

California Environmental Quality Act

INITIAL STUDY

FEBRUARY 2020

2020 Walnut Industrial Park

Lead Agency:



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Appendix B	Cultural and Paleontological Resources Research Materials
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SECTION A. ENVIRONMENTAL CHECKLIST FORM

1. **Project Title:** 2020 Walnut Industrial Park
2. **Lead Agency Name and Address:** City of Signal Hill
2175 Cherry Avenue
Signal Hill, CA 90755
3. **Contact Person and Phone Number:** Colleen Doan
Community Development Director
(562) 989-7344
CDoan@cityofsignalhill.org
4. **Project Location:** The project is located on the west and east sides of Walnut Avenue, south of Hill Street and north of Jenni Rivera Park, 20th Street, and Alamitos Avenue. Gundry Avenue borders the site on the west and Gaviota Avenue borders the site on the east. For reference purposes, the site address is 2020 Walnut Avenue. The western parcel will be referred to throughout this Initial Study as “Site 1” and the eastern parcel will be referred to as “Site 2.” A regional location map and a vicinity map are provided in *Figures 1 and 2*.
5. **Project Sponsor’s Name and Address:** Xebec Realty
3010 Old Ranch Parkway, Suite 470
Seal Beach, CA 90740
6. **General Plan Designation:** The western parcel is designated Light Industrial and the eastern parcel is designated Commercial Office.
7. **Zoning:** The western parcel is zoned Light Industrial and the eastern parcel is zoned Commercial Office.
8. **Description of Project:**

Development of nine 1-story and 1-story-with-mezzanine concrete tilt-up buildings, ranging in height from 30 feet six inches to 34 feet, comprising 151,075 square feet of total building area, for occupancy by businesses engaged in a variety of light industrial activities permitted in the City’s Light Industrial Zone, such as light manufacturing, warehousing and assembly of products for consumers and businesses, limited sales of home furnishings and other products, and research facilities. Each building will be designed to meet the specifications of the occupants, who will lease or own their space. Up to 22 percent of the space may be allocated for office activities directly related to the primary business. The range of permitted and conditionally permitted uses would be limited to those identified in Section 20.20.020 of the Signal Hill Municipal Code, provided that there is sufficient parking in accordance with Section 20.70.030 of the Municipal Code.

The proposed development plan also includes a variety of site improvements, such as surface-level parking for 262 vehicles, 77,527 square feet of landscaping, and miscellaneous underground water, sewer, storm drainage, electricity, and communications lines. Preferential parking areas for carpool/vanpool vehicles and secure bicycle parking would also be provided, in accordance with Section 20.70.075 of the Municipal Code. Vehicular access would be via



driveways to be located along Gundry Avenue, Walnut Avenue, and Alamitos Avenue. 21st Street, currently a two-way/two-lane public street extending between Walnut Avenue and Gundry Avenue, would be vacated and incorporated into the project site plan as a two-way/two-lane private drive aisle for parking. The project would dedicate private land for expanded public street right-of-way at the southern terminus of Gundry Avenue (to create a cul-de-sac there), along both frontages of Walnut Avenue, and for 20th Street between Alamitos Avenue and Walnut Avenue. The project also includes a soil vapor extraction system to capture and remove soil vapor gas resulting from contamination by a former oil refinery that operated on the site between the late 1920s and the mid-1990s. A sub-slab vapor intrusion barrier will be installed within the building foundations. Further details concerning the site contamination, environmental and health hazards, and proposed remedial measures are included in Section D.IX, Hazards and Hazardous Materials.

Details of the proposed development plan are provided in *Table 1*, below.

Table 1 Project Components

SITE 1 - LI ZONING						SF	ACRES
Gross Site Area						267,020	6.13
Walnut Avenue Street Dedication						8,242	0.19
TOTAL NET SITE AREA						258,778	5.94
BUILDING AREA		BUILDING 1A	BUILDING 1B	BUILDING 1C	BUILDING 1D	BUILDING 1E	TOTAL
Ground Floor Office		2,000	3,000	2,000	6,000	3,000	16,000
Warehouse		14,310	11,460	15,530	19,660	24,530	85,490
Total Building Footprint		16,310	14,460	17,530	25,660	27,530	101,490
Mezzanine		2,000	3,000	2,000	0	0	7,000
TOTAL BUILDING AREA		18,310	17,460	19,530	25,660	27,530	108,490
COVERAGE							39.2%
FAR							41.9%
PARKING							
Office	1/250	16.0	24.0	16.0	24.0	12.0	92.0
Industrial	1/1000	14.3	11.5	15.5	19.7	24.5	85.5
PARKING REQUIRED		31.0	36.0	32.0	44.0	37.0	178.0
PARKING PROVIDED	1.6/1000	31	37	33	46	39	186.0
HANDICAP STALL		1	1	1	3	1	7.0
CA/CP STALL (10 EV STALLS INCLUDED)		3	4	4	4	4	19.0
TRASH ENCLOSURE							
Required (5s.f./1000s.f.)		92	87	98	128	138	542
Provided							720



SITE 2 - CO ZONING - "ZOA CHANGE TO LI"						SF	ACRES
Gross Site Area						111,494	2.56
Walnut Avenue Street Dedication						1,903	0.04
20th Street Dedication						3,627	
TOTAL NET SITE AREA						105,964	2.43
BUILDING AREA			BUILDING 2A	BUILDING 2B	BUILDING 2C	BUILDING 2D	TOTAL
Ground Floor Office			1,000	1,000	2,000	2,000	6,000
Warehouse			5,650	7,430	10,475	8,030	31,585
Total Building Footprint			6,650	8,430	12,475	10,030	37,585
Mezzanine			1,000	1,000	1,000	2,000	5,000
Total Building Area			7,650	9,430	13,475	12,030	42,585
COVERAGE							33.7%
FAR							38.2%
PARKING							
Office	1/250		8.0	8.0	12.0	16.0	44.0
Industrial	1/1000		5.7	7.4	10.5	8.0	31.6
PARKING REQUIRED			13.7	15.4	22.5	24.0	75.6
PARKING PROVIDED	1.8/1000		14	15	23	24	76.0
HANDICAP STALL			2	2	2	3	9.0
CA/CP STALL (5 EV STALLS INCLUDED)			2	2	2	2	8.0
TRASH ENCLOSURE							
Required (5s.f./1000s.f.)			38	47	67	60	213
Provided							360
TOTAL - SITES 1 and 2						SF	ACRES
Gross Site Area						378,514	8.69
Walnut Ave. & 20th Street Dedication						13,772	0.32
TOTAL NET SITE AREA						364,742	8.37
BUILDING FOOTPRINT							139,075
MEZZ / 2ND FLR							12,000
TOTAL BUILDING AREA							151,075
COVERAGE							38.1%
FAR							41.4%
SITE 1 LANDSCAPE						47,503	18.4%



SITE 2 LANDSCAPE						30,024	28.3%
TOTAL LANDSCAPE PROVIDED						77,527	21.3%
SITE 1 PARKING DRIVE AREA						100,080	
SITE 1 LANDSCAPED SETBACK AREA						25,086	
SITE 1 PARKING LANDSCAPE REQUIRED (5%)						6,258	5.0%
SITE 1 PARKING LANDSCAPE PROVIDED						22,417	17.9%
SITE 2 PARKING DRIVE AREA						35,179	
SITE 2 LANDSCAPED SETBACK AREA						15,039	
SITE 2 PARKING LANDSCAPE REQUIRED (5%)						2,511	5.0%
SITE 2 PARKING LANDSCAPE PROVIDED						14,985	29.8%

Construction Program and Projected Full Occupancy Year

The project would be built in a continuous sequence until all buildings and site improvements are complete, estimated to require approximately 18-19 months from start to finish. Grading would include approximately 35,756 cubic yards of cut and 68,877 cubic yards of fill, with approximately 33,121 cubic yards of imported soil material. Additional earthwork would involve removal and transport of contaminated soils from the prior oil refinery operations. This results in an estimated total of 8,551 cy material to be exported from the project site and an estimated total of 41,672 cy of clean fill material to be transported onto the project site. Water, sewer, storm drainage, and communications lines would be installed underground and would connect to existing distribution facilities in the adjacent streets. Building sales, leasing and occupancies would occur in accordance with market demand. For the purposes of this Initial Study, it is assumed that all buildings will be fully occupied and operational by late 2021. The estimated durations of the construction phases are shown in *Table 2*, as follows:

Table 2 Construction Phasing/Durations

Grading	5-6 months
Building construction	12 months
Paving, painting, and final site improvements such as landscaping, fencing, and utilities connections	1 month
Total Construction Period	18-19 months



Required City Approvals

The proposed project will require approval of the following discretionary actions by the City of Signal Hill:

- A. *General Plan Amendment*: To amend the City's General Plan Land Use Element to redesignate Site 2 (eastern parcel) from Commercial Office to Light Industrial.
- B. *Zone Change*: To amend the City's Zoning Map to classify Site 2 (eastern parcel) from Commercial Office to Light Industrial.
- C. *Tentative Tract Map 80302*: To merge and re-subdivide existing parcels to create condominium ownership rights for each of the nine buildings, plus commonly owned parcels for shared site improvements to be maintained by an association of the future property owners. This map will also vacate the existing 21st Street right-of-way, dedicate 5 feet of additional public right-of-way along both Walnut Avenue frontages, and dedicate public right-of-way for the existing segment of 20th Street. See *Figure 3, Tentative Tract Map*, which illustrates features of the proposed condominium subdivision.
- D. *Site Plan and Design Review*: The purpose of site plan and design review process is to ensure the proposed project is in conformance with the provisions of the Municipal Code and to guide City departments in the issuance of permits. *Figure 4, Site Plan*, illustrates the proposed development plan and the full array of proposed site improvements. *Figure 5, Building Elevations*, illustrates the proposed architectural features, building heights, and exterior finishes for the nine buildings. *Figure 6, Grading and Utilities Plan*, illustrates the proposed grading plan and utility line locations.

9. Surrounding Land Uses and Setting:

The project site consists of 21 parcels of land, designated by the Los Angeles County Assessor's Parcel Numbers listed in *Table 3*.

Table 3 Existing Assessor's Parcel Numbers

7210-043-002	7210-043-014	7210-043-022
7210-043-003	7210-043-016	7210-043-023
7210-043-004	7210-043-017	7210-043-024
7210-043-010	7210-043-018	7210-043-025
7210-043-011	7210-043-019	7210-043-026
7210-043-012	7210-043-020	7215-009-003
7210-043-013	7210-043-021	7215-009-006

The proposed development area would occur on 5.94 acres on the western side of Walnut Avenue, referred to as Site 1, and on 2.43 acres on the eastern side of Walnut Avenue, referred to as Site 2. All of this land was formerly developed as an oil refinery operated originally by MacMillan Ring-Free Oil Co. and later by Chemoil Corporation, between 1922 and 1994. All refinery improvements were removed by 1997, when efforts were initiated to characterize soil,



groundwater, and soil vapor contamination from the former refinery. The southerly sloping site has remained vacant since the oil refinery was demolished. Today, the project site consists mostly of bare soil, with patches of ruderal vegetation, a few scattered trees and other vegetation, covered and uncovered small soil piles, plastic and metal storage containers, temporary power poles, plus plastic pipelines, monitoring devices, and a trailer-mounted temporary treatment unit comprising a temporary soil vapor extraction system. There are also several groundwater monitoring and soil vapor extraction wells found on-site.

Chain-link fencing surrounds the perimeters of both sites. Curb, gutter, and sidewalks are found along both Walnut Avenue frontages, along the 20th Street frontage, along the Gaviota Avenue frontage, and along the Alamitos Avenue frontage. Curb and gutter, but no sidewalk, is along the Gundry Avenue frontage. Overhead utility poles and lines are found along all street frontages, except for 20th Street and Alamitos Avenue. Miscellaneous street trees line the parkways next to sidewalks on all frontages containing a sidewalk. *Figure 7* is an aerial view of the site and surroundings. An orientation map identifying locations of photographs taken of existing views of and around the project is provided in *Figure 8*. Photographs of existing site conditions and surroundings are provided in *Figures 9 and 10*.

Surrounding land uses are described in *Table 4*.

Table 4 Surrounding Land Uses

Site 1	Site 2
North: Recently developed apartment complex	North: American University of Health Sciences office complex
South: Jenni Rivera linear park (within the City of Long Beach), with a mixture of single- and multi-family residences farther south, along Wesley Avenue	South: Los Angeles County Sanitation Districts pump station and school district bus facility
East: Walnut Avenue, project Site 2 and a two-three story office complex housing the American University of Health Sciences	East: Gaviota Avenue, Sea Breeze Manor senior care facility, apartment building and single family residences
West: Gundry Avenue and a mix of low-scale light industrial businesses	West: Walnut Avenue and project Site 1

10. Other Public Agencies Whose Approval is Required:

Los Angeles Regional Water Quality Control Board:

- NPDES General Construction Permit
- Soil Vapor Mitigation Plan and Soil Reuse Plans

11. Have California Native American tribes traditionally and culturally affiliated with the project are 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.?

Correspondence was sent to the Gabrieleño Band of Mission Indians on March 15, 2019. Consultation was not requested. Further information concerning the consultation is provided in Section D.XVIII, Tribal Cultural Resources.

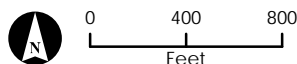
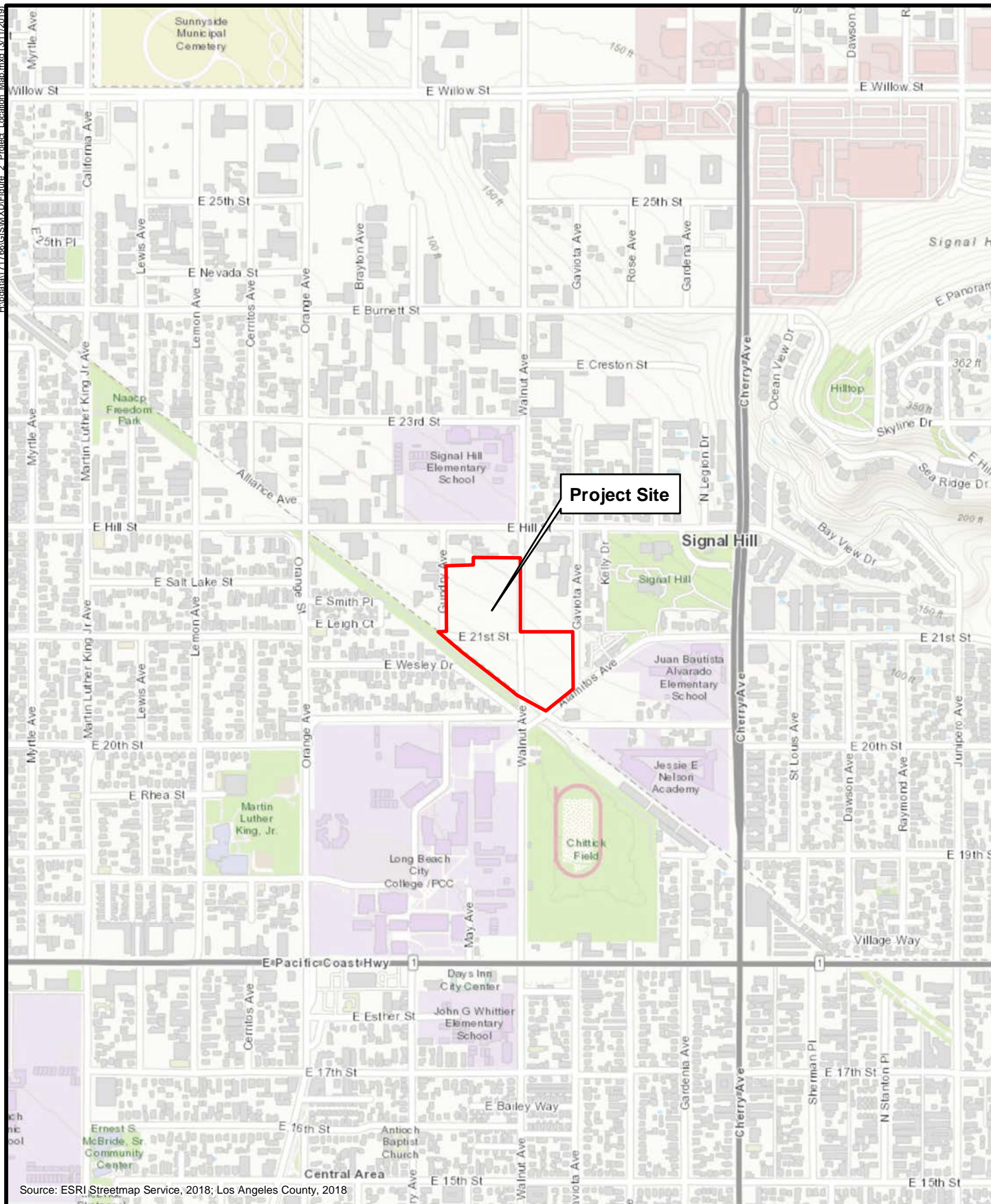
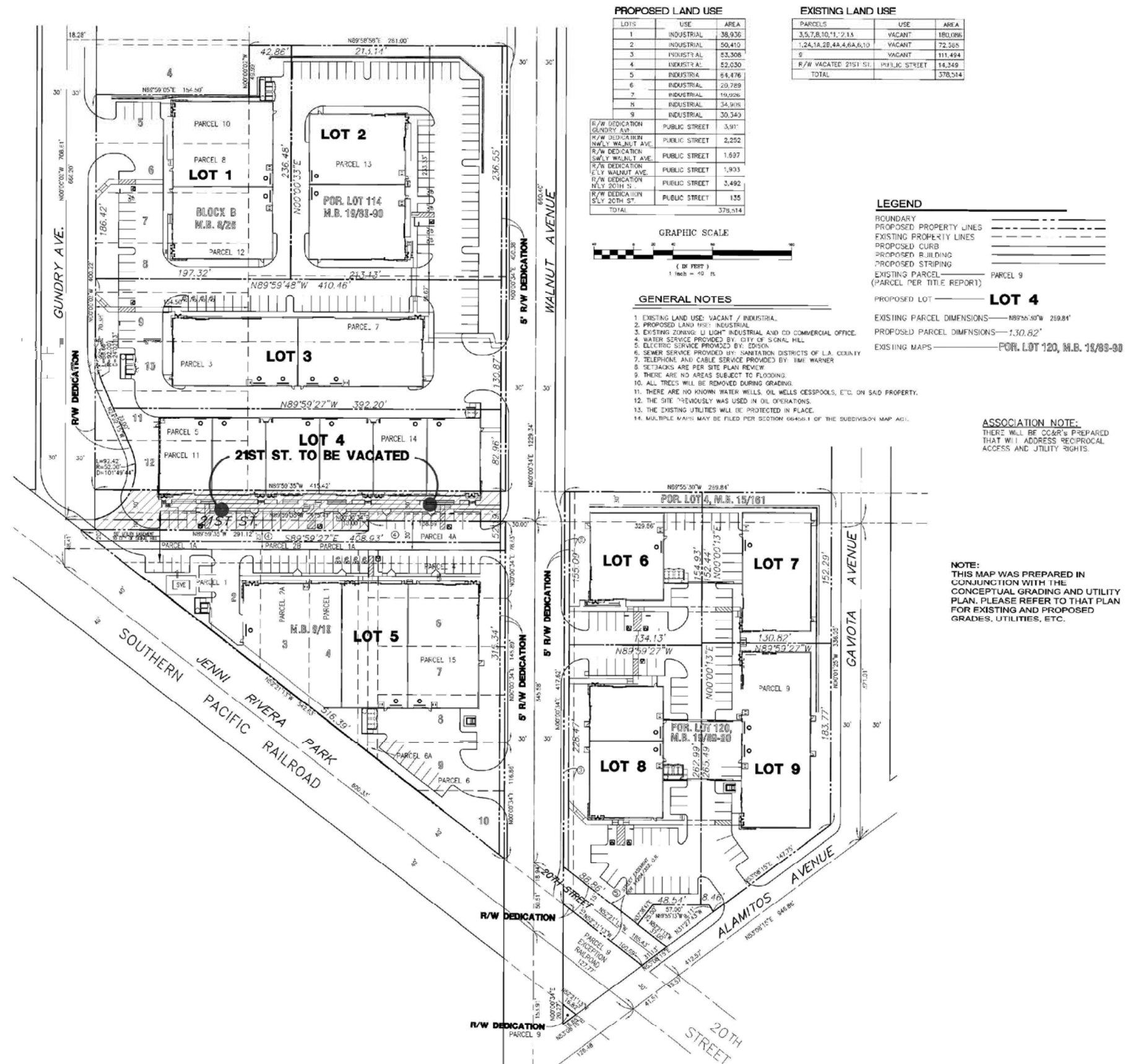
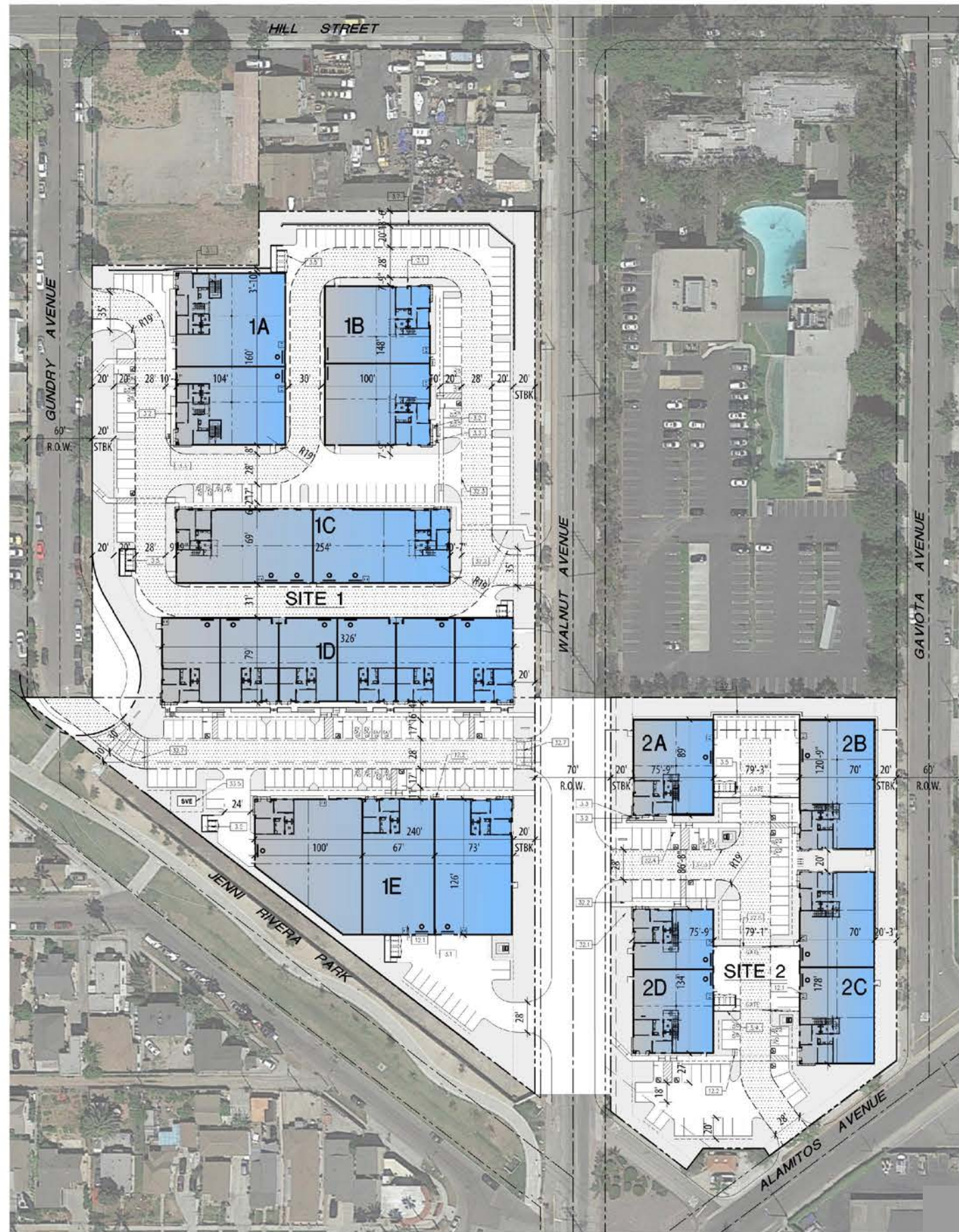


FIGURE 2
Project Vicinity Map

3/12/2019 J:\H:\data\171766\GIS\MapX\Figure 3 TentativeTractMap.mxd



3/12/2019 J:\H\p\p\p\171766\GIS\MapXFigure4_SitePlan.mxd



SITE INFORMATION

APN:

REFER TO CIVIL DRAWINGS

LAND USE / ZONING:

EXISTING/PROPOSED ZONING & GENERAL PLAN:

SITE 1: LI - LIGHT INDUSTRIAL

SITE 2: CO - COMMERCIAL OFFICE

CODE ANALYSIS:

2016 IBC CODE

BUILDING OCCUPANCY: B, S-1

CONSTRUCTION TYPE: II-B

FIRE SPRINKLERS (AUTOMATIC): YES

STORIES: 1

ZONING ANALYSIS:

SETBACKS (THE PRESERVE SP)

FRONT: 20' MINIMUM

REAR: 0'

INTERIOR: 0'

STREET: 20'

MAX. COVERAGE/FAR: LIGHT INDUSTRIAL 45% FAR

MIN. PARKING LOT LANDSCAPE COVERAGE: 5%

MAX. BLDG. HEIGHT: 90' 8" STORIES

PARKING/LOADING:

STANDARD STALL: 9'x20'

PARALLEL STALL: 10'x22'

MIN. AISLE: 24'

MIN. STAKING DISTANCE FROM

RIGHT-OF-WAY: 20'

PARKING/DRIVE TO BUILDING: 5'

PARKING/DRIVE TO OFFICE: 10'

KEYNOTES

1.0 GENERAL

- 1.1 PROPERTY LINE / R.O.W. - REFER TO CIVIL DRAWINGS
- 1.2 EASEMENT - REFER TO CIVIL DRAWINGS
- 1.3 STANDARD PARKING STALL(S) - TYP.
- 1.4 ADA-ACCESSIBLE PARKING STALL(S)
- 1.5 CLEAN AIR / VAN POOL / EV PARKING STALL(S) PER CALGREEN 5.106.5.2
- 1.6 NOT USED
- 1.7 2-WAY DRIVE AISLE: 24' MIN.
- 1.8 FIRE DEPT. ACCESS DRIVE: 30' MIN.
- 1.9 STREET DEDICATION.

