designed to at least meet the current California Building Code provisions in the latest 2022 CBC edition and the 2016 ASCE Standard 7-16, where applicable. However, it should be noted that the building code is intended as a minimum construction design and is often the maximum level to which structures are designed. Structures that are built to minimum code are designed to at least remain operational after an earthquake. It is the responsibility of both the property owner and project structural engineer to determine the risk factors with respect to using CBC minimum design values for the proposed facilities.

CLOSURE

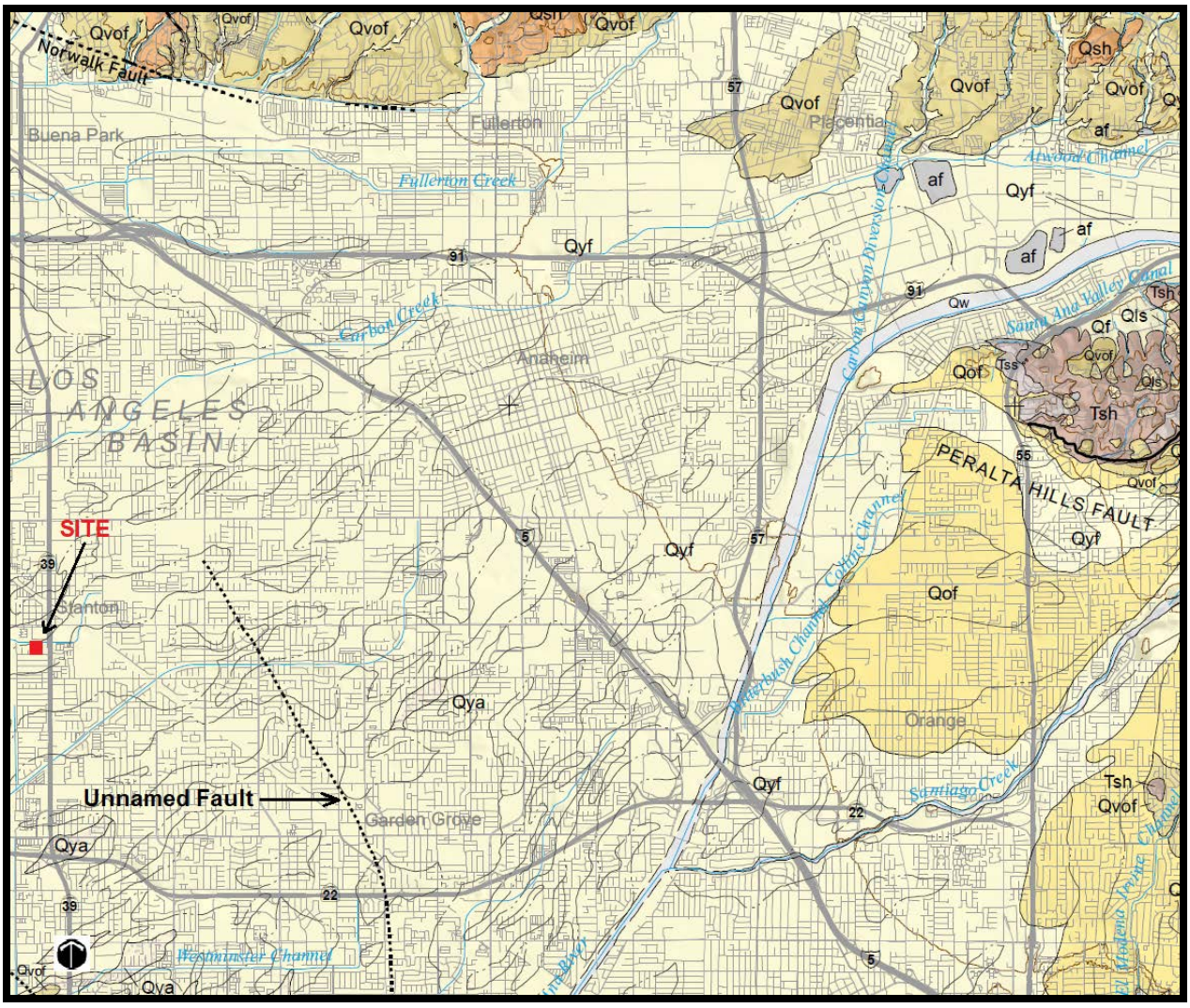
Our conclusions and recommendations are based on a review of available existing geologic/seismic data and the provided site-specific provided subsurface exploratory boring logs. No subsurface exploration was performed by this firm for this evaluation. The results of the seismic parameter values were based on the U.S. Seismic "Design Maps" OSHPD Web Application (California's Office of Statewide Health Planning and Development); as provided by the U.S.G.S. and as requested by the CGS for inclusion in this report. We make no warranty, either express or implied.

Should conditions be encountered at a later date or more information becomes available that appear to be different than those indicated in this report, we reserve the right to reevaluate our conclusions and recommendations and provide appropriate mitigation measures, if warranted. It is assumed that all the conclusions and recommendations outlined in this report are understood and followed. If any portion of this report is not understood, it is the responsibility of the owner, contractor, engineer, and/or governmental agency, etc., to contact this office for further clarification.

Respectfully submitted,
TERRA GEOSCIENCES

Donn C. Schwartzkopf
Principal Geologist / Geophysicist
CEG 1459 / PGP 1002

REGIONAL GEOLOGIC MAP

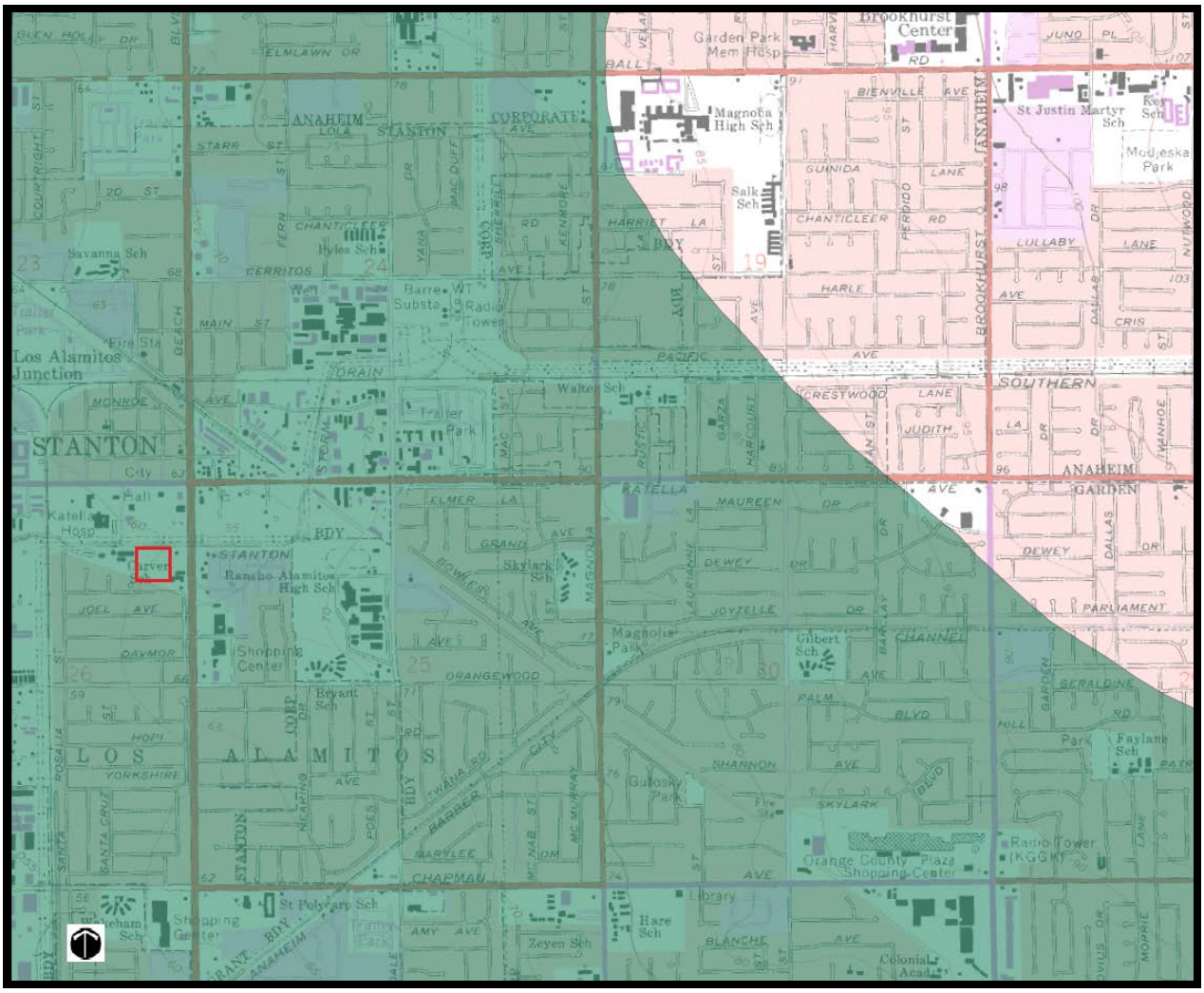


BASE MAP: Morton and Miller (2006), U.S.G.S. OFR 2006-1217, Scale 1: 100,000, Site outlined in red.

PARTIAL LEGEND

Qyf	**YOUNG FAN DEPOSITS**	Unconsolidated to moderately-consolidated silt, sand, pebbly cobbly sand, and bouldery alluvial-fan deposits (Holocene and late Pleistocene).
——----	**GEOLOGIC CONTACT**	Solid where well-located to approximately-located, dashed where inferred.
⇌----	**FAULT**	Solid where accurately located, dashed where approximate, dotted where concealed.

SEISMIC HAZARDS MAP



BASE MAP: CGS (2018), Earthquake/Seismic Hazards Zones, Scale 1: 24,000, Site outlined in red.

MAP EXPLANATION

SEISMIC HAZARD ZONES

Liquefaction Zones
Areas where historical occurrence of liquefaction, or local geological, geotechnical and ground water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

Earthquake-Induced Landslide Zones
Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

GOOGLE™ EARTH IMAGERY MAP

Base Map: Google™ Earth (2023); Seismic shear-wave traverse SW-1 shown as blue line.

PROJECT NO. 233932-1

PLATE 3

PARK PLAN

Park Plan
NORM ROSS SPORTS PARK
Stanton, California

Base Map: Provided Park Plan; Seismic shear-wave traverse SW-1 shown as blue line; Proposed construction shown in red.

PROJECT NO. 233932-1

PLATE 4
Enclosure 9, Page 15
Rpt. No.: 7650-a
File No.: S-14556

APPENDIX A

SHEAR-WAVE SURVEY

SHEAR-WAVE SURVEY

Methodology

The fundamental premise of this survey uses the fact that the Earth is always in motion at various seismic frequencies. These relatively constant vibrations of the Earth's surface are called microtremors, which are very small with respect to amplitude and are generally referred to as background "noise" that contain abundant surface waves. These microtremors are caused by both human activity (i.e., cultural noise, traffic, factories, etc.) and natural phenomenon (i.e., wind, wave motion, rain, atmospheric pressure, etc.) which have now become regarded as useful signal information. Although these signals are generally very weak, the recording, amplification, and processing of these surface waves has greatly improved by the use of technologically improved seismic recording instrumentation and recently developed computer software. For this application, we are mainly concerned with the Rayleigh wave portion of the seismic signals, which is also referred to as "ground roll" since the Rayleigh wave is the dominant component of ground roll.

For the purposes of this study, there are two ways that the surface waves were recorded, one being "active" and the other being "passive." Active means that seismic energy is intentionally generated at a specific location relative to the survey spread and recording begins when the source energy is imparted into the ground (i.e., MASW survey technique). Passive surveying, also called "microtremor surveying," is where the seismograph records ambient background vibrations (i.e., MAM survey technique), with the ideal vibration sources being at a constant level. Longer wavelength surface waves (longer-period and lower-frequency) travel deeper and thus contain more information about deeper velocity structure and are generally obtained with passive survey information. Shorter wavelength (shorter-period and higher-frequency) surface waves travel shallower and thus contain more information about shallower velocity structure and are generally collected with the use of active sources.

For the most part, higher frequency active source surface waves will resolve the shallower velocity structure and lower frequency passive source surface waves will better resolve the deeper velocity structure. Therefore, the combination of both of these surveying techniques provides a more accurate depiction of the subsurface velocity structure.

The assemblage of the data that is gathered from these surface wave surveys results in development of a dispersion curve. Dispersion, or the change in phase velocity of the seismic waves with frequency, is the fundamental property utilized in the analysis of surface wave methods. The fundamental assumption of these survey methods is that the signal wavefront is planar, stable, and isotropic (coming from all directions) making it independent of source locations and for analytical purposes uses the spatial autocorrelation method (SPAC). The SPAC method is based on theories that are able to detect "signals" from background "noise" (Okada, 2003). The shear wave velocity (V_s) can then be calculated by mathematical inversion of the dispersive phase velocity of the surface waves which can be significant in the presence of velocity layering, which is common in the near-surface environment.

Field Procedures

One shear-wave survey traverse (SW-1) was performed along an accessible area proximal to the proposed construction, as approximated on the Google™ Earth Imagery Map and the Park Plan (see Plates 3 and 4, respectively). For data collection, the field survey employed a twenty-four channel Geometrics StrataVisor™ NZXP model signal-enhancement refraction seismograph. This survey employed both active source (MASW) and passive (MAM) methods to ensure that both quality shallow and deeper shear-wave velocity information was recorded (Park et al., 2005).

Both the MASW and MAM survey lines used the same linear geometry array that consisted of a 161-foot-long spread using a series of twenty-four 4.5-Hz geophones that were spaced at regular seven-foot intervals. For the active source MASW survey, the ground vibrations were recorded using a one second record length at a sampling rate of 0.5-milliseconds. Two separate seismic records were obtained using a 25-foot shot offset at both ends of the line utilizing a 16-pound sledge-hammer as the energy source to produce the seismic waves. Numerous seismic impacts were used at each shot location to improve the signal-to-noise ratio.

The MAM survey did not require the introduction of any artificial seismic sources with only background ambient noise (i.e., air and vehicle traffic, etc.) being necessary. These ambient ground vibrations were recorded using a thirty-two second record length at a two-millisecond sampling rate with twenty separate seismic records being obtained for quality control purposes. The frequency spectrum data that was displayed on the seismograph screen were used to assess the recorded seismic wave data for quality control purposes in the field. The acceptable records were digitally recorded on the in-board seismograph computer and subsequently transferred to a flash drive so that they could be subsequently transferred to our office computer for analysis.

Data Reduction

For analysis and presentation of the shear-wave profile and supportive illustration, this study used the **SeisImager/SW™** computer software program that was developed by Geometrics, Inc. (2009). Both the active (MASW) and passive (MAM) survey results were combined for this analysis (Park et al., 2005). The combined results maximize the resolution and overall depth range in order to obtain one high resolution V_s curve over the entire sampled depth range. These methods economically and efficiently estimate one-dimensional subsurface shear-wave velocities using data collected from standard primary-wave (P-wave) refraction surveys.

However, it should be noted that surface waves by their physical nature cannot resolve relatively abrupt or small-scale velocity anomalies and this model should be considered as an approximation. Processing of the data then proceeded by calculating the dispersion curve from the input data from both the active and passive data records, which were subsequently combined creating an initial shear-wave (V_s) model based on the observed data. This initial model was then inverted in order to converge on the best fit of the initial model and the observed data, creating the final V_s curve as presented within this appendix.

Summary of Data Analysis

Data acquisition went very smoothly and the quality was considered to be good. Analysis revealed that the average shear-wave velocity ("weighted average") in the upper 100 feet of the subject survey area is **675.7** feet per second as shown on the shear-wave model for Seismic Line SW-1, as presented within this appendix. This average velocity classifies the underlying soils to that of Site Class "**D**" (Stiff Soil profile), which has a velocity range from 600 to 1,200 ft/sec (ASCE, 2017; Table 20.3-1).

The "weighted average" velocity is computed from a formula that is used by the ASCE (2017; Section 20.4, Equation 20.4-1) to determine the average shear-wave velocity for the upper 100 feet of the subsurface (V100).

$$Vs = 100/[(d1/v1) + (d2/v2) + ...+ (dn/vn)]$$

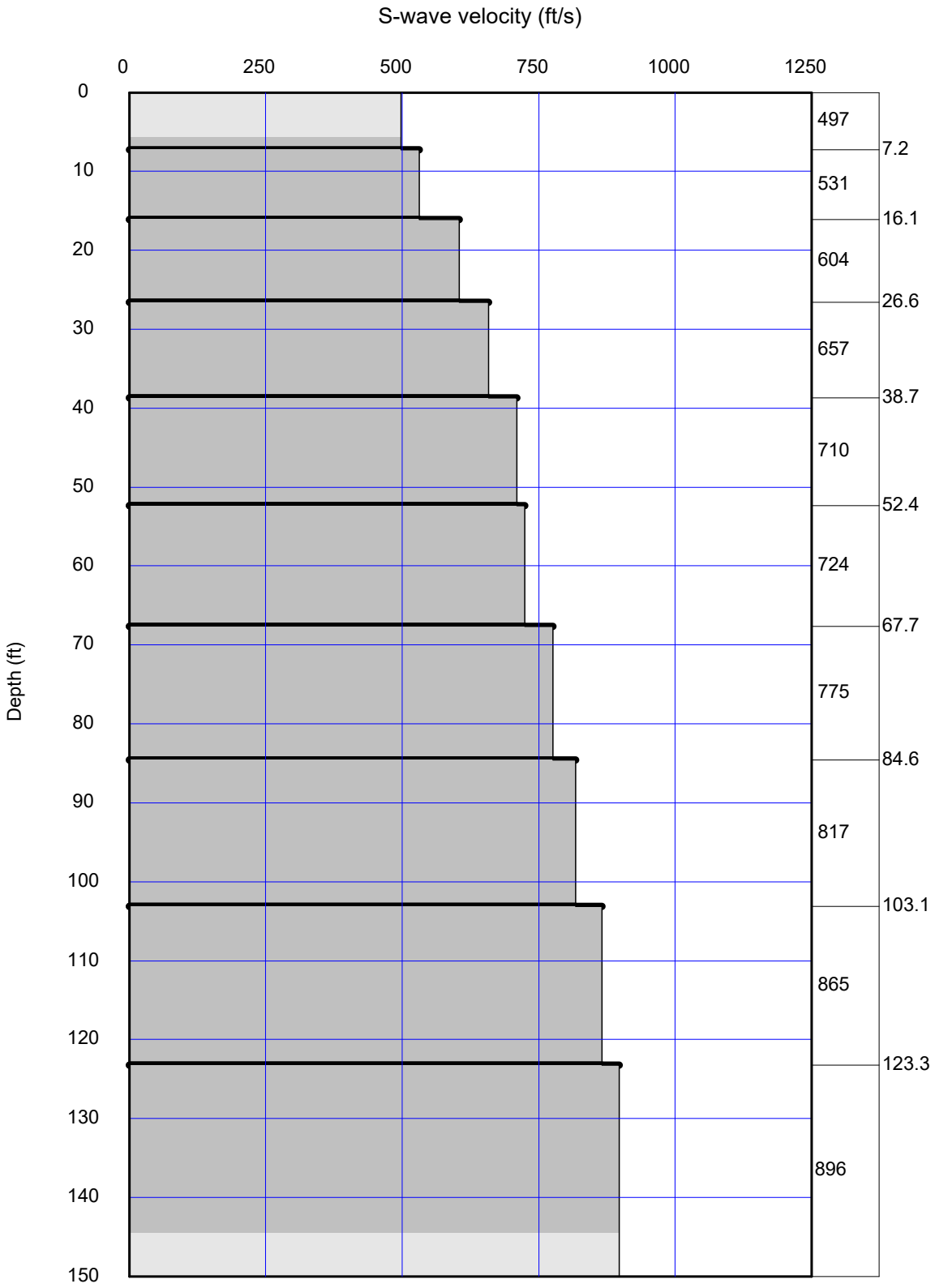
Where d1, d2, d3,...,tn, are the thicknesses for layers 1, 2, 3,...n, up to 100 feet, and v1, v2, v3,...,vn, are the seismic velocities (feet/second) for layers 1, 2, 3,...n. The detailed shear-wave model displays these calculated layer boundaries/depths and associated velocities (feet/second) for the 144-foot profile where locally measured. The constrained data is represented by the dark-gray shading on the shear-wave model. The associated Dispersion Curves (for both the active and passive methods) which show the data quality and picks, along with the resultant combined dispersion curve model, are also included within this appendix, for reference purposes.