3.0 CONCRETE

- 3.1 TILT-UP CONCRETE BUILDING WALL
- 3.2 ACCESSIBLE CONCRETE RAMP
- 3.3 CONCRETE STAIR W/ HANDRAIL
- 3.4 TILT-UP CONCRETE SCREEN WALL, PTD.
- 3.5 TILT-UP CONCRETE TRASH ENCLOSURE, 6' TALL TYP.
- 3.6 NOT USED
- 3.7 CONCRETE RETAINING WALL - SEE CIVIL

5.0 METAL FABRICATIONS

- 5.1 STEEL PIPE ROLLER, REFER TO 1/AD.2

12.0 FURNISHINGS

- 12.1 BICYCLE RACK PER CAL GREEN, LONG-TERM 5% OF EMPLOYEE PARKING - REFER TO TABULATIONS
- 12.2 BICYCLE RACK PER CAL GREEN, SHORT-TERM 5% OF VISITOR PARKING - REFER TO TABULATIONS
- 12.3 PROJECT MONUMENT SIGN

32.0 EXTERIOR IMPROVEMENT - REFER TO CIVIL AND LANDSCAPE U.N.O.

- 32.1 LANDSCAPE PLANTING AREA
- 32.2 CONCRETE WALKWAY
- 32.3 CONCRETE CURB, TYP.
- 32.4 PRECAST CONCRETE WHEEL STOP
- 32.5 VERTICAL PLANTING
- 32.6 CONCRETE COMMERCIAL DRIVEWAY
- 32.7 DECORATIVE CONCRETE
- 32.8 WROUGHT IRON GATE W/ MOTOR & KNOX PADLOCK - 8' TALL

33.0 UTILITIES - REFER TO CIVIL AND ELECTRICAL

- 33.1 BIO-SWALE
- 33.2 ELECTRICAL TRANSFORMER
- 33.3 (E) POWER POLE
- 33.4 (C) FIRE HYDRANT
- 33.5 (SVE) SOIL VAPOR EVAPORATION SYSTEM

GENERAL NOTES

1. GUARDS SHALL BE LOCATED ALONG OPEN SIDE OF WALKING SURFACES, STAIRS, RAMP AND LANDINGS THAT ARE LOCATED MORE THAN 30 INCHES MEASURED VERTICALLY TO THE FLOOR OR GRADE BELOW AT ANY POINT WITHIN 36 INCHES HORIZONTALLY TO THE EDGE OF THE OPEN SIDE. GUARDS ARE NOT REQUIRED ON THE LOADING SIDE OF LOADING DOCKS (CBC 107.3.2)
2. THE RUNNING SLOPE OF WALKING SURFACE SHALL NOT BE STEEPER THAN 1:20 (5%), THE CROSS SLOPE OF WALKING SURFACE SHALL NOT BE STEEPER THAN 1:48 (2.083%)
3. THE CLEAR WIDTH FOR SIDEWALKS AND WALKS SHALL BE 48 INCHES MINIMUM.
4. THE WASTE STORAGE AREA SHALL BE GRADED SO THAT STORAGE CONTAINERS REMAIN AT REST WITHOUT AUXILIARY RESTRAINING DEVICES.

SITE PLAN - LEGEND

- ACCESSIBLE PATH OF TRAVEL - 4' WIDE MINIMUM - 1:20 MAX RUNNING SLOPE (U.N.O.), AND 1:48 MAX CROSS SLOPE
- ACCESSIBLE PARKING STALL(S), TYP.
- PARKING STALL MARKING PER CALGREEN CLEAN AIR/VANPOOL/EV, TYP.
- LANDSCAPE AREA, REFER TO LANDSCAPE DRAWINGS
- FIRE LANE - PER FIRE DEPARTMENT REQUIREMENTS
- GRADE LEVEL DOOR 12' X 14'

SCHEME 10.1-Modified Site Plan With Cul-de-Sac

SITE 1 - LI ZONING	SF	ACRES
Gross Site Area	267,320	6.13
Walnut Avenue Street Dedication	8,242	0.19
TOTAL NET SITE AREA	259,078	5.94

BUILDING AREA	BUILDING 1A	BUILDING 1B	BUILDING 1C	BUILDING 1D	BUILDING 1E	TOTAL
Ground Floor Office	2,000	3,000	2,000	6,000	3,000	16,000
Warehouse	14,310	11,460	15,530	10,660	24,530	85,490
Total Building Footprint	16,310	14,460	17,530	25,660	27,530	101,490
Mezzanine	2,000	3,000	2,000	0	7,000	14,000
Total Building Area	18,310	17,460	19,530	25,660	34,530	115,490

COVERAGE	39.2%
FAR	41.9%

PARKING	Office	Warehouse	Office	Warehouse	Office	Warehouse	Office	Warehouse	Office	Warehouse
Office	1,250	16.0	24.0	18.0	24.0	12.0	92.0			
Industrial	1,100	14.3	11.5	15.5	19.7	24.5	85.5			
PARKING REQUIRED		31.0	36.0	32.0	44.0	37.0	178.0			
PARKING PROVIDED	1.9/1000	32	37	33	46	36	184.0			
HANDICAP STALL		1	1	1	3	1	7.0			
CACP STALL (10 EV STALLS INCLUDED)		3	4	4	4	4	19.0			

TRASH ENCLOSURE										
Required (55 f/1000s.f.)	92	67	98	128	138	542				
Provided						720				

SITE 2 - CO ZONING - "ZDACHANGE TO LI"	SF	ACRES
Gross Site Area	111,424	2.56
Walnut Avenue Street Dedication	1,903	0.04
20th Street Dedication	3,627	
TOTAL NET SITE AREA	105,964	2.43

BUILDING AREA	BUILDING 2A	BUILDING 2B	BUILDING 2C	BUILDING 2D	TOTAL
Ground Floor Office	1,000	1,000	2,000	2,000	6,000
Warehouse	5,650	7,430	10,475	8,030	31,585
Total Building Footprint	6,650	8,430	12,475	10,030	37,585
Mezzanine	1,000	1,000	1,000	2,000	5,000
Total Building Area	7,650	9,430	13,475	12,030	42,585

COVERAGE	33.7%
FAR	38.2%

PARKING	Office	Warehouse	Office	Warehouse	Office	Warehouse	Office	Warehouse	Office	Warehouse
Office	1,250	8.0	8.0	12.0	10.0	44.0				
Industrial	1,100	5.7	7.4	10.5	8.0	31.6				
PARKING REQUIRED		13.7	15.4	22.5	24.0	75.6				
PARKING PROVIDED	1.9/1000	14	15	23	24	79.0				
HANDICAP STALL		2	2	2	2	9.0				
CACP STALL (5 EV STALLS INCLUDED)		2	2	2	2	8.0				

TRASH ENCLOSURE										
Required (55 f/1000s.f.)	38	47	67	60	213					
Provided					360					

TOTAL - SITES 1 and 2	SF	ACRES
GROSS SITE AREA	378,744	8.69
WALNUT AVE. & 20TH STREET DEDICATION	13,772	0.32
TOTAL NET SITE AREA	364,972	8.37

BUILDING FOOTPRINT	139,075
MEZZ./2ND FLR	12,000
TOTAL BUILDING AREA	151,075

COVERAGE	
FAR	

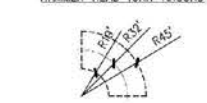
LANDSCAPE AREA - SITE 1		
OVERALL LANDSCAPE AREA		
LANDSCAPING WITHIN PARKING AND DRIVES, EXCLUDING REQ.		

LANDSCAPE AREA - SITE 2		
OVERALL LANDSCAPE AREA	30,024	28.3%
LANDSCAPING WITHIN PARKING AND DRIVES, EXCLUDING REQ. SETBACKS	14,085	14.1%

COUNTY OF LOS ANGELES FIRE DEPARTMENT

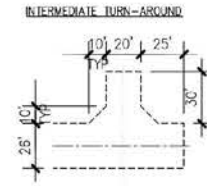
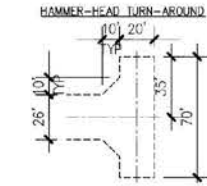
HAMMER-HEAD TURN-AROUND

PRIVATE STREET (CUL-DE-SAC)

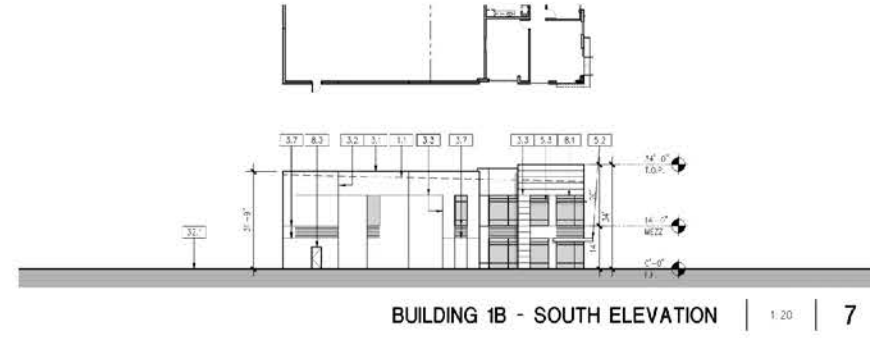
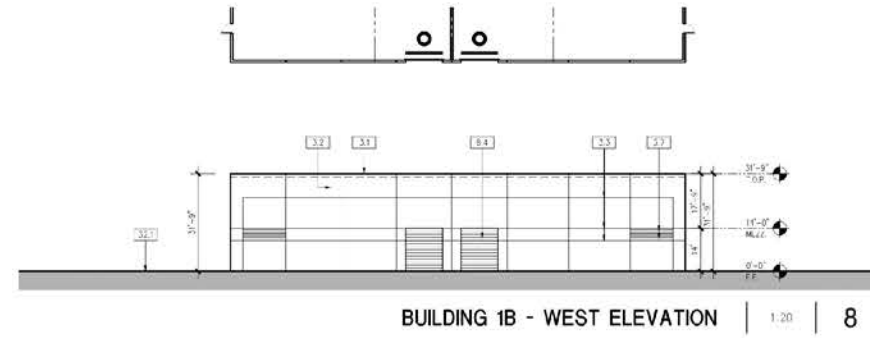
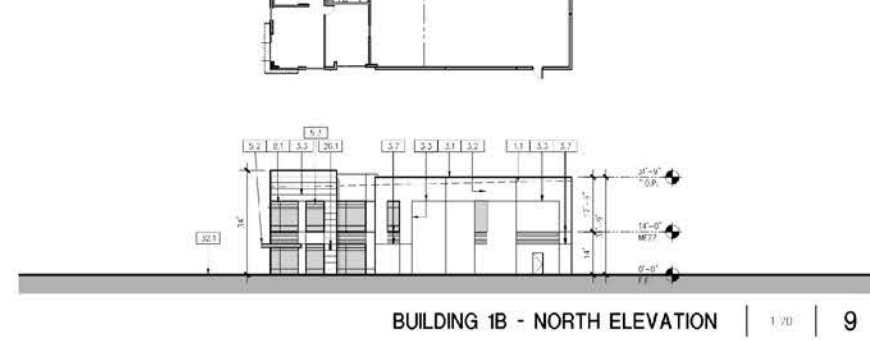
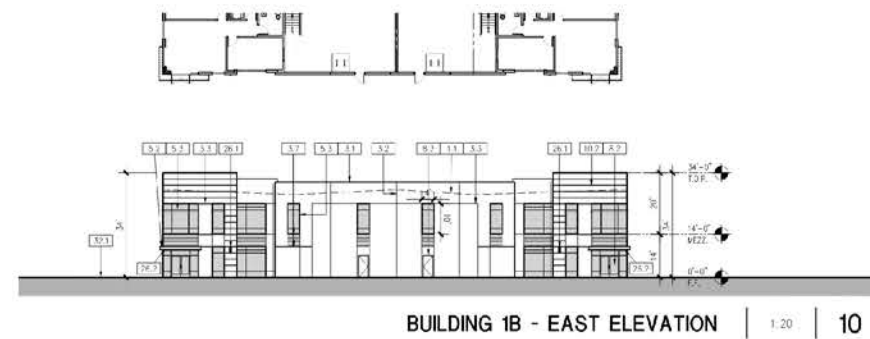
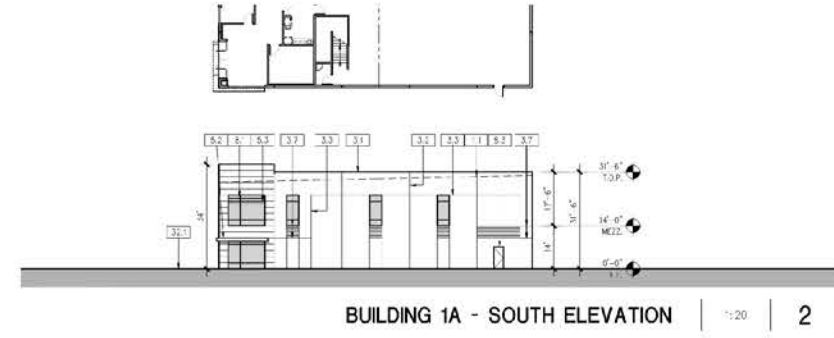
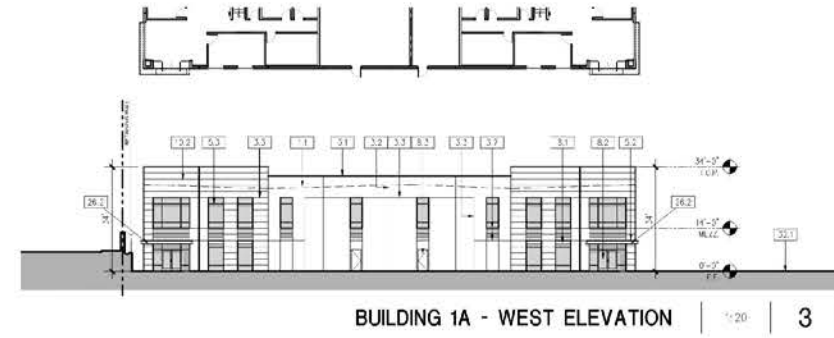
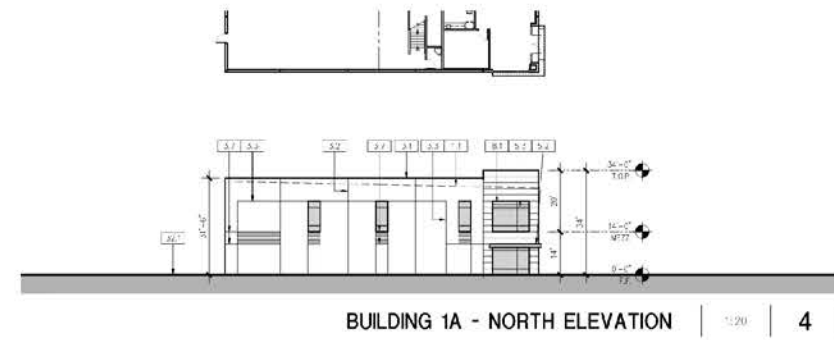
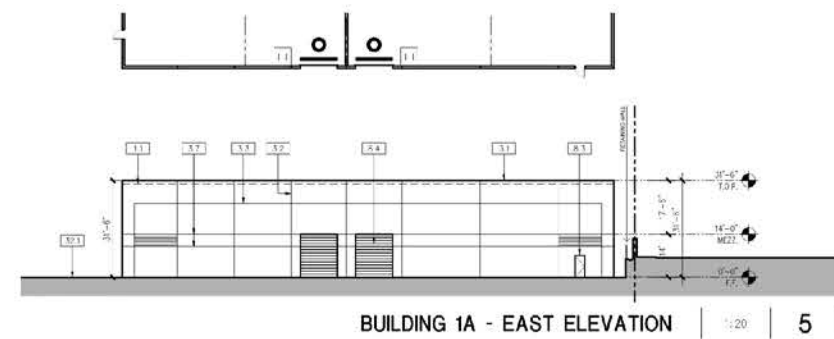


HAMMER-HEAD TURN-AROUND

INTERMEDIATE TURN-AROUND



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KEYNOTES

- 1.0 GENERAL
 - 1.1 LINE OF ROOF BEYOND
- 3.0 CONCRETE
 - 3.1 TILT-UP CONCRETE WALL PANEL (PAINTED, ALL EXTERIOR SURFACES)
 - 3.2 PANEL JOINT
 - 3.3 2" REVEAL. REVEAL COLOR TO MATCH ADJACENT FIELD COLOR.
 - 3.4 TILT-UP CONCRETE SCREEN WALL PANEL (PAINTED ALL SIDES)
 - 3.5 CONCRETE STAIR, LANDING, & METAL PIPE RAILING
 - 3.6 CONCRETE PARAPET RETURN
 - 3.7 3/4" "V" GROOVE REVEAL
 - 3.8 3/4" RECESS ON CONCRETE WALL PANEL (PAINTED TO MATCH WALL)
- 5.0 METALS
 - 5.1 EXTERIOR METAL DOWNSPOUT WITH ROOF AND OVERFLOW SCUPPER. ROOF DRAIN TO MANIFOLD TO STORM DRAIN, PAINTED TO MATCH ADJACENT WALL
 - 5.2 METAL CANOPY
 - 5.3 ACCENT MULLION
- 8.0 OPENINGS
 - 8.1 EXTRUDED ALUMINUM AND GLASS STOREFRONT, DUAL GLAZE
 - 8.2 ALUMINUM AND GLASS ENTRY DOOR - REFER TO DOOR SCHEDULE
 - 8.3 HOLLOW METAL MAN DOOR, PAINTED
 - 8.4 12"W x 14"H OVERHEAD SECTIONAL GRADE DOOR, PAINTED
 - 8.6 METAL WALL LOUVRE - PAINT TO MATCH BLDG.
- 10.0 SPECIALTIES
 - 10.1 STREET ADDRESS - SIZE AS REQUIRED BY GOVERNING AGENCY BUT NOT LESS THAN 12"
 - 10.2 POSSIBLE LOCATION OF BUILDING / TENANT SIGNAGE (N.I.C.)
- 11.0 EQUIPMENT
 - 11.1 DOCK BUMPERS - COORDINATE W/ MANUFACTURER & STRUCTURAL DRAWINGS
- 22.0 PLUMBING
 - 22.1 INTERNAL ROOF DRAIN W/ OVERFLOW DRAIN TYP. AT ENTRY AND STREET SIDE ELEVATION (NOT SHOWN)
- 26.0 ELECTRICAL
 - 26.1 EXTERIOR LIGHTING FIXTURE
 - 26.2 DOWN LIGHT AT CANOPY
- 32.0 EXTERIOR IMPROVEMENT
 - 32.1 PAVING OR FINISH GRAI

GENERAL NOTES

- 1. MECHANICAL ROOF EQUIPMENT TO BE SCREENED FROM VIEW.
- 2. ALL PAINT COLOR CHANGES TO OCCUR AT INSIDE CORNERS AND REVEAL LINES UNLESS NOTED OTHERWISE. REVEAL COLOR TO MATCH THE ADJACENT FIELD COLOR.
- 3. PROVIDE 20 FEET WIDE X HEIGHT OF THE BUILDING MOCK-UP. LOCATION TO BE APPROVED BY ARCHITECT. PROVIDE ONE MOCK-UP FOR SPECIFIED COLOR, IF THERE ARE NO SUBSTITUTION. PROVIDE UP TO THREE (3) MOCK UP AS REQUIRED BY ARCHITECT IF SPECIFIED PAINT IS SUBSTITUTED. PROVIDE MOCK-UP TWO WEEKS PRIOR TO BUILDING PAINTING TO ALLOW TIME FOR ANY CHANGES.
- 4. ALL PAINT, STAIN, SANDBLAST, ETC. FINISHES AND JOINTS/REVEALS SHOWN IN ELEVATION VIEW SHALL RETURN TO THE NEAREST INSIDE CORNER OR INTO WINDOW JAMBS.
- 5. ALL WALL PAINT FINISHES ARE TO BE FLAT, METAL PAINT TO BE SEMI-GLOSS UNLESS NOTED OTHERWISE.
- 6. BACK SIDE OF PARAPETS TO HAVE SMOOTH FINISH AND BE PAINTED WITH ELASTOMERIC PAINT.
- 7. T.O.P. = TOP OF PARAPET ELEVATION
- 8. F.F. = FINISH FLOOR ELEVATION
- 9. STOREFRONT CONSTRUCTION: GLASS, METAL ATTACHMENTS, AND LINTELS SHALL BE DESIGNED TO RESIST 90 MPH EXPOSURE "C" WINDS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION.



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KEYNOTES

- 1.0 GENERAL
 - 1.1 LINE OF ROOF BEYOND
- 3.0 CONCRETE
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KEYNOTES

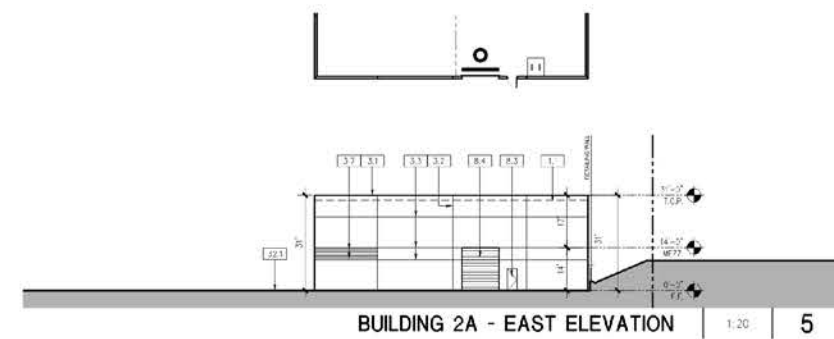
- 1.0 GENERAL
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GENERAL NOTES

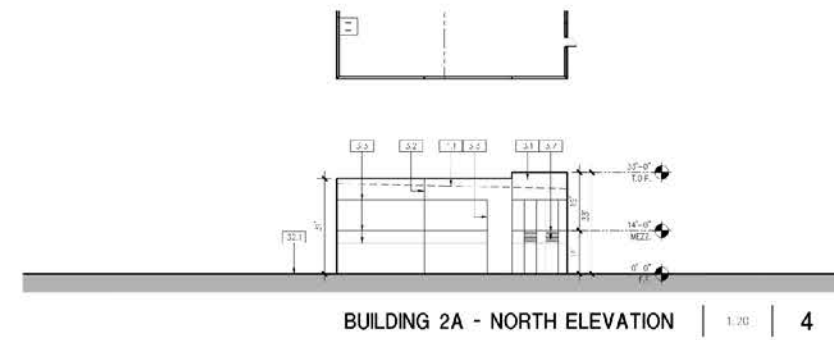
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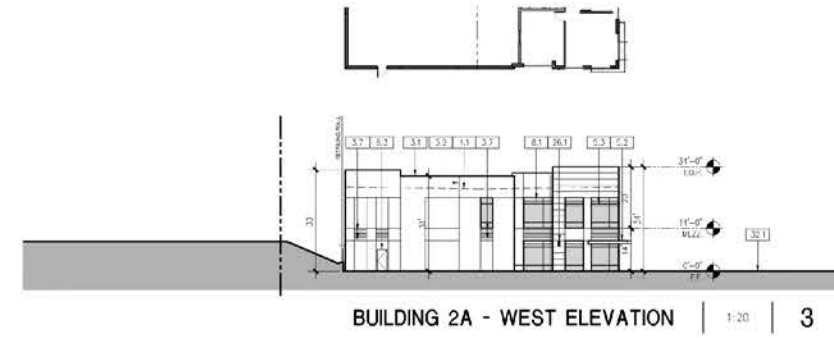
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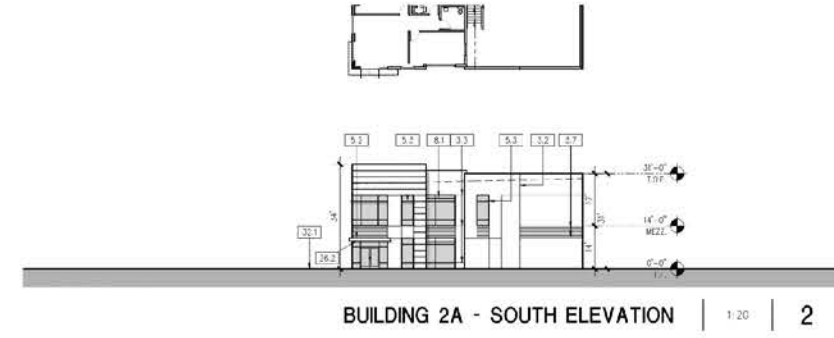
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BUILDING 2A - NORTH ELEVATION | 1:20 | 4 |



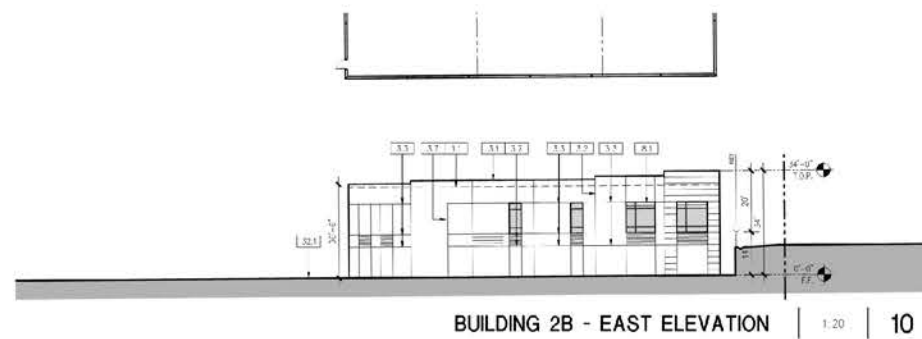
BUILDING 2A - WEST ELEVATION | 1:20 | 3 |



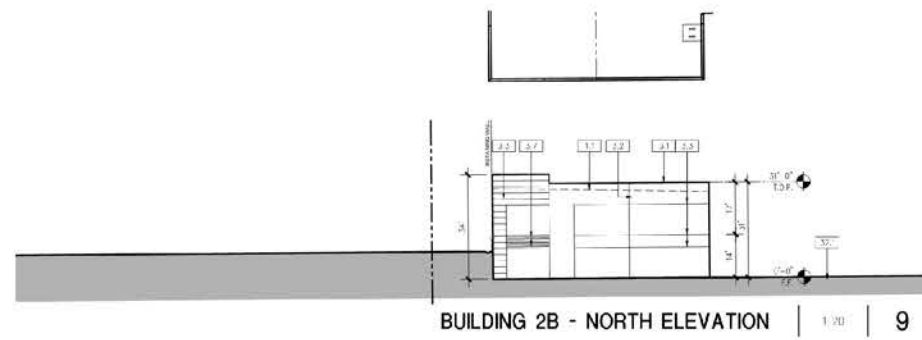
BUILDING 2A - SOUTH ELEVATION | 1:20 | 2 |



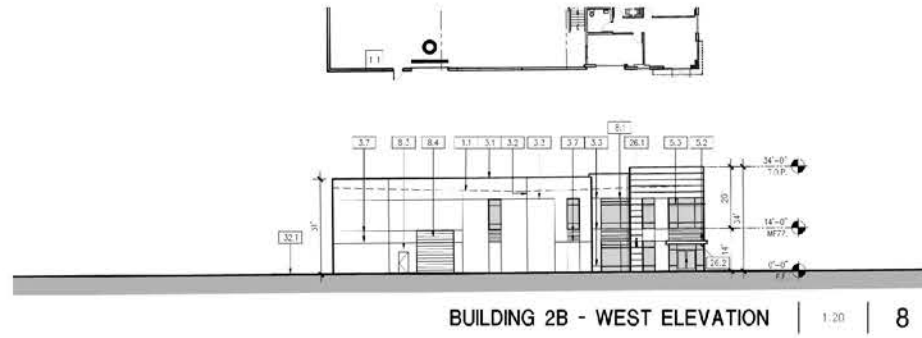
BUILDING 2A - ENTRY PERSPECTIVE AND FLOOR PLAN REFERENCE | 1:40 | 1 |



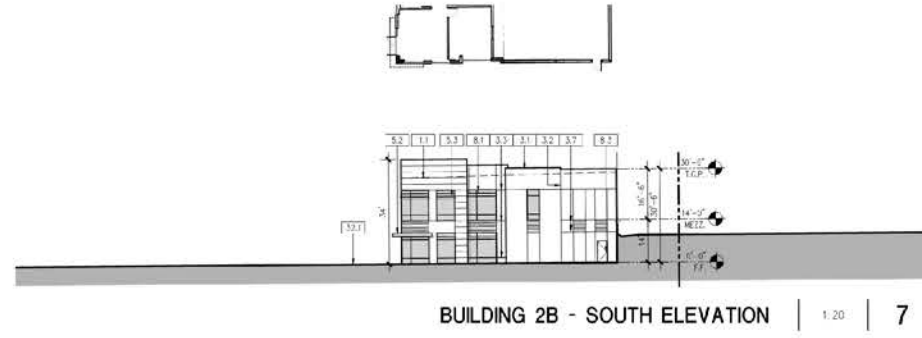
BUILDING 2B - EAST ELEVATION | 1:20 | 10 |



BUILDING 2B - NORTH ELEVATION | 1:20 | 9 |



BUILDING 2B - WEST ELEVATION | 1:20 | 8 |



BUILDING 2B - SOUTH ELEVATION | 1:20 | 7 |



BUILDING 2B - ENTRY PERSPECTIVE AND FLOOR PLAN REFERENCE | 1:40 | 6 |

KEYNOTES

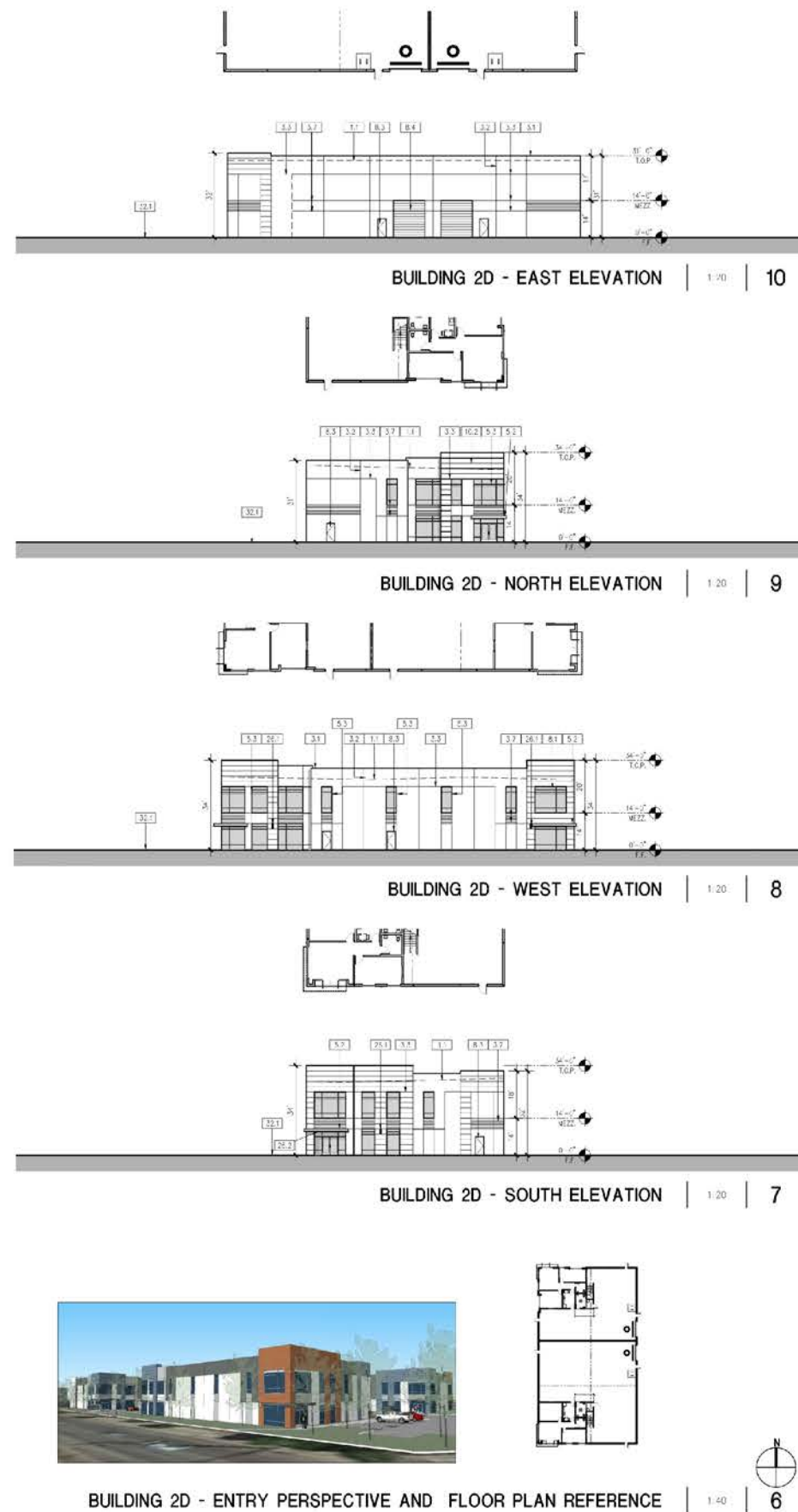
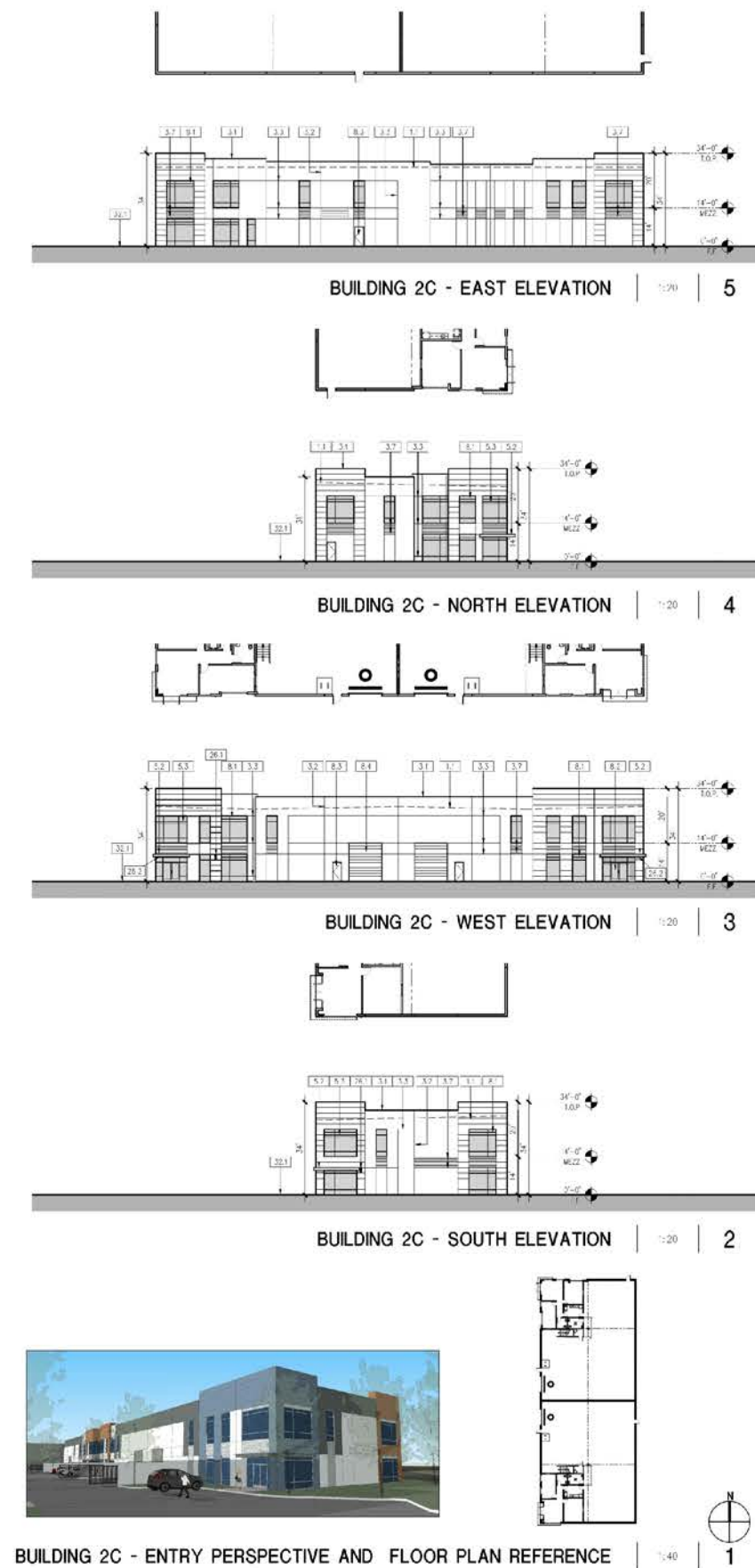
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GENERAL NOTES

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- 9. STOREFRONT CONSTRUCTION: GLASS, METAL ATTACHMENTS, AND LINTELS SHALL BE DESIGNED TO RESIST 90 MPH EXPOSURE "C" WINDS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PRIOR TO INSTALLATION.



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KEYNOTES

- 1.0 GENERAL
 - 1.1 LINE OF ROOF BEYOND
- 3.0 CONCRETE
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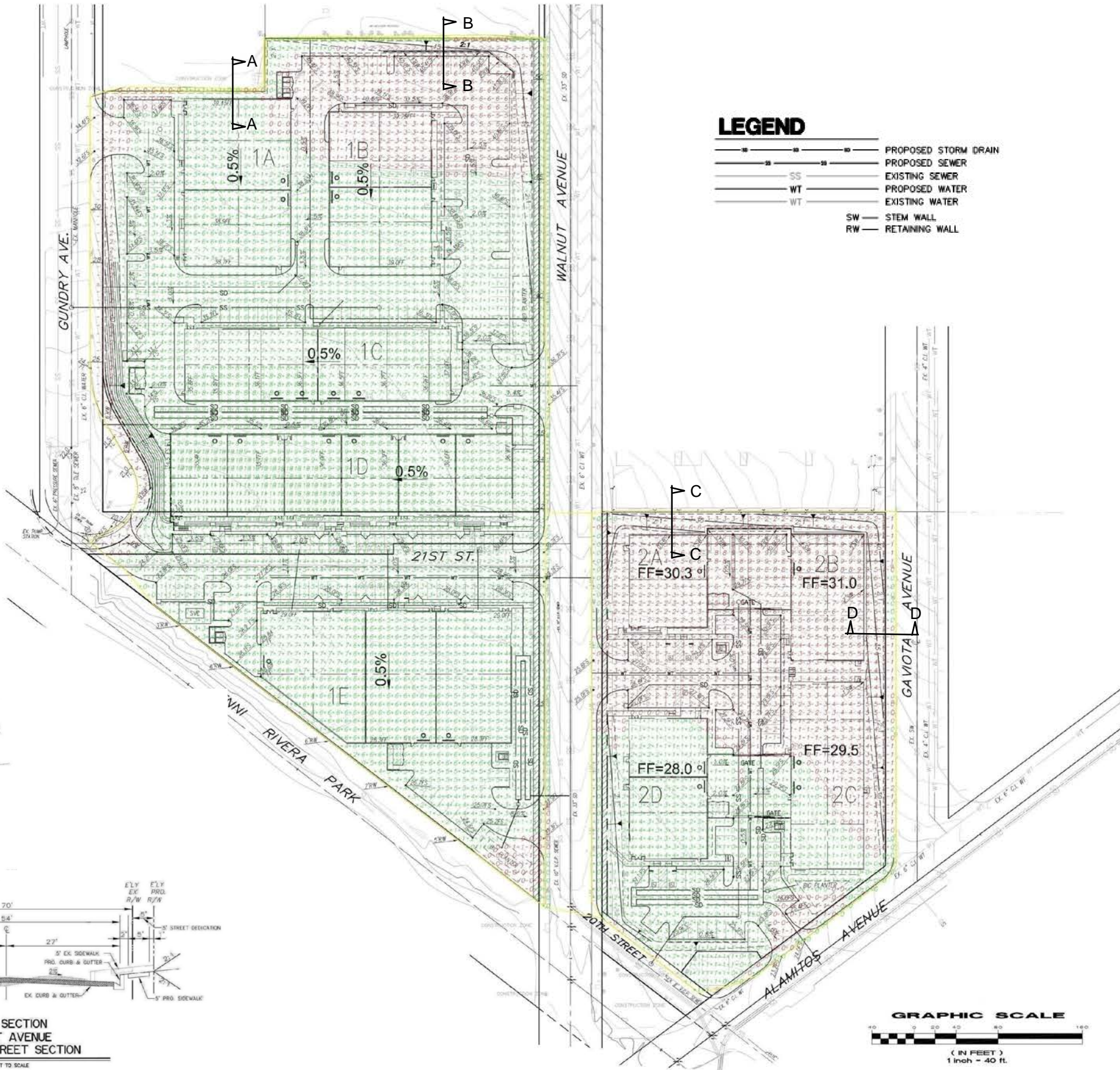
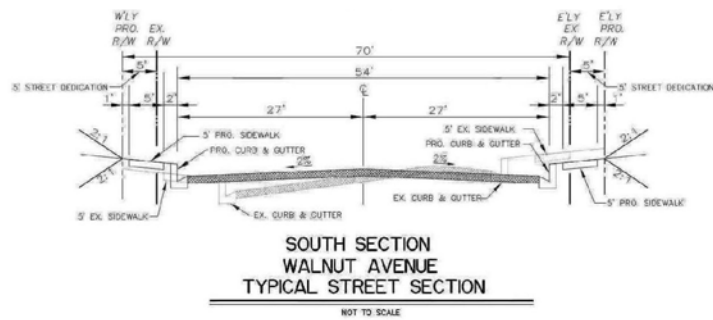
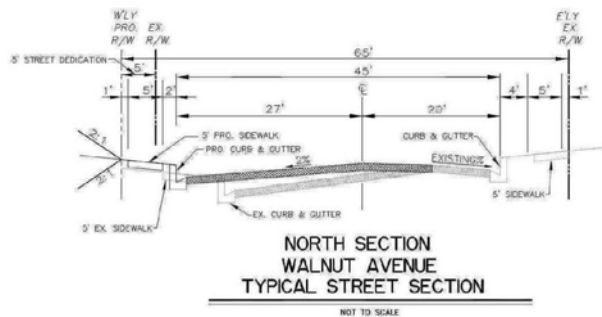
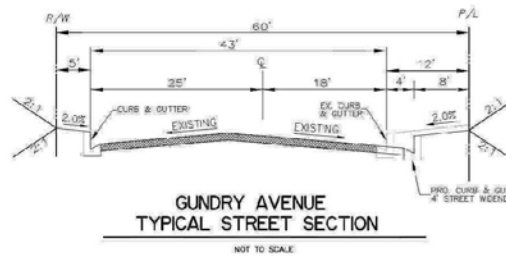
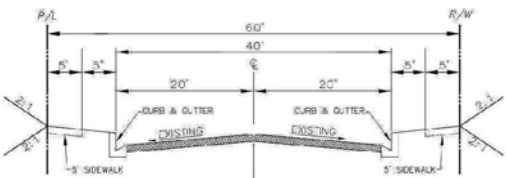
RAW EARTHWORK ESTIMATE			
EARTHWORK ESTIMATE	QUANTITIES		
	CUT	FILL	
ROUGH GRADING	14,303 CY	39,826 CY	
OVER EXCAVATION	29,051 CY	29,051 CY	
SUBSIDENCE (0.15')	(2,179) CY		
SHRINKAGE (12.5%)	(5,419) CY		
SUBTOTAL PROJECT EARTHWORK QUANTITIES	35,756 CY	68,877 CY	
NET	33,121CY (SHORT)		

EARTHWORK ESTIMATE INCORPORATING
INCORPORATING ENVIRONMENTAL RECOMMENDATIONS

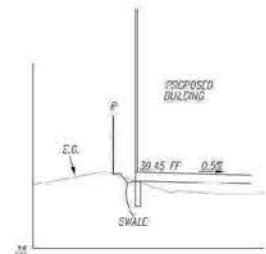
SOIL REUSE:
80% OF THE CUT VOLUME = $0.8 \times 35,756 \text{ CY} = 28,605 \text{ CY}$

SOIL EXPORT:
20% OF THE CUT VOLUME + ADDITIONAL 1,400 CY =
 $0.2 \times 35,756 \text{ CY} + 1,400 \text{ CY} = 8,551 \text{ CY}$

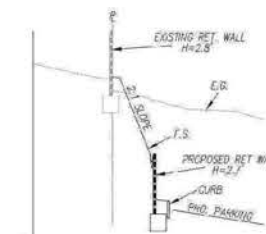
SOIL IMPORT:
FILL VOLUME + ADDITIONAL 1,400 CY - SOIL REUSE =
 $68,877 \text{ CY} + 1,400 \text{ CY} - 28,605 \text{ CY} = 41,672 \text{ CY}$



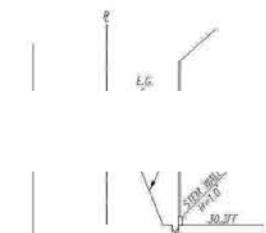
SECTIONS
SCALES: HOR. 1"=20'; VERT. 1"=4'



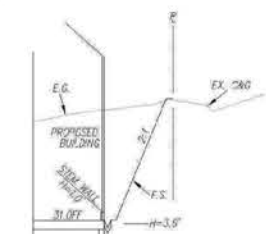
SECTION A-A



SECTION B-B

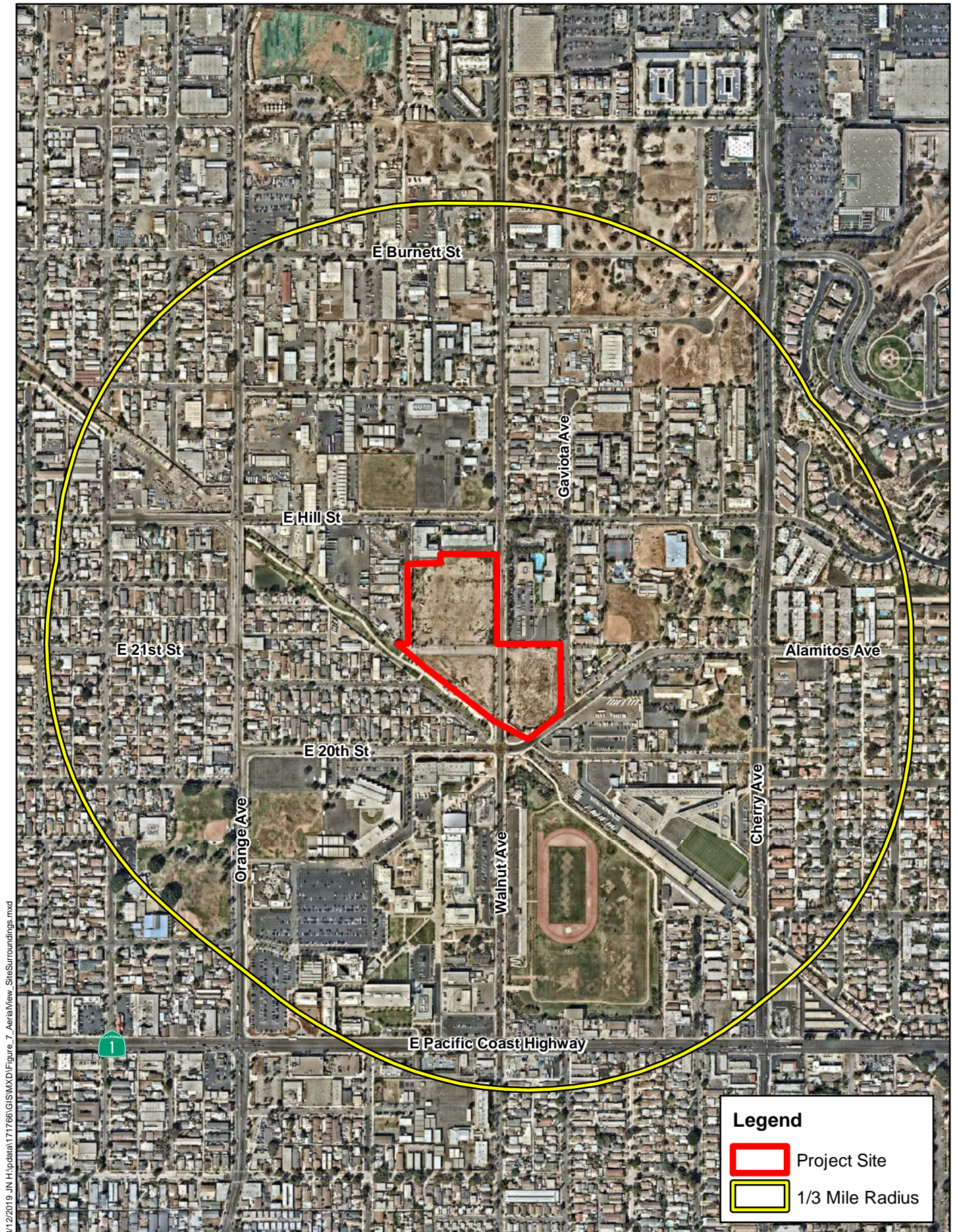


SECTION C-C

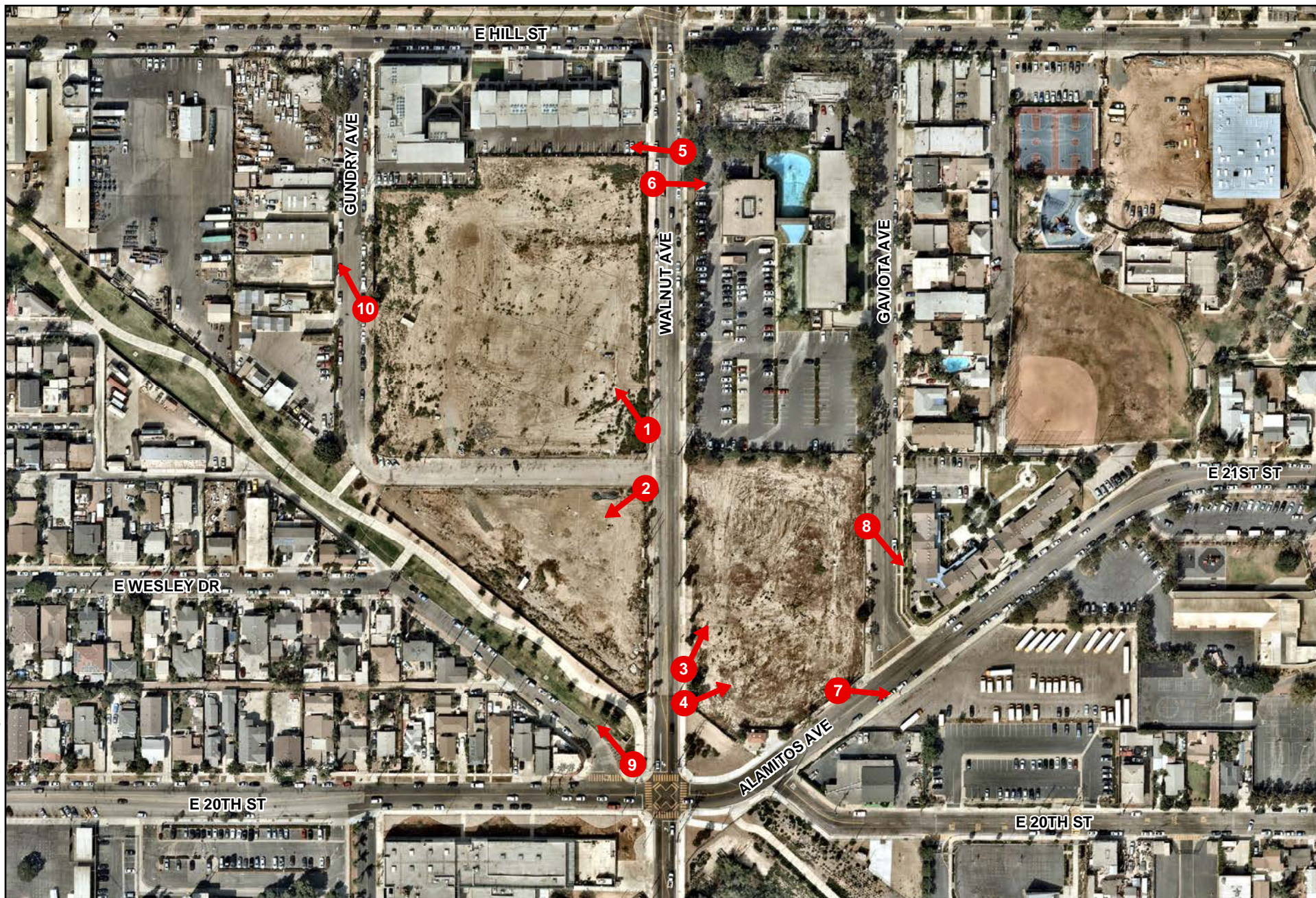


SECTION D-D





3/14/2019, JN H:\pda\171776\GIS\MapXD\Figure8_OrientationMap.mxd







3/14/2019 JN H:\pdata\171776\GISMXD\Figure10_VIEWS\SurroundingLandUses.mxd





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SECTION B. 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.

- | | | |
|--|---|---|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture & Forestry Resources | <input type="checkbox"/> Air Quality |
| <input type="checkbox"/> Biological Resources | <input type="checkbox"/> Cultural Resources | <input type="checkbox"/> Energy |
| <input type="checkbox"/> Geology/Soils | <input type="checkbox"/> Greenhouse Gas Emissions | <input type="checkbox"/> Hazards & Hazardous Materials |
| <input type="checkbox"/> Hydrology/Water Quality | <input type="checkbox"/> Land Use/Planning | <input type="checkbox"/> Mineral Resources |
| <input type="checkbox"/> Noise | <input type="checkbox"/> Population/Housing | <input type="checkbox"/> Public Services |
| <input type="checkbox"/> Recreation | <input type="checkbox"/> Transportation/Traffic | <input type="checkbox"/> Tribal Cultural Resources |
| <input type="checkbox"/> Utilities/Service Systems | <input type="checkbox"/> Wildfire | <input type="checkbox"/> Mandatory Findings of Significance |

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the project. To each question, there are four possible responses:

- **No Impact.** The project would not have any measurable environmental impact on the environment.
- **Less Than Significant Impact.** The project would have the potential for impacting the environment, although this impact would be below established thresholds that are considered to be significant.
- **Less Than Significant Impact With Measures Incorporated.** The project would have the potential to generate impacts which may be considered a significant effect on the environment, although measures or changes to the development's physical or operational characteristics can reduce these impacts to levels that are less than significant.
- **Potentially Significant Impact.** The project would have impacts which are considered significant, and additional analysis is required to identify measures that could reduce these impacts to less than significant levels.



SECTION C. 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

Collen Doan

Date

2/26/2020



SECTION D. EVALUATION OF ENVIRONMENTAL IMPACTS

I. Aesthetics

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

Discussion

a) *Except as provided in Public Resources Code Section 21099, would the project have a substantial adverse effect on a scenic vista?*

Less Than Significant Impact. Approximately one-half mile northeast of the project site is the tallest hilltop in this area, known as Signal Hill, which is visible to pedestrians transiting Walnut Avenue on the south edge of the project site, looking northeast, as well as to motorists traveling northeast on Alamitos Avenue, south and east of the project site. The hilltop is not visible by pedestrians or motorists using East 21st Street or Gundry Avenue because these streets experience little pedestrian movement due to a lack of sidewalk infrastructure or established pedestrian paths, and because views of the hilltop from these streets are almost entirely obscured by existing mature trees and the medical university campus north of Site 2. Signal Hill has prominent features, such as a communication tower, as well as seven tall palm trees located at Hilltop Park, which are visible in Figure 9, Views of Project Site (images 3 and 4). In the city, the views from the hilltop and of the hilltop are valued public resources. From the hilltop area, homeowners and visitors have views of the Pacific Ocean and downtown Long Beach to the south, the Palos Verdes Peninsula to the west, downtown Los Angeles and the Santa Monica Mountains to the north, and California State University Long Beach to the east. As such, the General Plan Land Use Element states that views from the hilltop “must be preserved for the benefit of the community and the general public” (Signal Hill 2001, pg. 50). Further, the Environmental Resources Element includes Policy 1.1, which states that the City will “protect views both to and from the Hill and other scenic features” (Signal Hill 1986, pg. 37). The City’s View Protection Policy states that other unique landmarks other than Signal Hill may also serve as the



primary view of a residence, such as the ocean, Long Beach skyline, the Queen Mary, the Palos Verdes peninsula, Los Angeles, and the San Gabriel/Santa Ana mountains.

For purposes of determining significance under CEQA, a scenic vista is considered a publicly accessible, prominent vantage point that provides expansive views of highly valued landscapes or prominent visual elements comprising man-made or natural features. The view from the top of Signal Hill, as described above, meets this definition of scenic vista; however, the project site is separated from the hilltop by a distance of over one-half mile of urban development and an elevation change of over 300 feet. Further, the proposed structures would be similar in scale and mass to surrounding structures to the north, such as the three-story apartment building north of Site 1, and the three-story office building north of Site 2. Therefore, the proposed project would not be tall enough to obstruct views from the hilltop of the prominent features described above and there would be a less than significant adverse effect on a scenic vista.