SURVEY LINE PHOTOGRAPHS

View looking northeast along Seismic Line SW-1.

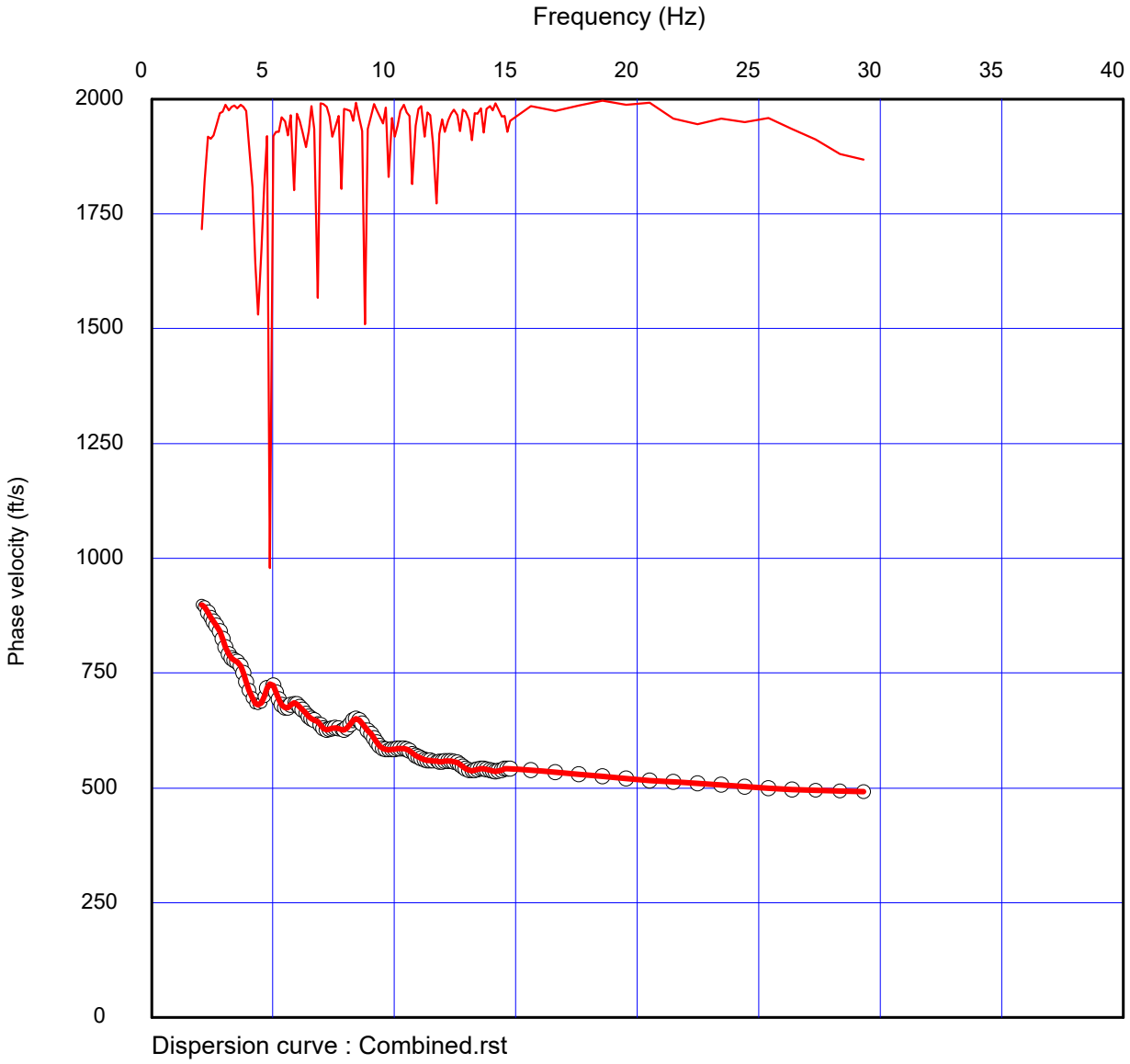
View looking southwest along Seismic Line SW-1.

SEISMIC LINE SW-1
SHEAR-WAVE MODEL



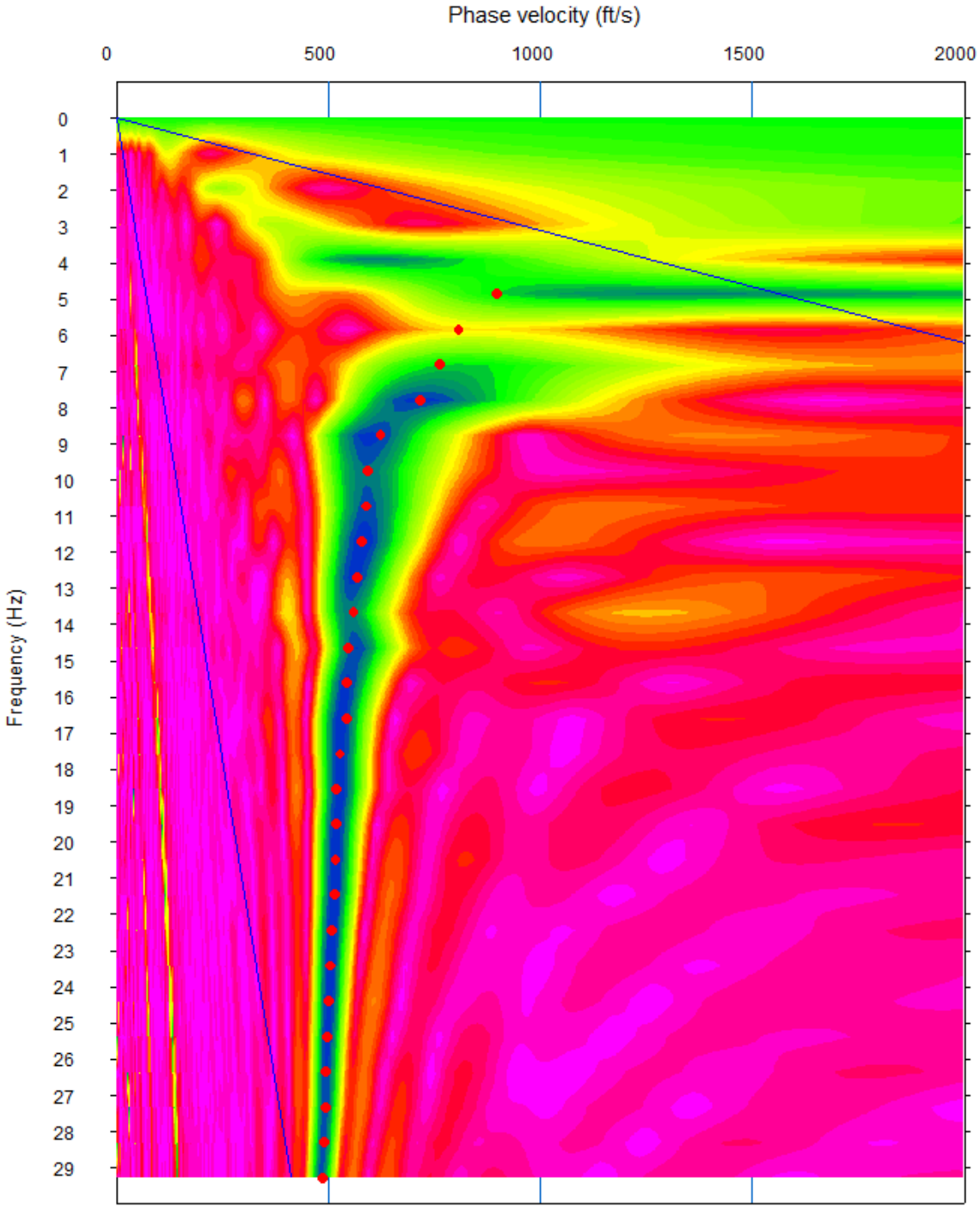
S-wave velocity model (inverted): Final.rst **Average Vs 100ft = 675.7 ft/sec**

SEISMIC LINE SW-1



COMBINED DISPERSION CURVE

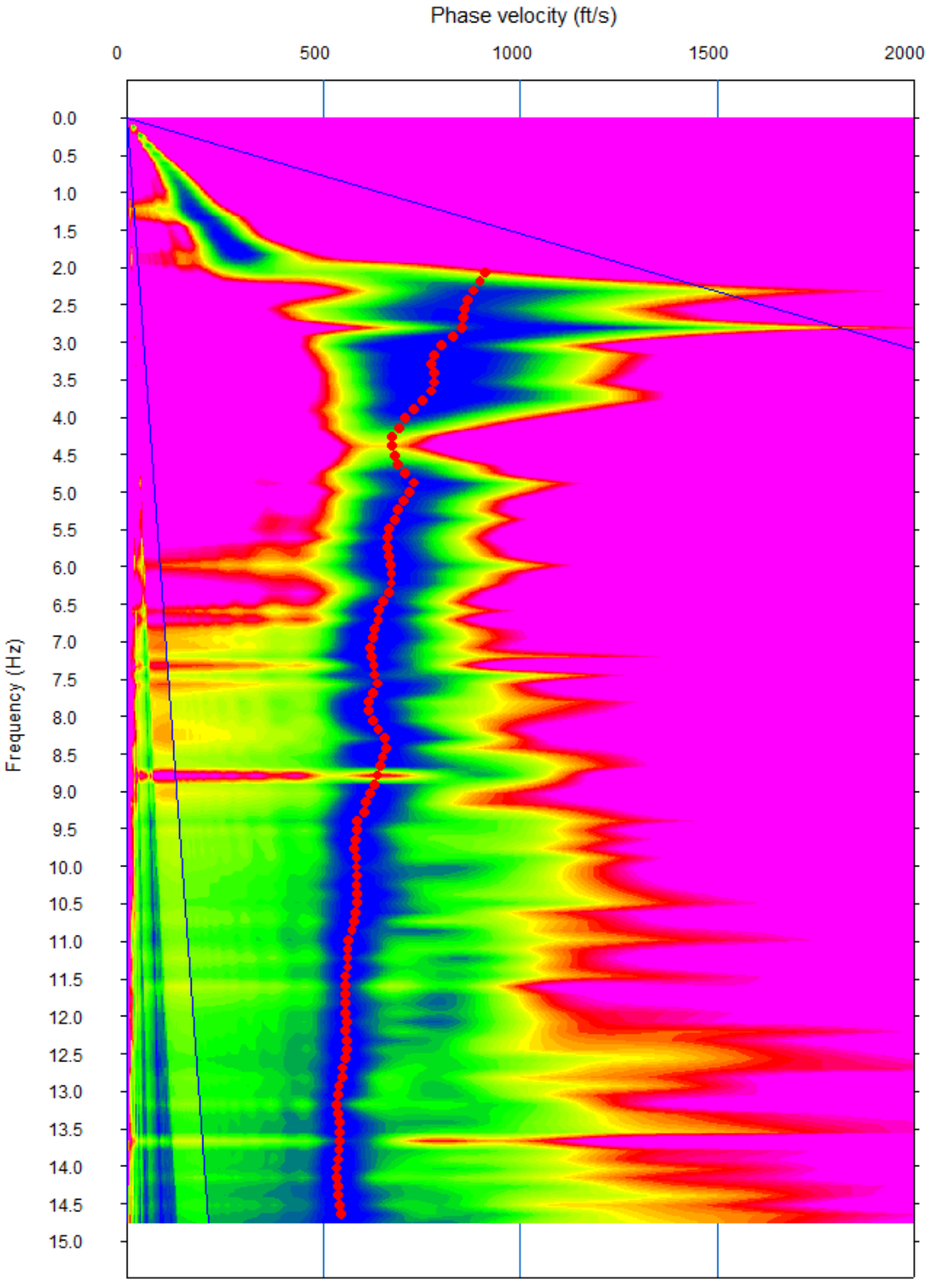
SEISMIC LINE SW-1



Dispersion Cure: Active.dat

ACTIVE DISPERSION CURVE

SEISMIC LINE SW-1



Dispersion Curve: Passive.dat

PASSIVE DISPERSION CURVE

APPENDIX B

SITE-SPECIFIC GROUND MOTION ANALYSIS

SITE-SPECIFIC GROUND MOTION ANALYSIS

A detailed summary of the site-specific ground motion analysis, which follows Section 21 of the ASCE Standard 7-16 and the 2022 California Building Code is presented below, with the Seismic Design Parameters Summary included within this appendix following the summary text.

- ***Mapped Spectral Acceleration Parameters (CBC 1613A.2.1)***-

  Based on maps prepared by the U.S.G.S (Risk-Adjusted Maximum Considered Earthquake (MCE_R) Ground Motion Parameter for the Conterminous United States for the 0.2 and 1-second Spectral Response Acceleration (5% of Critical Damping; Site Class B/C), a value of **1.423g** for the 0.2 second period (S_s) and **0.503g** for the 1.0 second period (S_1) was calculated (ASCE 7-16 Figures 22-1, 22-2 and CBC 1613A.2.1).

- ***Site Classification (CBC 1613A.2.2 & ASCE 7-16 Chapter 20)***-

  Based on the site-specific measured shear-wave value of 675.7 feet/second (206.0 m/sec), the soil profile type used should be Site Class **"D."** This Class is defined as having the upper 100 feet (30 meters) of the subsurface being underlain by stiff soil with average shear-wave velocities of 600 to 1,200 feet/second (180 to 360 meters/second), as detailed within Appendix A.

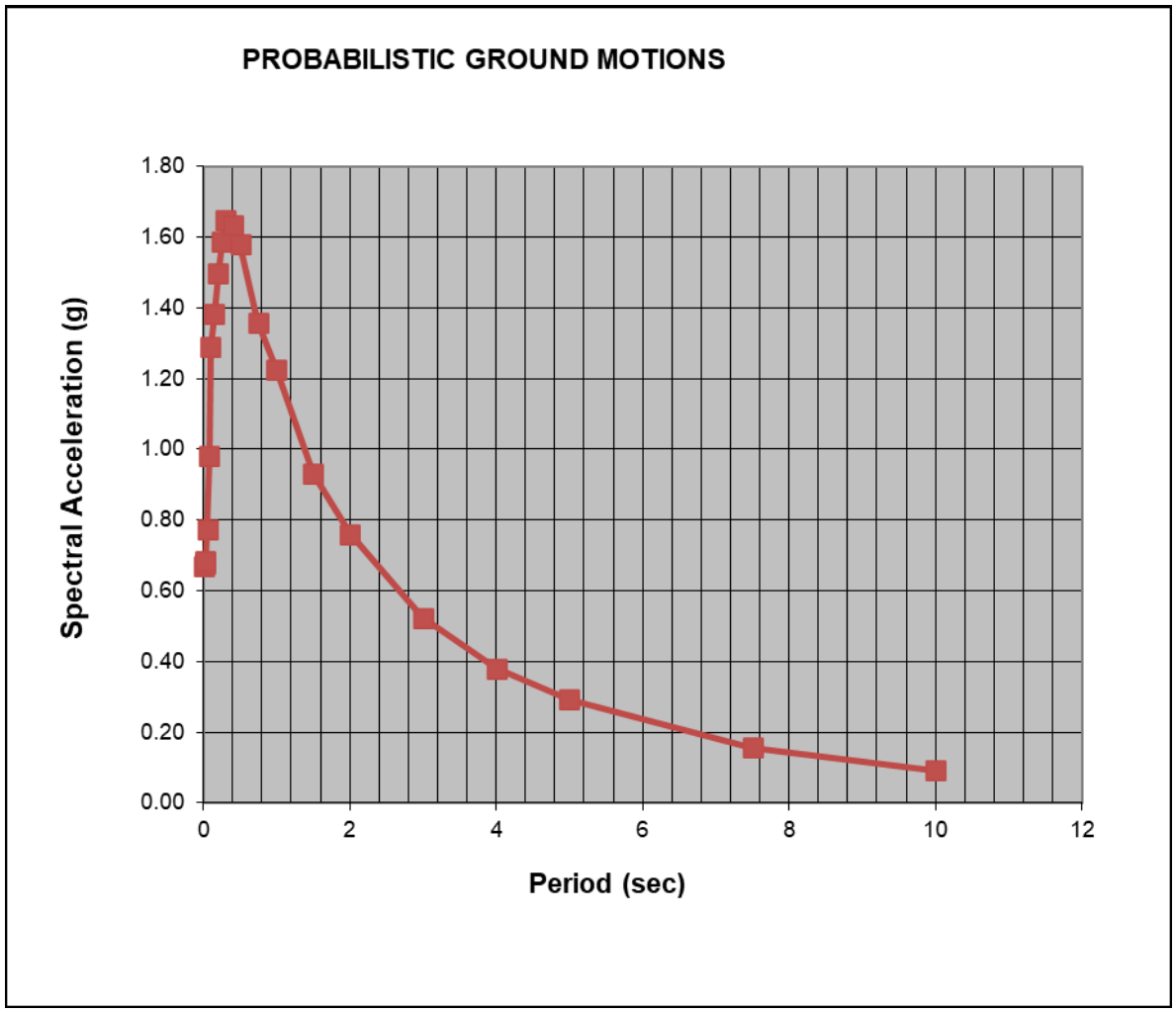
- ***Site Coefficients (CBC 1613A.2.3)***-

  Based on CBC Tables 1613A.2.3(1) and 1613A.2.3(2), the site coefficient $\mathbf{F_a = 1.0}$ and $\mathbf{F_v = 1.797}$, respectively.

- ***Probabilistic (MCE_R) Ground Motions (ASCE 7 Section 21.2.1)***-

  Per Section 21.2.1, the probabilistic MCE spectral accelerations shall be taken as the spectral response accelerations in the direction of maximum response represented by a five percent damped acceleration response spectrum that is expected to achieve a one percent probability of collapse within a 50-year period.

  The probabilistic analysis included the use of the Open Seismic Hazard Analysis (OpenSHA). The selected Earthquake Rupture Forecast (ERF) was UCERF3 along with a Probability of Exceedance of 2% in 50 Years. The average of four Next Generation Attenuation West-2 Relations (2014 NGA) were utilized to produce a response spectrum. These included Chiou & Youngs (2014), Abrahamsom et al. (2014), Campbell & Bozorgnia (2014), Boore et al. (2014), and Campbell & Bozorgnia (2014). The Probabilistic Risk Targeted Response Spectrum was determined as the product of the ordinates of the probabilistic response spectrum and the applicable risk coefficient (C_R). These values were then modified to produce a spectrum based upon the maximum rotated components of ground motion. The resulting MCE_R Response Spectrum is indicated below:



- ***Deterministic Spectral Response Analyses (ASCE 7 Section 21.2.2)***-

The deterministic MCE_R response acceleration at each period shall be calculated as an 84th-percentile 5 percent damped spectral response acceleration in the direction of maximum horizontal response computed at that period. The largest such acceleration calculated for the characteristic earthquakes on all known active faults within the region shall be used. Analyses were conducted using the average of four Next Generation Attenuation West-2 Relations (2014 NGA), including Chiou & Youngs (2014), Abrahamsom et al. (2014), Boore et al. (2014) and Campbell & Bozorgnia (2014).