Signal Hill, being the tallest hilltop in the area, is visible from many locations throughout the city, including from the southern portion of the project site, near the intersection of Walnut Avenue, Alamitos Avenue, and the pedestrian trail in Jenni Rivera Park. Trail users in Jenni Rivera Park can only view the hilltop from near the trail's intersection with Walnut Avenue, as there is a cinderblock wall topped with slatted, chain-link fencing along the southern frontage of the project's Site 1, which obstructs views of the hilltop. While the hilltop is visible to pedestrians on Walnut Avenue and part of Jenni Rivera Park, the view is obstructed by existing trees, buildings, and utility poles. As such, neither Walnut Avenue nor the trail in Jenni Rivera Park offer a prominent viewing location with an expansive view of the hilltop. The existing ability for motorists traveling northeast on Alamitos Avenue to view the hilltop would not be impacted by the proposed project. Therefore, the proposed project would have a less than significant adverse effect on a scenic vista of the hilltop area.

The apartment building at the corner of Alamitos Avenue and Gaviota Avenue has views to the northwest of the Santa Monica Mountains and ocean over the currently vacant Site 2 and the parking lot of the medical university campus. The proposed project, especially buildings 2B on Site 2 and 1B on Site 1, would partially obstruct this view to the northwest. However, the view of the Santa Monica Mountains and the ocean from these apartments is already obstructed by the apartment building immediately north of Site 1 (the new apartment building north of Site 1 has a maximum building elevation of 89 feet above sea level, as compared with the existing apartments at the corner of Alamitos Avenue and Gaviota Avenue which have a maximum building height of 60 feet above sea level). Further, the Santa Monica mountains are located approximately 25 miles north of the project site, meaning that the view of these landmarks would only be visible as distant background features under favorable weather and air quality conditions. As such, the proposed project would not represent a significant adverse effect on a scenic vista of landmarks to the northwest.

b) Except as provided in Public Resources Code Section 21099, would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The closest officially designated state scenic highway is part of the Angeles Crest State Scenic Highway, State Route (SR) 2, from near La Cañada-Flintridge north to the San Bernardino County line. This state scenic highway is approximately 28 miles north of the project site. SR 110, Arroyo Seco Historic Parkway, between mileposts 25.7 and 31.9 in Los Angeles, is approximately 19 miles north of the project site (Caltrans 2011). The distance between the project site and these officially designated scenic highways indicate that the proposed project would not be visible from a state scenic



highway. As such, the proposed project would not adversely affect the viewshed from a state scenic highway.

The project site is currently characterized by areas of bare soil with patches of ruderal vegetation, scattered ornamental trees that are not protected tree species, covered and uncovered soil piles, plastic and metal storage containers, and temporary power poles, in addition to a temporary soil vapor extraction system consisting of plastic pipelines, monitoring devices, and a trailer-mounted treatment unit (see Figure 9 of the Project Description in this Initial Study). No historic buildings, rock outcroppings or other scenic resources, such as hilltops, streams, or slopes, currently exist on the project site. Because of the project site's distance from the nearest officially designated scenic highway, and the lack of scenic resources on the project site, the proposed project would have no impact on scenic resources such as trees, rock outcroppings, or historic buildings within a state scenic highway.

c) *Except as provided in Public Resources Code Section 21099, would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?*

Less Than Significant Impact. The proposed project would be located in a fully urbanized area, where there is a variety of nonresidential and residential land uses and extensive urban infrastructure improvements. For purposes of determining impact significance for projects within urbanized areas, a project is evaluated for whether it would conflict with applicable zoning or other regulations governing “scenic quality.” The term “scenic quality” is not specifically defined in the threshold language of Appendix G of the CEQA Guidelines; however, for assessment of impacts involving changes in visual character and quality, this is interpreted as pertaining to zoning standards involving building height and bulk, design character, landscape elements, and consistency with scale, massing and character of surrounding development. There are no applicable federal or state regulations that pertain to aesthetic impact; however, the proposed project would need to comply with the City of Signal Hill municipal code regulations governing aesthetic character for areas zoned Light Industrial (LI).¹

Regulations governing building height and setbacks are included in Chapter 20.20, Commercial Districts, of the City's municipal code. The above regulations, as well as information regarding proposed project compliance with such regulations, are displayed in *Table I.1*, below.

¹ As stated in the Project Description of this Initial Study, the proposed project would amend the City's zoning map and General Plan Land Use Element to redesignate the project's Site 2 from Commercial Office to Light Industrial (LI), meaning that the entire project area would be zoned LI. Therefore, this analysis compares the proposed project plan and design to the City of Signal Hill's development standards pertaining to aesthetic quality for LI uses only.

**Table I-1 Municipal Code Requirements for Light Industrial (LI) Zones and Project Compliance**

Municipal Code	Code Title	Required (LI)	Proposed Project
20.20.040	Building Height	90 feet, 6 stories maximum	Maximum: 36 feet, 2 stories
None	Lot Coverage	None specified	Site 1: 41.9% Site 2: 41.4%
20.20.060	Required setbacks	Front: 20ft Rear: 0ft Interior: 0ft Side: 20ft	Front: 20ft Rear: 0ft Interior: 0ft Street: 20ft

On Site 1, proposed building 1B would be set back a total of 98 feet from Walnut Avenue, approximately 74 feet from the project site's northern boundary, 120 feet from the existing apartment building to the north, 30 feet from proposed building 1A, and 59 feet from proposed building 1C. Proposed building 1A would be 78 feet away from Gundry Avenue and 3.75 feet away from the project site's northwestern boundary; however, there would be a distance of approximately 41 feet between building 1A and the existing apartment building to the north. Proposed buildings 1D and 1E would be 20 feet away from Walnut Avenue and would be placed 89 feet apart. Building 1E would be set back approximately 10 feet from the project site's southwestern property line along Jenni Rivera Park. On Site 2, proposed buildings 2A and 2D would be 20 feet away from Walnut Avenue and would be placed 86.5 feet apart. Proposed Buildings 2B and 2C would be 20 feet away from Gaviota Avenue and would be placed 20 feet apart. Proposed buildings 2A and 2D would be approximately 79 feet apart from buildings 2B and 2C. Therefore, the proposed building layout provides for considerable buffers between proposed buildings and surrounding land uses, as well as between proposed buildings within the development. The areas between and surrounding proposed buildings are mostly composed of landscaped areas, parking stalls, and 28-foot-wide, internal drive aisles.

Municipal regulations require development within LI zones to have a minimum parking lot landscaping coverage of 5 percent. Proposed project Site 1 would have 8.4 percent landscaping within parking and drive areas, and Site 2 would have 14.1 percent landscaping within parking and drive areas. Landscaping would include more than 150 trees, along with shrubs, accent plants, and groundcover placed within parking areas along the site boundaries and between the proposed buildings. Landscaping would be concentrated along the site's boundaries, including along the Walnut Avenue, Alamitos Avenue, Gaviota Avenue, and Gundry Avenue frontages. Trees, shrubs, and groundcover would also extend along the southern boundary of Site 1, providing a visual buffer between Jenni Rivera Park and the proposed project (specifically, Building 1E).

There are no Municipal Code standards or any form of design guidelines governing the architectural stylings of the structures proposed for construction. The nine proposed structures would all be two-story, tilt-up buildings constructed with white concrete panels, with light and dark grey accent panels around doors, windows, and rooflines for visual interest. For each building, the unit entrances and building corners would be finished in a storefront style, with aluminum and glass, short metal canopies with downward highlighting above the entrances, a slightly raised parapet, and muted orange concrete panel accents. The proposed project would use this design and color scheme on all proposed buildings. The proposed project would not degrade the character of the area as it would represent an improvement over the currently vacant project site; furthermore, the building design would be compatible with the style of the apartment complex directly north of the project site, which displays contemporary styling with a mix of white-, grey-, and red-colored materials and accents. The proposed project would be similar in mass and scale to the apartment building north of Site 1 and the medical



office building north of Site 2, both of which are on sites that contain three-story structures, internal drive aisles, and parking stalls. The project would improve current visual conditions for pedestrians and motorists along surrounding streets where existing, slatted chain-link fencing in disrepair would be replaced by landscaped areas. Further, design elements, such as accent lighting and shielding of rooftop equipment, would be incorporated into the design of front and rear building elevations to improve the project's overall aesthetic appeal as compared with a standard tilt-up concrete industrial building. A sidewalk and landscape elements would also be added along the Gundry Avenue frontage of Site 1, which currently does not have any pedestrian path or substantial landscaping improvements.

Therefore, given that the proposed project would not conflict with the applicable zoning and other regulations governing scenic quality, and would be consistent with the massing, scale, and visual character of the surrounding area, the project would have a less than significant impact in this regard.

d) Except as provided in Public Resources Code Section 21099, would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. The proposed project is primarily vacant, apart from slatted and unslatted chain-link fencing around the project site boundaries; a few scattered trees and ruderal plants within the site interior; storage containers; temporary power poles; soil piles; and plastic pipelines, monitoring devices, and a trailer mounted treatment unit associated with soil vapor extraction. Therefore, there are no existing outdoor lighting sources on the project site. The area is highly urbanized and therefore already impacted by night lighting from streetlights along Alamitos Avenue, Gaviota Avenue, and Gundry Avenue; exterior security lights within existing office uses to the northeast, light industrial uses to the west, sanitation district infrastructure to the south, and residential development to the east and south; overhead parking lot lighting at the medical university campus north of Site 2; vehicle headlights on surrounding streets; traffic lights at the intersection of Walnut Avenue and Alamitos Avenue; and security lighting along the multiuse path in Jenni Rivera Park to the south.

The proposed project would include wall-mounted security lighting angled downward, as well as upward-and downward-facing accent lighting within the interior of the site, such as downward lighting under the canopies at the building entrances and upward-facing, wall-mounted, decorative lighting on building exteriors. In short, the proposed project would provide illumination for safe usage and night lighting accents, which would not spill across the site boundaries, as is required by the Cal Green Building Standards Code 5.106.8, Light Pollution Reduction (incorporated into the Signal Hill Municipal Code, as described in Chapter 15.10). Further, vehicles entering and exiting the proposed project would do so at locations where there are no residential uses directly across the street; thus, headlights would not shine onto any homes when exiting site driveways on Walnut Avenue, Gundry Avenue, or Alamitos Avenue. Regarding glare, the proposed building elevations would be constructed of concrete, with some non-reflecting glazing and metal finishes at building entrances on the building corners and unit entrances; therefore, there would be little to no light reflection from building surfaces onto surrounding uses. As such, the proposed project would not result in a new source of substantial light or glare which would adversely affect day or nighttime views in the area.



II. Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
AGRICULTURE AND FORESTRY RESOURCES: <i>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:</i>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a) Would the project 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 western part of the project site was operated as an oil refinery between 1922 and 1994; associated offices, warehouse, and truck repair existed on the eastern part. All of the structures and site improvements associated with the oil refinery and past land uses at the site have been removed and the site remains vacant. The proposed project site is not in an area of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, Farmland of Local Importance, Farmland of Local Potential, or Grazing Land as identified by the California Department of Conservation's (2016)



California Important Farmland Finder. The site is classified as Other land type, which is described on the Important Farmland Finder as land that is not included in any of the other mapping categories. Since the project site is not designated farmland and would not convert designated farmland to nonagricultural uses, the proposed project would have no impact on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.

b) *Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?*

No Impact. The project site is not encumbered by a Williamson Act contract and is zoned LI (Light Industrial) on the western side and CO (Commercial Office) on the eastern side. Therefore, since the project site is not subject to the provisions of a Williamson Act contract and is not zoned for agricultural use, no impact would occur.

c) *Would the project 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. As discussed under response to threshold b) above, the project site is zoned LI and CO. Therefore, implementation of the proposed project would not conflict with the existing zoning for, or cause rezoning of, forestland, timberland, or timberland zoned Timberland Production. No impact would occur.

d) *Would the project result in the loss of forest land or conversion of forest land to non-forest use?*

No Impact. The site formerly supported an oil refinery and is currently vacant land, within a fully urbanized area where there is no forest land. A few scattered trees primarily line the perimeter of the site. However, there is no substantial concentration of trees that would constitute a forest. The site has not been managed as timberland or managed to produce forest products. There would be no loss of forestland or conversion of forestland; therefore, no impact would occur.

e) *Would the project 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 site is currently vacant. Surrounding land uses include a combination of educational, commercial, industrial, multifamily and single-family residential, and park land uses. There are currently no agricultural operations being conducted on or surrounding the project site, and the site and surrounding areas are not zoned for agricultural uses. In addition, no forestland is located on the proposed project site or in the vicinity. Thus, no farmland or forestland would be converted to other uses under the proposed project, and no impact would occur.



III. Air Quality

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY: <i>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:</i>				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

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

Less than Significant Impact with Mitigation Incorporated. The project is located within the South Coast Air Basin (Basin), which is governed by the South Coast Air Quality Management District (SCAQMD). Consistency with the SCAQMD 2016 Air Quality Management Plan for the South Coast Air Basin (2016 AQMP) means that a project is consistent with the goals, objectives, and assumptions set forth in the 2016 AQMP that are designed to achieve federal and state air quality standards. According to the SCAQMD CEQA Air Quality Handbook (SCAQMD 1993) in order to determine consistency with the 2016 AQMP, two main criteria must be addressed:

Criterion 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment of federal and/or state air quality standards.

a) Would the project result in an increase in the frequency or severity of existing air quality violations?

Since the consistency criteria identified under the first criterion pertains to pollutant concentrations, rather than total regional emissions, an analysis of the project's pollutant emissions relative to localized pollutant concentrations is used as the basis for evaluating project consistency. As discussed in Response III(c) below, localized concentrations of carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter less than 10 microns in diameter (PM₁₀), and particulate matter less than 2.5 microns in diameter (PM_{2.5}) would be less than



significant during project construction and operations. Therefore, the proposed project would not result in an increase in the frequency or severity of existing air quality violations.²

b) *Would the project cause or contribute to new air quality violations?*

As discussed in Response III(b), the proposed project would result in emissions that are below the SCAQMD regional thresholds, with Mitigation Measure III-1 to reduce NO_x emissions during grading. Therefore, the project would not have the potential to cause a violation of the ambient air quality standards.

c) *Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?*

As discussed in Response III(b), the proposed project would result in less than significant impacts with regard to short-term construction and long-term operational emissions. As such, the project would not delay the timely attainment of air quality standards or 2016 AQMP emissions reductions.

Criterion 2:

With respect to the second criterion for determining consistency with SCAQMD and Southern California Association of Governments (SCAG) air quality policies, it is important to recognize that air quality planning within the Basin focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining project consistency focuses on whether or not the proposed project exceeds the assumptions utilized in preparing the forecasts presented in the 2016 AQMP. Determining whether or not a project exceeds these assumptions involves the evaluation of the three criteria outlined below. The following discussion analyzes each of these criteria.

a) *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP?*

In the case of the 2016 AQMP, three sources of data form the basis for the projections of air pollutant emissions: the Signal Hill General Plan (General Plan), SCAG's regional growth forecast, and SCAG's 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The population, housing, and employment forecasts in the 2016 RTP/SCS, developed by SCAG, are based on local general plans as well as input from local governments. The SCAQMD has incorporated these same demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment) into the 2016 AQMP.

The project proposes development of nine light industrial buildings comprising 151,075 square feet of total building area. The project requires a General Plan amendment to change the eastern portion of the site's zoning from Commercial Office to Light Industrial. According to the General Plan, the Light Industrial designation is designed to accommodate a variety of light industrial uses which are nonpolluting and which can coexist with surrounding commercial and residential uses. Permitted uses include, but are not limited to, research and development, assembly, general offices, light

² Because reactive organic gases (ROGs) are not a criteria pollutant, there is no ambient standard or localized threshold for ROGs. Due to the role ROG plays in ozone formation, it is classified as a precursor pollutant and only a regional emissions threshold has been established.



manufacturing not involving excessive noise, vibrations, odors, dust or hazardous materials, and limited warehouse and distribution uses of finished products but not transportation, storage or shipping uses involving fleets of large size (tractor trailer) trucks. The proposed project does not have any loading docks that could accommodate large trucks. As proposed, the nine light industrial buildings would provide occupancy for businesses engaged in a variety of nonpolluting, light industrial activities such as manufacturing, warehousing and assembly of products for consumers and businesses, and research facilities.

As discussed in Section XIV, Population and Housing, the General Plan amendment to change the eastern portion of the site's zoning to Light Industrial would not represent a significant change in employment intensity from the current Commercial Office designation. Because offices typically have higher levels of employment intensity than light industrial uses, the General Plan amendment may actually result in a lower overall employment intensity compared to what is possible under the Commercial Office designation. Therefore, because the General Plan amendment would not increase employment intensity from the current Commercial Office designation, the project would not cause the City's General Plan buildout employment levels to be exceeded. As the SCAQMD has incorporated these same projections into the 2016 AQMP, it can be concluded that the project would be consistent with the projections.

It is also noted that the project's construction and operational air emissions would not exceed the SCAQMD regional thresholds. As such, the project would not result in or cause federal or California air quality standard violations. Thus, a less than significant impact would occur with regard to 2016 AQMP consistency.

b) *Would the project implement all feasible air quality mitigation measures?*

Compliance with all applicable SCAQMD rules for emission reduction measures would be required as identified in Response III(b) and III(c) and Mitigation Measure III-1 would also be implemented to reduce NO_x emissions during grading. As such, the proposed project meets this 2016 AQMP consistency criterion.

c) *Would the project be consistent with the land use planning strategies set forth in the AQMP?*

The AQMP contains air pollutant reduction strategies and demonstrates that the applicable ambient air quality standards can be achieved within the time frames required under federal law. Growth projections from local general plans adopted by cities in the SCAQMD are provided to SCAG, which develops regional growth forecasts that are used to develop future air quality forecasts for the AQMP. Development consistent with the growth projections in the General Plan is considered to be consistent with the AQMP. The proposed project is consistent with the land use designation and development density presented in the General Plan. Therefore, the proposed project meets this AQMP consistency criterion.

Mitigation Measures: Please refer to the response to III(b) and the specifications for Mitigation Measure III-1.



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

Less than Significant Impact with Mitigation Incorporated.

Criteria Pollutants

Criteria pollutants are pollutants regulated through the development of human health based and/or environmentally based criteria for setting permissible levels. The Basin is currently in state nonattainment status for ozone (O_3), $PM_{2.5}$, and PM_{10} , as well as federal nonattainment status for O_3 and $PM_{2.5}$. Criteria pollutants, their typical sources, and effects are identified below.

Carbon Monoxide (CO). CO is an odorless, colorless toxic gas that is emitted by mobile and stationary sources as a result of incomplete combustion of hydrocarbons or other carbon-based fuels. In cities, automobile exhaust can cause as much as 95 percent of all CO emissions. CO replaces oxygen in the body's red blood cells. Individuals with a deficient blood supply to the heart, patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes are most susceptible to the adverse effects of CO exposure. People with heart disease are also more susceptible to developing chest pains when exposed to low levels of carbon monoxide.

Ozone (O_3). O_3 occurs in two layers of the atmosphere. The layer surrounding the earth's surface is the troposphere. The troposphere extends approximately 10 miles above ground level, where it meets the second layer, the stratosphere. The stratospheric (the "good" ozone layer) extends upward from about 10 to 30 miles and protects life on earth from the sun's harmful ultraviolet rays. "Bad" O_3 is a photochemical pollutant, and needs volatile organic compounds (VOCs), NO_x , and sunlight to form; therefore, VOCs and NO_x are O_3 precursors. To reduce O_3 concentrations, it is necessary to control the emissions of these ozone precursors. Significant O_3 formation generally requires an adequate amount of precursors in the atmosphere and a period of several hours in a stable atmosphere with strong sunlight. High O_3 concentrations can form over large regions when emissions from motor vehicles and stationary sources are carried hundreds of miles from their origins.

While O_3 in the upper atmosphere (stratosphere) protects the earth from harmful ultraviolet radiation, high concentrations of ground-level O_3 (in the troposphere) can adversely affect the human respiratory system and other tissues. O_3 is a strong irritant that can constrict the airways, forcing the respiratory system to work hard to deliver oxygen. Individuals exercising outdoors, children, and people with preexisting lung disease such as asthma and chronic pulmonary lung disease are considered to be the most susceptible to the health effects of O_3 . Short-term exposure (lasting for a few hours) to O_3 at elevated levels can result in aggravated respiratory diseases such as emphysema, bronchitis and asthma, shortness of breath, increased susceptibility to infections, inflammation of the lung tissue, and increased fatigue, as well as chest pain, dry throat, headache, and nausea.

Nitrogen Dioxide (NO_2). NO_x are a family of highly reactive gases that are a primary precursor to the formation of ground-level ozone and react in the atmosphere to form acid rain. NO_2 (often used interchangeably with NO_x) is a reddish-brown gas that can cause breathing difficulties at elevated levels. Peak readings of NO_2 occur in areas that have a high concentration of combustion sources (e.g., motor vehicle engines, power plants, refineries, and other industrial operations). NO_2 can irritate and damage the lungs and lower resistance to respiratory infections such as influenza. The health



effects of short-term exposure are still unclear. However, continued or frequent exposure to NO_2 concentrations that are typically much higher than those normally found in the ambient air may increase acute respiratory illnesses in children and increase the incidence of chronic bronchitis and lung irritation. Chronic exposure to NO_2 may aggravate eyes and mucus membranes and cause pulmonary dysfunction.

Coarse Particulate Matter (PM_{10}). PM_{10} refers to suspended particulate matter, which is smaller than 10 microns or ten one-millionths of a meter. PM_{10} arises from sources such as road dust, diesel soot, combustion products, construction operations, and dust storms. PM_{10} scatters light and significantly reduces visibility. In addition, these particulates penetrate into lungs and can potentially damage the respiratory tract. On June 19, 2003, the California Air Resources Board (CARB) adopted amendments to the statewide 24-hour particulate matter standards based upon requirements set forth in the Children's Environmental Health Protection Act (Senate Bill 25).

Fine Particulate Matter ($\text{PM}_{2.5}$). Due to recent increased concerns over health impacts related to fine particulate matter (particulate matter 2.5 microns in diameter or less), both state and federal $\text{PM}_{2.5}$ standards have been created. Particulate matter impacts primarily affect infants, children, the elderly, and those with preexisting cardiopulmonary disease. In 1997, the U.S. Environmental Protection Agency (EPA) announced new $\text{PM}_{2.5}$ standards. Industry groups challenged the new standard in court and the implementation of the standard was blocked. However, upon appeal by the EPA, the U.S. Supreme Court reversed this decision and upheld the EPA's new standards. On January 5, 2005, the EPA published a Final Rule in the Federal Register that designates the Basin as a nonattainment area for federal $\text{PM}_{2.5}$ standards. On June 20, 2002, CARB adopted amendments for statewide annual ambient particulate matter air quality standards. These standards were revised/established due to increasing concerns by CARB that previous standards were inadequate, as almost everyone in California is exposed to levels at or above the current state standards during some parts of the year, and the statewide potential for significant health impacts associated with particulate matter exposure was determined to be large and wide-ranging.

Sulfur Dioxide (SO_2). SO_2 is a colorless, irritating gas with a rotten egg smell; it is formed primarily by the combustion of sulfur-containing fossil fuels. Sulfur dioxide is often used interchangeably with sulfur oxides (SO_x) and lead. Exposure of a few minutes to low levels of SO_2 can result in airway constriction in some asthmatics.

Volatile Organic Compounds (VOC). VOCs are hydrocarbon compounds (any compound containing various combinations of hydrogen and carbon atoms) that exist in the ambient air. VOCs contribute to the formation of smog through atmospheric photochemical reactions and/or may be toxic. Compounds of carbon (also known as organic compounds) have different levels of reactivity; that is, they do not react at the same speed or do not form ozone to the same extent when exposed to photochemical processes. VOCs often have an odor; some examples include gasoline, alcohol, and the solvents used in paints. Exceptions to the VOC designation include carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. VOCs are a criteria pollutant since they are a precursor to O_3 , which is a criteria pollutant. The SCAQMD uses the terms VOC and ROG (see below) interchangeably.

Reactive Organic Gases (ROG). Similar to VOC, ROG are also precursors in forming ozone and consist of compounds containing methane, ethane, propane, butane, and longer chain hydrocarbons, which are typically the result of some type of combustion/decomposition process. Smog is formed when ROG and nitrogen oxides react in the presence of sunlight. ROG are a criteria pollutant since



they are a precursor to O₃, which is a criteria pollutant. The SCAQMD uses the terms ROG and VOC interchangeably.

Short-Term Construction Emissions

The project involves construction activities associated with grading, paving, construction, and architectural coating applications. Grading activities would require approximately 35,756 cubic yards of cut and 68,877 cubic yards of fill. Additional earthwork would involve removal and transport of contaminated soils from the prior oil refinery operations. This results in a total of 8,551 cy material to be exported from the project site and a total of 41,672 cy of clean fill material to be transported onto the project site. Exhaust emission factors for typical diesel-powered heavy equipment are based on the California Emissions Estimator Model version 2016.3.2 (CalEEMod) program defaults. Variables factored into estimating the total construction emissions include the level of activity, length of construction period, number of pieces and types of equipment in use, site characteristics, weather conditions, number of construction personnel, and the amount of materials to be transported on- or off-site. The analysis of daily construction emissions has been prepared utilizing CalEEMod. Refer to Appendix B, *Air Quality/Greenhouse Gas and Energy Worksheets*, for the CalEEMod outputs and results. *Table III-1, Construction-Related Emissions*, presents the anticipated daily short-term construction emissions.

Table III-1 Construction-Related Emissions

Emissions Source	Pollutant (pounds/day) ^{1,2}					
	ROG	NO _x	CO	SO ₂	PM ₁₀	PM _{2.5}
Emissions Without Mitigation²	7.45	98.75	44.21	0.15	9.55	5.39
SCAQMD Thresholds	75	100	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No
Emissions With Mitigation^{2,3}	5.02	65.87	29.94	0.10	5.37	3.18
Volume Reduced	-2.43	-32.88	-14.27	-.05	-4.18	-2.21
Notes: 1. Emissions were calculated using CalEEMod version 2016.3.2, as recommended by the SCAQMD. 2. Totals shown are for highest intensity construction activities that generate these pollutants. The grading emissions in this table include reduction/credits based on compliance with SCAQMD Rules that are included in CalEEMod. The emission reduction measures applied in CalEEMod includes the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces three times daily; cover stock piles with tarps; water all haul roads twice daily; and limit speeds on unpaved roads to 15 miles per hour. 3. Totals reflect 4 hour daily limit for grading activities, per Mitigation Measure III-1. Refer to Appendix A, <i>Air Pollutant, Greenhouse Gas and Energy Consumption Calculation Worksheets</i> , for assumptions used in this analysis.						

Fugitive Dust Emissions

Construction activities are a source of fugitive dust emissions that may have a substantial, temporary impact on local air quality. In addition, fugitive dust may be a nuisance to those living and working in the project area. Fugitive dust emissions are associated with land clearing, ground excavation, cut and fill, and truck travel on unpaved roadways (including demolition as well as construction activities). Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions. Fugitive dust from grading, excavation, and construction is expected to be short term and would cease upon project completion. Most of this material is inert



silicates, rather than the complex organic particulates released from combustion sources, which are more harmful to health.

Dust (larger than 10 microns) generated by such activities usually becomes more of a local nuisance than a serious health problem. Of particular health concern is the amount of PM₁₀ generated as a part of fugitive dust emissions. PM₁₀ poses a serious health hazard alone or in combination with other pollutants. PM_{2.5} is mostly produced by mechanical processes. These include automobile tire wear, industrial processes such as cutting and grinding, and resuspension of particles from the ground or road surfaces by wind and human activities such as construction or agriculture. PM_{2.5} is mostly derived from combustion sources, such as automobiles, trucks, and other vehicle exhaust, as well as from stationary sources. These particles are either directly emitted or are formed in the atmosphere from the combustion of gases such as NO_x and SO_x combining with ammonia. PM_{2.5} components from material in the earth's crust, such as dust, are also present, with the amount varying in different locations.

The project would implement all required SCAQMD dust control techniques (i.e., daily watering), limitations on construction hours, and adhere to SCAQMD Rules 402 and 403 (which require watering of inactive and perimeter areas, track out requirements, etc.), to reduce PM₁₀ and PM_{2.5} concentrations. As depicted in *Table III-1*, total PM₁₀ and PM_{2.5} emissions would not exceed the SCAQMD thresholds during construction. Thus, construction air quality impacts would be less than significant.

Construction Equipment and Worker Vehicle Exhaust

Exhaust emissions from construction activities include emissions associated with the transport of machinery and supplies/materials to and from the project site, transport of soil materials off- and on-site, employee commutes to/from the project site, and emissions produced on-site as the equipment is used. As shown in *Table III-1*, the calculated level of NO_x emissions produced by diesel-fueled on-site grading machinery and trucks that haul machinery, supplies and soils off or to the project site would be approximately 98.75 pounds/day, which is close to the 100 pounds/day threshold. Because there is uncertainty in any calculation of grading volumes, and because the excavation work may require removal of additional contaminated soils due to the soil testing requirements identified in Section IX and specified in mitigation measure IX-2, it is possible that the estimated quantity of earthwork and truck transport will be higher than this current estimate. As such, the level of NO_x emissions associated with the proposed grading plan is considered to be potentially significant.

To reduce daily NO_x emissions by a substantial margin, the Project Applicant has agreed to implement Mitigation Measure III-1, to limit daily grading activities, including truck transport of materials on or off-site, to a maximum of four hours per day. As shown in *Table III-1*, this would reduce total daily NO_x regional emissions by approximately 30 pounds/day, a reduction of 33 percent. This mitigation would also reduce regional emissions for all other criteria pollutants analyzed. As shown in *Table III-3*, this measure would also reduce levels of localized emissions by substantial margins.

ROG Emissions

In addition to gaseous and particulate emissions, the application of asphalt and surface coatings creates ROG emissions, which are O₃ precursors. In accordance with the methodology prescribed by the SCAQMD, the ROG emissions associated with paving and architectural coating have been quantified with the CalEEMod model. As required by SCAQMD Regulation XI, Rule 1113 – *Architectural Coating*, all architectural coatings for the proposed structures would comply with specifications on painting



practices as well as regulation on the ROG content of paint (SCAQMD 2016b). ROG emissions associated with the proposed project would be less than significant; refer to *Table III-1*.

Naturally Occurring Asbestos

Asbestos is a term used for several types of naturally occurring fibrous minerals that are a human health hazard when airborne. The most common type of asbestos is chrysotile, but other types such as tremolite and actinolite are also found in California. Asbestos is classified as a known human carcinogen by state, federal, and international agencies and was identified as a toxic air contaminant by CARB in 1986.

Asbestos can be released from serpentinite and ultramafic rocks when the rock is broken or crushed. At the point of release, the asbestos fibers may become airborne, causing air quality and human health hazards. These rocks have been commonly used for unpaved gravel roads, landscaping, fill projects, and other improvement projects in some localities. Asbestos may be released to the atmosphere due to vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations. All of these activities may have the effect of releasing potentially harmful asbestos into the air. Natural weathering and erosion processes can act on asbestos-bearing rock and make it easier for asbestos fibers to become airborne if such rock is disturbed. According to the Department of Conservation (2000), serpentinite and ultramafic rocks are not known to occur within the project area. Thus, there would be no impact in this regard.

Long-Term (Operational) Emissions

Long-term air quality impacts would consist of mobile source emissions generated from project-related traffic and emissions from stationary area and energy sources. Emissions associated with each of these sources were calculated and are discussed below.

Mobile Source

Mobile sources are emissions from motor vehicles, including tailpipe and evaporative emissions. Depending upon the pollutant, the potential air quality impact may be of either regional or local concern. For example, ROG, NO_x, SO_x, PM₁₀, and PM_{2.5} are all pollutants of regional concern (NO_x and ROG react with sunlight to form O₃ [photochemical smog], and wind currents readily transport SO_x, PM₁₀, and PM_{2.5}). However, CO tends to be a localized pollutant, dispersing rapidly at the source.

Project-generated vehicle emissions have been estimated using CalEEMod. According to the Signal Hill Business Center Traffic Impact Analysis (Traffic Impact Analysis) prepared by Kunzman Associates, Inc. (revised June 22, 2018), the proposed project would generate approximately 2,668 total daily passenger car equivalent trips.³ *Table III-2 Long-Term Air Emissions*, presents the anticipated mobile source emissions.

Table III-2 Long-Term Air Emissions

Emissions Source	Pollutant (pounds/day) ¹					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Area	3.47	0.00	0.04	0.00	0.00	0.00

³ One car is one “passenger car equivalent.” A truck is equal to two or three passenger car equivalents in that a truck requires longer to start, goes slower, and accelerates slower. Loaded trucks have a higher passenger car equivalent than empty trucks.



Emissions Source	Pollutant (pounds/day) ¹					
	ROG	NO _x	CO	SO _x	PM ₁₀	PM _{2.5}
Energy	0.08	0.74	0.62	0.00	0.06	0.06
Mobile	5.71	29.63	83.83	0.30	25.38	6.97
Total Winter Emissions³	9.26	30.38	84.49	0.30	25.44	7.02
SCAQMD Threshold	55	55	550	150	150	55
Is Threshold Exceeded? (Significant Impact?)	No	No	No	No	No	No

Notes:

1. Emissions were calculated using CalEEMod version 2016.3.2, as recommended by the SCAQMD.

2. The numbers may be slightly off due to rounding.

Refer to Appendix A, *Air Quality/Greenhouse Gas and Energy Worksheets*, for assumptions used in this analysis.

Area Source Emissions

Area source emissions would be generated from consumer products, architectural coating, and landscaping maintenance. This would result in minor levels of reactive organic gases and minute levels of CO, as shown in *Table III-2*.

Energy Source Emissions

Energy source emissions would be generated as a result of electricity and natural gas usage associated with the proposed project; refer to *Table III-2*. The primary use of electricity and natural gas by the project would be for space heating and cooling, water heating, ventilation, lighting, appliances, and electronics. Note that the proposed project would not include installation of natural gas lines to serve any buildings. Some future building occupants may, however, elect to install their own gas systems and the energy emissions totals shown in *Table III-2* account for that.

Total Operational Emissions

As shown in *Table III-2*, the total operational emissions would not exceed established SCAQMD thresholds. Therefore, impacts in this regard would be less than significant.

Cumulative Construction Impacts

With respect to the proposed project's construction-period air quality emissions and cumulative Basin-wide conditions, the SCAQMD has developed strategies to reduce criteria pollutant emissions, which are outlined in the 2016 AQMP pursuant to Federal Clean Air Act mandates. As such, the proposed project would comply with SCAQMD Rule 403 requirements and implement all feasible SCAQMD rules to reduce construction air emissions to the extent feasible. Rule 403 requires that fugitive dust be controlled and reduced with the best available control measures so that it does not remain visible in the atmosphere beyond the property line of the proposed project. In addition, the proposed project would comply with adopted 2016 AQMP emissions control measures. Pursuant to SCAQMD rules and mandates, as well as the CEQA requirement that significant impacts be mitigated to the extent feasible, these same requirements would also be imposed on construction projects throughout the Basin.

According to the CEQA Air Quality Handbook, project-related emissions that fall below the recommended construction thresholds are considered less than significant on a project level or with respect to cumulative impacts. As discussed above, the project's short-term construction emissions would be below the SCAQMD thresholds and would result in a less than significant impact, with Mitigation Measure III-1 to reduce NO_x emissions during grading. Thus, it can be reasonably inferred



that the project's construction emissions would not contribute to a cumulatively considerable air quality impact for nonattainment criteria pollutants in the Basin. Thus, a less than significant impact would occur in this regard.

Air Quality Health Impacts

Adverse health effects induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individual [e.g., age, gender]). In particular, ozone precursors VOCs and NO_x affect air quality on a regional scale. Health effects related to ozone are therefore the product of emissions generated by numerous sources throughout a region. Existing models have limited sensitivity to small changes in criteria pollutant concentrations, and, as such, translating project-generated criteria pollutants to specific health effects or additional days of nonattainment would produce meaningless results. In other words, the project's less than significant increases in regional air pollution from criteria air pollutants would have nominal or negligible impacts on human health.

As noted in the Brief of Amicus Curiae by the SCAQMD (April 6, 2015), the SCAQMD acknowledged it would be extremely difficult, if not impossible, to quantify health impacts of criteria pollutants for various reasons including modeling limitations as well as where in the atmosphere air pollutants interact and form. Furthermore, as noted in the Brief of Amicus Curiae by the San Joaquin Valley Air Pollution Control District (April 13, 2015), the district acknowledged that currently available modeling tools are not equipped to provide a meaningful analysis of the correlation between an individual development project's air emissions and specific human health impacts.

The SCAQMD acknowledges that health effects quantification from ozone, as an example, is correlated with the increases in the ambient level of ozone in the air (concentration) that an individual person breathes. SCAQMD's Brief of Amicus Curiae states that it would take a large amount of additional emissions to cause a modeled increase in ambient ozone levels over the entire region. The SCAQMD states that based on its own modeling in the 2012 Air Quality Management Plan, a reduction of 432 tons (864,000 pounds) per day of NO_x and a reduction of 187 tons (374,000 pounds) per day of VOCs would reduce ozone levels at the highest monitored site by only nine parts per billion. As such, the SCAQMD concludes that it is not currently possible to accurately quantify ozone-related health impacts caused by NO_x or VOC emissions from relatively small projects (defined as projects with regional scope) due to photochemistry and regional model limitations. Thus, as the project would not exceed SCAQMD thresholds for construction and operational air emissions, the project would have a less than significant impact for air quality health impacts.

Cumulative Long-Term Impacts

As discussed previously, the proposed project would not result in significant long-term air quality impacts, as emissions would not exceed SCAQMD adopted operational thresholds. As a result, the proposed project would not contribute a cumulatively considerable net increase of any criteria pollutant. Additionally, adherence to SCAQMD rules and regulations would alleviate potential impacts related to cumulative conditions on a project-by-project basis. Emission reduction technology, strategies, and plans are constantly being developed and applied throughout the Basin. Therefore, cumulative operational impacts associated with implementation of the proposed project would be less than significant.



Mitigation Measures

MM III-1: Daily grading activities on-site shall be limited to a maximum of four hours on any work day. This time restriction also applies to all haul trucks bringing in soil material to the project site, or trucks that are transporting excavated materials off-site.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Sensitive receptors near the project site include surrounding residences to the north, east, and south. The nearest sensitive receptors are residents of the Zinnia apartment complex located approximately 40 feet north of the western parcel (Site 1). There are also apartments and townhomes located on the eastern side of Gaviota Avenue, directly opposite the eastern parcel (Site 2). In order to identify impacts to sensitive receptors, the SCAQMD recommends addressing localized significance thresholds for construction and operations impacts (stationary sources only).

Localized Significance Thresholds

Localized significance thresholds (LSTs) were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008]) for guidance. The LST methodology assists lead agencies in analyzing localized air quality impacts. The SCAQMD provides the LST lookup tables for 1-, 2-, and 5-acre projects emitting CO, NO_x, PM_{2.5}, or PM₁₀. The LST methodology and associated mass rates are not designed to evaluate localized impacts from mobile sources traveling over the roadways. The project is located within Source Receptor Area (SRA) 4, South Coastal LA County.

Construction LST

The SCAQMD guidance on applying CalEEMod to LSTs specifies the number of acres a particular piece of equipment would likely disturb per day. Based on the SCAQMD guidance, the project would disturb approximately 5 acres of land per day during the grading phase. Therefore, the LST thresholds for 5 acres were utilized for the construction LST analysis. The closest sensitive receptors are residential uses approximately 40 feet north of the project site. These sensitive land uses may be potentially affected by air pollutant emissions generated during on-site construction activities. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. As the nearest sensitive uses are approximately 40 feet north of the project site, the lowest available LST values for 25 meters were used.

Table III-3, Localized Significance of Construction Emissions, shows the localized unmitigated and mitigated construction-related emissions for NO_x, CO, PM₁₀, and PM_{2.5} compared to the LSTs for SRA 4, South Coastal LA County. It is noted that the localized emissions presented in *Table III-3* are less than those



in *Table III-1* because localized emissions include only on-site emissions (i.e., from construction equipment and fugitive dust), and do not include off-site emissions (i.e., from hauling activities). As shown in *Table III-3*, the project's localized construction emissions would not exceed the LSTs for SRA 4. Therefore, localized significance impacts from construction would be less than significant.

Table III-3 Localized Significance of Construction Emissions

Source	Pollutant (pounds/day) ³			
	NO _x	CO	PM ₁₀	PM _{2.5}
Construction (Grading Phase)				
On-Site Emissions ^{1,2}	77.84	37.98	8.18	4.96
Localized Significance Threshold ³	99	1,503	14	8
Thresholds Exceeded?	No	No	No	No
<i>Reduced Emissions With 4-Hour/Day Grading Limit⁴</i>	<i>51.89</i>	<i>25.32</i>	<i>4.35</i>	<i>2.86</i>

Notes:

1. The grading phase emissions are presented as the worst-case scenario for NO_x, CO, PM₁₀, and PM_{2.5}.
2. The construction emissions in this table include reduction/credits based on the application of dust control techniques as required by SCAQMD Rule 403. The dust control techniques include the following: properly maintain mobile and other construction equipment; replace ground cover in disturbed areas quickly; water exposed surfaces twice daily; cover stock piles with tarps; water all haul roads three times daily; and limit speeds on unpaved roads to 15 miles per hour.
3. The Localized Significance Threshold was determined using Appendix C of the SCAQMD Final Localized Significant Threshold Methodology guidance document for pollutants NO_x, CO, PM₁₀, and PM_{2.5}. The Localized Significance Threshold was based on the anticipated daily acreage disturbance for construction (approximately 5 acres; therefore the 5-acre threshold was used) and the source receptor area (SRA 4).
4. 4-Hour grading day limit per Mitigation Measure III-1.

Refer to Appendix A, *Air Pollutant, Greenhouse Gas and Energy Consumption Calculation Worksheets*, for assumptions used in this analysis.

Operational LST

As seen in *Table III-4, Localized Significance of Operational Emissions*, project-related operational area source emissions would be negligible and would be below the LSTs. Therefore, operational LST impacts would be less than significant in this regard.

Table III-4 Localized Significance of Operational Emissions

Source	Pollutant (pounds/day)			
	NO _x	CO	PM ₁₀	PM _{2.5}
Operational				
Area Source Emissions	0.00	0.04	0.00	0.00
Localized Significance Threshold ¹	99	1,503	4	2
Thresholds Exceeded?	No	No	No	No

Notes:

1. The Localized Significance Threshold was determined using Appendix C of the SCAQMD *Final Localized Significant Threshold Methodology* guidance document for pollutants NO_x, CO, PM₁₀, and PM_{2.5}. The Localized Significance Threshold was based on the total acreage for operations (the 5-acre threshold was used), the distance to sensitive receptors, and the source receptor area (SRA 4).

Carbon Monoxide Hotspots

CO emissions are a function of vehicle idling time, meteorological conditions, and traffic flow. Under certain extreme meteorological conditions, CO concentrations near a congested roadway or



intersection may reach unhealthful levels (adversely affecting residents, school children, hospital patients, the elderly, etc.).

The Basin is designated as an attainment/maintenance area for the federal CO standards and an attainment area for state standards. There has been a decline in CO emissions even though vehicle miles traveled on U.S. urban and rural roads have increased. On-road mobile source CO emissions have declined 24 percent between 1989 and 1998, despite a 23 percent rise in motor vehicle miles traveled over the same 10 years. California trends have been consistent with national trends; CO emissions declined 20 percent in California from 1985 through 1997 while vehicle miles traveled increased 18 percent in the 1990s. Three major control programs have contributed to the reduced per-vehicle CO emissions: exhaust standards, cleaner burning fuels, and motor vehicle inspection/maintenance programs.

According to the SCAQMD CEQA Air Quality Handbook, a potential CO hotspot may occur at any location where the background CO concentration already exceeds 9.0 parts per million (ppm), which is the 8-hour California ambient air quality standard. As previously discussed, the project site is located in SRA 4, South Coastal LA County. Communities within SRAs are expected to have similar climatology and ambient air pollutant concentrations. The monitoring station representative of SRA 4 is the Long Beach-Hudson monitoring station, which is located approximately 2.71 miles west of the project site. The highest CO concentration at the Long Beach-Hudson monitoring station was measured at 4.7 ppm in 2018. As such, the background CO concentration does not exceed 9.0 ppm and a CO hotspot would not occur. Therefore, CO hotspot impacts would be less than significant in this regard.

Air Quality Health Impacts

As evaluated above, the project's air emissions would not exceed the SCAQMD's LST thresholds, and CO hotspots would not occur as a result of the proposed project. Therefore, the project would not exceed the most stringent applicable federal or state ambient air quality standards for emissions of CO, NOX, PM10, or PM2.5. It should be noted that the ambient air quality standards are developed and represent levels at which the most susceptible persons (children and the elderly) are protected. In other words, the ambient air quality standards are purposefully set in a stringent manner to protect children, elderly, and those with existing respiratory problems. Thus, an air quality health impact would be less than significant in this regard.

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

Less Than Significant Impact. According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors and would not generate heavy truck trips with high concentrations of diesel exhaust or other emissions leading to odors. In addition, California Health & Safety Code, Division 26, Part 4, Chapter 3, Section 41700 prohibits the emission of any material which causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of the public. Projects required to obtain permits from SCAQMD, typically industrial and some commercial projects, are evaluated by SCAQMD staff for potential odor nuisance and conditions may be applied (or control equipment required) where necessary to prevent occurrence of public nuisance.



Construction activities associated with the project may generate detectable odors from heavy-duty equipment exhaust. Construction-related odors would be short term in nature and cease upon project completion. Additionally, the project site is designated as Light Industrial, which allows for a variety of nonpolluting light industrial uses and can coexist with surrounding commercial and residential uses. Therefore, the project would not emit other types of emissions, including emissions leading to odors, adversely affecting a substantial number of people. Impacts would be less than significant.

IV. Biological Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES:				
<i>Would the project:</i>				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Discussion

- a) *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?***

Less than Significant Impact. The entire project site has been fully disturbed by past oil refinery activities. Most of the site is devoid of any surface vegetation, apart from scattered ruderal vegetation and ornamental trees. There are no native plant communities or any natural or man-made water features within or near the project site. The lands surrounding the site are developed with streets, light industrial, educational, residential, recreation and commercial uses, which have disturbed and replaced natural habitat.

The City of Signal Hill's General Plan Environmental Resources Element (1986) states that no species of plant or wildlife currently designated as rare or threatened has been located or is expected to occur within the city. While the Environmental Resources Element was published in 1986, this statement is still relevant, as no known habitat has been disturbed or removed in the last 30 years by the conversion of undeveloped land and oil fields and associated oil refinery and production land uses to urban development. Therefore, since the proposed project would not eliminate any native wildlife habitat or sensitive plant communities and would not affect any important habitat linkages that could support sensitive species, the project would not result in a substantial adverse effect on any candidate, sensitive, or special-status species. As such, the impact would be less than significant.

- b) *Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?***

No Impact. There are no rivers or streams and no riparian habitat or any other kind of sensitive natural community in or within the immediate vicinity of the fully disturbed project site. The General Plan Environmental Resources Element (1986) has not identified any sensitive natural communities on or within the area of the project site. The closest Los Angeles County designated Significant Ecological Area (SEA) is the Harbor Lake Regional Park site, approximately 8 miles west of the project site (Los Angeles County Department of Regional Planning 2015, Figure 9.3). The project site is characterized by barren ground surfaces, pipelines, and related devices associated with a soil vapor removal system, scattered ruderal vegetation, and a few ornamental trees that primarily line the perimeter of the project site. As such, the proposed development would have no impact on riparian habitat or sensitive natural habitat.

- c) *Would the project 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?***

No Impact. Wetlands are defined by Section 404 of the federal Clean Water Act as land that is flooded or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that normally does support, a prevalence of vegetation adapted to life in saturated soils. Wetlands include areas such as swamps, marshes, and bogs. There is no wetland habitat on the project site or in



the immediate area, which is fully urbanized. The US Fish and Wildlife Service's (2018) National Wetland Inventory shows that the nearest wetland habitat occurs along the Los Angeles River, approximately 2 miles west of the project site. As a result, the proposed project would have no impact on wetlands.

d) *Would the project 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. The project site has been heavily disturbed by past oil refinery facilities, and the surrounding area is fully urbanized, dominated by buildings and other structures, pavement, and ornamental vegetation such as turf grass, trees, and shrubs. There are no forms of natural wildlife habitat, no rivers, lakes or streams, and no native wildlife nursery sites in this area. The highly disturbed local landscape does not provide suitable habitat to support native resident or migratory fish or wildlife movement. While there is some possibility that the few ornamental trees found on-site, specifically in Site 2 (eastern parcel), could support nests of federal or state-protected migratory bird species, those trees would be replaced by more than 150 new ornamental trees included in the proposed landscape plan. As such, the development of 151,075 square feet of light industrial building spaces and the associated infrastructure and site improvements would not remove any valuable biological habitat that currently supports movement of fish or wildlife, nor would it inhibit, disturb, or alter the existing patterns of wildlife movement that occur elsewhere. Therefore, the project would have a less than significant impact on movement of native or migratory wildlife species.

e) *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*

No Impact (e and f). The City of Signal Hill does not have any policies or ordinances specifically protecting biological resources. The project site is not within a habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, the proposed project would not conflict with any City of Signal Hill regulations protecting biological resources, nor would the project conflict with any adopted habitat conservation plans. As such, the proposed project would have no impact.

f) *Would the project 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 (e and f). The City of Signal Hill does not have any policies or ordinances specifically protecting biological resources. The project site is not within a habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Therefore, the proposed project would not conflict with any City of Signal Hill regulations protecting biological resources, nor would the project conflict with any adopted habitat conservation plans. As such, the proposed project would have no impact.



V. Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
CULTURAL RESOURCES: <i>Would the project:</i>				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

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

See response to b, below.

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

Less Than Significant Impact with Mitigation Incorporated. Michael Baker staff reviewed literature and historical maps for archaeological, ethnographic, historical, and environmental information about the project area and the vicinity. Below is a list of resources reviewed, followed by a narrative description of the results for the project area.

- Official Map of Los Angeles County, California (Schmidt Label & Litho. Co. 1888)
- Downey, Calif. 1:24,000 scale topographic quadrangle (USGS 1902)
- Long Beach, Calif. 1:24,000 scale topographic quadrangle (USGS 1924)
- Map of “(Los Angeles Streets). Palos Verdes. San Pedro. Wilmington. Long Beach. Signal Hill.” (Thomas Bros. 1938)
- Long Beach, Calif. 1:24,000 scale topographic quadrangle (USGS 1949)
- Long Beach, Calif. 1:24,000 scale topographic quadrangle (USGS 1964)
- Historic aerials dated 1953, 1963, 1972, 1994, 2002 (Historicaerials.com 2019)

No features are depicted in the project site until at least 1924 when approximately four buildings, of unknown type, are located within the project area. At this time the project site was bound by the Union Pacific Railroad and Pacific Electric Railroad (neither extant). By 1949, the project area included various buildings and tanks related to the oil refinery industry. The number of tanks and buildings increased into the 1990s until the majority of the project site was covered. The project site was cleared



of all buildings and structures between 1994 and 2002. (Schmidt Label & Litho. Co. 1888; Thomas Bros. 1938; USGS 1902, 1924, 1949, 1964; Historicaerials.com 2019)

The South Central Coastal Information Center (SCCIC), as part of the California Historical Resources Information System, California State University, Fullerton, an affiliate of the California Office of Historic Preservation (OHP), is the official state repository of cultural resources records and reports for Los Angeles County. At Michael Baker International's request, SCCIC staff conducted a records search (File No. 20039.6048) on March 26, 2019. As part of the records search, the following federal and California inventories were reviewed:

- California Inventory of Historic Resources (OHP 1976).
- California Points of Historical Interest (OHP 1992 and updates).
- California Historical Landmarks (OHP 1996).
- Directory of Properties in the Historic Property Data File (OHP 2012). The directory includes the listings of the National Register of Historic Places, National Historic Landmarks, California Register of Historical Resources (California Register), California Historical Landmarks, and California Points of Historical Interest.

The SCCIC search determined that there are no cultural resources identified within the project site; 1 historical resource and 13 cultural resources are located within a quarter-mile search radius. The SCCIC records search and historic map review identified no historical resources as defined by CEQA Section 15064.5(a) within the project area. One historical resource, 1700 Hill Street, is located near the project area; however, the project would not directly or indirectly impact the historical significance of the resource because the project will not physically demolish, destruct, relocate, or alter the resource or its immediate surroundings in such a way that the significance of the resource would be materially impaired, as defined in CEQA Section 15064.5(b)(1-2). The project would have no impacts to historical resources.

There are no known archaeological resource concerns in the project site; however, since there are a number of recorded cultural resource sites within one-quarter mile of the project site, it is reasonable to conclude there is some potential to uncover previously unidentified archaeological resources during excavation into native soil materials. Mitigation Measure MM CUL-1 will be implemented to avoid significant impacts in the event that potentially significant archaeological resources and/or human remains are discovered, as follows:

Mitigation Measures

MM V-1 Treatment of previously unidentified archaeological deposits. If suspected prehistoric or historical archaeological deposits are discovered during construction, all work within 25 feet of the discovery shall be redirected and a Secretary of the Interior Professional Qualified and/or Registered Professional Archaeologist shall assess the situation and make recommendations regarding the treatment of the discovery. Impacts to significant archaeological deposits should be avoided if feasible, but if such impacts cannot be avoided, the deposits should be evaluated for their eligibility for the California Register. If the deposit is not California Register eligible, no further protection of the find is necessary. If the deposits are California Register eligible, impacts shall be avoided or mitigated. Acceptable mitigation may consist of but is not



necessarily limited to systematic recovery and analysis of archaeological deposits, recording the resource, preparation of a report of findings, and accessioning recovered archaeological materials at an appropriate curation facility.

c) *Would the project disturb any human remains, including those interred outside of dedicated cemeteries?*

Less Than Significant Impact. The research conducted regarding documented historical or archaeological resources in this area did not identify any known instances of human remains or human burial grounds. With the extensive past site disturbance from the Chemoil refinery facilities that were in place for several decades, and additional ground disturbance associated with environmental site investigations and monitoring devices, it is considered unlikely that some intact human remains could remain on-site, at the ground surface or in the near surface areas that would be disturbed by the proposed grading plan. Nonetheless, in the event of an accidental discovery of human remains during project excavation, compliance with Section 7050.5 of the California Health and Safety Code would ensure that such remains are properly identified and treated. Compliance would start with ensuring that there is no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the Los Angeles County coroner has determined the manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation or to his or her authorized representative. Project personnel/construction workers shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will immediately identify a Native American most likely descendant to inspect the site and provide recommendations within 48 hours for the proper treatment of the remains and associated grave goods.

VI. Energy

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
ENERGY: <i>Would the project:</i>				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

California Building Energy Efficiency Standards (Title 24)

The 2016 Building Energy Efficiency Standards for Residential and Nonresidential Buildings (California Code of Regulations, Title 24, Part 6), commonly referred to as Title 24, became effective on January 1, 2017. In general, Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2016 Title 24 standards are 5 percent more efficient than previous standards for nonresidential development (CEC 2016). The



standards offer developers better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in homes and businesses. Additionally, the 2019 Title 24 standards will take effect on January 1, 2020. Under 2019 Title 24 standards, nonresidential buildings will use about 30 percent less energy, mainly due to lighting upgrades, when compared to 2016 Title 24 standards (CEC 2019).

California Green Building Standards (CALGreen)

The 2016 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as CALGreen, is the first-in-the-nation mandatory green buildings standards code. The California Building Standards Commission developed the green building standards in an effort to meet the goals of California's landmark initiative Assembly Bill (AB) 32, which established a comprehensive program of cost-effective reductions of greenhouse gas (GHGs) emissions to 1990 levels by 2020. CALGreen was developed to (1) reduce GHG emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; (3) reduce energy and water consumption; and (4) respond to the environmental directives of the state administration. CALgreen, which went into effect on January 1, 2017, requires that new buildings employ water efficiency and conservation, increase building system efficiencies (e.g., lighting, heating/ventilation and air conditioning [HVAC], and plumbing fixtures), divert construction waste from landfills, and incorporate electric vehicles charging infrastructure.