The design faults that were used in this analysis are based on our review of the Fault Section Database within the Uniform California Earthquake Rupture Forecast (UCERF 3; Field et al., 2013) and discussions with the California Geologic Survey (CGS), and are based on the length and maximum magnitude of each of the nearby Anaheim, Elysian Park, Puente Hills (Coyote Hills Segment), Compton Thrust, and Newport-Inglewood (which includes the five individual fault segments) faults.

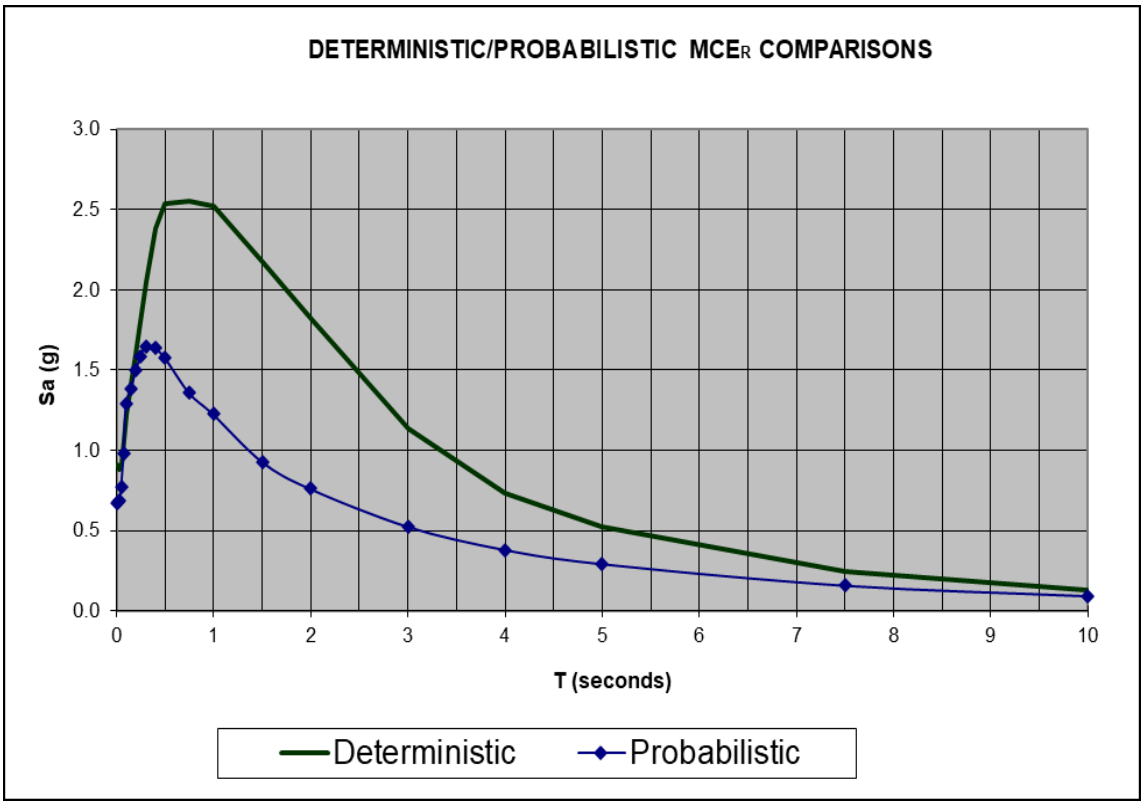
- **Site Specific MCE_R (ASCE 7 Section 21.2.3)-**

  The site-specific MCE_R spectral response acceleration at any period, S_{aM}, shall be taken as the lesser of the spectral response accelerations from the probabilistic ground motions of Section 21.2.1 and the deterministic ground motions of Section 21.2.2. The deterministic ground motions were compared with the probabilistic ground motions that were determined in accordance with Section 21.2.1.

Comparison of Deterministic MCE_R Values with Probabilistic MCE_R Values - Section 21.2.3

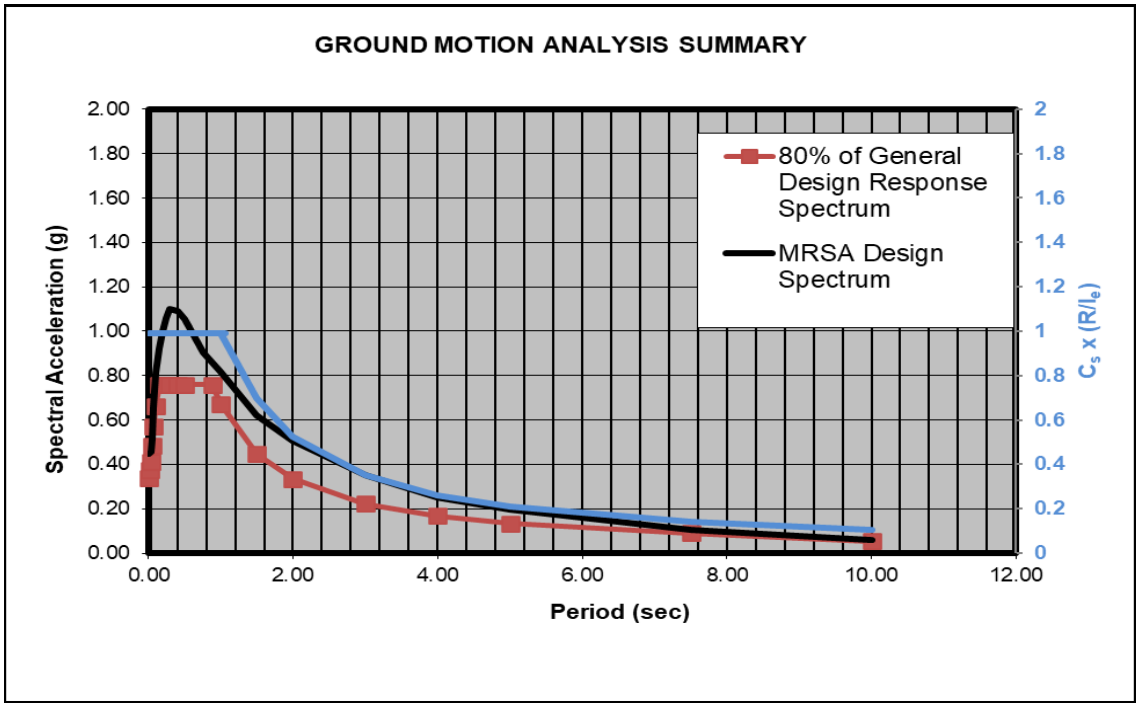
Period	Deterministic	Probabilistic		Governing Method	
T	MCE_R	MCE_R	Lower Value (Site Specific $MCE_{R)}$		
0.010	0.91	0.67	0.67	Probabilistic Governs	
0.020	0.90	0.68	0.68	Probabilistic Governs	
0.030	0.88	0.69	0.69	Probabilistic Governs	
0.050	0.92	0.77	0.77	Probabilistic Governs	
0.075	1.06	0.98	0.98	Probabilistic Governs	
0.100	1.22	1.29	1.22	Deterministic Governs	
0.150	1.41	1.38	1.38	Probabilistic Governs	
0.200	1.60	1.50	1.50	Probabilistic Governs	
0.250	1.80	1.59	1.59	Probabilistic Governs	
0.300	2.05	1.65	1.65	Probabilistic Governs	
0.400	2.38	1.64	1.64	Probabilistic Governs	
0.500	2.54	1.58	1.58	Probabilistic Governs	
0.750	2.55	1.36	1.36	Probabilistic Governs	
1.000	2.52	1.22	1.22	Probabilistic Governs	
1.500	2.17	0.93	0.93	Probabilistic Governs	
2.000	1.83	0.76	0.76	Probabilistic Governs	
3.000	1.13	0.52	0.52	Probabilistic Governs	
4.000	0.74	0.38	0.38	Probabilistic Governs	
5.000	0.52	0.29	0.29	Probabilistic Governs	
7.500	0.25	0.16	0.16	Probabilistic Governs	
10.000	0.13	0.09	0.09	Probabilistic Governs	

These are plotted in the following diagram:



- ***Design Response Spectrum (ASCE 7 Section 21.3)-***

In accordance with Section 21.3, the Design Response Spectrum was developed by the following equation: $S_a = 2/3S_{aM}$, where S_{aM} is the MCE_R spectral response acceleration obtained from Section 21.1 or 21.2. The design spectral response acceleration shall not be taken less than 80 percent of S_a. These are plotted and compared with 80% of the CBC Spectrum values in the following diagram:



- ***Design Acceleration Parameters (ASCE 7 Section 21.4)***-

  Where the site-specific procedure is used to determine the design ground motion in accordance with Section 21.3, the parameter S_{DS} shall obtained from the site-specific spectra at a period of 0.2 s, except that it shall not be taken less than 90 percent of the peak spectral acceleration, S_a, at any period larger than 0.2 s. The parameter S_{D1} shall be taken as the greater of the products of Sa * T for periods between 1 and 5 seconds. The parameters S_{MS}, and S_{M1} shall be taken as 1.5 times S_{DS} and S_{D1}, respectively. The values so obtained shall not be less than 80 percent of the values determined in accordance with Section 11.4.4 for S_{MS}, and S_{M1} and Section 11.4.5 for S_{DS} and S_{D1}.

- ***Site Specific Design Parameters*** -

  For the 0.2 second period (S_{DS}), a value of 0.990g was computed, based upon the average spectral accelerations. The maximum average acceleration for any period exceeding 0.2 seconds was 1.10g occurring at T=0.30 seconds. This was multiplied by 0.9 to produce a value of 0.990g making this the applicable value. A value of 1.050g was calculated for S_{D1} at a period of 1 second (ASCE 7-16, 21.4). For the MCE_R 0.2 second period, a value of 1.484g (S_{MS}) was computed, along with a value of 1.573g (S_{M1}) for the MCE_R 1.0 second period was also calculated (ASCE 7-16, 21.2.3).

- ***Site-Specific MCE_G Peak Ground Accelerations (ASCE 7 Section 21.5)***-

  The probabilistic geometric mean peak ground acceleration (2 percent probability of exceedance within a 50-year period) was calculated as 0.65g. The deterministic geometric mean peak ground acceleration (largest 84^{th} percentile geometric mean peak ground acceleration for characteristic earthquakes on all known active faults within the site region) was calculated as 0.82g. The site-specific MCE_G peak ground acceleration was calculated to be **0.65g**, which was determined by using the lesser of the probabilistic (0.65g) or the deterministic (0.82g) geometric mean peak ground accelerations, but not taken as less than 80 percent of PGA_M (i.e., 0.67g x 0.80 = 0.54g).

SEISMIC DESIGN PARAMETERS SUMMARY

Project: Norm Ross Sports Complex
Project #: 233932-1
Date: 3/30/2023

Lattitude: 33.8004
Longitude: -117.9952

CALIFORNIA BUILDING CODE CHAPTER 16/ASCE7-16

Mapped Acceleration Parameters per ASCE 7-16, Chapter 22

S_s=	1.423	Figure 22-1
S_1=	0.503	Figure 22-2

Site Class per Table 20.3-1

Site Class=	D - Stiff Soil

Site Coefficients per ASCE 7-16 CHAPTER 11

F_a=	1	Table 11.4-1	=	1	For Site Specific Analysis per ASCE7-16 21.3
F_v=	1.797	Table 11.4-2	=	2.50	For Site Specific Analysis per ASCE7-16 21.3

Mapped Design Spectral Response Acceleration Parameters

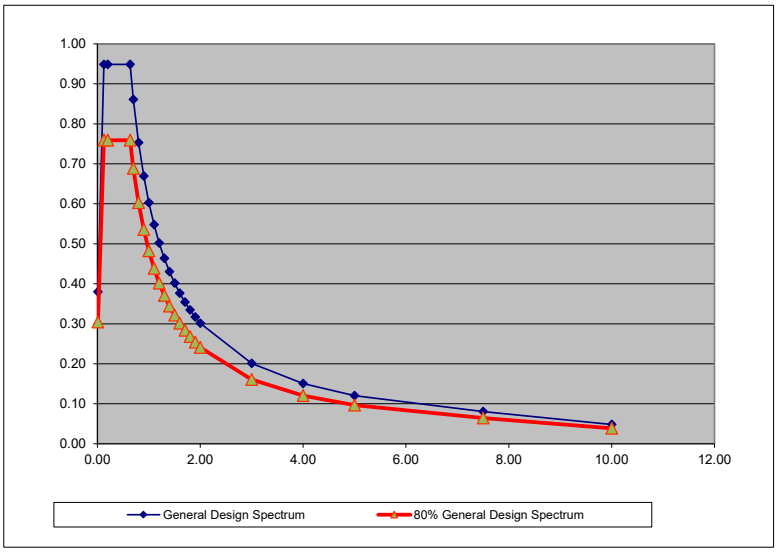
S_{Ms}=	1.423	Equation 11.4-1	1.423	For Site Specific Analysis per ASCE7-16 21.3
S_{M1}=	0.904	Equation 11.4-2	1.258	For Site Specific Analysis per ASCE7-16 21.3

S_{DS}=	0.949	Equation 11.4-3
S_{D1}=	0.603	Equation 11.4-4

T_0=	0.127	sec
T_S=	0.635	sec
T_L=	8	sec
PGA	0.608	g
F_{PGA}=	1.1	From Table 11.8-1
C_{RS}=	0.915	Figure 22-17
C_{R1}=	0.918	Figure 22-18

From Fig 22-12

Period (T)	Sa (ASCE7-16 - 11.4.6)	80% General Design Spectrum
0.01	0.38	0.30
0.13	0.95	0.76
0.20	0.95	0.76
0.64	0.95	0.76
0.70	0.86	0.69
0.80	0.75	0.60
0.90	0.67	0.54
1.00	0.60	0.48
1.10	0.55	0.44
1.20	0.50	0.40
1.30	0.46	0.37
1.40	0.43	0.34
1.50	0.40	0.32
1.60	0.38	0.30
1.70	0.35	0.28
1.80	0.33	0.27
1.90	0.32	0.25
2.00	0.30	0.24
3.00	0.20	0.16
4.00	0.15	0.12
5.00	0.12	0.10
7.50	0.08	0.06
10.00	0.05	0.04



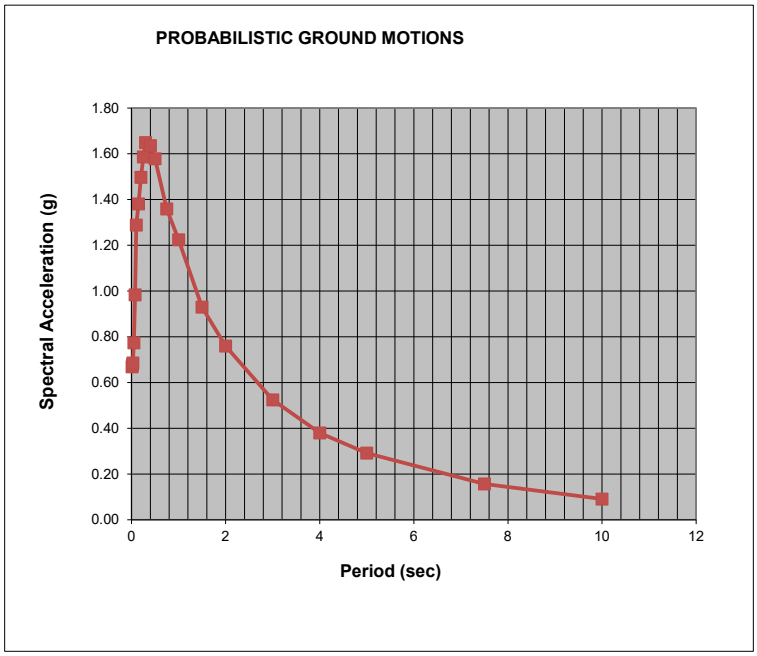
ASCE 7-16 - RISK-TARGETED MAXIMUM CONSIDERED EARTHQUAKE GROUND MOTION ANALYSIS

Use Maximum Rotated Horizontal Component?* (Y/N) **Y**

Presented data are the average of Chiou & Youngs (2014), Abrahamson et. al. (2014) , Boore et. al (2014) and Campbell & Bozorgnia (2014) NGA West-2 Relationships
Earthquake Rupture Forecast - UCERF3 FM 3.2

PROBABILISTIC MCER per 21.2.1.1 **Method 1**
Risk Coefficients taken from Figures 22-18 and 22-19 of ASCE 7-16
OpenSHA data
2% Probability Of Exceedance in 50 years
Maximum Rotated Horizontal Component determined per ASCE7-16

T	Sa 2% in 50	MCER
0.01	0.73	0.67
0.02	0.74	0.68
0.03	0.75	0.69
0.05	0.85	0.77
0.08	1.07	0.98
0.10	1.28	1.29
0.15	1.51	1.38
0.20	1.64	1.50
0.25	1.73	1.59
0.30	1.80	1.65
0.40	1.79	1.64
0.50	1.72	1.58
0.75	1.48	1.36
1.00	1.33	1.22
1.50	1.01	0.93
2.00	0.83	0.76
3.00	0.57	0.52
4.00	0.41	0.38
5.00	0.32	0.29
7.50	0.17	0.16
10.00	0.10	0.09



S_s=	1.64	1.50
S_1=	1.33	1.22
PGA	0.65 g	

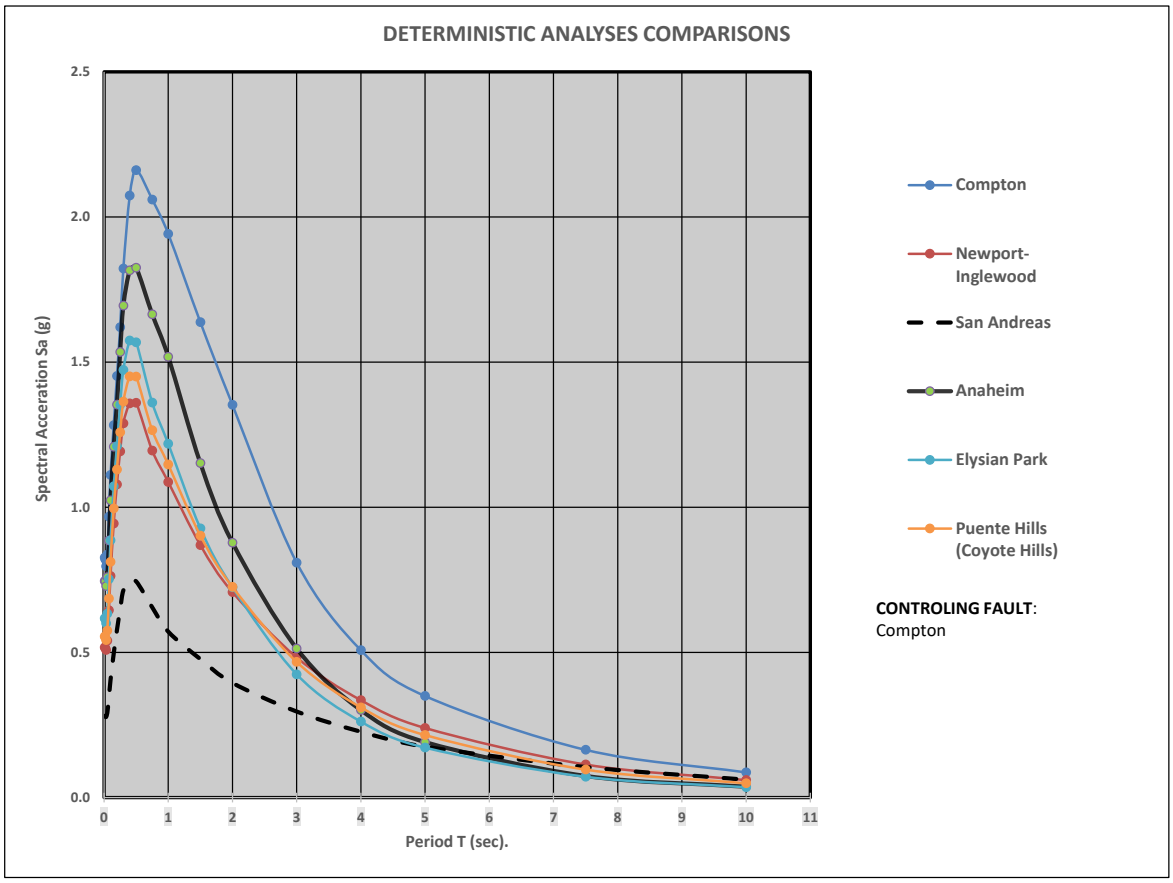
Risk Coefficients:			
C_{RS}	0.915	Figure 22-18	Get from Mapped Values
C_{R1}	0.918	Figure 22-19	
Fa=	1	Table 11.4-1	Per ASCE7-16 - 21.2.3
Is $Sa_{(max)}$<1.2XFa?		NO	If "YES", Probabilistic Spectrum prevails

DETERMINISTIC MCE per 21.2.2

Preliminary Assessment:

Fault	Distance (km)
Compton	14.20
Newport-Inglewood	10.50
Puente Hills (Coyote Hills)	8.60
Elysian Park	7.30
San Andreas	69.00
Anaheim	1.40

The Probalistic Analyses revealed 6 faults contributing more than 10% to the seismic hazard. These were considered in the Deterministic Analyses which was controlled by the Comption Fault throughout the range of the spectrum.



Input Parameters		Compton	Newport-Inglewood	Puente Hills (Coyote Hills)	Anaheim
Fault					
M	= Moment magnitude	7.5	7.2	7	6.4
R_{RUP}	= Closest distance to coseismic rupture (km)	9.7	10.5	8.6	1.4
R_{JB}	= Closest distance to surface projection of coseismic rupture (km)	0	10.5	8.6	1.4
Rx	= Horizontal distance to top edge of rupture measured perpendicular to strike (km)	14.2	10.5	8.6	1.4
U	= Unspecified Faulting Flag (Boore et.al.)	0	0	0	0
F_{RV}	= Reverse-faulting factor: 0 for strike slip, normal, normal-oblique; 1 for reverse, reverse-oblique and thrust	1	0	1	1
F_{NM}	= Normal-faulting factor: 0 for strike slip, reverse, reverse-oblique and thrust; 1 for normal and normal-oblique	0	0	0	0
F_{HW}	= Hanging-wall factor: 1 for site on down-dip side of top of rupture; 0 otherwise, used in AS08 and CY08	1	0	0	0
Z_{TOR}	= Depth to top of coseismic rupture (km)	5.2	0	2.1	3.8
δ	= Average dip of rupture plane (degrees)	20	90	26	90
V_{S30}	= Average shear-wave velocity in top 30m of site profile	206	206	206	206
$F_{Measured}$		1	1	1	1
$Z_{1.0}$	= Depth to Shear Wave Velocity of 1.0 km/sec (km)	0.75	0.75	0.75	0.75
$Z_{2.5}$	= Depth to Shear Wave Velocity of 2.5 km/sec (km)	4.75	4.75	4.75	4.75
Site Class		D	D	D	D
W (km)	= Fault rupture width (km)	30.4	15.1	26.9	11
F_{AS}	= 0 for mainshock; 1 for aftershock	0	0	0	0
σ	=Standard Deviation	1	1	1	1

Deterministic Summary - Section 21.2.2 (Supplement 1)

T	Compton	Newport-Inglewood	Puente Hills (Coyote Hills)	Anaheim	Maximum S_a (Average)	*Corrected* S_a (per ASCE7-16)*	*Scaled $S_{a(Average)}$*	Controlling Fault
0.010	0.83	0.52	0.55	0.75	0.83	0.91	0.91	Compton
0.020	0.82	0.51	0.55	0.74	0.82	0.90	0.90	Compton
0.030	0.80	0.51	0.54	0.73	0.80	0.88	0.88	Compton
0.050	0.84	0.54	0.57	0.76	0.84	0.92	0.92	Compton
0.075	0.97	0.64	0.69	0.89	0.97	1.06	1.06	Compton
0.100	1.11	0.76	0.81	1.02	1.11	1.22	1.22	Compton
0.150	1.28	0.94	1.00	1.21	1.28	1.41	1.41	Compton
0.200	1.45	1.08	1.13	1.35	1.45	1.60	1.60	Compton
0.250	1.62	1.19	1.26	1.54	1.62	1.80	1.80	Compton
0.300	1.82	1.29	1.36	1.69	1.82	2.05	2.05	Compton
0.400	2.07	1.36	1.45	1.82	2.07	2.38	2.38	Compton
0.500	2.16	1.36	1.45	1.83	2.16	2.54	2.54	Compton
0.750	2.06	1.20	1.27	1.66	2.06	2.55	2.55	Compton
1.000	1.94	1.09	1.15	1.52	1.94	2.52	2.52	Compton
1.500	1.64	0.87	0.90	1.15	1.64	2.17	2.17	Compton
2.000	1.35	0.71	0.73	0.88	1.35	1.83	1.83	Compton
3.000	0.81	0.48	0.47	0.51	0.81	1.13	1.13	Compton
4.000	0.51	0.34	0.31	0.30	0.51	0.74	0.74	Compton
5.000	0.35	0.24	0.22	0.19	0.35	0.52	0.52	Compton
7.500	0.16	0.11	0.10	0.07	0.16	0.25	0.25	Compton
10.000	0.09	0.06	0.05	0.04	0.09	0.13	0.13	Compton
PGA	0.82	0.51	0.55	0.74	0.82		0.82	g

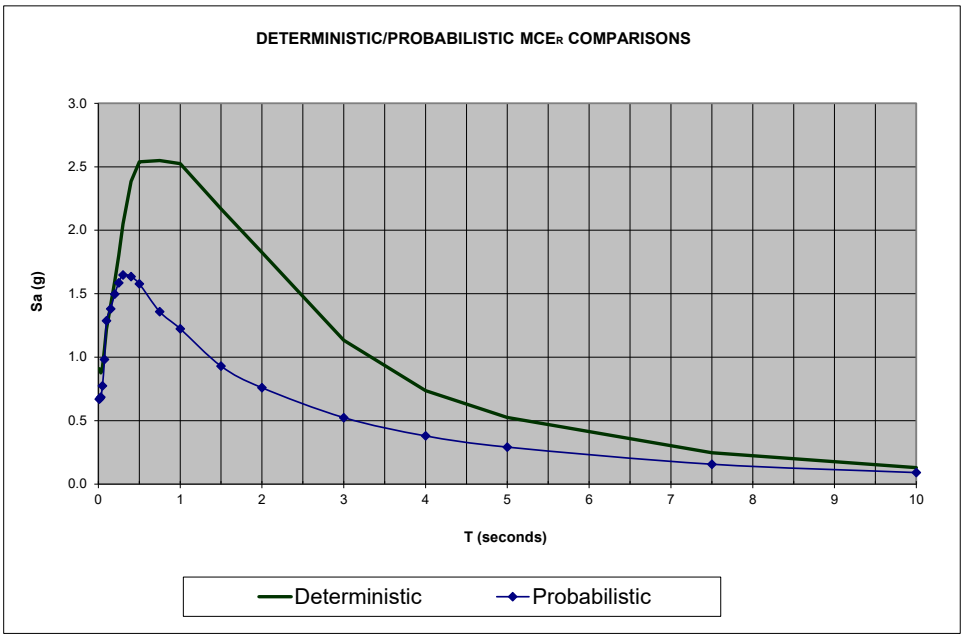
Max Sa=	2.55	
Fa =	1.00	Per ASCE7-16 21.2.2
1.5XFa=	1.5	
Scaling Factor=	1.00	

* Correction is the adjustment for Maximum Rotated Value if Applicable

SITE SPECIFIC MCE_R - Compare Deterministic MCE_R Values (S_a) with Probabilistic MCE_R Values (S_a) per 21.2.3

Presented data are the average of Chiou & Youngs (2014), Abrahamson et. al. (2014) , Boore et. al (2014) and Campbell & Bozorgnia (2014) NGA West-2 Relationships

Period	Deterministic	Probabilistic	Lower Value (Site Specific $MCE_{R)}$	Governing Method
T	MCE_R	MCE_R		
0.010	0.91	0.67	0.67	ProbabilisticGoverns
0.020	0.90	0.68	0.68	ProbabilisticGoverns
0.030	0.88	0.69	0.69	ProbabilisticGoverns
0.050	0.92	0.77	0.77	ProbabilisticGoverns
0.075	1.06	0.98	0.98	ProbabilisticGoverns
0.100	1.22	1.29	1.22	Deterministic Governs
0.150	1.41	1.38	1.38	ProbabilisticGoverns
0.200	1.60	1.50	1.50	ProbabilisticGoverns
0.250	1.80	1.59	1.59	ProbabilisticGoverns
0.300	2.05	1.65	1.65	ProbabilisticGoverns
0.400	2.38	1.64	1.64	ProbabilisticGoverns
0.500	2.54	1.58	1.58	ProbabilisticGoverns
0.750	2.55	1.36	1.36	ProbabilisticGoverns
1.000	2.52	1.22	1.22	ProbabilisticGoverns
1.500	2.17	0.93	0.93	ProbabilisticGoverns
2.000	1.83	0.76	0.76	ProbabilisticGoverns
3.000	1.13	0.52	0.52	ProbabilisticGoverns
4.000	0.74	0.38	0.38	ProbabilisticGoverns
5.000	0.52	0.29	0.29	ProbabilisticGoverns
7.500	0.25	0.16	0.16	ProbabilisticGoverns
10.000	0.13	0.09	0.09	ProbabilisticGoverns



DESIGN RESPONSE SPECTRUM per Section 21.3

DESIGN ACCELERATION PARAMETERS per Section 21.4 (MRSA)

Period	2/3*MCE_R	80% General Design Response Spectrum (per ASCE 7-16 23.3-1)	Design Response Spectrum	TXSa
0.01	0.45	0.33	0.45	
0.02	0.45	0.35	0.45	
0.03	0.46	0.37	0.46	
0.05	0.52	0.42	0.52	
0.08	0.66	0.47	0.66	
0.10	0.81	0.53	0.81	
0.15	0.92	0.65	0.92	
0.20	1.00	0.76	1.00	
0.25	1.06	0.76	1.06	
0.30	1.10	0.76	1.10	
0.40	1.09	0.76	1.09	
0.50	1.05	0.76	1.05	
0.75	0.91	0.76	0.91	
1.00	0.82	0.67	0.82	0.82
1.50	0.62	0.45	0.62	0.93
2.00	0.51	0.34	0.51	1.01
3.00	0.35	0.22	0.35	1.05
4.00	0.25	0.17	0.25	1.01
5.00	0.19	0.13	0.19	0.97
7.50	0.10	0.09	0.10	
10.00	0.06	0.05	0.06	

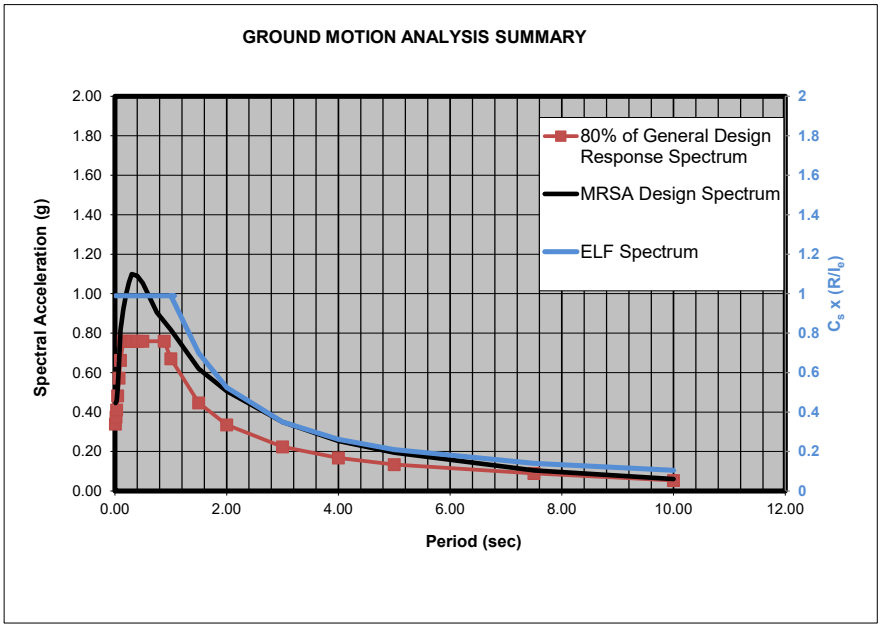
Highest value of S_a for any period exceeding 0.2 sec.=	1.10
90%of Highest Value =	0.99
80% 0f Mapped S_{DS}=	0.76
Maximum TXSa from T=1s-5s =	1.05
80% of Mapped S_{D1}=	0.48

S_{DS}=	0.99
S_{D1}=	1.05
Ts =	1.06

S_{MS}=	1.484
S_{M1}=	1.573

PGA Determination:

Site Coefficient F_{PGA}=	1.1	
Mapped PGA=	0.61	Figure 22-7
PGA_M =	0.67	g
Deterministic PGA =	0.82	g
Probabilistic PGA =	0.65	g
Lesser of Deterministic/Probabilistic =	0.65	g
80% of PGA_M=	0.54	g
MCE_G PGA=	0.65	g



SUMMARY OF SITE SPECIFIC GROUND MOTION HAZARD ANALYSIS DATA

1	2	3		4	5	6	7	8	9	10	11	12
Period (sec)	Mapped MCE_R Spectrum	Mapped Design Spectrum	**Period (sec)**	Risk Coefficient C_R	Scaled MCE_R Deterministic Spectrum	Probabilistic MCE_R Spectrum	Probabilistic w/Risk Coeffcicent C_R	84th Percentile Deterministic Spectrum	2/3 Site Specific MCE_R Spectrum	80% of General Design Spectrum	Site Specific MCE_R Spectrum	Design Response Spectrum
0.01	0.57	0.38	**0.01**	0.915	0.91	0.67	0.67	0.91	0.45	0.33	0.67	0.45
0.13	1.42	0.95	**0.02**	0.915	0.90	0.68	0.68	0.90	0.45	0.35	0.68	0.45
0.20	1.42	0.95	**0.03**	0.915	0.88	0.69	0.69	0.88	0.46	0.37	0.69	0.46
0.64	1.42	0.95	**0.05**	0.915	0.92	0.77	0.77	0.92	0.52	0.42	0.77	0.52
0.70	1.29	0.86	**0.08**	0.915	1.06	0.98	0.98	1.06	0.66	0.47	0.98	0.66
0.80	1.13	0.75	**0.10**	0.915	1.22	1.29	1.29	1.22	0.81	0.53	1.22	0.81
0.90	1.00	0.67	**0.15**	0.915	1.41	1.38	1.38	1.41	0.92	0.65	1.38	0.92
1.00	0.90	0.60	**0.20**	0.915	1.60	1.50	1.50	1.60	1.00	0.76	1.50	1.00
1.10	0.82	0.55	**0.25**	0.915	1.80	1.59	1.59	1.80	1.06	0.76	1.59	1.06
1.20	0.75	0.50	**0.30**	0.915	2.05	1.65	1.65	2.05	1.10	0.76	1.65	1.10
1.30	0.70	0.46	**0.40**	0.916	2.38	1.64	1.64	2.38	1.09	0.76	1.64	1.09
1.40	0.65	0.43	**0.50**	0.916	2.54	1.58	1.58	2.54	1.05	0.76	1.58	1.05
1.50	0.60	0.40	**0.75**	0.917	2.55	1.36	1.36	2.55	0.91	0.76	1.36	0.91
1.60	0.56	0.38	**1.00**	0.918	2.52	1.22	1.22	2.52	0.82	0.67	1.22	0.82
1.70	0.53	0.35	**1.50**	0.918	2.17	0.93	0.93	2.17	0.62	0.45	0.93	0.62
1.80	0.50	0.33	**2.00**	0.918	1.83	0.76	0.76	1.83	0.51	0.34	0.76	0.51
1.90	0.48	0.32	**3.00**	0.918	1.13	0.52	0.52	1.13	0.35	0.22	0.52	0.35
2.00	0.45	0.30	**4.00**	0.918	0.74	0.38	0.38	0.74	0.25	0.17	0.38	0.25
3.00	0.30	0.20	**5.00**	0.918	0.52	0.29	0.29	0.52	0.19	0.13	0.29	0.19
4.00	0.23	0.15	**7.50**	0.918	0.25	0.16	0.16	0.25	0.10	0.09	0.16	0.10
5.00	0.18	0.12	**10.00**	0.918	0.13	0.09	0.09	0.13	0.06	0.05	0.09	0.06
7.50	0.12	0.08										
10.00	0.07	0.05										

APPENDIX C

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REFERENCES

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Appendix

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Appendix D Paleontological Resources Records Search

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Research & Collections

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March 26, 2023

re: Paleontological resources for the Norm Ross Sports Complex Joint Use Project

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Norm Ross Sports Complex Joint Use project area as outlined on the portion of the Anaheim USGS topographic quadrangle map that you sent to me via e-mail on March 17, 2023. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

Locality Number	Location	Formation	Taxa	Depth
LACM IP 4933	Near the intersection of Navajo Rd & Meinhardt Rd	Niguel Formation	Invertebrates (unspecified)	Unknown
LACM IP 4560	east of Hwy. 39; north from Rosecrans Ave.; near L.A. - Orange Co. line	Unknown (Pliocene)	*Pecten caurinus* Gould	surface in stream bed
LACM VP 4185-4201	Coyote Creek, adjacent to Ralph B Clark Regional Park in West Coyote Hills	La Habra Formation (Pleistocene; sandy silt shot through with caliche)	Bison (*Bison*), camel (*Camelops*), horse (*Equus*), mammoth (*Mammuthus*), mastodon (*Mamut*), elephant clade (Proboscidea), dire wolf *(Canis dirus*), Coyote (*C. latrans*), deer (*Odocoileus*), dwarf pronghorn (*Capromeryx*),unidentified artiodactyl; sea duck (*Chendytes*)	Surface, in creek bed
LACM VP 1652	Rio Vista Avenue south of Lincoln Avenue	Alluvium (Pleistocene)	Sheep (*Ovis*)	Unknown (excavations for housing project)
LACM VP 65113	5092 Wintersburg Road; Huntington Beach	Unknown formation (Pleistocene)	Mammoth (*Mammuthus*), bison (*Bison*); uncatalogued invertebrates	6 - 20 feet bgs

LACM VP 3291	Sunset Beach at low tide, 50 yards north of Anderson Street & west of Pacific Coast Highway	Unknown Formation (Pleistocene)	Camel (*Camelops hesternus*)	Surface

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,

Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice

Appendix

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Appendix E Noise Assessment

Fundamentals of Noise

NOISE

Noise is most often defined as unwanted sound; whether it is loud, unpleasant, unexpected, or otherwise undesirable. Although sound can be easily measured, the perception of noise and the physical response to sound complicate the analysis of its impact on people. People judge the relative magnitude of sound sensation in subjective terms such as "noisiness" or "loudness."

Noise Descriptors

The following are brief definitions of terminology used in this chapter:

- **Sound.** A disturbance created by a vibrating object, which, when transmitted by pressure waves through a medium such as air, is capable of being detected by a receiving mechanism, such as the human ear or a microphone.

- **Noise.** Sound that is loud, unpleasant, unexpected, or otherwise undesirable.

- **Decibel (dB).** A unitless measure of sound, expressed on a logarithmic scale and with respect to a defined reference sound pressure. The standard reference pressure is 20 micropascals (20 μPa).