There is growing recognition among developers and retailers that sustainable construction is not prohibitively expensive, and that there is a significant cost-savings potential in green building practices and materials (U.S. Green Building Council 2015).

Discussion

- a) *Would the project 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.

Project-Related Sources of Energy Consumption

This analysis focuses on three sources of energy that are relevant to the proposed project: electricity, natural gas, and transportation fuel for vehicle trips associated with new development and project construction. The analysis of operational electricity/natural gas usage is based on the California Emissions Estimator Model version 2016.3.2 (CalEEMod) modeling results for the project, which quantifies energy use for the proposed light industrial occupancy. The project's estimated electricity/natural gas consumption is based primarily on CalEEMod's default settings for Los Angeles County, and consumption factors provided by Southern California Edison (SCE) and the Southern California Gas Company (SoCalGas), who are the electricity and natural gas providers for the City of Signal Hill and the project site. The results of the CalEEMod modeling are included in Appendix A, Air Quality/Greenhouse Gas and Energy Worksheets. The amount of operational fuel consumption for vehicle travel was estimated using CARB's Emissions Factor 2014 (EMFAC2014) computer program, which provides projections for typical daily fuel (i.e., diesel and gasoline) usage in Los Angeles County, and the project's annual vehicle miles traveled (VMT) outputs from CalEEMod. The estimated construction fuel consumption is based on the project's construction equipment list



timing/phasing and hours of duration for construction equipment, as well as vendor, hauling, and construction worker trips.

The project's estimated energy consumption is summarized in *Table VI-1, Project and Countywide Energy Consumption*. As shown, the project's electricity usage would constitute an approximate 0.0026 percent increase over Los Angeles County's typical annual electricity usage and an approximate 0.0009 percent increase over Los Angeles County's typical annual natural gas consumption. The project's construction and operational vehicle fuel consumption would increase Los Angeles County's consumption by 0.0128 percent and 0.0181 percent, respectively.

Table VI-1 Project and Countywide Energy Consumption

Energy Type	Project Annual Energy Consumption ¹	Los Angeles County Annual Energy Consumption ²	Percentage Increase Countywide ²
Electricity Consumption	1,736 MWh	67,569,000 MWh	0.0026%
Natural Gas Consumption	27,693 therms	2,956,000,000 therms	0.0009%
Fuel Consumption			
• Construction Fuel Consumption ³	73,739 gallons	575,557,071 gallons	0.0128%
• Operational Automotive Fuel Consumption ³	700,418 gallons	3,866,914,629 gallons	0.0181%

Notes:

1. As modeled in CalEEMod version 2016.3.2.
2. The project increases in electricity and natural gas consumption are compared to the total consumption in Los Angeles County in 2018. The project increases in automotive fuel consumption are compared with the projected countywide fuel consumption in 2018. Los Angeles County electricity consumption and natural gas consumption source from the Energy Consumption Database (CEC n.d.).
3. Project fuel consumption calculated based on CalEEMod results. Countywide fuel consumption is from the CARB EMFAC2014 model. Refer to Appendix A, *Air Quality/Greenhouse Gas and Energy Worksheets*, for assumptions used in this analysis.

Construction-Related Energy Consumption

Project construction would consume energy in two general forms: (1) the fuel energy consumed by construction vehicles and equipment; and (2) bound energy in construction materials, such as asphalt, steel, concrete, and pipes, and manufactured or processed materials such as lumber and glass.

Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during site clearing, grading, and construction. Fuel energy consumed during construction would be temporary and would not represent a significant demand on energy resources. In addition, some incidental energy conservation would occur during construction through compliance with state requirements that heavy-duty diesel equipment not in use for more than five minutes be turned off. Project construction equipment would also be required to comply with the latest U.S. Environmental Protection Agency (EPA) and CARB engine emissions standards. These emissions standards require highly efficient combustion systems that maximize fuel efficiency and reduce unnecessary fuel consumption. Due to increasing transportation costs and fuel prices, contractors and owners have a strong financial incentive to avoid wasteful, inefficient, and unnecessary consumption of energy during construction.

Substantial reductions in energy inputs for construction materials can be achieved by selecting building materials composed of recycled materials that require substantially less energy to produce than nonrecycled materials. The project-related incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, and pipes and manufactured or processed materials (e.g., lumber and glass) would not substantially increase demand for energy compared to



overall local and regional demand for construction materials. It is reasonable to assume that production of building materials such as concrete, steel, etc., would employ all reasonable energy conservation practices in the interest in minimizing the cost of doing business. As indicated in *Table VI-1*, the project's annual fuel consumption from construction would be approximately 73,739 gallons, which would increase fuel use in the County by 0.0128 percent. As such, construction would have a nominal effect on the local and regional energy supplies. It is noted that construction fuel use is temporary and would cease upon completion of construction activities. There are no unusual project characteristics that would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or state. Therefore, construction fuel consumption would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature. As such, a less than significant impact would occur in this regard.

Operational Energy Consumption

Transportation Energy Demand

Pursuant to the Federal Energy Policy and Conservation Act of 1975, the National Highway Traffic and Safety Administration is responsible for establishing additional vehicle standards and for revising existing standards. Compliance with federal fuel economy standards is not determined for each individual vehicle model. Rather, compliance is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. *Table VI-1* provides an estimate of the daily fuel consumed by vehicles traveling to and from the site. As indicated, project operations are estimated to consume approximately 700,418 gallons of fuel per year, which would increase the Los Angeles County's automotive fuel consumption by 0.0181 percent. The project would have any unusual characteristics that would result in excessive operational fuel consumption associated with vehicular travel. Fuel consumption associated with project-related vehicle trips would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. As such, a less than significant impact would occur in this regard.

Building Energy Demand

The project would consume energy for interior and exterior lighting, HVAC, refrigeration, electronics systems, appliances, and security systems, among other common light industrial features. The project would be required to comply with Title 24 Building Energy Efficiency Standards, which provide minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the Title 24 standards significantly reduces energy usage. Furthermore, the electricity provider, SCE, is subject to California's Renewables Portfolio Standard (RPS). The RPS requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020 and to 50 percent of total procurement by 2030. As indicated in *Table VI-1*, operational energy consumption would represent an approximate 0.0026 percent increase in electricity consumption over the current countywide usage. Therefore, the project would not result in the inefficient, wasteful, or unnecessary consumption of building energy, and impacts in this regard would be less than significant.

As indicated in *Table VI-1*, operational energy consumption would represent an approximate 0.0026 percent increase in electricity consumption and a 0.0009 percent increase in natural gas consumption over the current countywide usage. The project would adhere to all federal, state, and local requirements for energy efficiency, including the Title 24 standards. Additionally, the project would not result in a substantial increase in demand or transmission service, resulting in the need for new or



expanded sources of energy supply or new or expanded energy delivery systems or infrastructure. The project would not result in the inefficient, wasteful, or unnecessary consumption of building energy. A less than significant impact would occur in this regard.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. The primary statewide plan for renewable energy and energy efficiency is the California Public Utilities Commission (CPUC) Energy Efficiency Strategic Plan, which is implemented chiefly through Title 24 and the CALGreen code (Title 24, Part 11). The project would be required to comply with Title 24 and CALGreen standards. Mandatory compliance with Title 24 and CALGreen standards would ensure the project incorporates energy-efficient windows, insulation, lighting, and ventilation systems, as well as water-efficient fixtures and electric vehicles charging infrastructure. The 2019 Title 24 standards are 30 percent more energy efficient than previous standards for nonresidential development (CEC 2019). Adherence to the CPUC's energy requirements and Title 24 and CALGreen standards will ensure conformance with the state's goal of promoting energy and lighting efficiency. Therefore, the proposed project would not conflict with or obstruct renewable energy or energy efficiency plans.

VII. Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS:				
<i>Would the project:</i>				
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Responses to the following are based, in part, on a preliminary geotechnical investigation of the project site conducted by TGR Geotechnical (TGR) and documented in a report dated June 21, 2019, provided in Appendix D of this Initial Study.

Discussion

a)i) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving 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.

- i) **No Impact.** The State Mining and Geology Board defines an active fault as one that has had surface displacement within the Holocene Epoch (roughly the last 11,000 years) and defines a potentially active fault as any fault that has been active during the Quaternary Period (approximately the last 1,600,000 years). These definitions are used in delineating Earthquake Fault Zones as mandated by the Alquist-Priolo Geologic Hazard Zones Act of 1972 and as subsequently revised in 1994 as the Alquist-Priolo Geologic Hazard Zoning Act and Earthquake Fault Zones Act.

TGR's review of geologic maps and a field reconnaissance determined that the project site is not included within any Earthquake Fault Zones as created by the Alquist-Priolo Earthquake Fault Zoning Act; further, no indications of faulting during a site reconnaissance in March 2017 were found (TGR 2019). The nearest fault is the Cherry Hill segment of the Newport-Inglewood Fault System, approximately one-quarter mile northeast of the project site (City of Signal Hill 2016). Other faults in the area include the Los Alamitos Fault, approximately 3.6 miles northeast; the Huntington Beach Fault, approximately 4.9 miles southwest; and the Palos Verde Fault Zone, approximately 6.6 miles southwest of the project site (TGR 2019).



A review of the Conceptual Grading and Utility Plan (CA Engineering, Inc., 2018), indicates that soil cuts would occur at a depth of no greater than 9 feet. Excavations at these depths are too shallow to trigger a fault rupture. Given that there are no faults underlying the project site and the limited depth of excavation, the project would have no direct or indirect impact in relation to substantial adverse effects associated with fault rupture.

a)ii) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

- ii) **Less than Significant Impact.** As noted in the discussion under threshold i), the Newport-Inglewood Fault System, which cuts diagonally across Signal Hill, is the most significant seismic feature in the area. This fault is considered seismically active. Within the Newport-Inglewood Fault System, five faults have been identified in the immediate vicinity of Signal Hill, including the Cherry Hill Fault, located approximately one-quarter mile northeast of the project site. It is likely that a seismic event on the Cherry Hill Fault or along the greater Newport-Inglewood Fault System would result in strong seismic ground shaking.

The proposed light industrial development would be required to comply with the City's Building Code (Signal Hill Municipal Code Title 15), which requires future developments to submit an engineering geology report and soils engineering report (Signal Hill Municipal Code Section 15.04) to identify and detail construction requirements that account for geologic conditions and seismic hazards. The Preliminary Geotechnical Investigation (TGR 2019) for the proposed project outlines design and construction methods to alleviate geotechnical constraints and provide sufficient structural support to resist the estimated strong seismic ground motions resulting from movement along the Cherry Hill Fault or the greater Newport-Inglewood Fault System. Construction plans and specifications are to be submitted to the City Engineer for review and approval prior to the issuance of grading or building permits. Thus, with the required adherence to the City of Signal Hill Building Code, potential impacts from strong seismic ground shaking would be less than significant.

a)iii) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

- iii) **Less than Significant Impact.** Liquefaction is a seismic phenomenon in which loose, saturated, fine-grained granular soils behave similarly to fluid when subjected to high-intensity ground shaking. Liquefaction occurs when there is the presence of shallow groundwater, low-density fine, clean, sandy soils, and high-intensity ground motion. Effects of liquefaction can include sand boils, settlement, and load-bearing capacity failures below foundations.

TGR's review of the Long Beach Quadrangle of the Seismic Hazard Zone Map indicates that the southern portion of the project site is in an area with the potential for liquefaction. Accordingly, TGR performed a liquefaction analysis that indicated that the project site soils have a negligible potential for liquefaction. As is required by the City of Signal Hill Building Code (Signal Hill Municipal Code Section 15.04), prior to the issuance of a



grading permit, the project applicant shall submit to the City Engineer for review and approval final plans and specifications that outline the construction methods to be employed to lessen liquefaction impacts and provide stable soil conditions to support all proposed structures. These specifications will identify the applicable seismic safety design standards based on the project site location, soils conditions, and proximity to regional faults. Thus, with the required adherence to the City of Signal Hill Building Code, potential impacts from seismic-related ground failure would be less than significant.

a)iv) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

- iv) **No Impact.** Figure 5 of the City of Signal Hill General Plan Safety Element (2016) does not identify the project site as being within an area known to be susceptible to landslides. Further, as stated in the Preliminary Geotechnical Investigation prepared by TGR, the project site is not subject to landslide hazards. The project site has relatively modest overall topographical relief across both the eastern and western parcels of 20 feet from the north to the south and southeast; similarly, the proposed grading plan indicates the finished grades of the project site would have gradients that have a differential of approximately 15 feet across the site. There are no existing or proposed steep slopes that could be susceptible to landslide hazards. Thus, since the project site is not in an area subject to landslides, no impact would occur.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less than Significant Impact. Given the extensive history of ground disturbance across the site from past oil refinery activities and subsequent earthwork associated with site remediation, it is unlikely that any natural topsoil remains in the upper soil layers. The proposed development would include grading activities that would remove any existing ground cover and disturb exposed soils. These soils could be exposed to wind and rain, thus potentially resulting in soil erosion.

The Signal Hill Municipal Code Chapter 12.16 establishes the framework for the City to control erosion through the management of stormwater and urban runoff. In part, this chapter requires that prior to the issuance of a building or grading permit for a new development or redevelopment project, the City must evaluate the proposed project's erosion and grading requirements, including the appropriate wet weather erosion control plan, stormwater pollution prevention plan, or other plans consistent with countywide development construction guidance provisions to control erosion. These plans are required to demonstrate that stormwater runoff containing sediment is reduced to the maximum extent practicable and that best management practices apply and are required from the time of commencement of construction until receipt of a certificate of occupancy.

In addition, construction activities are required to comply with existing erosion control requirements, including the South Coast Air Quality Management District's (SCAQMD) Rule 403, which would reduce the potential for wind erosion through a variety of dust control measures such as covering soil stockpiles, watering exposed soils several times a day, ceasing grading during high winds, and providing temporary soil binders. The project must also comply with the conditions of a General Construction Permit, administered by the Los Angeles Regional Water Quality Control Board, pursuant to the National Pollutant Discharge Elimination System, which would reduce water erosion by requiring best management water quality control practices during construction (e.g., using berms or drainage ditches to divert water around the site; preventing sediment from migrating off the site by using temporary



swales, silt fences, or gravel rolls). Compliance with these existing regulatory standards would generally avoid or reduce potential erosion impacts during construction to less than significant.

Once completed, the currently exposed soils across the project site would be replaced with impervious and landscaped surfaces, which would substantially reduce and, to a large extent, eliminate erosion potential as compared with existing site conditions.

With adherence to the mandatory regulations to reduce and control erosion during construction and project design, which reduces the amount of exposed soils subject to erosion, impacts in relation to substantial soil erosion or the loss of topsoil would be less than significant.

c) *Would the project 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. Based on the subsurface investigation and review of the borings, TGR determined that the undocumented fill that underlies the project site, which varies in thickness from 1 to 5 feet, is not suitable to support the proposed structures. In accordance with the requirements of the City of Signal Hill Municipal Code Section 15.04, the undocumented fills shall be replaced with engineered fill that would support the proposed structures. Based on field exploration, laboratory testing, and engineering analyses, TGR did not identify any other unstable conditions, such as liquefaction, landslide, laterals spread, collapse, expansive soils, or subsidence that would become unstable. Compliance with Section 15.04 would ensure that any potentially unstable conditions affecting site design and construction would be addressed and remediated through a review of additional soil investigations and monitoring during site grading; thus, impacts would be less than significant.

d) *Would the project 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?*

No Impact. TRG performed expansion index testing as part of the Preliminary Geotechnical Investigation prepared for the proposed project. The tests indicated that the site soils have a very low expansion potential. Therefore, the project would not create substantial direct or indirect risks to life or property because of expansive soils and would have no impact.

e) *Would the project 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. All wastewater generated by the proposed project would be discharged into the City's municipal sewer system. No septic systems or other soil-based wastewater disposal systems would be part of the proposed project. Therefore, the proposed project would have no impact related to soils incapable of supporting the use of septic tanks or alternative wastewater disposal systems.



f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant With Mitigation Incorporated. The geotechnical investigations conducted by TGR did not identify any unique geologic features on the project site. A vertebrate paleontology collection records search for locality and specimen data was completed by the NHMLAC on March 26, 2019 (McLeod 2019: Attachment 2). The records search identified no previously identified vertebrate fossil localities within the project site; however, the project site was identified to have high sensitivity for paleontological resources because the entire project site consists of older Quaternary deposits, referred to as the Palos Verdes Sand or the Lakewood Formation. Directly east of the project site are exposures of slightly older marine Pleistocene San Pedro Sand that likely underlies the Palos Verdes Sand in the project area. The older Quaternary deposits and older marine Pleistocene San Pedro Sand are both known to produce fossil specimens, including four localities within the project's vicinity. While it is unlikely, it is possible that project excavations into native Quaternary materials could potentially disturb fossil resources that may be of scientific significance. To avoid significant impacts, Mitigation Measure VII-1 will be implemented, as follows:

Mitigation Measures

MM VII-1 Treatment of Fossil Discoveries. Excavations into native Quaternary materials shall be monitored by a qualified professional paleontologist, including collection and processing of soil samples in those areas to determine the fossil potential of the site. Any fossils recovered during mitigation shall be deposited to an accredited and permanent scientific institution. A qualified professional paleontologist is a professional with a graduate degree in paleontology, geology, or related field, with demonstrated experience in the vertebrate, invertebrate, or botanical paleontology of California, as well as at least one year full time professional experience, or equivalent specialized training in paleontological research (i.e., the identification of fossil deposits, application of paleontological field and laboratory procedures and techniques, and curation of fossil specimens), and at least four months of supervised field and analytic experience in general North American paleontology.

VIII. Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
GREENHOUSE GAS EMISSIONS:				
<i>Would the project:</i>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Global Climate Change

California is a substantial contributor of global greenhouse gases (GHGs), emitting over 440 million tons of carbon dioxide (CO₂) per year (Cal/EPA 2018). Methane (CH₄) is also an important GHG



that potentially contributes to global climate change. GHGs are global in their effect, which is to increase the earth's ability to absorb heat in the atmosphere. As primary GHGs have a long lifetime in the atmosphere, accumulate over time, and are generally well mixed, their impact on the atmosphere is mostly independent of the point of emission. Every nation emits GHGs and as a result makes an incremental cumulative contribution to global climate change; therefore, global cooperation will be required to reduce the rate of GHG emissions enough to slow or stop the human-caused increase in average global temperatures and associated changes in climatic conditions.

The impact of human activities on global climate change is apparent in the observational record. Air trapped by ice has been extracted from core samples taken from polar ice sheets to determine the global atmospheric variation of CO₂, CH₄, and nitrous oxide (N₂O) from before the start of industrialization (approximately 1750) to over 650,000 years ago. For that period, it was found that CO₂ concentrations ranged from 180 to 300 parts per million (ppm). For the period from approximately 1750 to the present, global CO₂ concentrations increased from a pre-industrialization period concentration of 280 to 379 ppm in 2005, with the 2005 value far exceeding the upper end of the pre-industrial period range. As of April 2018, the highest monthly average concentration of CO₂ in the atmosphere was recorded at 410 ppm (Scripps 2018).

The Intergovernmental Panel on Climate Change (IPCC) constructed several emission trajectories of GHGs needed to stabilize global temperatures and climate change impacts. It concluded that a stabilization of GHGs at 400 to 450 ppm carbon dioxide equivalent (CO₂eq)⁴ concentration is required to keep global mean warming below 2 degrees Celsius (°C), which in turn is assumed to be necessary to avoid dangerous climate change.

Regulatory Frameworks and Legal Decisions Addressing GHG Reduction

Federal

To date, no national standards have been established for nationwide GHG reduction targets, nor have any regulations or legislation been enacted specifically to address climate change and GHG emissions reduction at the project level. Various efforts have been promulgated at the federal level to improve fuel economy and energy efficiency to address climate change and its associated effects.

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

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

⁴ Carbon dioxide equivalent (CO₂eq) – A metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential.



consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

U.S. Environmental Protection Agency Endangerment Finding. The U.S. Environmental Protection Agency's (EPA) authority to regulate GHG emissions stems from the U.S. Supreme Court decision in *Massachusetts v. EPA* (2007). The Supreme Court ruled that GHGs meet the definition of air pollutants under the existing Clean Air Act and must be regulated if these gases could be reasonably anticipated to endanger public health or welfare. Responding to the Court's ruling, the EPA finalized an endangerment finding in December 2009. Based on scientific evidence it found that six GHGs (CO_2 , CH_4 , N_2O , hydrofluorocarbons [HFCs], perfluorocarbons [PFCs], and sulfur hexafluoride [SF_6]) constitute a threat to public health and welfare. Thus, it is the Supreme Court's interpretation of the existing act and the EPA's assessment of the scientific evidence that form the basis for the EPA's regulatory actions.

State

Various statewide and local initiatives to reduce the state's contribution to GHG emissions have raised awareness that, even though the various contributors to and consequences of global climate change are not yet fully understood, global climate change is under way, and there is a real potential for severe adverse environmental, social, and economic effects in the long term.

Assembly Bill 1493. AB 1493 (also known as the Pavley Bill) requires that the California Air Resources Board (CARB) develop and adopt, by January 1, 2005, regulations that achieve "the maximum feasible reduction of GHG emitted by passenger vehicles and light-duty trucks and other vehicles determined by CARB to be vehicles whose primary use is noncommercial personal transportation in the State."

To meet the requirements of AB 1493, CARB approved amendments to the California Code of Regulations (CCR) in 2004 by adding GHG emissions standards to California's existing standards for motor vehicle emissions. Amendments to CCR Title 13, Sections 1900 and 1961 and adoption of 13 CCR Section 1961.1 require automobile manufacturers to meet fleet-average GHG emissions limits for all passenger cars, light-duty trucks within various weight criteria, and medium-duty weight classes for passenger vehicles (i.e., any medium-duty vehicle with a gross vehicle weight rating less than 10,000 pounds that is designed primarily to transport people), beginning with the 2009 model year. Emissions limits are reduced further in each model year through 2016. The near-term standards were intended to achieve a reduction of about 22 percent in GHG emissions compared to the emissions from the 2002 fleet, while the mid-term standards were intended to achieve a reduction of about 30 percent.

Assembly Bill 32 (California Global Warming Solutions Act of 2006). California passed the California Global Warming Solutions Act of 2006 (AB 32; California Health and Safety Code Division 25.5, Sections 38500–38599). AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020.

CARB Scoping Plan. On December 11, 2008, CARB adopted its initial Climate Change Scoping Plan, which functions as a roadmap to achieve GHG reductions in California required by AB 32 through subsequently enacted regulations. CARB's first Scoping Plan contains the main strategies California will implement to reduce CO_2eq emissions by 174 million metric tons (MT), or approximately 30 percent, from the state's projected 2020 emissions level of 596 million MTCO_2eq under a business as



usual (BAU) scenario.⁵ This is a reduction of 42 million MTCO₂eq, or almost 10 percent, from 2002 to 2004 average emissions, but requires the reductions in the face of population and economic growth through 2020.

CARB's Scoping Plan calculates 2020 BAU emissions as the emissions that would be expected to occur in the absence of any GHG reduction measures. The 2020 BAU emissions estimate was derived by projecting emissions from a past baseline year using growth factors specific to each of the different economic sectors (e.g., transportation, electrical power, commercial and residential, industrial). CARB used three-year average emissions, by sector, for 2002 to 2004 to forecast emissions to 2020. The measures described in CARB's Scoping Plan are intended to reduce the projected 2020 BAU to 1990 levels, as required by AB 32.

AB 32 requires CARB to update the Scoping Plan at least once every five years. CARB adopted the first major update to the Scoping Plan on May 22, 2014. The updated Scoping Plan summarizes recent science related to climate change, including anticipated impacts to California and the levels of GHG reduction necessary to likely avoid risking irreparable damage. It identifies the actions California has already taken to reduce GHG emissions and focuses on areas where further reductions could be achieved to help meet the 2020 target established by AB 32. The Scoping Plan update also looks beyond 2020 toward the 2050 goal, established in Executive Order S-3-05, and observes that "a mid-term statewide emission limit will ensure that the state stays on course to meet our long-term goal." The Scoping Plan update did not establish or propose any specific post-2020 goals, but identified such goals adopted by other governments or recommended by various scientific and policy organizations.

In December 2017, CARB approved California's 2017 Climate Change Scoping Plan: The Strategy for Achieving California's 2030 Greenhouse Gas Target. This update focuses on implementation of a 40 percent reduction in GHGs by 2030 compared to 1990 levels. To achieve this, the updated Scoping Plan draws on a decade of successful programs that addresses the major sources of climate-changing gases in every sector of the economy:

- *More Clean Cars and Trucks:* The plan sets out far-reaching programs to incentivize the sale of millions of zero-emission vehicles, drive the deployment of zero-emission trucks, and shift to a cleaner system of handling freight statewide.
- *Increased Renewable Energy:* California's electric utilities are ahead of schedule meeting the requirement that 33 percent of electricity come from renewable sources by 2020. The Scoping Plan guides utilities to 50 percent renewables by 2030, as required under SB 350.
- *Slashing Super-Pollutants:* The plan calls for a significant cut in super-pollutants such as methane and HFC refrigerants, which are responsible for as much as 40 percent of global warming.
- *Cleaner Industry and Electricity:* California's renewed Cap-and-Trade program extends the declining cap on emissions from utilities and industries and the carbon allowance auctions. The auctions will continue to fund investments in clean energy and efficiency, particularly in disadvantaged communities.

⁵ "Business as usual" refers to emissions that would be expected to occur in the absence of GHG reductions; refer to <http://www.arb.ca.gov/cc/inventory/data/bau.htm>. Note that there is significant controversy as to what BAU means. In determining the GHG 2020 limit, CARB used the above as the "definition." It is broad enough to allow for design features to be counted as reductions.



- Cleaner Fuels: The Low Carbon Fuel Standard will drive further development of cleaner, renewable transportation fuels to replace fossil fuels.
- Smart Community Planning: Local communities will continue developing plans which will further link transportation and housing policies to create sustainable communities.
- Improved Agriculture and Forests: The Scoping Plan outlines innovative programs to account for and reduce emissions from agriculture, forests, and other natural lands.

Senate Bill 375. SB 375, signed in September 2008 (Chapter 728, Statutes of 2008), aligns regional transportation planning efforts, regional GHG reduction targets, and land use and housing allocations. SB 375 requires Metropolitan Planning Organizations (MPOs) to adopt a sustainable communities strategy (SCS) or alternative planning strategy that will prescribe land use allocation in that MPO's regional transportation plan. CARB, in consultation with MPOs, will provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in the region for the years 2020 and 2035. These reduction targets will be updated every eight years but can be updated every four years if advancements in emissions technologies affect the reduction strategies to achieve the targets. CARB is also charged with reviewing each MPO's SCS or alternative planning strategy for consistency with its assigned targets. If MPOs do not meet the GHG reduction targets, transportation projects may not be eligible for funding programmed after January 1, 2012.

Executive Order S-1-07. Executive Order S-1-07 proclaims that the transportation sector is the main source of GHG emissions in California, generating more than 40 percent of statewide emissions. It establishes a goal to reduce the carbon intensity of transportation fuels sold in California by at least 10 percent by 2020. This order also directs CARB to determine whether this Low Carbon Fuel Standard could be adopted as a discrete early-action measure as part of the effort to meet the mandates in AB 32.

Executive Order S-3-05. Executive Order S-3-05 set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced, as follows:

- By 2010, reduce GHG emissions to 2000 levels.
- By 2020, reduce GHG emissions to 1990 levels.
- By 2050, reduce GHG emissions to 80 percent below 1990 levels.

The executive order directed the secretary of the California Environmental Protection Agency (Cal/EPA) to coordinate a multi-agency effort to reduce GHG emissions to the target levels. The secretary will also submit biannual reports to the governor and California legislature describing the progress made toward the emissions targets, the impacts of global climate change on California's resources, and mitigation and adaptation plans to combat these impacts. To comply with the executive order, the secretary of Cal/EPA created the California Climate Action Team, made up of members from various state agencies and commissions. The team released its first report in March 2006. The report proposed to achieve the targets by building on the voluntary actions of California businesses, local governments, and communities and through state incentive and regulatory programs.