- **Vibration Decibel (VdB).** A unitless measure of vibration, expressed on a logarithmic scale and with respect to a defined reference vibration velocity. In the U.S., the standard reference velocity is 1 micro-inch per second ($1x10^{-6}$ in/sec).

- **A-Weighted Decibel (dBA).** An overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.

- **Equivalent Continuous Noise Level (L_{eq}); also called the Energy-Equivalent Noise Level.** The value of an equivalent, steady sound level which, in a stated time period (often over an hour) and at a stated location, has the same A-weighted sound energy as the time-varying sound. Thus, the L_{eq} metric is a single numerical value that represents the equivalent amount of variable sound energy received by a receptor over the specified duration.

- **Statistical Sound Level (L_n).** The sound level that is exceeded "n" percent of time during a given sample period. For example, the L_{50} level is the statistical indicator of the time-varying noise signal that is exceeded 50 percent of the time (during each sampling period); that is, half of the sampling time, the changing noise levels are above this value and half of the time they are below it. This is called the "median sound level." The L_{10} level, likewise, is the value that is exceeded 10 percent of the time (i.e., near the maximum) and this is often known as the "intrusive sound level." The L_{90} is the sound level exceeded 90 percent of the time and is often considered the "effective background level" or "residual noise level."

- **Maximum Sound Level (L_{max})**. The highest RMS sound level measured during the measurement period.
- **Root Mean Square Sound Level (RMS).** The square root of the average of the square of the sound pressure over the measurement period.
- **Day-Night Sound Level (L_{dn} or DNL).** The energy-average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the sound levels occurring during the period from 10:00 PM to 7:00 AM.
- **Community Noise Equivalent Level (CNEL).** The energy average of the A-weighted sound levels occurring during a 24-hour period, with 5 dB added from 7:00 PM to 10:00 PM and 10 dB from 10:00 PM to 7:00 AM. NOTE: For general community/environmental noise, CNEL and L_{dn} values rarely differ by more than 1 dB (with the CNEL being only slightly more restrictive – that is, higher than the L_{dn} value). As a matter of practice, L_{dn} and CNEL values are interchangeable and are treated as equivalent in this assessment.
- **Peak Particle Velocity (PPV).** The peak rate of speed at which soil particles move (e.g., inches per second) due to ground vibration.
- **Sensitive Receptor.** Noise- and vibration-sensitive receptors include land uses where quiet environments are necessary for enjoyment and public health and safety. Residences, schools, motels and hotels, libraries, religious institutions, hospitals, and nursing homes are examples.

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 can be described in terms of amplitude (loudness), frequency (pitch), or duration (time). Loudness or amplitude is measured in dB, frequency or pitch is measured in Hertz [Hz] or cycles per second, and duration or time variations is measured in seconds or minutes.

Amplitude

Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale. Because of the physical characteristics of noise transmission and perception, the relative loudness of sound does not closely match the actual amounts of sound energy. Table 1 presents the subjective effect of changes in sound pressure levels. 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 with 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.

Table 1 Noise Perceptibility

Change in dB	Noise Level
± 3 dB	Barely perceptible increase
± 5 dB	Readily perceptible increase
± 10 dB	Twice or half as loud
± 20 dB	Four times or one-quarter as loud

Source: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Frequency

The human ear is not equally sensitive to all frequencies. Sound waves below 16 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 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. 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 event occurrences and their repetitiveness
- Time of day that the event occurs

Duration

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.

Sound 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 an additional 1.5 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 results in permanent cell damage, which is the main driver for employee hearing protection regulations in the workplace. For community environments, the ambient or background noise problem is widespread, through 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. 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 2 shows typical noise levels from familiar sources.

Table 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: California Department of Transportation (Caltrans). 2013, September. Technical Noise Supplement ("TeNS").

Vibration Fundamentals

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. As with noise, vibration can be described by both its amplitude and frequency. Vibration displacement is the distance that a point on a surface moves away from its original static position; velocity is the instantaneous speed that a point on a surface moves; and acceleration is the rate of change of the speed. 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.

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 3 displays the human response and the effects on buildings resulting from continuous vibration (in terms of various levels of PPV).

Table 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: California Department of Transportation (Caltrans). 2020, April. *Transportation and Construction Vibration Guidance Manual.* Prepared by ICF International.

LOCAL REGULATIONS AND STANDARDS

NOISE

The Noise Element of the General Plan provides a framework to limit noise exposure within the city. Existing and future noise environments and the compatibility of land uses are considered in the Element, as well as sensitive receptors and generators of stationary noise. Projected noise levels are included to help guide future land use policy and prevent high noise levels in sensitive areas at build-out. In addition, noise contours in the form of community noise equivalent level (CNEL) or day-night average level (Ldn) are provided for all referenced sources.

Various measures are described in order to mitigate potential noise conflicts. These measures are designed to lessen impacts from unavoidable noise conflicts within the city. The Noise Element also serves as a guideline for compliance with the State's Noise Insulation Standards.

The State of California requires every jurisdiction to include a Noise element in their General Plan. The Noise element for this General Plan presents several different aspects of noise evaluation. The city's goals, objectives, and policies for meeting noise standards are first identified, and then the method in which the noise levels are measured are described. The most general ways to quantify noise levels are by CNEL, Leq, and Ldn, which are measured in decibels using the A-weighted sound pressure level (dBA). These measures are discussed in more detail below.

Also presented in the Noise element are Federal, State, and Local noise standards, and related laws, standards, ordinances, and regulations, such as the U.S. Noise Control Act and California Office of Planning and Research Guidelines.

Noise in Stanton comes from two primary sources: transportation and non-transportation noise sources. Noise levels associated with mobile sources or transportation noise can be reliably predicted using formulas that take into account traffic volume, speed and percentage of trucks. Stationary or non-transportation noise sources include commercial and industrial land uses located near residential areas currently generate occasional noise impacts. The primary noise sources associated with these facilities are caused by delivery trucks, air compressors, generators, outdoor loudspeakers and gas venting. Residential land uses and areas identified as noise-sensitive must be protected from excessive noise from transportation and non-transportation noise sources.

Noise Scale and Definitions

Sound is described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by differentiating among frequencies in a manner approximating the sensitivity of the human ear.

Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dBA higher than another is perceived to be twice as loud and 20 dBA higher is perceived to be four times as loud, and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are illustrated on Exhibit 6-6, Common Environmental Noise Levels.

Many methods have been developed for evaluating community noise to account for, among other things:

- The variation of noise levels over time;
- The influence of periodic individual loud events; and
- The community response to changes in the community noise environment.

Table 6-1, Noise Descriptors, provides a listing of methods to measure sound over a period of time.

Table 6-1
Noise Descriptors

Term	Definition
Decibel (dB)	The unit for measuring the volume of sound equal to 10 times the logarithm (base 10) of the ratio of the pressure of a measured sound to a reference pressure (20 micropascals).
A-Weighted Decibel (dBA)	A sound measurement scale that adjusts the pressure of individual frequencies according to human sensitivities. The scale accounts for the fact that the region of highest sensitivity for the human ear is between 2,000 and 4,000 cycles per second (hertz).
Equivalent Sound Level (L_{eq})	The sound level containing the same total energy as a time varying signal over a given time period. The L_{eq} is the value that expresses the time averaged total energy of a fluctuating sound level.
Maximum Sound Level (L_{max})	The highest individual sound level (dBA) occurring over a given time period.
Minimum Sound Level (L_{min})	The lowest individual sound level (dBA) occurring over a given time period.
Community Noise Equivalent Level (CNEL)	A rating of community noise exposure to all sources of sound that differentiates between daytime, evening, and nighttime noise exposure. These adjustments are +5 dBA for the evening, 7:00 p.m. to 10:00 p.m., and +10 dBA for the night, 10:00 p.m. to 7:00 a.m..
Day/Night Average (L_{dn})	The L_{dn} is a measure of the 24-hour average noise level at a given location. It was adopted by the U.S. Environmental Protection Agency for developing criteria for the evaluation of community noise exposure. It is based on a measure of the average noise level over a given time period called the L_{eq}. The L_{dn} is calculated by averaging the L_{eq}'s for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 p.m. to 7:00 a.m.) by 10 dBA to account for the increased sensitivity of people to noises that occur at night.
Exceedance Level (L_n)	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% (L_{01}, L_{10}, L_{50}, L_{90}, respectively) of the time during the measurement period.

Source: Cyril M. Harris, *Handbook of Noise Control*, 1979.

Health Effects of Noise

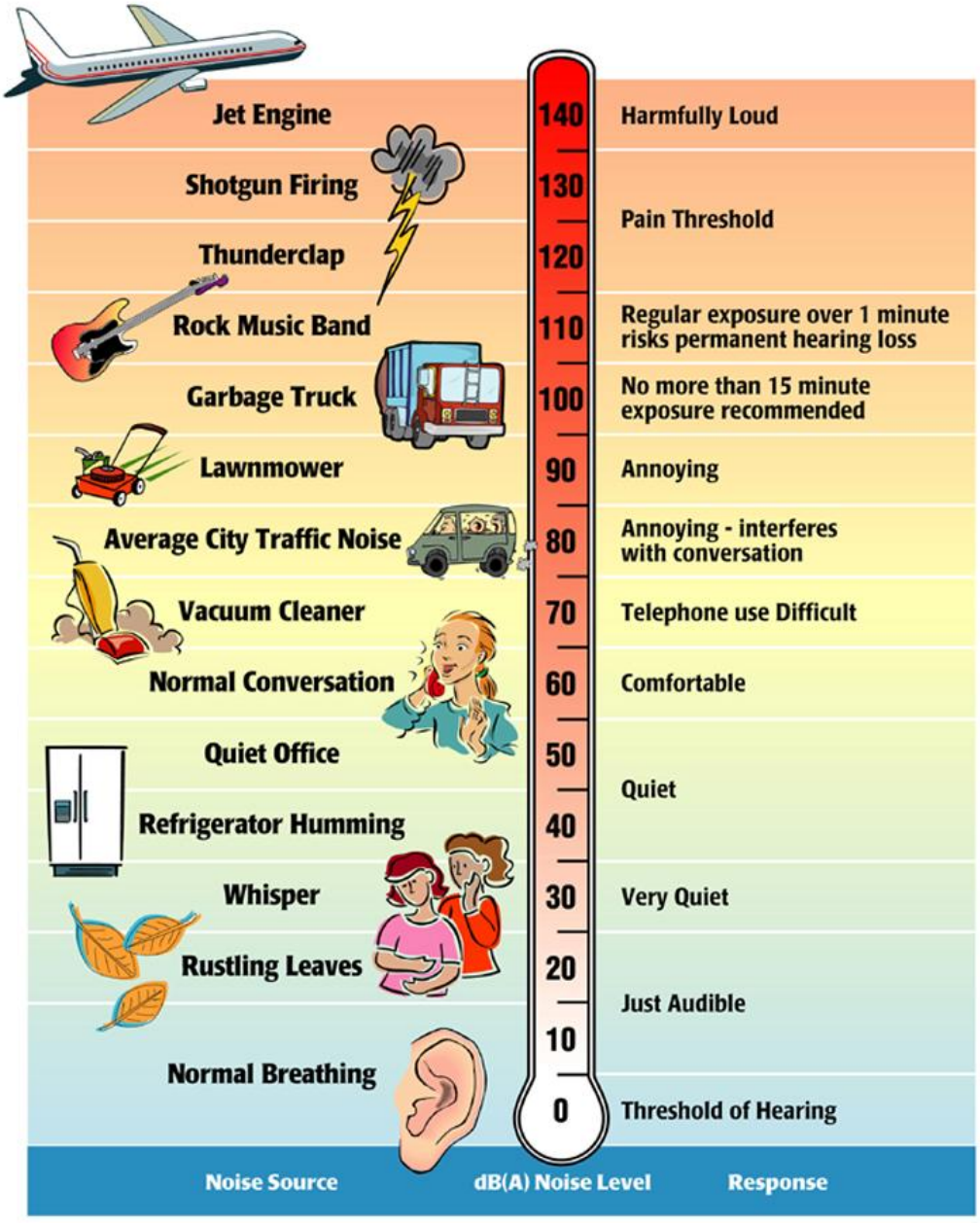
Human response to sound is highly individualized. Annoyance is the most common issue regarding community noise. The percentage of people claiming to be annoyed by noise generally increases with the environmental sound level. However, many factors also influence people's response to noise. The factors can include the character of the noise, the variability of the sound level, the presence of tones or impulses, and the time of day of the occurrence. Additionally, non-acoustical factors, such as the person's opinion of the noise source, the ability to adapt to the noise, the attitude towards the source and those associated with it, and the predictability of the noise, all influence people's response. As such, response to noise varies widely from one person to another and with any particular noise, individual responses will range from "not annoyed" to "highly annoyed."

When the noise level of an activity rises above 70 dBA, the chance of receiving a complaint is possible, and as the noise level rises, dissatisfaction among the public steadily increases. However, an individual's reaction to a particular noise depends on many factors, such as the source of the sound, its loudness relative to the background noise, and the time of day. The reaction to noise can also be highly subjective; the perceived effect of a particular noise can vary widely among individuals in a community.

The effects of noise are often only transitory, but adverse effects can be cumulative with prolonged or repeated exposure. The effects of noise on the community can be organized into six broad categories:

- Noise-Induced Hearing Loss;
- Interference with Communication;
- Effects of Noise on Sleep;
- Effects on Performance and Behavior;
- Extra-Auditory Health Effects; and
- Annoyance.

Although it often causes discomfort and sometimes pain, noise-induced hearing loss usually takes years to develop. Noise-induced hearing loss can impair the quality of life through a reduction in the ability to hear important sounds and to communicate with family and friends. Hearing loss is one of the most obvious and easily quantified effects of excessive exposure to noise. While the loss may be temporary at first, it could become permanent after continued exposure. When combined with hearing loss associated with aging, the amount of hearing loss directly caused by the environment is difficult to quantify. Although the major cause of noise-induced hearing loss is occupational, substantial damage can be caused by non-occupational sources.



Source: Melville C. Branch and R. Dale Beland, *Outdoor Noise in the Metropolitan Environment*, 1970.
Environmental Protection Agency, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (EPA/ONAC 550/9-74-004), March 1974.

Stanton General Plan Update
Common Environmental Noise Levels
EXHIBIT 6-6

According to the United States Public Health Service, nearly ten million of the estimated 21 million Americans with hearing impairments owe their losses to noise exposure. Noise can mask important sounds and disrupt communication between individuals in a variety of settings. This process can cause anything from a slight irritation to a serious safety hazard, depending on the circumstance. Noise can disrupt face-to-face communication and telephone communication, and the enjoyment of music and television in the home. It can also disrupt effective communication between teachers and pupils in schools, and can cause fatigue and vocal strain in those who need to communicate in spite of the noise.

Interference with communication has proved to be one of the most important components of noise-related annoyance. Noise-induced sleep interference is one of the critical components of community annoyance. Sound level, frequency distribution, duration, repetition, and variability can make it difficult to fall asleep and may cause momentary shifts in the natural sleep pattern, or level of sleep. It can produce short-term adverse effects on mood changes and job performance, with the possibility of more serious effects on health if it continues over long periods. Noise can cause adverse effects on task performance and behavior at work, and non-occupational and social settings. These effects are the subject of some controversy, since the presence and degree of effects depends on a variety of intervening variables. Most research in this area has focused mainly on occupational settings, where noise levels must be sufficiently high and the task sufficiently complex for effects on performance to occur.

Recent research indicates that more moderate noise levels can produce disruptive after-effects, commonly manifested as a reduced tolerance for frustration, increased anxiety, decreased incidence of "helping" behavior, and increased incidence of "hostile" behavior. Noise has been implicated in the development or exacerbation of a variety of health problems, ranging from hypertension to psychosis. As with other categories, quantifying these effects is difficult due to the amount of variables that need to be considered in each situation. As a biological stressor, noise can influence the entire physiological system. Most effects seem to be transitory, but with continued exposure some effects have been shown to be chronic in laboratory animals.

Annoyance can be viewed as the expression of negative feelings resulting from interference with activities, as well as the disruption of one's peace of mind and the enjoyment of one's environment. Field evaluations of community annoyance are useful for predicting the consequences of planned actions involving highways, airports, road traffic, railroads, or other noise sources. The consequences of noise-induced annoyance are privately held dissatisfaction, publicly expressed complaints to authorities, and potential adverse health effects, as discussed above. In a study conducted by the United States Department of Transportation, the effects of annoyance to the community were quantified. In areas where noise levels were consistently above 60 dBA CNEL, approximately nine percent of the community is highly annoyed. When levels exceed 65 dBA CNEL, that percentage rises to 15 percent. Although evidence for the various effects of noise have differing levels of certainty, it is clear that noise can affect human health. Most of the effects are, to a varying degree, stress related.

Laws, Ordinances, Regulations, and Standards

Land uses deemed sensitive by the State of California (State) include schools, hospitals, rest homes, and long-term care and mental care facilities. Many jurisdictions also consider residential uses particularly noise-sensitive because families and individuals expect to use time in the home for rest and relaxation, and noise can interfere with those activities. Some jurisdictions may also

identify other noise-sensitive uses such as churches, libraries, and parks. Land uses that are relatively insensitive to noise include office, commercial, and retail developments. There is a range of insensitive noise receptors that include uses that generate significant noise levels and that typically have a low level of human occupancy.

This noise analysis was conducted in accordance with Federal, State, and local criteria described in the following sections.

Federal Noise Standards

The United States Noise Control Act of 1972 (NCA) recognized the role of the Federal government in dealing with major commercial noise sources in order to provide for uniform treatment of such sources. As Congress has the authority to regulate interstate and foreign commerce, regulation of noise generated by such commerce also falls under congressional authority. The Federal government specifically preempts local control of noise emissions from aircraft, railroad and interstate highways.

U.S. Environmental Protection Agency

The EPA offers guidelines for community noise exposure in the publication Noise Effects Handbook – *A Desk Reference to Health and Welfare Effects of Noise*. These guidelines consider occupational noise exposure as well as noise exposure in homes. The EPA recognizes an exterior noise level of 55 dB Ldn as a general goal to protect the public from hearing loss, activity interference, sleep disturbance, and annoyance. The EPA and other Federal agencies have adopted suggested land use compatibility guidelines that indicate that residential noise exposures of 55 to 65 dB Ldn are acceptable. The EPA notes, however, that these levels are not regulatory goals, but are levels defined by a negotiated scientific consensus, without concern for economic and technological feasibility or the needs and desires of any particular community.

State of California

The State Office of Planning and Research *Noise Element Guidelines* include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Office of Planning and Research *Noise Element Guidelines* contain a land use compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of community noise equivalent level (CNEL). A CNEL is defined as the 24-hour average noise level measured in A-weighted sound pressure level for a 24-hour period with different weighting factors for the noise levels occurring during the day, evening, and nighttime periods. A noise environment of 50 to 60 CNEL is considered to be "normally acceptable" for residential uses. The Office of Planning and Research recommendations also note that, under certain conditions, more restrictive standards than the maximum levels cited may be appropriate. As an example, the standards for quiet suburban and rural communities may be reduced by 5 to 10 dB to reflect their lower existing outdoor noise levels in comparison with urban environments. Table 6-2, Land Use Compatibility Noise Guidelines – California, illustrates the State guidelines established by the State Department of Health Services for acceptable noise levels for each county and city.

Table 6-2
Land Use Compatibility Noise Guidelines — California

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

NA: Not Applicable

Source: General Plan Guidelines, Office of Planning and Research, California, October 2003.

Normally Acceptable – Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable – New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
Normally Unacceptable – New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable – New construction or development should generally not be undertaken.

City Noise Standards

The city of Stanton maintains a comprehensive Noise Control Ordinance within the Municipal Code that sets standards for noise levels citywide and provides the means to enforce the reduction of obnoxious or offensive noises. Chapter 9.28 of the Stanton Municipal Code establishes noise standards and enforcement procedures.

The city of Stanton has adopted a local Noise Control Ordinance (*Municipal Code 9.28*) in order to control unnecessary, excessive, and annoying sounds emanating from incorporated areas of the city. The Ordinance is designed to control unnecessary, excessive, and annoying sounds in residential neighborhoods by the following noise standards:

- Exterior and interior noise of 55 dBA during the hours of 7:00 a.m. to 10:00 p.m.;
- Exterior noise of 50 dBA during the hours of 10:00 p.m. to 7:00 a.m.; and,
- Interior noise of 45 dBA during the hours of 10:00 p.m. to 7:00 a.m.

The Ordinance prohibits exterior noise sources to exceed the following:

- The noise standard for a cumulative period of more than thirty minutes in any hour; or
- The noise standard plus 5 dB(A) for a cumulative period of more than fifteen minutes in any hour; or
- The noise standard plus 10 dB(A) for a cumulative period of more than five minutes in any hour; or
- The noise standard plus 15 dB(A) for a cumulative period of more than one minute in any hour; or
- The noise standard plus 20 dB(A) for any period of time.

Interior noise sources cannot exceed the following:

- The interior noise standard for a cumulative period of more than five minutes in any hour; or
- The interior noise standard plus 5 dB(A) for a cumulative period of more than one minute in any hour; or
- The interior noise standard plus 10 dB(A) for any period of time.

Noise Analysis

Human response to noise varies widely depending on the type of noise, time of day, and sensitivity of the receptor. The effects of noise on humans can range from temporary or permanent hearing loss to mild stress and annoyance due to such things as speech interference and sleep deprivation. Prolonged stress, regardless of the cause, is known to contribute to a variety of health disorders. Noise, or the lack of it, is a factor in the aesthetic perception of some settings, particularly those with religious or cultural significance.

Noise impacts can be mitigated in three basic ways: by reducing the sound level of the noise generator, by increasing the distance between the source and receiver, and by insulating the receiver. Noise reduction can be accomplished by placement of walls, landscaped berms, or a combination of the two, between the noise source and the receiver. Generally, effective noise shielding requires a solid barrier with a mass of at least four pounds per square-foot of surface area which is large enough to block the line of sight between source and receiver. Variations may be appropriate in individual cases based on distance, nature and orientation of buildings behind the barrier, and a number of other factors. Garages or other buildings may be used to shield dwelling units and outdoor living areas from traffic noise.

In addition to site design techniques, noise insulation can be accomplished through proper design of buildings. Nearby noise generators should be recognized in determining the location of doors, windows and vent openings. Sound-rated windows (extra thick or multi-paned) and wall insulation are also effective. None of these measures, however, can realize their full potential unless care is taken in actual construction: doors and windows fitted properly, openings sealed, joints caulked, plumbing adequately insulated from structural members. Of course, sound-rated doors and windows will have little effect if left open. This may require installation of air conditioning for adequate ventilation. The chain of design, construction, and operation is only as effective as its weakest link.

Noise impacts can be reduced by insulating noise sensitive uses, such as residences, schools, libraries, hospitals, nursing and care homes and some types of commercial activities. But perhaps a more efficient approach involves limiting the level of noise generation at the source. State and

Federal statutes have largely preempted local control over vehicular noise emissions but commercial and industrial operations and certain residential activities provide opportunities for local government to assist in noise abatement. Local ordinances may establish maximum levels for noise generated on-site. This usually takes the form of limiting the level of noise permitted to leave the property where it may impact other uses.

Although vehicular noise emission standards are established at the State and Federal levels, local agencies can play a significant part in reducing traffic noise by controlling traffic volume and congestion. Traffic noise is greatest at intersections due to acceleration, deceleration, and gear shifting. Measures such as signal synchronization can help to minimize this problem. Likewise, reduction of congestion aids in reduction of noise. This can be accomplished through the application of traffic engineering techniques such as channelization of turning movements, parking restrictions, separation of modes (bus, auto, bicycle, pedestrian), and restrictions on truck traffic.

Noise reduction through reduction of traffic volumes can also be accomplished with incentive programs for use of public transit facilities and high-occupancy vehicles, staggering of work hours and land use controls. Vehicle trips can be turned into pedestrian trips with integration of housing and employment into the same project or area, construction of high-density, affordable housing in proximity to employment, shopping and public transit facilities and other techniques.

FIRE PROTECTION

The Orange County Fire Authority (OCFA) is a regional fire service agency that provides fire protection services to 22 cities in Orange County, including the city of Stanton and unincorporated areas of Orange County. Established in 1956, OCFA Fire Station #46 is located at 7871 Pacific Street in Stanton. Fire Station #46 currently maintains an Engine and Paramedic Assessment Unit (PAU) with six captains, six engineers and nine firefighters. According to the OCFA, Fire Station #46 responded to 2,352 emergency incidents in 2005, which included fire, emergency medical, hazardous material, false alarms and other incidents.[1]

OCFA's Dispatch Center receives and dispatches emergency calls using a Computer Aided Dispatching (CAD) system. The Mapping and Geo-file Group maintains the Fire Station Order file (a key component of CAD to ensure the closest emergency apparatus is sent to an emergency) and produces District Maps for use by emergency apparatus to respond to the emergency scenes.[2] It takes approximately three to five minutes for engines to arrive on scene after an emergency (911) call has been placed.[3]

Fire Hazards

As growth and development continues within the city, and Orange County, urban fires become a greater threat. Within urbanized areas the incidence of structural fires increases. Some of the most difficult fire protection problems within urbanized areas are: multiple story, wood frame, high density apartment developments; large contiguous developed areas with combustible roof-covering materials, storage, handling and use of hazardous materials on site; and natural disasters. Opportunities to reduce the incidence and effects of urban fires include adherence to the

[1] Orange County Fire Authority, "Orange County Fire Authority Partner City Stanton", www.ocfa.org (accessed October 2006).
[2] Orange County Fire Authority, "Emergency Communications", www.ocfa.org (accessed October 2006).
[3] Orange County Fire Authority, "Frequently Asked Questions", www.ocfa.org (accessed October 2006).

Stanton, California Municipal Code

Title 9 PEACE, SAFETY AND MORALS

Chapter 9.28 NOISE CONTROL

9.28.010 Declaration of policy.

A. In order to control unnecessary, excessive and annoying sounds emanating from incorporated areas of the city, it is declared to be the policy of the city to prohibit such sounds generated from all sources as specified in this chapter.

B. It is determined that certain noise levels are detrimental to the public health, welfare and safety and contrary to public interest, therefore, the city council does ordain and declare that creating, maintaining, causing or allowing to create, maintain or cause any noise in a manner prohibited by or not in conformity with the provisions of this chapter is a public nuisance and shall be punishable as such. (Prior code § 9.44.010)

9.28.020 Definitions.

The following words, phrases and terms as used in this chapter shall have the meaning as indicated below:

A. “Ambient noise level” means the all-encompassing level associated with a given environment, being a composite of sounds from all sources, excluding the alleged offensive noise, at the location and approximate time at which a comparison with the alleged offensive noise is to be made.

B. “Cumulative period” means an additive period of time composed of individual time segments which may be continuous or interrupted.

C. “Decibel” (“dB”) means a unit which denotes the ratio between two quantities which are proportional to power. The number of decibels corresponding to the ratio of two amounts of power is ten times the logarithm to the base ten of this ratio.

D. “Dwelling unit” means a single unit providing complete, independent living facilities for one or more persons including permanent provisions for living, sleeping, eating, cooking and sanitation.

E. “Emergency machinery, vehicle or work” means any machinery, vehicle or work used, employed or performed in an effort to protect, provide or restore safe conditions in the community or for the citizenry, or work by private or public utilities when restoring utility service.

F. “Fixed noise source” means a stationary device which creates sounds while fixed or motionless including, but not limited to, industrial and commercial machinery and equipment, pumps, fans, compressors, generators, air conditioners and refrigeration equipment.

G. “Grading” means any excavating or filling of earth materials, or any combination thereof, conducted at a site to prepare said site for construction or other improvements thereon.

H. “Impact noise” means the noise produced by the collision of one mass in motion with a second mass which may be either in motion or at rest.

I. “Mobile noise source” means any noise source other than a fixed noise source.

J. “Noise level” means the “A” weighted sound pressure level in decibels obtained by using a sound level meter at slow response with a reference pressure of twenty micronewtons per square meter. The unit of measurement shall be designated as dB(A).

K. “Noise variance board” means an administrative board of five members appointed by the board of supervisors of the county, per Title 4, Division 6, Article 1 of the codified ordinances of the county.

L. “Person” means a person, firm, association, copartnership, joint venture, corporation or any entity, public or private in nature.

M. “Residential property” means a parcel of real property which is developed and used either in part or in whole for residential purposes, other than transient uses such as hotels and motels.

N. “Simple tone noise” means a noise characterized by a predominant frequency or frequencies so that other frequencies cannot be readily distinguished.

O. “Sound level meter” means an instrument meeting American National Standard Institute’s Standard S1.4-1971 for Type 1 or Type 2 sound level meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

P. “Sound pressure level” of a sound, in decibels, shall mean twenty times the logarithm to the base ten of the ratio of the pressure of the sound to a reference pressure, which reference pressure shall be explicitly stated. (Prior code § 9.44.020)

9.28.025 Excessively loud events.

City or law enforcement personnel who receive a complaint related to excessively loud, unusual, penetrating, or boisterous noise, disturbance, or commotion shall handle the matter in accordance with the provisions of this chapter and Chapter 9.30 of this title. (Ord. 1021 § 2, 2013; Ord. 838 § 1, 2000)

9.28.030 Noise level measurement criteria.

Any noise level measurements made pursuant to the provisions of this chapter shall be performed using a sound level meter as defined in Section 9.28.020. (Prior code § 9.44.030)

9.28.040 Designated noise zone.

The residential properties hereinafter described are hereby assigned to the following noise zones:

Noise Zone 1: all residential properties, whether incorporated or unincorporated. (Prior code § 9.44.040)

9.28.050 Exterior noise standards.

A. The following noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

Noise Standards		
Noise Zone	**Noise Level**	**Time Period**
1	55 dB(A)	7:00 a.m. - 10:00 p.m.
	50 dB(A)	10:00 p.m. - 7:00 a.m.

In the event the alleged offensive noise consists of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five dB(A).

B. It is unlawful for any person at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level, when measured on any other residential property, either incorporated or unincorporated, to exceed:

1. The noise standard for a cumulative period of more than thirty minutes in any hour; or

2. The noise standard plus five dB(A) for a cumulative period of more than fifteen minutes in any hour; or

3. The noise standard plus ten dB(A) for a cumulative period of more than five minutes in any hour; or

4. The noise standard plus fifteen dB(A) for a cumulative period of more than one minute in any hour; or

5. The noise standard plus twenty dB(A) for any period of time.

C. In the event the ambient noise level exceeds any of the first four noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level. (Prior code § 9.44.050)

9.28.060 Interior noise standards.

A. The following interior noise standards, unless otherwise specifically indicated, shall apply to all residential property within a designated noise zone:

Interior Noise Standards		
Noise Zone	**Noise Level**	**Time Period**
1	55 dB(A)	7:00 a.m. - 10:00 p.m.

	45 dB(A)	10:00 p.m. - 7:00 a.m.

In the event the alleged offensive noise consists of impact noise, simple tone noise, speech, music, or any combination thereof, each of the above noise levels shall be reduced by five dB(A).

B. It is unlawful for any person at any location within the incorporated area of the city to create any noise, or to allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, when the foregoing causes the noise level when measured within any other dwelling unit on any residential property, either incorporated or unincorporated, to exceed:

1. The interior noise standard for a cumulative period of more than five minutes in any hour; or

2. The interior noise standard plus five dB(A) for a cumulative period of more than one minute in any hour; or

3. The interior noise standard plus ten dB(A) for any period of time.

C. In the event the ambient noise level exceeds either of the first two noise limit categories above, the cumulative period applicable to said category shall be increased to reflect said ambient noise level. In the event the ambient noise level exceeds the third noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level. (Prior code § 9.44.060)

9.28.070 Special provisions.

The following activities shall be exempted from the provisions of this chapter:

A. Activities conducted on the grounds of any public or private nursery, elementary, intermediate or secondary school or college;

B. Outdoor gatherings, public dances, shows and sporting and entertainment events provided said events are conducted pursuant to a permit issued by the city pursuant to the city code relative to the staging of said events;

C. Activities conducted on any park or playground provided such park or playground is owned and operated by a public entity;

D. Any mechanical device, apparatus or equipment used, related to or connected with emergency machinery, vehicle or work;

E. Noise sources associated with construction, repair, remodeling, or grading of any real property provided said activities do not take place between the hours of eight p.m. and seven a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday;

F. All mechanical devices, apparatus or equipment which are utilized for the protection or salvage of agricultural crops during periods of potential or actual frost damage or other adverse weather conditions;

G. Mobile noise sources associated with agricultural operations provided such operations do not take place between the hours of eight p.m. and seven a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday;

H. Mobile noise sources associated with agricultural pest control through pesticide application; provided, that the application is made in accordance with restricted material permits issued by or regulations enforced by the agricultural commission;

I. Noise sources associated with the maintenance of real property provided said activities take place between the hours of seven a.m. and eight p.m. on any day except Sunday or federal holiday, or between the hours of nine a.m. and eight p.m. on Sunday or federal holiday;

J. Any activity to the extent regulation thereof has been preempted by state or federal law;

K. Any event or activity sponsored by the city. (Ord. 1021 § 3, 2013; prior code § 9.44.070)

9.28.080 Schools, hospitals and churches— Special provisions.

It is unlawful for any person to create any noise which causes the noise level at any school, hospital or church, while the same is in use, to exceed the noise limits as specified in Section 9.28.050 prescribed for the assigned noise zone in which the school, hospital or church is located, or which noise level unreasonably interferes with the use of such institutions or which unreasonably disturbs or annoys patients in the hospital, provided conspicuous signs are displayed in three separate locations within one-tenth of a mile of the institution indicating the presence of a school, church, or hospital. (Prior code § 9.44.080)

9.28.090 Air conditioning and refrigeration—Special provisions.

Until January 19, 1979, the noise standards enumerated in Sections 9.28.050 and 9.28.060 shall be increased eight dB(A) where the alleged offensive noise source is an air conditioning or refrigeration system or associated equipment which was installed prior to the effective date of the ordinance codified in this chapter. (Prior code § 9.44.090)

9.28.095 Special noise sources—Radios, television sets and similar devices.

A. Use Restricted. It is unlawful and a misdemeanor, subject to punishment in accordance with Chapter 1.10 of this code, for any person within the city of Stanton to use or operate any radio receiving set, musical instrument, phonograph, television set, or other machine or device for the producing or reproducing of sound at any time in such a manner as to produce noise levels on residential land which would disturb the peace, quiet, and comfort of neighboring residents or any reasonable person of normal sensitivity residing in the area.

B. Prima Facie Violation. Any noise exceeding the ambient noise level at the property line of any residential area (or if a condominium or apartment house, within any adjoining apartment) by more than five decibels shall be deemed to be prima facie evidence of a violation of the provisions of this section. (Ord. 838 § 2, 2000)

9.28.096 Same—Machinery, fans and other mechanical devices.

Any noise level from the use or operation of any machinery, equipment, pump, fan, air conditioning apparatus, refrigerating equipment, or other mechanical or electrical device, or in repairing or rebuilding any motor vehicle, which exceeds the noise limits as set forth in this title at any property line, or, if a condominium or rental unit, within any condominium unit or rental unit within the complex, shall be a violation of this chapter. (Ord. 838 § 3, 2000)

9.28.100 Noise level measurement.

The location selected for measuring exterior noise levels shall be at any point on the affected property. Interior noise measurements shall be made within the affected dwelling unit. The measurement shall be made at a point at least four feet from the wall, ceiling, or floor nearest the alleged offensive noise source and may be made with the windows of the affected unit open. (Prior code § 9.44.100)

9.28.110 Manner of enforcement.

A. The county health officer and duly authorized representatives are directed to enforce the provisions of this chapter. The county health officer and duly authorized representatives are authorized, pursuant to Penal Code Section 836.5, to arrest any person without a warrant when they have reasonable cause to believe that such person has committed a misdemeanor in their presence.

B. No person shall interfere with, oppose or resist any authorized person charged with enforcement of this chapter while such person is engaged in the performance of his or her duty. (Prior code § 9.44.110)

9.28.120 Variance procedure.

A. The owner or operator of a noise source which violates any of the provisions of this chapter may file an application with the health officer for a variance from the provisions of this chapter wherein said owner or operator shall set forth all actions taken to comply with said provisions, the reasons why immediate compliance cannot be achieved, a proposed method of achieving compliance, and a proposed time schedule for its accomplishment. Said application shall be accompanied by a fee in the amount of seventy-five dollars. A separate application shall be filed for each noise source; provided, however, that several mobile sources under common ownership, or several fixed sources on a single property may be combined into one application. Upon receipt of said application and fee, the health officer shall refer it with his or her recommendation thereon within thirty days to the noise variance board for action thereon in accordance with the provisions of this chapter.

B. An applicant for a variance shall remain subject to prosecution under the terms of this chapter until a variance is granted. (Prior code § 9.44.120)

9.28.130 Noise variance board.

The noise variance board shall evaluate all applications for variance from the requirements of this chapter and may grant said variances with respect to time for compliance, subject to such terms, conditions and requirements as it may deem reasonable to achieve maximum compliance with the provisions of this chapter. Said terms, conditions and requirements may include, but shall not be limited to, limitations on noise levels and operating hours. Each such variance shall set forth in detail the approved method of achieving maximum compliance and a time schedule for its accomplishment. In its determinations the board shall consider the magnitude of nuisance caused by the offensive noise; the uses of property within the area of impingement by the noise; the time factors related to study, design, financing and construction of remedial work; the economic factors related to age and useful life of equipment; and the general public interest and welfare. Any variance granted by the board shall be by resolution and shall be transmitted to the health officer for enforcement. Any violation of the terms of the variance shall be unlawful. (Prior code § 9.44.130)

9.28.140 Appeals.

A. Within fifteen days following the decision of the variance board on an application, the applicant, the health officer or any member of the city council may appeal the decision to the city council by filing a notice of appeal with the secretary of the variance board. In the case of an appeal by the applicant for a variance, the notice of appeal shall be accompanied by a fee to be computed by the secretary on the basis of the estimated cost of preparing the materials required to be forwarded to the city council as discussed in this section. If the actual cost of such preparation differs from the estimated cost appropriate payments shall be made either to or by the secretary.

B. Within fifteen days following receipt of a notice of appeal fee, the secretary of the variance board shall forward to the city council copies of the application for variance; the recommendation of the health officer; the notice of appeal; all evidence concerning said application received by the variance board and its decision thereon. In addition, any person may file with the city council written arguments supporting or attaching said decision and the city council may in its discretion hear oral arguments thereon. The city clerk shall mail to the applicant a notice of the date set for hearing of the appeal. The notice shall be mailed at least ten days prior to the hearing date.

C. Within sixty days following its receipt of the notice of the appeal, the city council shall either affirm, modify or reverse the decision of the variance board. Such decision shall be based upon the city council's evaluation of the matters submitted to the city council in light of the powers conferred on the variance board and the factors to be considered both as enumerated in Sections 9.28.120 and 9.28.130.

D. As part of its decision the council may direct the variance board to conduct further proceedings on said application. Failure of the city council to affirm, modify or reverse the decision of the variance board within said sixty-day period shall constitute an affirmance of the decision. (Prior code § 9.44.140)

9.28.150 Violation—Misdemeanor.

A. It is unlawful for any person to violate any provision or to fail to comply with any of the requirements of this chapter.

B. Any person violating any provision hereof shall be charged in accordance with Section 1.04.080 of this code and upon conviction shall be punished in accordance therewith.