Executive Order S-13-08. Executive Order S-13-08 seeks to enhance the state's management of climate impacts including sea level rise, increased temperatures, shifting precipitation, and extreme weather events by facilitating the development of state's first climate adaptation strategy. This will result in consistent guidance from experts on how to address climate change impacts in the state of California.



Executive Order S-14-08. Executive Order S-14-08 expands the state's Renewable Energy Standard to 33 percent renewable power by 2020. Additionally, Executive Order S-21-09 (signed on September 15, 2009) directs CARB to adopt regulations requiring that 33 percent of electricity sold in the state come from renewable energy by 2020. CARB adopted the "Renewable Electricity Standard" on September 23, 2010, which requires 33 percent renewable energy by 2020 for most publicly owned electricity retailers.

Executive Order S-20-04. Executive Order S-20-04, the California Green Building Initiative, (signed into law on December 14, 2004), establishes a goal of reducing energy use in state-owned buildings by 20 percent from a 2003 baseline by 2015. It also encourages the private commercial sector to set the same goal. The initiative places the California Energy Commission (CEC) in charge of developing a building efficiency benchmarking system, commissioning and retro-commissioning (commissioning for existing commercial buildings) guidelines and developing and refining building energy efficiency standards under Title 24 to meet this goal.

Title 24, Part 6. California's Energy Efficiency Standards for Residential and Nonresidential Buildings, located at Title 24, Part 6 of the CCR and commonly referred to as "Title 24," were established in 1978 in response to a legislative mandate to reduce California's energy consumption. Title 24 requires the design of building shells and building components to conserve energy. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The CEC adopted the 2016 Title 24 standards, which became effective on January 1, 2017 (CEC 2016). The 2016 standards continue to improve upon the 2013 Title 24 standards for new construction of, and additions and alterations to, residential and nonresidential buildings (CEC 2016). Compliance with Title 24, Part 6 is enforced through the building permit process. Additionally, the 2019 Title 24 standards will take effect on January 1, 2020. Under 2019 Title 24 standards, nonresidential buildings will use about 30 percent less energy, mainly due to lighting upgrades, when compared to 2016 Title 24 standards (CEC 2018).

Title 24, Part 11. The California Green Building Standards Code (CCR, Title 24, Part 11), commonly referred to as the CALGreen Code, went into effect on January 1, 2017. Most mandatory measure changes in the 2016 CALGreen Code from the previous 2013 CALGreen Code were related to the definitions and to the clarification or addition of referenced manuals, handbooks, and standards. For example, several definitions related to energy that were added or revised affect electric vehicles (EV) chargers and charging and hot water recirculation systems. For new multifamily dwelling units, the residential mandatory measures were revised to provide additional EV charging space requirements, including quantity, location, size, single EV space, multiple EV spaces, and identification. For nonresidential mandatory measures, the number of required EV charging spaces has been revised in its entirety (CEC 2018). Compliance with Title 24, Part 11 is enforced through the building permit process.

Executive Order S-21-09. Executive Order S-21-09, 33 percent Renewable Energy for California, directs CARB to adopt regulations to increase California's Renewables Portfolio Standard to 33 percent by 2020. This builds upon SB 1078 (2002), which established the California Renewables Portfolio Standard program, requiring 20 percent renewable energy by 2017, and SB 107 (2006), which advanced the 20 percent deadline to 2010, a goal which was expanded to 33 percent by 2020 in the 2005 Energy Action Plan II.

Senate Bill 97. On June 19, 2008, the Governor's Office of Planning and Research (OPR) released a technical advisory on addressing climate change. This guidance document outlines suggested



components to CEQA disclosure, including quantification of GHG emissions from a project's construction and operation; determination of significance of the project's impact to climate change; and if the project is found to be significant, the identification of suitable alternatives and mitigation measures.

SB 97, passed in August 2007, is designed to work in conjunction with CEQA and AB 32. SB 97 requires OPR to prepare and develop guidelines for the mitigation of GHG emissions or the effects thereof, including, but not limited to, the effects associated with transportation and energy consumption. The Draft Guidelines Amendments for Greenhouse Gas Emissions ("Guidelines Amendments") were adopted on December 30, 2009, and address the specific obligations of public agencies when analyzing GHG emissions under CEQA to determine a project's effects on the environment.

However, neither a threshold of significance nor any specific mitigation measures are included or provided in the Guidelines Amendments.⁶ The Guidelines Amendments require a lead agency to make a good-faith effort, based on the extent possible on scientific and factual data, to describe, calculate, or estimate the amount of GHG emissions resulting from a project. The Guidelines Amendments give discretion to the lead agency whether to: (1) use a model or methodology to quantify GHG emissions resulting from a project, and which model or methodology to use; or (2) rely on a qualitative analysis or performance-based standards. Furthermore, the Guidelines Amendments identify three factors that should be considered in the evaluation of the significance of GHG emissions:

1. The extent to which a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.⁷

The administrative record for the Guidelines Amendments also clarifies "that the effects of greenhouse gas emissions are cumulative and should be analyzed in the context of California Environmental Quality Act's requirements for cumulative impact analysis."⁸

The California Natural Resources Agency is required to periodically update the Guidelines Amendments to incorporate new information or criteria established by CARB pursuant to AB 32. Senate Bill 97 applies to any environmental impact report (EIR), negative declaration, mitigated negative declaration, or other document required by CEQA, which has not been finalized.

Senate Bills 1078 and 107. SB 1078 (Chapter 516, Statutes of 2002) requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 20 percent of their supply from renewable sources by 2017. SB 107 (Chapter 464, Statutes of 2006) changed the target date to 2010.

⁶ See 14 California Code of Regulations Section 15064.7 (generally giving discretion to lead agencies to develop and publish thresholds of significance for use in the determination of the significance of environmental effects) and 15064.4 (giving discretion to lead agencies to determine the significance of impacts from GHGs).

⁷ 14 California Code of Regulations Section 15064.4(b).

⁸ Letter from Cynthia Bryant, Director of the Governor's Office of Planning and Research to Mike Chrisman, California Secretary for Natural Resources, dated April 13, 2009.



Senate Bill 1368. SB 1368 (Chapter 598, Statutes of 2006) is the companion bill of AB 32 and was signed into law in September 2006. SB 1368 required the California Public Utilities Commission to establish a performance standard for baseload generation of GHG emissions by investor-owned utilities by February 1, 2007. SB 1368 also required the CEC to establish a similar standard for local publicly owned utilities by June 30, 2007. These standards could not exceed the GHG emissions rate from a baseload combined-cycle, natural gas fired plant. Furthermore, the legislation states that all electricity provided to California, including imported electricity, must be generated by plants that meet the standards set by California Public Utilities Commission and CEC.

Senate Bill 32. Signed into law on September 2016, SB 32 codifies the 2030 GHG reduction target in Executive Order B-30-15 (40 percent below 1990 levels by 2030). The bill authorizes CARB to adopt an interim GHG emissions level target to be achieved by 2030. CARB also must adopt rules and regulations in an open public process to achieve the maximum, technologically feasible, and cost-effective GHG reductions.

Regional

South Coast Air Quality Management District. The Southern California Air Quality Management District (SCAQMD) adopted a “Policy on Global Warming and Stratospheric Ozone Depletion” on April 6, 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the Air Quality Management Plan. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy to include the following directives:

- Phase out the use and corresponding emissions of chlorofluorocarbons (CFC), methyl chloroform (1,1,1-trichloroethane or TCA), carbon tetrachloride, and halons by December 1995.
- Phase out the large quantity use and corresponding emissions of hydrochlorofluorocarbons by the year 2000.
- Develop recycling regulations for hydrochlorofluorocarbons (e.g., SCAQMD Rules 1411 and 1415).
- Develop an emissions inventory and control strategy for methyl bromide.
- Support the adoption of a California GHG emission reduction goal.

In 2008, SCAQMD released draft guidance regarding interim CEQA GHG significance thresholds (SCAQMD 2008), in which SCAQMD proposed the use of a percent emission reduction target to determine significance for commercial/residential projects that emit greater than 3,000 MTCO₂eq per year. Under this proposal, commercial/residential projects that emit fewer than 3,000 MTCO₂eq per year would be assumed to have a less than significant impact on climate change. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold of 10,000 MTCO₂eq per year for stationary source/industrial projects where the SCAQMD is the lead agency. However, the SCAQMD has yet to adopt a GHG significance threshold for application by local lead agencies in their review of land use development projects (e.g., residential/commercial projects).

Southern California Association of Governments. Pursuant to SB 375, the Southern California Association of Governments (SCAG) adopted the 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy (2016–2040 RTP/SCS) on April 7, 2016. The 2016–2040 RTP/SCS reaffirms the land use policies that were incorporated into the 2012–2035 RTP/SCS. These



foundational policies, which guided the development of the 2016–2040 RTP/SCS’s strategies for land use, include the following:

- Identify regional strategic areas for infill and investment.
- Structure the plan on a three-tiered system of centers development.⁹
- Develop “Complete Communities.”
- Develop nodes on a corridor.
- Plan for additional housing and jobs near transit.
- Plan for changing demand in types of housing.
- Continue to protect stable, existing single-family areas.
- Ensure adequate access to open space and preservation of habitat.
- Incorporate local input and feedback on future growth.

The 2016–2040 RTP/SCS recognizes that transportation investments and future land use patterns are inextricably linked, and continued recognition of this close relationship will help the region make choices that sustain existing resources and expand efficiency, mobility, and accessibility for people across the region. In particular, the 2016–2040 RTP/SCS draws a closer connection between where people live and work, and it offers a blueprint for how Southern California can grow more sustainably. The 2016–2040 RTP/SCS also includes strategies focused on compact infill development and economic growth by building the infrastructure the region needs to promote the smooth flow of goods and easier access to jobs, services, educational facilities, healthcare and more.

The 2016–2040 RTP/SCS states that the SCAG region is home to about 18.3 million people (as of 2012) and currently includes approximately 5.9 million homes and 7.4 million jobs.¹⁰ By 2040, the integrated growth forecast projects that these figures will increase by 3.8 million people, with nearly 1.5 million more homes and 2.4 million more jobs. High Quality Transit Areas¹¹ (HQTAs) will account for 3 percent of regional total land but are projected to accommodate 46 percent and 55 percent of future household and employment growth respectively between 2012 and 2040. The 2016–2040 RTP/SCS overall land use pattern reinforces the trend of focusing new housing and employment in the region’s HQTAs. HQTAs are a cornerstone of land use planning best practice in the SCAG region because they concentrate roadway repair investments, leverage transit and active transportation investments, reduce regional life-cycle infrastructure costs, improve accessibility, create local jobs, and have the potential to improve public health and housing affordability.

In March 2018, CARB updated the SB 375 targets to require an 8 percent reduction by 2020 and a 19 percent reduction by 2035 in per capita passenger vehicle GHG emissions (CARB 2018). As this reduction target was updated after publication of the 2016–2040 RTP/SCS, it is expected that the next iteration of the RTP/SCS will be updated to include this target.

⁹ Complete language: “Identify strategic centers based on a three-tiered system of existing, planned and potential relative to transportation infrastructure. This strategy more effectively integrates land use planning and transportation investment” (SCAG 2008, pp. 90-92).

¹⁰ 2016–2040 RTP/SCS population growth forecast methodology includes data for years 2012, 2020, 2035 and 2040.

¹¹ Defined by the 2016–2040 RTP/SCS as generally walkable transit villages or corridors that are within 0.5 mile of a well-served transit stop or a transit corridor with 15 minute or less service frequency during peak commute hours.



Methodology

The City has not adopted a numerical significance threshold for assessing impacts related to GHG emissions. Nor have the SCAQMD, CARB, or any other state or regional agency adopted a numerical significance threshold for assessing GHG emissions that is applicable to the project. As discussed above, the SCAQMD has an interim GHG significance threshold of 10,000 MTCO₂eq per year for stationary source/industrial projects where SCAQMD is the lead agency. However, this SCAQMD interim GHG significance threshold is not applicable to the project as the project is a nonpolluting light industrial development and the City of Signal Hill is the lead agency.¹² Since there is no applicable adopted or accepted numerical threshold of significance for GHG emissions, the methodology for evaluating the project's impacts related to GHG emissions focuses on its consistency with statewide, regional, and local plans adopted for the purpose of reducing and/or mitigating GHG emissions. This evaluation of consistency with such plans is the sole basis for determining the significance of the project's GHG-related impacts on the environment.

Notwithstanding, for informational purposes, the analysis also calculates the amount of GHG emissions that would be attributable to the project using recommended air quality models, as described below. The primary purpose of quantifying the project's GHG emissions is to satisfy State CEQA Guidelines Section 15064.4(a), which calls for a good-faith effort to describe and calculate emissions. However, the significance of the project's GHG emissions impacts is not based on the amount of GHG emissions resulting from the project.

Discussion

In accordance with State CEQA Guidelines Appendix G, the project would have a significant impact related to greenhouse gas emissions if it would:

- a) *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?***
- b) *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?***

Project-Related Sources of Greenhouse Gases

Less than Significant Impact. Project-related GHG emissions would include emissions from direct and indirect sources. The proposed project would result in direct and indirect emissions of CO₂, N₂O, and CH₄, and would not result in other GHGs that would facilitate a meaningful analysis. Therefore, this analysis focuses on these three forms of GHG emissions. Direct project-related GHG emissions include emissions from construction activities, area sources (e.g., consumer products, architectural coatings, and landscaping equipment), and mobile sources, while indirect sources include emissions from electricity consumption, water demand, and solid waste generation. Operational GHG estimations are based on energy emissions from natural gas usage and automobile emissions. The California Emissions Estimator Model version 2016.3.2 (CalEEMod) relies upon trip generation rates from the *Signal Hill Business Center Traffic Impact Analysis* by Kunzman Associates, Inc. (revised June 22, 2018), and project-specific land use data to calculate emissions; refer to Appendix G1, *Traffic Impact*

¹² According to the General Plan, the Light Industrial designation is designed to accommodate a variety of light industrial uses which are non-polluting and which can coexist with surrounding commercial and residential uses. Permitted uses include, but are not limited to, research and development, assembly, general offices, light manufacturing not involving excessive noise, vibrations, odors, dust or hazardous materials, and limited warehouse and distribution uses of finished products but not transportation, storage, or shipping uses involving fleets of large size (tractor trailer) trucks.



Analysis. According to the Traffic Impact Analysis, the proposed project would generate a net increase of approximately 2,668 total daily trips. *Table VIII-1, Estimated Annual Greenhouse Gas Emissions*, presents the estimated CO₂, N₂O, and CH₄ emissions of the proposed project. The CalEEMod outputs are contained within the Appendix A, *Air Quality/Greenhouse Gas and Energy Worksheets*.

Table VIII-1 Estimated Annual Greenhouse Gas Emissions

Source ⁴	CO ₂	CH ₄		N ₂ O		Total Metric Tons of CO ₂ eq ^{2,3}
	Metric Tons/yr ¹	Metric Tons/yr ¹	Metric Tons of CO ₂ eq ¹	Metric Tons/yr ¹	Metric Tons of CO ₂ eq ¹	
Direct Emissions						
• Construction (amortized over 30 years)	41.88	0.01	0.21	0.00	0.00	42.10
• Area Source	0.01	0.00	0.00	0.00	0.00	0.01
• Mobile Source	5,083.86	0.27	6.63	0.00	0.00	5,090.49
Indirect Emissions						
• Energy	700.76	0.03	0.64	0.01	2.21	703.62
• Water Demand	19.26	1.14	28.45	0.00	0.00	47.71
• Waste	158.01	1.16	28.98	0.03	8.49	195.47
Total Project-Related Emissions ²	6,079.40 MTCO ₂ eq/yr					

Notes:

1. Emissions were calculated using CalEEMod version 2016.3.2, as recommended by the SCAQMD.
2. Totals may be slightly off due to rounding.
3. Carbon dioxide equivalent values calculated using the EPA's *Greenhouse Gas Equivalencies Calculator*, <http://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>, accessed April 2, 2019.
4. GHG reductions accounted for in CalEEMod include 2016 Title 24 standards.

Refer to Appendix A, *Air Quality/Greenhouse Gas and Energy Worksheets*, for detailed model input/output data.

Direct Project-Related Sources of Greenhouse Gases

- **Construction Emissions.** Construction GHG emissions are typically summed and amortized over the lifetime of the project (assumed to be 30 years), then added to the operational emissions.¹³ As seen in *Table VIII-1*, the proposed project would result in 1,262.89 MTCO₂eq/yr, which represents 42.10 MTCO₂eq when amortized over 30 years.
- **Area Source.** The project would directly result in 0.01 MTCO₂eq/yr from area source emissions. Area source emissions would be generated due to an increased demand for natural gas associated with the development of the proposed project. The primary use of natural gas-producing area source emissions by the project would be for consumer products, architectural coating, and landscaping.
- **Mobile Source.** CalEEMod relies upon trip generation rates from the 2018 Traffic Impact Analysis and project-specific land use data to calculate mobile source emissions. The project would directly result in 5,090.49 MTCO₂eq/yr of mobile source-generated GHG emissions.

Indirect Project-Related Sources of Greenhouse Gases

- **Energy Consumption.** Energy consumption emissions were calculated using CalEEMod and project-specific land use data. Southern California Edison (SCE) would provide electricity to the project site. The primary use of electricity and natural gas by the project would be for space

¹³ The project lifetime is based on the standard 30-year assumption of the South Coast Air Quality Management District (SCAQMD 2008).



heating and cooling, water heating, ventilation, lighting, appliances, and electronics. The project would indirectly result in 703.62 MTCO₂eq/year due to energy consumption.

- **Water Demand.** The project operations would result in a demand of approximately 35.4 million gallons of water per year. GHG emissions from indirect energy impacts due to water supply would result in 47.71 MTCO₂eq/year.
- **Solid Waste.** Solid waste associated with operations of the proposed project would result in 195.47 MTCO₂eq/year.

Total Project-Related Sources of Greenhouse Gases

As shown in *Table VIII-1*, the total amount of proposed project-related GHG emissions from direct and indirect sources combined would total 6,079.40 MTCO₂eq/yr.

Consistency with Applicable GHG Plans, Policies, or Regulations

Climate Change Scoping Plan

The goal to reduce GHG emissions to 1990 levels by 2020 (Executive Order S-3-05) was codified by the California legislature as the 2006 Global Warming Solutions Act (AB 32). In 2008, CARB approved a Scoping Plan as required by AB 32. The Scoping Plan has a range of GHG reduction actions which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 implementation fee to fund the program. The 2017 Scoping Plan Update identifies additional GHG reduction measures necessary to achieve the 2030 target. These measures build upon those identified in the First Update to the Scoping Plan (2013). Although a number of these measures are currently established as policies and measures, some measures have not yet been formally proposed or adopted. It is expected that these measures or similar actions to reduce GHG emissions will be adopted as required to achieve statewide GHG emissions targets.

As shown in *Table VIII-1*, the project would result in approximately 6,079.40 MTCO₂eq/yr. The breakdown of emissions by source category shows approximately less than 1 percent from area sources; 12 percent from energy consumption; 84 percent from mobile sources; less than 1 percent from solid waste generation; 3 percent from water supply, treatment, and distribution; and less than 1 percent from construction activities. *Table VIII-2*, Project Consistency with the Scoping Plan, evaluates applicable reduction actions/strategies by emissions source category to determine how the project would be consistent with or exceed reduction actions/strategies outlined in the First Update to the Scoping Plan.

Table VIII-2 Project Consistency with the Scoping Plan

Sector / Source	Category / Description	Project Consistency Analysis
Area		
SCAQMD Rule 445 (Wood Burning Devices)	Restricts the installation of wood-burning devices in new development.	Mandatory Compliance. Approximately 15 percent of California's major anthropogenic sources of black carbon include fireplaces and woodstoves (CARB 2017, Figure 4). The project would not include hearths (woodstove and fireplaces) to be installed in the proposed light industrial buildings.
Energy		
California Renewables Portfolio Standard,	Increases the proportion of electricity from renewable sources to 33 percent renewable power by 2020. SB 350 requires 50 percent by 2030. SB	No Conflict. The project would utilize energy from SCE, which is required to meet the 2020, 2030, 2045, and 2050 performance standards. In 2017, 29 percent of



Senate Bill 350 and Senate Bill 100	100 requires 44 percent by 2024, 52 percent by 2027, and 60 percent by 2030. It also requires the CEC to double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation.	SCE's electricity came from renewable resources (CEC 2017). By 2030 SCE plans to achieve 80 percent carbon-free energy (SCE 2017). The project would also meet the applicable requirements of the 2019 Title 24 Building Energy Efficiency Standards and CALGreen Code.
CCR, Title 24, Building Standards Code	Energy Efficiency Standards for Residential and Nonresidential Buildings.	Mandatory Compliance. The project must demonstrate that it will meet the applicable requirements of the 2019 Title 24 Building Energy Efficiency Standards and CALGreen Code.
Assembly Bill 1109	The Lighting Efficiency and Toxics Reduction Act (AB 1109) prohibits manufacturing specified general purpose lights that contain levels of hazardous substances prohibited by the European Union. AB 1109 also requires a reduction in average statewide electrical energy consumption by not less than 50 percent from the 2007 levels for indoor residential lighting and not less than 25 percent from the 2007 levels for indoor commercial and outdoor lighting by 2018.	No Conflict. According to the CEC, energy savings from AB 1109 are achieved through codes and standards. Energy savings from AB 1109 are calculated as part of codes and standards savings (CEC 2013, Appendix Volume I). The project would incorporate energy-efficient lighting. As discussed above, the project would also meet the applicable requirements of the 2019 Title 24 Building Energy Efficiency Standards and CALGreen Code.
California Green Building Standards (CALGreen) Code Requirements	All bathroom exhaust fans shall be Energy Star compliant.	Mandatory Compliance. The project construction plans must demonstrate that energy efficient appliances, including bathroom exhaust fans, and equipment would meet the applicable energy standards in the 2019 Title 24 Building Energy Efficiency Standards and CALGreen Code.
	HVAC Systems will be designed to meet American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standards.	Mandatory Compliance. The project construction plans must demonstrate that energy-efficient appliances and equipment would meet the applicable energy standards in ASHRAE 90.1-2013 Appendix G and the 2019 Title 24 Building Energy Efficiency Standards and CALGreen Code.
	Energy commissioning shall be performed for buildings larger than 10,000 square feet.	Mandatory Compliance The project must meet this requirement as part of its compliance with the CALGreen Code.
	Air filtration systems are required to meet a minimum efficiency reporting value (MERV) 8 or higher.	Mandatory Compliance. The project must meet the requirement of MERV 8 as part of its compliance with the CALGreen Code.
	Refrigerants used in newly installed HVAC systems shall not contain any CFCs.	Mandatory Compliance. The project must meet this requirement as part of its compliance with the CALGreen Code.
	Parking spaces shall be designed for carpool or alternative fueled vehicles. Up to 8 percent of total parking spaces will be designed for such vehicles.	Mandatory Compliance. The project would meet this requirement as part of its compliance with the CALGreen Code. The project would designate a minimum of 16 parking spaces for carpool and/or alternative-fueled vehicles. In addition, the project would be required to install a minimum of 10 EV charging spaces.
	Long-term and short-term bike parking shall be provided for up to 5 percent of vehicle trips.	Mandatory Compliance. The project would meet this requirement by providing bicycle parking spaces equivalent to 5 percent of the tenant vehicular parking spaces as part of its compliance with the CALGreen Code.
	Requires use of low volatile organic compound (VOC) coatings consistent with AQMD Rule 1168.	Mandatory Compliance. The project would be consistent with this regulation and would meet the low VOC coating requirements.
SB 1368, CCR Title 20, Cap-and-Trade Program	The Cap-and-Trade program places an economy-wide "cap" on major sources of GHG emissions (i.e. refineries, power plants, industrial facilities and transportation fuels) and minimizes the compliance	Not Applicable. As shown in Table VIII-1, the proposed project would generate approximately 6,079.40 MTCO ₂ e/yr, which is below the 25,000 MTCO ₂ e/yr Cap-and-Trade screening level. As such, the proposed



	costs of achieving AB 32 goals. Electricity generators and large industrial facilities emitting 25,000 MTCO ₂ e or more annually are subject to the Cap-and-Trade program. Each year the cap is lowered by approximately 3 percent, ensuring that California is reducing GHG emissions.	project would not be subject to the requirements of the Cap-and-Trade program.
Mobile Sources		
Mobile Source Strategy (Cleaner Technology and Fuels)	Reduce GHGs and other pollutants from the transportation sector through transition to zero-emission and low-emission vehicles, cleaner transit systems, and reduction of vehicle miles traveled (VMT).	Consistent. The project would be consistent with this strategy by supporting the use of zero-emission and low-emission vehicles. Project compliance with the CalGreen Building Code standards would include designating a minimum of 16 parking spaces for carpool and/or alternative-fueled vehicles. In addition, the project would be required to install a minimum of 10 EV charging spaces. Furthermore, the project would also reduce VMT as a result of its urban infill location, with access to public transportation within a quarter-mile of the project site, and its proximity to other destinations including off-site residential, restaurants, and retail.
AB 1493 (Pavley Regulations)	Reduces GHG emissions in new passenger vehicles from model year 2012 through 2016 (Phase I) and model years 2017–2025 (Phase II). Also reduces gasoline consumption to a rate of 31 percent of 1990 gasoline consumption (and associated GHG emissions) by 2020.	Not Applicable. These regulations apply to automobile manufacturers, not individual land uses. Mobile emissions associated with the project in Table VIII-1 reflect compliance with this regulation. GHG emissions related to vehicular travel by the project would benefit from this regulation because vehicle trips associated with the project would be affected by AB 1493. Mobile source emissions generated by the project would be reduced with implementation of AB 1493 consistent with reduction of GHG emissions under AB 32.
Low Carbon Fuel Standard (Executive Order S-01-07)	Establishes protocols for measuring life-cycle carbon intensity of transportation fuels and helps to establish use of alternative fuels. This executive order establishes a statewide goal to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020	Not Applicable. The LCFS applies to manufacturers of automotive fuels, not to individual land uses. Mobile emissions associated with the project in Table VIII-1 reflect compliance with this regulation. GHG emissions related to vehicular travel by the project would benefit from this regulation and mobile source emissions generated by the project would be reduced with implementation of the LCFS consistent with reduction of GHG emissions under AB 32.
Advanced Clean Cars Program	In 2012, CARB adopted the Advanced Clean Cars program to reduce criteria pollutants and GHG emissions for model year vehicles 2015 through 2025. The program includes the Low-Emission Vehicle regulations that reduce criteria pollutants and GHG emissions from light- and medium-duty vehicles, and the Zero-Emission Vehicle (ZEV) regulation, which requires manufacturers to produce an increasing number of pure ZEVs (meaning battery electric and fuel cell electric vehicles), with provisions to also produce plug-in hybrid electric vehicles in the 2018 through 2025 model years.	Not Applicable. The standards would apply to manufacturers of vehicles used by visitors and employees associated with the project. The project would designate a minimum of 16 parking spaces for carpool and/or alternative-fueled vehicles. In addition, the project would be required to install a minimum of 10 EV charging spaces.
Senate Bill 375	SB 375 establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions. Under SB 375, CARB is required, in consultation with the state's MPOs, to set regional GHG reduction targets for the passenger vehicle and light-duty truck sector for 2020 and 2035.	Consistent. The project would be consistent with SCAG RTP/SCS goals and objectives under SB 375 to implement "smart growth." The project would provide employment opportunities in close proximity to off-site residential and other job centers in Signal Hill where people can live and work and have access to modes of transportation that provide options for reducing reliance on automobiles and minimizing associated air pollutant emissions. The project would also reduce VMT as a



		result of its urban infill location, with access to public transportation within a quarter-mile of the project site, and its proximity to other destinations including off-site residential, restaurants, and retail. As the project would comply with the 2016–2040 RTP/SCS, the project would also be consistent with SB 375. Consistency with the 2016–2040 RTP/SCS is discussed below in Table VIII-3, <i>Project Consistency with the 2016–2040 RTP/SCS</i> .
Water		
CCR, Title 24, Building Standards Code	Title 24 includes water efficiency requirements for new residential and nonresidential uses.	Mandatory Compliance. See discussion under 2019 Title 24 Building Standards Code and CALGreen Code above.
Senate Bill X7-7	The Water Conservation Act of 2009 sets an overall goal of reducing per capita urban water use by 20 percent by December 31, 2020. Each urban retail water supplier shall develop water use targets to meet this goal. This is an implementing measure of the Water Sector of the AB 32 Scoping Plan. Reduction in water consumption directly reduces the energy necessary and the associated emissions to convene, treat, and distribute the water; it also reduces emissions from wastewater treatment.	Consistent. See discussion under 2019 Title 24 Building Standards Code and CALGreen Code.
Solid Waste		
California Integrated Waste Management Act (IWMA) of 1989 and Assembly Bill 341	The IWMA mandated that state agencies develop and implement an integrated waste management plan which outlines the steps to be taken to divert at least 50 percent of their solid waste from disposal facilities. AB 341 directs CalRecycle to develop and adopt regulations for mandatory commercial recycling and sets a statewide goal for 75 percent disposal reduction by the year 2020.	Not Applicable. These regulations apply to municipal agencies who are responsible for reducing landfill disposal of solid wastes collected in their jurisdictions. GHG emissions related to solid waste generation from the project would benefit from this regulation as it would decrease the overall amount of solid waste disposed of at landfills. The decrease in solid waste would then in turn decrease the amount of methane released from the decomposing solid waste. Project-related GHG emissions from solid waste generation provided in Table VIII-1 includes a 50 percent reduction in solid waste generation source emissions.