C. The provisions of this chapter shall not limit any other remedies authorized by law. (Ord. 1021 § 4, 2013; Ord. 677 § 1, 1988: prior code § 9.44.150)

Contact:

City Clerk: 714-379-9222

CONSTRUCTION NOISE MODELING

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/11/2023
Case Description: PBK-01

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Architectural Coating	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Compressor (air)	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	77.7	73.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/11/2023
Case Description: PBK-01

**** Receptor #1 ****

Description	Land Use	Baselines (dBA) Daytime	Evening	Night
Building Construction	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Front End Loader	No	40		79.1	50.0	0.0
Tractor	No	40		84.0	50.0	0.0
Generator	No	50		80.6	50.0	0.0

Results

Equipment	Calculated (dBA) Lmax	Leq	Noise Limits (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq	Noise Limit Exceedance (dBA) Day Lmax	Leq	Evening Lmax	Leq	Night Lmax	Leq
Front End Loader	79.1	75.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Generator	80.6	77.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	82.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/08/2023
Case Description: PBK-01

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Demolition	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Saw	No	20	89.6	50.0		0.0
Excavator	No	40	80.7	50.0		0.0
Dozer	No	40	81.7	50.0		0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	89.6	82.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.6	84.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/08/2023
Case Description: PBK-01

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Fine Grading	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Tractor	No	40	84.0		50.0	0.0
Grader	No	40	85.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	84.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/11/2023
Case Description: PBK-01

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Finish and Landscaping	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Excavator	No	40	80.7	50.0	0.0	

Results

	Calculated (dBA)		Noise Limits (dBA) Day		Evening		Night		Noise Limit Exceedance (dBA) Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/11/2023
Case Description: PBK-01

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Paving	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Concrete Mixer Truck	No	40	78.8	50.0		0.0
Tractor	No	40	84.0	50.0		0.0
Pavement Scarafier	No	20	89.5	50.0		0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Mixer Truck	78.8	74.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pavement Scarafier	89.5	82.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	89.5	84.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/08/2023
Case Description: PBK-01

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Rough Grading	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Tractor	No	40	84.0		50.0	0.0
Grader	No	40	85.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grader	85.0	81.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	85.0	84.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/08/2023
Case Description: PBK-01

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Site Preparation	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Usage (%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Roller	No	20		80.0	50.0	0.0
Tractor	No	40	84.0		50.0	0.0
Dozer	No	40		81.7	50.0	0.0

Results

	Calculated (dBA)		Noise Limits (dBA)				Noise Limit Exceedance (dBA)					
			Day		Evening		Night		Day		Evening		Night	
Equipment	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq	Lmax	Leq
Roller	80.0	73.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	82.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 12/11/2023
Case Description: PBK-01

**** Receptor #1 ****

Baselines (dBA)

Description	Land Use	Daytime	Evening	Night
Utilities Trenching	Residential	60.0	55.0	50.0

Equipment

Description	Impact Device	Spec Usage (%)	Actual Lmax (dBA)	Receptor Lmax (dBA)	Estimated Distance (feet)	Shielding (dBA)
Excavator	No	40	80.7	50.0	0.0	
Tractor	No	40	84.0	50.0	0.0	
Pickup Truck	No	40	75.0	50.0	0.0	

Results

Equipment	Calculated (dBA) Lmax	Calculated (dBA) Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq	Day Lmax	Day Leq	Evening Lmax	Evening Leq	Night Lmax	Night Leq
Excavator	80.7	76.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tractor	84.0	80.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pickup Truck	75.0	71.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total	84.0	82.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

PBK-01 - Construction Noise Modeling Attenuation Calculations

		Levels in dBA Leq			
Phase	**RCNM Reference Noise Level**	**Residence at 35 Juniper Court**	**Jade Palace Motel to the east at 11231 Beach Boulevard**	**Residence at 7872 Ruthann Avenue**	**Residence at 11205 Mario Lane**
Distance in feet	*50*	*710*	*260*	*225*	*540*
Demolition	85	62	71	72	64
Site Prep	83	60	69	70	62
Grading	85	62	71	72	64
Distance in feet	*50*	*470*	*420*	*350*	*510*
Building Construction	83	64	65	66	63
Architectural Coating	74	55	56	57	54
Distance in feet	*50*	*570*	*410*	*320*	*500*
Paving	85	64	67	69	65
Distance in feet	*50*	*710*	*260*	*225*	*540*
Finish/Landscaping	77	54	63	64	56
Utilities Trenching	82	59	68	69	61

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R2/R1)

PBK-01 - Vibration Damage Attenuation Calculations

Levels, PPV (in/sec)

Distance in feet	**Vibration Reference Level at *25 feet***	**Commercial Building to the North** *50*	**Commercial Building to the East** *10*	**Residence to the South** *30*	**Instituitional Building to the West** *50*
Vibratory Roller	0.21	0.074	0.830	0.160	0.074
Static Roller	0.05	0.018	0.198	0.038	0.018
Large Bulldozer	0.089	0.031	0.352	0.068	0.031
Loaded Trucks	0.076	0.027	0.300	0.058	0.027
Jackhammer	0.035	0.012	0.138	0.027	0.012
Small Bulldozer	0.003	0.001	0.012	0.002	0.001

PBK-01 - Vibration Annoyance Attenuation Calculations

Levels in VdB

Equipment *Distance in feet*	**Vibration @ 25 ft**	**Residence to the South** *240*
Vibratory Roller	94.0	64.5
Static Roller	87.0	57.5
Large Bulldozer	87.0	57.5
Loaded Trucks	86.0	56.5
Jackhammer	79.0	49.5
Small Bulldozer	58.0	28.5

PBK-01 - Stationary Noise Attenuation Calculations

Reference Levels, Distances, and Receptor (residences) Distances

	Softball/Baseball	**Basketball**
Reference Distance in feet	*72*	*20*
Reference Levels, dBA Leq	57	60
Distance and Direction to	90 feet South	330 feet South
Distance Only	90	330

Levels in dBA Leq

	Softball/Baseball	**Basketball**
	Attenuated Noise Levels	
Attenuated Levels at Receptors	55	35

Attenuation calculated through Inverse Square Law: Lp(R2) = Lp(R1) - 20Log(R

Normalized Levels and Distances

	Softball/Baseball	**Basketball**
	56.9	*59.5*
Reference Distance	**72**	**20**
Normalized Distance	*90*	*330*
Normalized Level dBA Leq	55	35

TRAFFIC NOISE MODELING

Traffic Noise Calculator: FHWA 77-108 **Project Title: PBK-01 Existing Traffic.**

	Output						Inputs													
	dBA at 50 feet			Distance to CNEL Contour																
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever
2	77.2	80.9	81.3	283	610	1315	SR-39	South of Katella Avenue	64,600	65	0.0%	97.5%	1.6%	0.9%	75.0%	10.0%	15.0%	6	Soft	50

PBK-01

Traffic Noise Calculations

	ADT Volumes				dBA CNEL Increase		
Roadway Segment	Existing No Project	Existing Plus Project	Future No Project	Future Plus Project	Project Noise Increase	Cumulative Increase	Project Cumulative Contribution
Beach Boulevard - North of Katella Avenue	66,000	66,104	66,700	66,804	0.01	0.05	0.01
Beach Boulevard - South of Katella Avenue to Park Exi	66,000	66,208	66,700	66,908	0.01	0.06	0.01
Beach Boulevard - South of Park Exit to U-turn	66,000	66,415	66,700	67,115	0.03	0.07	0.03
Beach Boulevard - North of Orangewood Avenue	66,000	66,104	66,700	66,804	0.01	0.05	0.01
Katella Avenue - West of Cedar Street	31,200	31,304	31,500	31,604	0.01	0.06	0.01
Katella Avenue - Cedar Street to Beach Boulevard	31,200	31,408	31,500	31,708	0.03	0.07	0.03
Katella Avenue - East of Beach Boulevard	25,000	25,104	31,500	31,604	0.02	1.02	0.01

Appendix

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Appendix F Traffic/Transportation Analysis

TRAFFIC/TRANSPORTATION ANALYSIS

FOR THE PROPOSED

NORM ROSS SPORTS PARK IMPROVEMENT PROJECT

STANTON

Prepared for

CITY OF STANTON

Prepared by

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Huntington Beach, CA 92647
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December 2023

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I.
PROJECT DESCRIPTION AND STUDY METHODOLOGY

This traffic/transportation analysis was conducted to determine the impacts of the proposed Norm Ross Sports Park Improvement Project in Stanton. The project site is west of Beach Boulevard and south of Katella Avenue, as shown on Figure 1. It is bounded by the Stanton Storm Channel and Stanton Park on the north, commercial uses with frontage on Beach Boulevard on the east, residences with frontage on Ruthann Avenue on the south, and Carver Early Childhood Education Center on the west. The proposed site plan for the sports park is shown on Figure 2.

The proposed project includes a little league baseball field, a soccer field, a multipurpose sports court, a playground, a courtyard, a picnic area, a community garden, a dog park, and a park building with restrooms. Pedestrian access to the sports park would be provided by pedestrian bridges across the Stanton Storm Channel, two of which are existing and one of which would be constructed as a component of the project. Parking would be provided at an existing parking lot that is positioned along the north side of Stanton Park. It is accessed from Katella Avenue via Cedar Street and it has an exit-only driveway onto Beach Boulevard.

The objective of the analysis is to evaluate the traffic/transportation impacts of the proposed project. The methodology for the traffic study, in general, was to l) describe the baseline conditions on the streets and other transportation facilities that provide access to the project site to establish the environmental setting, and 2) present an evaluation of the project's impacts on the four transportation issue areas cited in the CEQA environmental checklist. Appendix G of the CEQA Guidelines states that a proposed project could have a significant effect on the environment if the project would:

a. Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities,

b. Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b),

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

d. Result in inadequate emergency access.

Item "b" involves an evaluation of the project's impacts on vehicle miles traveled (VMT). To establish the baseline conditions, an inventory was taken of the streets, sidewalks, bike lanes, and transit routes in the vicinity of the park site.

II.
BASELINE CONDITIONS/ENVIRONMENTAL SETTING

The following paragraphs provide a brief description of the streets that provide access to the park site, the existing bicycle and pedestrian facilities, and the existing transit service in the area.

Street Network, Sidewalks, and Crosswalks

The streets that provide access to the park site include Katella Avenue, Beach Boulevard, Cedar Street, and Ruthann Avenue. The following paragraphs provide a brief description of the characteristics of these streets.

Katella Avenue

Katella Avenue is a six lane east-west arterial street located approximately 800 feet north of the park site. It has sidewalks on both sides of the street and parking is prohibited on both sides of the street in the vicinity of the project site. Katella Avenue is a divided highway with raised medians. Access to the park site is provided from Katella Avenue via Cedar Street. The speed limit on Katella Avenue is 45 miles per hour (mph).

Beach Boulevard/State Route 39

Beach Boulevard/State Route 39 is an eight lane north-south arterial street located approximately 200 feet east of the park site. It has sidewalks on both sides of the street and parking is prohibited on both sides of the street in the vicinity of the project site. Beach Boulevard is a divided highway with raised medians. Egress from the parking lot on the north side of the park site is provided on Beach Boulevard. The speed limit on Beach Boulevard is 45 mph.

Cedar Street

Cedar Street is a two lane north-south street that provides a link between Katella Avenue and the parking lot on the north side of the project site. It has sidewalks on both sides of the street and parking is provided on the west side of the street. The speed limit on Cedar Street is 25 mph.

Ruthann Avenue

Ruthann Avenue is a two lane east-west local residential street located approximately 60 feet south of the park site. It has sidewalks and parking on both sides of the street. A gated emergency access driveway is provided from Ruthann Avenue to the park on the southeast corner of the project site. The speed limit on Ruthann Avenue is 25 mph.

Intersections Near the Park Site

The intersections that are near the park site and the types of traffic control at each intersection are shown in Table 1. The locations of the existing crosswalks are also shown. The crosswalks at the signalized intersections are equipped with pedestrian push buttons and pedestrian WALK signals.

TABLE 1
INTERSECTIONS NEAR THE PARK SITE

Intersection	Traffic Control	Crosswalks
Beach Boulevard at Katella Avenue	Traffic Signal	On All Four Sides
Katella Avenue at Rose Street	Traffic Signal	On North & East Sides
Katella Avenue at Cedar Street	Traffic Signal	On East & South Sides
Cedar Street at Parking Garage North Driveway	3-Way Stop Signs	On South and West Sides
Cedar Street at Parking Garage South Driveway	Stop Sign at Driveway Exit	On West Side at Driveway

Bike Lanes

There are no marked bike lanes on the streets in the immediate vicinity of the park site. Bike racks are provided at the Stanton City Hall on the west side of Cedar Street and at the Stanton Branch of the Orange County Library on the east side of Cedar Street.

Public Transportation

Orange County Transportation Authority (OCTA) operates Routes 29, 29A, and 529 on Beach Boulevard. Routes 29 and 29A run from Huntington Beach to La Habra. Route 529 is a weekday-only express bus that runs from Huntington Beach to Fullerton. These bus routes have northbound and southbound bus stops at Katella Avenue. OCTA also operates Route 50 on Katella Avenue. It runs from Long Beach to Orange and has eastbound and westbound bus stops at Beach Boulevard and Cedar Street. These bus routes offer a convenient public transportation option for patrons of the park.

III.
TRAFFIC/TRANSPORTATION ENVIRONMENTAL ANALYSIS

For the transportation analysis, Appendix G of the CEQA Guidelines states that a proposed project could have a significant effect on the environment if the project would:

Environmental Issues	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d) Result in inadequate emergency access?				X

The table indicates that the project would have a less than significant impact for two environmental issue areas and no impact for the other two environmental issue areas for the transportation category. Details regarding these findings are provided below.

a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Less Than Significant Impact. The following paragraphs summarize the analysis of the project's impacts on the study area traffic/transportation system and facilities. First is a discussion of project generated traffic volumes and the increases in traffic that would occur on the most-directly affected arterial streets. This is followed by an analysis of the impacts of the proposed project on bicycle and pedestrian facilities and public transportation.

Project Generated Traffic

The volumes of traffic expected to be generated by the proposed sports park were determined in order to estimate the impacts of the project on the study area streets. Table 2 shows the estimated volumes of project generated traffic for the morning and afternoon peak hours and for an entire day. The trip generation rates for the park are from the Institute of Transportation Engineers *Trip Generation Manual* (11th Edition, 2021). The trip rates for the little league games are based on the assumption that each team will have 15 players and two coaches and that each of them will travel to and from the sports park in a single vehicle (with players driven by parents). It is highly likely that there would be multiple players traveling in many of the vehicles, which would reduce the traffic volumes shown in the table. The numbers shown in the table, therefore, represent a worst-case scenario.

Table 2 shows the anticipated traffic volumes for three scenarios: a weekday during non-summer times of the year when there would be two little league games on a given day, a weekday during the summer months when there would be four games per day, and a Saturday when there would be five games per day.

TABLE 2 PROJECT GENERATED TRAFFIC							
Land Use	**AM Peak Hour**			**PM Peak Hour**			**Daily Traffic**
	Total	**In**	**Out**	**Total**	**In**	**Out**	
TRIP GENERATION RATES							
Public Park (trips per acre)	4.50	59%	41%	3.50	55%	45%	34.0
Little League Baseball (trips per player and coach per game)	0	0	0	2	1	1	2
GENERATED TRAFFIC VOLUMES							
Public Park – 4.2 acres	19	11	8	15	8	7	143
Baseball – Weekday Non-Summer (2 games, 15 players & 2 coaches per team = 60 players & 8 coaches per day)	0	0	0	68	34	34	136
Baseball – Weekday Summer (4 games, 15 players & 2 coaches per team = 120 players & 16 coaches per day)	0	0	0	68	34	34	272
Baseball – Saturday (5 games, 15 players & 2 coaches per team = 150 players & 20 coaches per day)	0	0	0	68	34	34	340
TOTAL – Park + Baseball							
Weekday Non-Summer	19	11	8	83	42	41	279
Weekday Summer	19	11	8	83	42	41	415
Saturday	19	11	8	83	42	41	483

NOTE: The trip generation rates for little league baseball are based on the worst-case assumption that each player will be driven to the park in a separate vehicle by parents. The PM peak hour traffic volumes for the baseball games involves two teams arriving and two teams departing during the one-hour period.

Table 2 indicates that the public park (exclusive of the baseball games) would generate an estimated 19 vehicle trips during the morning peak hour (11 inbound and 8 outbound), 15 trips during the afternoon peak hour (8 inbound and 7 outbound), and approximately 143 vehicle trips per day. On weekdays when little league baseball games would occur, the project site would generate an estimated 83 trips during the afternoon peak hour (42 inbound and 41 outbound). This level of site generated traffic is applicable to non-summer and summer times of year as well as Saturdays. The morning peak hour would remain unchanged and would only involve park traffic because little league games would not occur at that time of day. Table 2 indicates that the proposed project would generate 279 daily trips on non-summer weekdays, 415 daily trips on a summer weekday, and 483 daily trips on a Saturday.

It should be noted that the traffic volumes shown in Table 2 do not necessarily introduce new traffic to the overall roadway network but instead represent the traffic that would be re-directed to the proposed park site from other existing parks, because the little league games would most likely be taking place at other locations in the Stanton area. Most of the baseball-related traffic would be

traveling on the roadway network regardless of the status of the proposed project. It has been assumed for the traffic analysis, however, that the additional site-generated traffic would be new traffic on the roadway network.

Impacts on Traffic Volumes

To quantify the increases in traffic volumes on each of the most-directly affected arterial streets resulting from the proposed project, the project generated traffic was geographically distributed onto the street network using directional percentages that are based on the layout of the street network, the existing traffic patterns, and the anticipated geographical distribution of the patrons of the park facilities.

Table 3 shows the existing and projected daily traffic volumes on various segments of Beach Boulevard and Katella Avenue. The table shows the existing traffic volume, the anticipated volume of project generated traffic, the "existing plus project" traffic volume, the projected future traffic volume for the year 2024 (without the project), and the "future with project" traffic volume for each street segment.

TABLE 3
PROJECT IMPACTS ON DAILY TRAFFIC VOLUMES

Street Segment	Existing ADT	Project Traffic	Existing + Project	Future ADT (2024)	Future with Project
Beach Boulevard					
North of Katella Avenue	66,000	104	66,104	66,700	66,804
South of Katella Avenue to Park Exit	66,000	208	66,208	66,700	66,908
South of Park Exit to U-Turn	66,000	415	66,415	66,700	67,115
North of Orangewood Avenue	66,000	104	66,104	66,700	66,804
Katella Avenue					
West of Cedar Street	31,200	104	31,304	31,500	31,604
Cedar Street to Beach Boulevard	31,200	208	31,408	31,500	31,708
East of Beach Boulevard	25,000	104	25,104	31,500	31,604

Table 3 indicates that the increases in daily traffic volumes generated by the proposed park would be negligible compared to the existing and projected traffic volumes on Beach Boulevard and Katella Avenue. The proposed project would not, therefore, result in a significant adverse impact on traffic volumes.

Bicycle and Pedestrian Facilities

The proposed project would generate an increased demand for non-motorized travel as some park patrons and little league participants would travel to and from the project site as pedestrians or on bicycles. The streets in the vicinity of the park site have sidewalks along both sides of the street and the nearby intersections are equipped with painted crosswalks. The signalized intersections have pedestrian push buttons and pedestrian WALK signals. While there are no bike lanes on the nearby streets, little league players could potentially ride their bikes on the sidewalks of these major arterial routes. Nearby bike racks are available at City Hall and the Stanton Branch of the Orange County Library and bike racks would be provided at the project site. So there are multiple features at and near the project site that can accommodate bicycle and pedestrian travel.

Public Transit

With regard to public transit, some park patrons, little league baseball players, and coaches could potentially use the OCTA buses to travel to and/or from the park site. OCTA operates Routes 29,

29A, and 529 on Beach Boulevard and Route 50 on Katella Avenue in the vicinity of the project site. The project's impact on the operation and ridership levels on these bus routes would be negligible.

Conclusions

In summary, the proposed project would not adversely affect traffic conditions on the study area roadway network or the performance of any transit, pedestrian, or bicycle facilities. The project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities and no mitigation measures would be required.

b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?

Less Than Significant Impact. Vehicle delays and levels of service (LOS) have historically been used as the basis for determining the significance of traffic impacts as standard practice in California Environmental Quality Act (CEQA) documents. On September 27, 2013, SB 743 was signed into law, starting a process that fundamentally changed transportation impact analyses as part of CEQA compliance. SB 743 eliminates auto delay, LOS, and other similar measures of vehicular capacity or traffic congestion as the sole basis for determining significant impacts under CEQA. As part of the new CEQA Guidelines, the new criteria "shall promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (Public Resources Code Section 21099(b)(1)). Pursuant to SB 743, the California Natural Resources Agency adopted revisions to the CEQA Guidelines on December 28, 2018, to implement SB 743. CEQA Guidelines Section 15064.3 describes how transportation impacts are to be analyzed after SB 743. Under the new Guidelines, metrics related to "vehicle miles traveled" (VMT) are required beginning July 1, 2020, to evaluate the significance of transportation impacts under CEQA for development projects, land use plans, and transportation infrastructure projects. The State provided an "opt-in period" and did not require lead agencies to apply a VMT metric until July 1, 2020. However, in January 2020, State courts stated that under the Public Resources Code Section 21099, subdivision (b)(2), "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment" under CEQA, except for roadway capacity projects.

As stated in the Orange County "Transportation Implementation Manual" (County of Orange, September 2021) and the "Guidelines for Evaluating Vehicle Miles Traveled Under CEQA" (County of Orange, September 2020), a project that generates 500 or fewer average daily trips (ADT) may be assumed to result in a less than significant transportation impact and can be screened from a CEQA VMT analysis because it falls into the small project category. As the traffic that would be generated by the proposed project is below the VMT threshold of 500 trips per day, it can be screened from any further CEQA VMT analysis and would not result in a significant impact relative to VMT.

In addition, the Orange County guidelines state that the development of public facilities, which includes institutional/government and public service uses, can be screened from a CEQA VMT

analysis. As the proposed sports park project is included in the public facilities category, it can be screened in accordance with the Orange County guidelines. It is concluded, therefore, that the project would have a less than significant VMT impact and no mitigation measures would be required.

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

No Impact. The proposed project would not provide any on- or off-site access or circulation features that would create or increase any design hazards or incompatible uses. Access to the park site for vehicles, bicyclists, and pedestrians would continue to occur via properly designed streets, driveways, sidewalks, and on-site pedestrian pathways and a new pedestrian bridge would be constructed across the Stanton Storm Channel to improve pedestrian access to the sports park. The streets, intersections, driveways, and on-site circulation system are designed to accommodate the anticipated levels of vehicular and pedestrian activity and have historically been accommodating park-related traffic on a daily basis. These facilities would continue to be compatible with the design and operation of a park.

As the proposed project would not result in any adverse changes to the access or circulation features at the project site or on the surrounding streets, there would be no impacts involving increased hazards due to a geometric design feature or incompatible uses.

d) Result in inadequate emergency access?

No Impact. Emergency access will be provided by a gated driveway located at the southeast corner of the sports park site that connects to Ruthann Avenue. In addition, emergency vehicles can access the parking lot on the north side of the project site via Beach Boulevard and Cedar Street. The existing and proposed access and circulation features at the project site would continue to accommodate emergency ingress and egress by fire trucks, police units, and ambulance/paramedic vehicles. The proposed project would not, therefore, result in inadequate emergency access.

Mitigation Measures Applicable to the Proposed Project

No mitigation measures related to transportation would be required of the proposed project.

IV.
SUMMARY OF IMPACTS AND CONCLUSIONS

The key findings and conclusions of the traffic/transportation impact analysis are outlined below.

- The proposed sports park would generate an estimated 19 vehicle trips during the morning peak hour (11 inbound and 8 outbound), 83 trips during the afternoon peak hour (42 inbound and 41 outbound), and 279 to 483 trips per day, depending on the time of year and the days of the week.
- The levels of traffic generated by the project would not result in a significant impact on the roadway network.
- CEQA threshold of significance "a" asks if the proposed project would conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. The analysis indicates that the impact would be less than significant because the proposed project would not adversely affect the performance or safety of any roadway, transit, or non-motorized transportation facilities (pedestrians and bicycles) and would not conflict with any adopted plans, policies, or programs relative to these transportation modes.
- CEQA threshold of significance "b" asks if the proposed project would conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b), which addresses vehicle miles traveled (VMT). The analysis indicates that the impact would be less than significant because the proposed project is a public facility and is classified as a small project because it would generate less than 500 vehicle trips per day. Projects in these categories can be screened from a CEQA VMT analysis according to Orange County guidelines.
- CEQA threshold of significance "c" asks if the proposed project would substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). The analysis indicates that the existing streets, intersections, and driveways and the existing parking lot are designed to accommodate park-related vehicular and pedestrian activity. The proposed sports park would be compatible with the neighborhood and the proposed project would not result in any major hazards for vehicular traffic, pedestrians, or bicyclists. The proposed project would not, therefore, substantially increase hazards due to a geometric design feature or incompatible uses.
- CEQA threshold of significance "d" asks if the proposed project would result in inadequate emergency access. The existing access and circulation features at the park, including the emergency access driveway on Ruthann Avenue, would readily accommodate access for fire trucks, police units, and ambulance/paramedic vehicles. The proposed project would not result in inadequate emergency access.

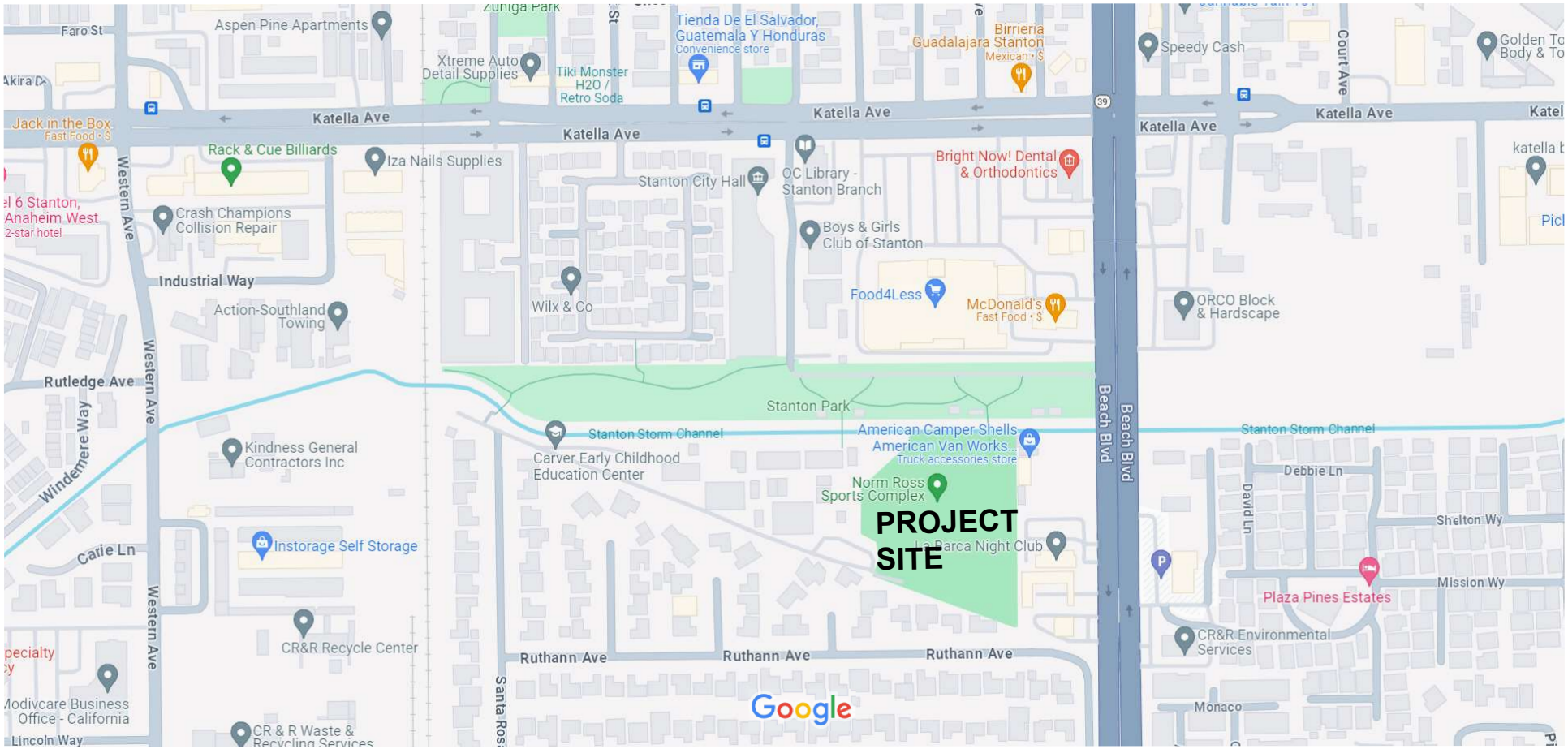

FIGURE 1
LOCATION MAP

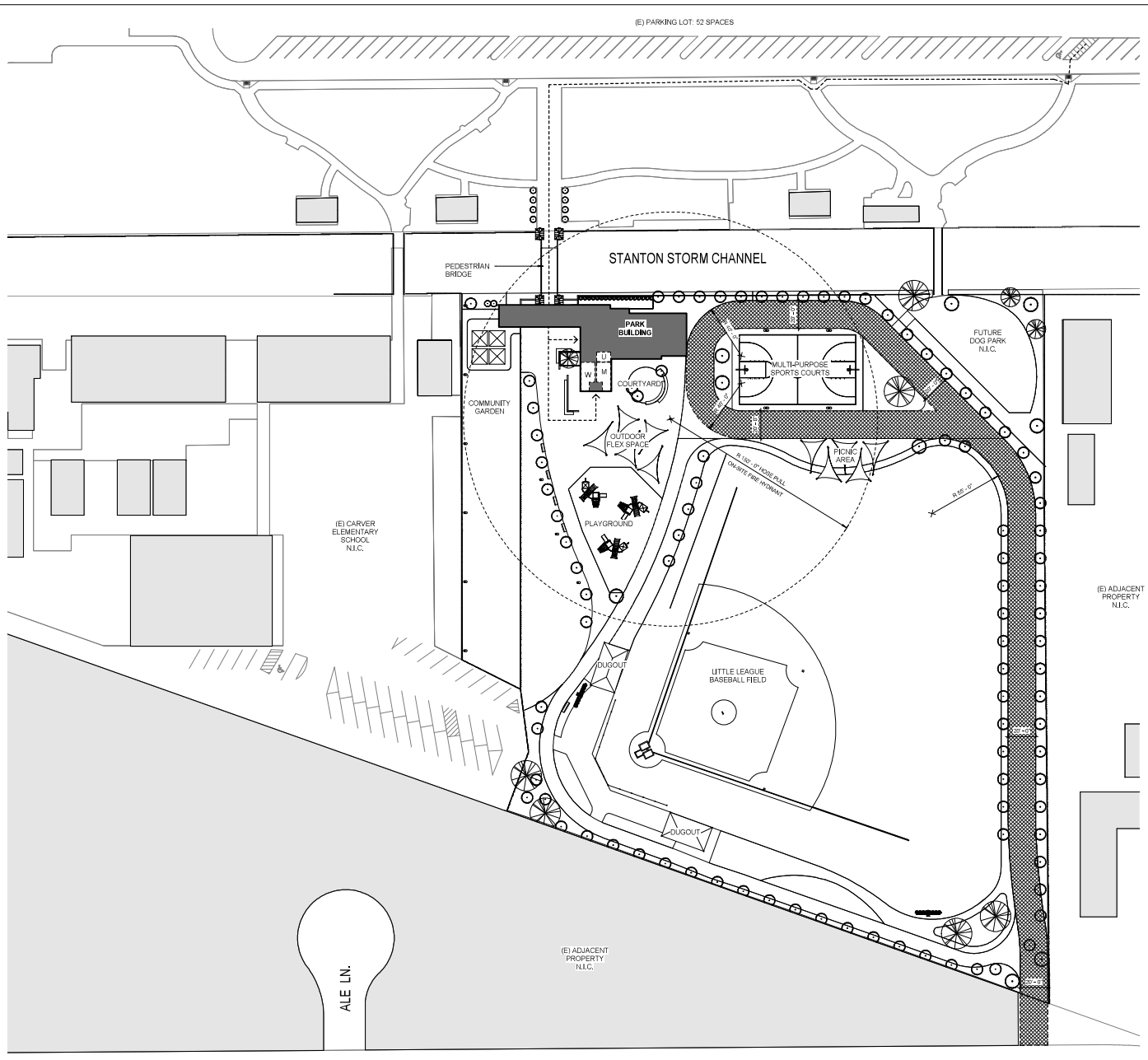

FIGURE 2
SITE PLAN

KEYNOTE	DESCRIPTION

REFERENCE NOTES

- SCOPE OF WORK AREA
- (E) BUILDINGS (N.I.C)
- FIRE LANE ACCESS ROAD PER OCFA GUIDELINE B-01
- (E) FENCE LINE
- MENS' RESTROOM
- WOMENS' RESTROOM
- UNISEX RESTROOM ADULT

SITE LEGEND 1 : 1

1. NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN APPROVED BY DSA.

2. RESTORE ALL IRRIGATION, PLANTING AND GRADES TO ORIGINAL FIELD CONDITIONS, UNO.

3. CONTRACTOR TO CLEAN AND REMOVE ANY AND ALL DEBRIS FROM PERIMETER SLOT DRAINS.

4. CONTRACTOR TO PROTECT EXISTING TRACK DURING CONSTRUCTION.

5. PROTECT IN PLACE (E) FENCING AND TREES, SHRUBS, AND OTHER LANDSCAPING AROUND PERIMETER OF PROPERTY, UNO

6. FIRE LANE IS TO BE MAINTAINED AND KEPT CLEAR AT ALL TIMES.

7. GATES THAT OCCUR ALONG THE ACCESSIBLE PATH OF TRAVEL SHALL COMPLY WITH EXIT DOOR REQUIREMENTS OF THE CALIFORNIA BUILDING CODE (CBC) SECTION 11B-202.4. GATES WILL BE PROVIDED WITH PANIC HARDWARE AND A METAL KICK PLATE AT THE BOTTOM OF THE GATE.

8. DOOR AND GATES SHALL COMPLY WITH 11B-404.2.7 AND 11B-309.4. PROVIDE 5 LBS. OPENING FORCE MAX, UNLATCHING AND 5 LBS. FORCE MAX OPERATING PRESSURE PER CBC 11B-404.2.9 AND CLOSING SPEED SHALL COMPLY WITH SECTION 11B-404.2.8.

THE FORCE FOR PUSHING OR PULLING OPEN A DOOR OR GATE SHALL BE AS FOLLOWS:
1. INTERIOR HINGED DOORS AND GATES: 5 POUNDS MAXIMUM.
2. SLIDING OR FOLDING DOORS: 5 POUNDS MAXIMUM.
3. REQUIRED FIRE DOORS: THE MINIMUM OPENING FORCE ALLOWABLE BY THE APPROPRIATE ADMINISTRATIVE AUTHORITY, NOT TO EXCEED 15 POUNDS.
4. EXTERIOR HINGED DOORS: 5 POUNDS MAXIMUM.

THESE FORCES DO NOT APPLY TO THE FORCE REQUIRED TO RETRACT LATCH BOLTS OR DISENGAGE OTHER DEVICES THAT HOLD THE DOOR OR GATE IN A CLOSED POSITION.

GENERAL NOTES 1 : 1

ACCESSIBLE PATH OF TRAVEL

DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE:
THE POT IDENTIFIED IN THESE CONSTRUCTION DOCUMENTS MEETS THE REQUIREMENTS OF THE CURRENT APPLICABLE CALIFORNIA BUILDING CODE (CBC) ACCESSIBILITY PROVISIONS FOR PATH OF TRAVEL REQUIREMENTS FOR ALTERATIONS, ADDITIONS, AND STRUCTURAL REPAIRS. AS PART OF THE DESIGN OF THIS PROJECT, THE POT WAS EXAMINED AND ANY ELEMENTS, COMPONENTS, OR PORTIONS OF THE POT THAT WERE DETERMINED TO BE NONCOMPLIANT WITH THE CBC HAVE BEEN IDENTIFIED AND THE CORRECTIVE WORK NECESSARY TO BRING THEM INTO COMPLIANCE HAS BEEN INCLUDED WITHIN THE SCOPE OF THIS PROJECT'S WORK THROUGH DETAILS, DRAWINGS, AND SPECIFICATIONS INCORPORATED INTO THESE CONSTRUCTION DOCUMENTS. AND NONCOMPLIANT ELEMENTS, COMPONENTS, OR PORTIONS OF THE POT THAT WILL NOT BE CORRECTED BY THIS PROJECT BASED ON VALUATION THRESHOLD LIMITATIONS OR FINDING OF UNREASONABLE HARDSHIP ARE INDICATED IN THESE CONSTRUCTION DOCUMENTS.

ACCESSIBLE PATH OF TRAVEL AS INDICATED ON PLANS A BARRIER-FREE ACCESS ROUTE WITHOUT ABRUPT LEVEL CHANGES EXCEEDING ½" IF BEVELED AT 1:2 MAXIMUM SLOPE OR VERTICAL LEVEL CHANGES NOT EXCEEDING ¼" MAXIMUM AND AT LEAST 48" IN WIDTH. SURFACE IS STABLE, FIRM, AND SLIP-RESISTANT. CROSS-SLOPE SHALL NOT BE STEEPER THAN 1:48 AND SLOPE IN THE DIRECTION OF TRAVEL SHALL NOT BE STEEPER THAN 1:20. ACCESSIBLE PATH OF TRAVEL SHALL BE MAINTAINED FREE OF OVERHANGING OBSTRUCTIONS TO 80" MINIMUM AND FREE OF OBJECTS PROTRUDING MORE THAN 4" FROM THE WALL ABOVE 27" AND LESS THAN 80" ABOVE THE FLOOR. ARCHITECT SHALL VERIFY THAT THERE ARE NO BARRIERS IN THE PATH OF TRAVEL.

DURING CONSTRUCTION, IF POT ITEMS WITHIN THE SCOPE OF THE PROJECT REPRESENTED AS CBC COMPLIANT ARE FOUND TO BE NONCONFORMING BEYOND REASONABLE CONSTRUCTION TOLERANCES, THE ITEMS SHALL BE BROUGHT INTO COMPLIANCE WITH THE CBC AS A PART OF THIS PROJECT BY MEANS OF A CONSTRUCTION CHANGE DOCUMENT

SITE PLAN | 1" = 30'-0" | 1 | PATH OF TRAVEL NOTES | 1 : 1

PBK

ARCHITECT PBK
COSTA MESA
600 Anton Blvd, Suite 1375
Costa Mesa, CA 92626
949-548-5000 P

NORM ROSS SPORTS PARK RENOVATION

CLIENT LOGO

ARCHITECT

LICENSED ARCHITECT
BRUCE OU
C-34832
10-13-23
STATE OF CALIFORNIA

DISCIPLINE

CLIENT

DATE | PROJECT NUMBER

DRAWING HISTORY

No.	Description	Date

BUILDING NUMBER

SITE PLAN

A1.0

SITE PLAN
A1.0
FOR BLUEBEAM LABELING ONLY

FILE PATH: C:\Users\amascarenas\Documents\Norm Ross Sports Park_Central_Arielle.Mascarenas.rvt
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Appendix

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