Source: Michael Baker International, April 2019.

2016–2040 RTP/SCS

The 2016–2040 RTP/SCS is expected to help California reach its GHG reduction goals, with reductions in per capita transportation emissions of 8 percent by 2020 and 18 percent by 2035.¹⁴ Furthermore, although there are no per capita GHG emission reduction targets for passenger vehicles set by CARB for 2040, the 2016–2040 RTP/SCS GHG emission reduction trajectory shows that more aggressive GHG emission reductions are projected for 2040 (SCAG 2016, p. 153). The 2016–2040 RTP/SCS would result in an estimated 8 percent decrease in per capita passenger vehicle GHG emissions by 2020, 18 percent decrease in per capita passenger vehicle GHG emissions by 2035, and 21 percent decrease in per capita passenger vehicle GHG emissions by 2040.¹⁵ By meeting and exceeding the SB 375 targets for 2020 and 2035, as well as achieving an approximately 21 percent decrease in per capita passenger vehicle GHG emissions by 2040 (an additional 3 percent reduction in the five years between 2035 [18 percent] and 2040 [21 percent]), the 2016–2040 RTP/SCS is

¹⁴ CARB, Regional Greenhouse Gas Emission Reduction Targets Pursuant to SB 375, Resolution 10-31.

¹⁵ In March 2018, CARB adopted updated targets requiring a 19 percent decrease in VMT for the SCAG region by 2035. As the CARB targets were adopted after the 2016–2040 RTP/SCS, it is expected that the updated targets will be incorporated into the next RTP/SCS.



expected to fulfill and exceed its portion of SB 375 compliance with respect to meeting the state's GHG emission reduction goals.

At the regional level, the 2016–2040 RTP/SCS is an applicable plan adopted for the purpose of reducing GHGs. In order to assess the project's potential to conflict with the 2016–2040 RTP/SCS, this section also analyzes the project's land use assumptions for consistency with those utilized by SCAG in the RTP/SCS. Generally, projects are considered consistent with the provisions and general policies of applicable City and regional land use plans and regulations, such as SCAG's RTP/SCS, if they are compatible with the general intent of the plans and would not preclude the attainment of their primary goals. *Table VIII-3 Project Consistency with the 2016–2040 RTP/SCS*, demonstrates the project's consistency with the actions and strategies set forth in the 2016–2040 RTP/SCS.¹⁶

As depicted in *Table VIII-3*, the project is the type of land use development that is encouraged by the RTP/SCS to reduce VMT and expand multimodal transportation options for the region to achieve GHG reductions from the land use and transportation sectors required by SB 375, which, in turn, advances the state's long-term climate policies.¹⁷ By furthering implementation of SB 375, the project supports regional land use and transportation GHG reductions consistent with state regulatory requirements. Therefore, the project would be consistent with the GHG reduction-related actions and strategies contained in the 2016–2040 RTP/SCS.

Table VIII-3 Project Consistency with the 2016–2040 RTP/SCS

Actions and Strategies	Responsible Party(ies)	Project Consistency Analysis
Land Use Strategies		
Focus new growth around transit.	Local jurisdictions	Consistent. The project is an infill development that would be consistent with the 2016 RTP/SCS's focus on growing development near transit facilities. Multiple bus stops are currently within walking distance (i.e. within 0.25 mile) of the proposed project site.
Provide more options for short trips through Neighborhood Mobility Areas and Complete Communities.	SCAG, local jurisdictions	Consistent. The Complete Communities strategy supports the creation of mixed-use districts through a concentration of activities with housing and employment located in close proximity to each other. The proposed project would support this strategy by providing employment within walking distance to residential uses.
Transportation Strategies		
Manage congestion through programs like the Congestion Management Program, Transportation Demand Management, and Transportation Systems Management strategies.	County transportation commissions, local jurisdictions	Not Applicable. This strategy applies to public agencies that govern transportation facilities and transportation programs.
Technological Innovation and 21st Century Transportation		
Promote zero-emissions vehicles.	SCAG, local jurisdictions	Not Applicable. This action/strategy is directed at regional and local agencies, and not at individual development projects. However, please note that the project would designate a minimum of 16 parking spaces for carpool and/or alternative-fueled vehicles. In addition, the project would be required to install a minimum of 10 EV charging spaces.

Source: SCAG 2016, Chapter 5.

¹⁶ As discussed in the 2016–2040 RTP/SCS, the actions and strategies included in the 2016–2040 RTP/SCS remain unchanged from those adopted in the 2012–2035 RTP/SCS.

¹⁷ As discussed above, SB 375 legislation links regional planning for housing and transportation with the GHG reduction goals outlined in AB 32.



Conclusion

In summary, the project's location and land use characteristics render it consistent with statewide and regional climate change mandates, plans, policies, and recommendations. More specifically, the preceding GHG plan consistency analysis demonstrates that the project complies with the regulations and GHG reduction actions/strategies outlined in the Scoping Plan and the 2016–2040 RTP/SCS. As also shown above, consistency with these plans would reduce the impact of the project's incremental contribution of GHG emissions. Accordingly, the project would not conflict with any applicable plan, policy, regulation, or recommendation adopted for the purpose of reducing GHG emissions. Therefore, impacts with regard to climate change would be less than significant.

IX. Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS:				
<i>Would the project:</i>				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Discussion

a) *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Less than Significant Impact. Materials are generally considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode, or generate vapors when mixed with water (reactivity). The term “hazardous material” is defined in California Health and Safety Code Section 25501 as any material that, because of quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment. The code additionally states that a hazardous material becomes a hazardous waste once it is abandoned, discarded, or recycled. The transportation, use, and disposal of hazardous materials, as well as the potential releases of hazardous materials to the environment, are closely regulated through many state and federal laws.

Once operational, the project would introduce new light industrial land uses to the site. While no specific tenants have been identified for the project site, as stated in the City of Signal Hill General Plan Land Use Element (2001), permitted land uses in the light industrial designation include, but are not limited to, research and development, assembly, general offices, light manufacturing not involving excessive noise, vibrations, odors, dust or hazardous materials.

Additional permitted land uses include limited warehouse and distribution of finished products but not transportation, storage or shipping uses involving fleets of large size (tractor trailer) trucks. Support commercial services like delicatessens and other eateries are allowed provided there is adequate parking. The Light Industrial land use category is also not intended for large-scale recycling, tow truck impound or auto body repair or painting businesses (Signal Hill 2001). The proposed buildings are designed to attract relatively small business owner occupants who are engaged in making a variety of products, in finished or unfinished condition, light assembly and storage, limited automotive repair or other services such as installing upgraded upholstery, electronic devices, etc. and possibly businesses that support other businesses within the project site, including small food services. Minor portions of each building would be allocated to administrative office activities.

Thus, once operational, it is anticipated that there would likely be some routine transport, storage, handling, and disposal of small quantities of hazardous substances that are typically associated with these types of uses. This could include common solid and liquid materials and substances such as toners, paints, lubricants, cleaning agents, glues and other adhesives. There could also be some limited use of flammable or explosive gases for some light manufacturing purposes or as fuel in propane-powered forklifts. No above-ground or underground storage tanks of any type are proposed, and no fuel storage or dispensing is proposed. No industrial process equipment requiring use of volatile and hazardous substances in the form of liquids, solids or gases are proposed or would be allowed under the restrictions of the Light Industrial zoning district, as set forth in the Signal Hill Municipal Code. All business activities would be conducted inside the buildings, except for arrival and departure of automobiles and trucks and routine site maintenance and trash removal. There would be no outdoor storage areas.

Additionally, any business that handles hazardous materials and/or hazardous waste of quantities at any one time during a year equal to, or greater than a total volume of 55 gallons, a



total weight of 500 pounds, or 200 cubic feet of a compressed gas is a “hazardous materials handler” and must report Owner/Operator, Business Activities, Inventory, Site Map, and Emergency Response and Contingency Plan and Employee Training Plan information in the California Environmental Reporting System (CERS). In addition, all hazardous materials handlers are inspected every three years by the Los Angeles County Fire Department Health Hazardous Materials Division.

As noted above, land uses that handle large quantities of hazardous materials would not be permitted and no special permits would be required for the limited use or disposal of common hazardous materials/wastes anticipated for this project. With mandatory compliance by each business owner with Los Angeles County Fire Department requirements for hazardous materials reporting and management, the minor level of hazardous materials usage and the eventual disposal of hazardous wastes anticipated for this project is considered acceptable and has not been identified as a significant threat to the environment.

Future businesses on-site can dispose of “household hazardous materials” for free at any of the Los Angeles County Sanitation District’s permanent disposal centers, and electronics can be disposed of at several private locations or electronic recycling events. The Los Angeles County Sanitation District and the Los Angeles County Department of Public Works sponsor household hazardous waste roundups, which are one-day events hosted on Saturdays at various locations around the county. Also, household hazardous wastes can be disposed of at the EDCO Recycling and Transfer Center at 2755 California Avenue in Signal Hill on the second and fourth Saturdays of each month.

In general, the proposed project would have a typical level of usage, storage, and disposal of hazardous materials as similar light industrial land uses in and near Signal Hill. All tenants would be obligated to comply with the City’s existing municipal code restrictions for operations in the Light Industrial zoning district, plus compliance, as warranted, with the above-noted countywide regulations governing hazardous waste handlers. As such, the project would have a less than significant impact involving the routine transport, use, or disposal of hazardous materials.

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

Less than Significant Impact with Mitigation Incorporated. Construction activities for tilt-up concrete structures and the variety of site improvements proposed for this project would be typical of this type of light industrial development. Construction would likely involve the use of hazardous materials, substances, or chemicals such as fuels, oils, lubricants, paints, solvents, glues and miscellaneous liquid and solid wastes, and as with any construction, there is the potential for an accidental release of such materials or wastes. As discussed in Section VIII, Hydrology and Water Quality of this Initial Study, the National Pollution Discharge Elimination System (NPDES) General Construction Permit issued by the Los Angeles Regional Water Quality Control Board (LARWQCB) required for the project includes a variety of construction control measures and best management practices to prevent pollution of surface or groundwaters from construction activities. Such measures will be defined in a Stormwater Pollution Prevention Plan and will include provisions to prevent or contain accidental spills and regular monitoring and reporting of construction water quality control practices conducted by



the contractor. All construction control measures would comply with the waste discharge standards established for the NPDES General Construction permit that would be reviewed and approved by the LARWQCB and the City of Signal Hill prior to issuance of a grading permit. Adherence to existing mandatory regulatory standards requiring a variety of best management practices to prevent water pollution and accidental spills of hazardous substances during the construction phases would prevent a significant impact due to a release of hazardous substances into surface or ground waters, in the normal course of construction activities.

Please refer to the response to threshold d) for a discussion of potential short-term and long-term impacts and mitigation measures to prevent harmful releases of hazardous substances associated with soil and groundwater contamination from the past oil refinery activities.

c) *Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

Less Than Significant Impact with Mitigation Incorporated. The eastern parcel of the project site is located within approximately 500 feet (0.09 mile) west of Alvarado Elementary School and is adjacent to the American University of Health Sciences. The northwestern parcel is approximately 250 feet (0.05 mile) south of Signal Hill Elementary School, and the southwestern parcel is approximately 635 feet (0.12 mile) north/northeast of Mary Butler Middle School and approximately 250 feet (0.05 mile) north of the Long Beach City College campus.

As discussed in the following response to threshold d), potential impacts that might occur during the project's construction phases due to disturbance of contaminated soils on-site, would be mitigated to less than significant levels through project design features and the mitigation measures identified therein.

The proposed project is intended for occupancy by businesses engaged in light industrial activities, which may include research and development, general offices, light manufacturing and limited warehouse and distribution of finished products. Support commercial services like delicatessens and other eateries are allowed provided there is adequate parking. As discussed in the response to threshold a) above, the Signal Hill General Plan Land Use Element (2001), activities that include the excessive use of hazardous materials or the generation of odors or dust are not permitted in the light industrial land use designation. Correspondingly, the light industrial zone does not permit any business that could generate hazardous emissions into the atmosphere, soils, groundwater and would not allow for any large quantity uses of hazardous materials, substances, or wastes.

Thus, since future tenants are prohibited by the standards set forth in the Signal Hill General Plan and zoning regulations from handling significant amounts of hazardous materials and generation emissions or waste that would disturb the air, soils, or groundwater the project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste near an existing or proposed school and impacts would be less than significant.



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

Less than Significant Impact with Mitigation Incorporated. A review of the databases to be consulted in accordance with Government Code 65962.5 identified that the project site is listed in the Geotracker database maintained by the State Water Resources Control Board (SWRCB), identified as Site Cleanup Program Number 1391, Site ID No. 2040510, Global ID T10000010213 (historic Site Cleanup Program Number 0453A, Site ID No. 2047W00, Global ID SL 2047W2348). The database indicates that the site as having ongoing site characterization and remediation activities that are being conducted in accordance with the Cleanup Site Program. This is associated with the several decades of prior operation of an oil refinery on the project site. Sources of site contamination, efforts to characterize the extent of that contamination and assess the level of environmental and health hazards present, remedial measures included in the project design, and additional mitigation measures are discussed below.

Site Land Use History

The 8.2-acre vacant undeveloped property (consisting of a 5.7-acre western parcel divided east to west by 21st Street into northwest and southwest parcels, and a 2.5-acre eastern parcel separated from the western parcel by Walnut Avenue, collectively the former ChemOil refinery) was used as a dairy farm prior to 1922. MacMillan Ring-Free Oil Company owned and operated a refinery onsite from 1922–1988. ChemOil purchased the refinery in August 1988 and operated it until February 14, 1994, when the refinery was shut down with occasional operation of its waste water system (Testa Environmental Corporation [TEC] 2009). Operation of the waste water system was discontinued and all above ground structures were dismantled in 1997. Reportedly the below ground structures and appurtenances including sumps, footings, foundations, and pipelines also were removed in 1997 (The Source Group [TSG] 2017); however based on potholing conducted by Xebec Realty in 2017 and 2019 it appears piping runs, debris, voids and free product in soil remain at relatively shallow, i.e., within 5-feet below ground surface (bgs) depths.

MacMillan Ring-Free Oil Company had most of the processing area of the refinery located south of 21st Street on the western parcel (the southwestern parcel). The refinery had an oil and grease area, scale house, truck scales, warehouses, crude unloading rack and truck loading rack on the western parcel. Aboveground storage tanks for the storage of crude oil, diesel, fuel oil, naptha, water, wastewater and blending stock also were located on the western parcel.

The California Regional Water Quality Control Board (CRWQCB) issued an order in 1984, Order No. 85-17, that required operating refineries to conduct a subsurface site assessment including the characterization and delineation of groundwater pollution underlying these facilities. MacMillan Ring-Free Oil Company complied with Order No. 85-17 in 1985 by installing groundwater monitoring wells in a shallow semi-perched groundwater zone approximately 40-feet below ground surface (bgs) and collecting soil samples from the borings used to install the monitoring wells.

Monitoring of groundwater underlying the former refinery has been performed periodically since 1985, with a hiatus from July 1999 to October 2001. Eight groundwater monitoring wells and three former light non-aqueous phase liquid (LNAPL) recovery wells were originally



installed on this property. The refinery was dismantled in 1997 to 1998 after which one monitoring well and two recovery wells were no longer operational. There were nine wells, six monitoring wells and three former recovery wells on the western parcel; two additional monitoring wells were on the eastern parcel.

Three plumes of LNAPL were discovered underlying the property during the initial site assessments in 1985 to 1989. Two of these plumes were located in the area formerly occupied by the aboveground storage tanks on the western parcel. The first plume was located in the central and eastern portions of the western parcel and was comprised of a combination of naphtha, kerosene and gas-oil. The other plume was on the western corner of this parcel and was comprised of naphtha, kerosene and gas-oil.

A LNAPL recovery program was initiated in the first plume in March 1987 and in the second plume in December 1988. The estimated volume of total fluids removed from the recovery system was 253,902 barrels of which approximately 27.9 barrels were LNAPL. The LNAPL recovery system was terminated in February 1994. Residual LNAPL was encountered at a thickness of 2.25 feet in 2002 at the location of the first plume. Approximately nine gallons of LNAPL has been bailed from the recovery well in place at the first plume from 1994 to 2002.

Environmental Site Assessments and Investigations

Soil samples were collected in 1986, 1987 and 1998 by Environmental Engineering, Inc. (EEI) and TEC from soils on the western parcel from depths of 2-feet bgs to 35-feet bgs. Not all investigations placed borings to 35-feet bgs. Eight soil samples were obtained from depths of 6 to 7.5-feet bgs and 20 to 21.5-feet bgs and submitted for analysis of oil and grease, phenols, total organic carbon, total organic halogens, selected volatile organic compounds (VOCs), pH and certain metals. Twelve additional soil samples from a depth of 2-feet bgs and 26 soil samples from a depth of 10-feet bgs were submitted for the same analyses. EEI reported that diesel and gasoline impacted soils occurred beneath the majority of the central and southern portions of the western parcel.

EEI reported that total petroleum hydrocarbons in the gasoline range (TPH-g) were reported in concentrations as great as 4,000 milligrams per kilogram (mg/kg). TPH in the diesel range (TPH-d) was reported in concentrations as great as 61,000 mg/kg. Undifferentiated hydrocarbons were reported in concentrations as great as 12,000 mg/kg, and total recoverable petroleum hydrocarbons (TrPH) were reported in concentrations as great as 49,000 mg/kg.

TEC placed three soil borings to depths of 25-feet bgs, 30-feet bgs and 35-feet bgs in the western parcel in 1998. Eighteen soil samples were collected by TEC and submitted for analysis of TPH-g, TPH-d, TrPH, benzene, toluene, ethylbenzene and total xylenes (BTEX), and methyl tertiary butyl ether (MTBE). TPH-g was reported in concentrations as great as 1,130 mg/kg; TPH-d was reported in concentrations as great as 11,200 mg/kg; TrPH was reported in concentrations as great as 20,800 mg/kg; the greatest detected concentrations of benzene, toluene, ethylbenzene and total xylenes were reported as 1,560 mg/kg, 14,000 mg/kg, 60,800 mg/kg and 105,000 mg/kg, respectively; and MTBE was not detected. TEC concluded that hydrocarbon concentrations in subsurface soil under the western parcel increased with depth and the greatest concentrations were detected in close proximity to the groundwater, especially within the central portion of this parcel.



The Los Angeles Regional Water Quality Control Board (LARWQCB) issued an enforcement letter under §13267 of the California Water Code to Signal Hill Holding Corporation on November 19, 2008 requiring a Phase I report and Phase II WorkPlan.

TEC conducted additional investigations in 2009 and 2011, on behalf of Signal Hill Holding Corporation, the property owner, including a soil vapor survey around the site perimeter and groundwater monitoring. Depth to groundwater was reported to range from 10.80-feet to 41.50-feet bgs and flow was reported to the south-southeast. Dissolved gasoline range organics were reported in 10 of the 16 monitoring wells sampled at concentrations ranging from non-detect to 19 milligrams per liter (mg/L). Dissolved diesel range organics were reported in 12 of the 16 monitoring wells at concentrations ranging from 1.1mg/L to 11mg/L. BTEX, MTBE and tert-butanol were reportedly detected in groundwater as were eight additional VOCs. Slight to strong hydrocarbon odors were noted in all monitoring wells during sampling. TEC concluded dissolved hydrocarbons exist beneath the site and have migrated hydraulically offsite towards the west, south and southwest. TEC also concluded significant portions of the soil column beneath the Western Parcel are impacted by residual hydrocarbons from beneath existing grade to the water table, particularly in the southern portion of the western parcel and the northwestern corner of the eastern parcel.

Exponent (2009) prepared an initial soil vapor intrusion evaluation and an updated evaluation in a letter dated May 5, 2010 (Exponent 2010). Both evaluations concluded the potential soil vapor intrusion is not likely to be of concern for current off-site residents living south or southwest of the site, pending collection of additional soil vapor and groundwater samples. The California Environmental Protection Agency (Cal-EPA) Office of Human Health and Environmental Assessment (OEHHA) reviewed the May 5, 2010, evaluation and generally concurred with this conclusion, also pending collection of additional samples and resolution of several comments.

ToxStrategies prepared a Second Update to Vapor Intrusion Evaluation for Southern Boundary, Former ChemOil Refinery, Signal Hill, California in 2012. The results of the human health vapor intrusion risk assessment prepared by ToxStrategies indicated estimated risk values for the residential scenario exceeded thresholds due to exposure to VOCs in soil vapor and shallow groundwater, however, ToxStrategies concluded “potential soil vapor intrusion should not be of concern for current or future residents living south or southwest of the property.” (ToxStrategies October 8, 2012)

Trihydro Corporation prepared a Phase I Environmental Site Assessment in May 2016 on behalf of RE|Solutions, LLC. Trihydro stated that soil sampling occurred onsite in 1986, 1999, 2006 and 2009, and indicates significant portions of the soil column beneath the Western Parcel were impacted by residual hydrocarbons extending from ground surface to the water table. Trihydro concluded that soil impacts had not been addressed.

The Source Group ([TSG] now Apex Companies, LLC [Apex]) produced a Site Investigation and Site Conceptual Model report on March 29, 2017 on behalf of Signal Hill Enterprises, LLC and RE|Solutions, LLC. The site was owned by Signal Hill Enterprises, LLC in March 2017. RE|Solutions, LLC entered into a California Land Reuse Revitalization Agreement (CLRRA) with the Los Angeles Regional Water Quality Control Board (LARWQCB) on March 4, 2017. Signal Hill Enterprises, LLC and RE|Solutions, LLC were negotiating to transfer property



ownership for redevelopment. TSG concluded constituents typical of petroleum refining facilities, including TPH, VOCs, including BTEX and benzene derivatives were present in soil within a significant portion of the western parcel and isolated to the northern portion of the eastern parcel. TSG also concluded constituents detected in soil vapor underlying the site were elevated and remediation or mitigation of soil and soil vapor would be required prior to redevelopment.

TGR Geotechnical, Inc. prepared a Preliminary Geotechnical Investigation Report in May 2017 on behalf of Xebec Realty Partners, LLC. TGR found undocumented fill between 1-foot to 5-feet thick consisted of sandy silt with scattered gravel was not suitable for support of the proposed buildings. TGR stated oversized material (cobble to boulder size), possibly concrete, may be encountered during grading. TGR recommended all uncertified fill with the building footprints and extending 5-feet laterally should be removed and replaced with engineered fill. TGR concluded “It is our understanding that a portion of the onsite soils have environmental contamination that would require export and proper disposal of excavated soils.”

The Source Group (TSG) prepared a Response Plan and Remedial Technology Evaluation in July 2017, pursuant to the CLRRA. The LARWQCB reviewed and approved the Response Plan on September 15, 2017. The Response Plan proposes the following remedial strategies: (1) removal of the LNAPL, (2) air sparging to create a barrier to off-site migration, (3) a soil vapor extraction (SVE) system, and (4) engineering and institutional controls. Implementation of these remedial strategies was proposed as a phased approach. Phase I includes pilot studies of the SVE system and passive skimming of the LNAPL, additional monitoring of groundwater and installation of the air sparge wells. Phase II includes remediation proposed to be constructed and installed concurrently with grading and construction.

Apex Companies, LLC prepared a Soil Reuse Plan in April 2018 that provides details for treating and reusing onsite soils impacted with hydrocarbons. The soil reuse plan is to redeposit contaminated soil onsite in areas that require fill and to treat this contaminated soil with the SVE system. Apex proposes monitoring for VOCs during soil excavation activities using the Air Quality Management District (AQMD) Rule 1166 permit and compliance plan. Both Apex and the LARWQCB estimate the SVE system will operate between 2 to 5 years after completion.

Apex Companies, LLC prepared a Methane Soil Vapor Assessment Report in May 2018 in conformance with the City of Signal Hill’s Oil and Gas Code and Project Development Guidelines. The methane soil gas assessment concluded that a modified active methane mitigation system subslab of buildings proposed on the Western Parcel, a passive methane mitigation system subslab of buildings proposed on the Eastern Parcel and methane mitigation of paved areas greater than 5,000 square feet within 15-feet of the proposed buildings was required.

Mearns Consulting Corp. prepared a baseline Human Health Risk Assessment (HHRA) in May 2018 on behalf of Signal Hill XC, LLC. The HHRA indicated estimated risks and hazards for residential and commercial worker scenarios exceeded thresholds due to inhalation of VOCs such as benzene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, m,p-xylenes, o-xylene, 1,4-dichlorobenzene, ethylbenzene, naphthalene and tetrachloroethylene in soil vapor and groundwater underlying the western parcel. The HHRA indicated estimated risks and hazards for the construction worker exceeded the thresholds due to exposure to TPH-g and



TPH-d in the soil matrix on the western parcel. The results of the HHRA were similar for the eastern parcel, with the exception of the commercial worker scenario, in which health-protective thresholds were not exceeded due to exposure to VOCs in the vapor phase.

OEHHA reviewed the HHRA prepared by Mearns Consulting Corp. and concurred with the estimated risks and hazards. OEHHA also estimated potential risks and hazards to construction workers in trenches due to exposure to VOCs in soil vapor and shallow groundwater underlying the site and determined this exposure produced estimated risk and hazard values that exceeded the applicable health protective thresholds.

The LARWQCB (February 13, 2019) reviewed and provided comments on the Revised Soil Reuse Plan dated January 11, 2019, prepared by Apex Companies, LLC. The conceptual grading plan included in the Revised Soil Reuse Plan was designed to minimize excavation of contaminated soil. The LARWQCB provided the following conditions regarding onsite soil disturbance: (1) any disturbed soil will be preliminarily screened with a PID, soil with concentrations of VOCs 50 ppmv or less will be stockpiled for reuse pending further characterization that consists of the following – (a) the excavated soil must meet the soil screening levels specified in *Table 1* (attached hereto) and soil samples will be analyzed in a California certified laboratory for VOCs, TPH and polycyclic aromatic hydrocarbons (PAHs), (b) VOCs, TPH and PAHs in this disturbed soil that exceed the screening levels will be treated via ex-situ treatment methods or disposed offsite, (c) soils disposed offsite must be sent to a facility that has a current permit to accept such soil, (d) a separate Ex-Situ Soil Treatment Workplan will be submitted to the LARWQCB prior to consideration for reuse of such soils onsite, treated soil must meet the screening levels for commercial/industrial land use, and (e) impacted soil volumes treated and reused onsite greater than an amount to be specified by the LARWQCB will be subject to Waste Discharge Requirements; (2) disturbed soil with concentrations of VOCs greater than 50 ppmv and less than 1,000 ppmv will be (a) sprayed with water and/or vapor suppressant, (b) placed in segregated stockpiles, for additional laboratory analyses, (c) covered with plastic sheeting weighted with sandbags, and (d) reused as backfill onsite ONLY with prior approval from the LARWQCB and SCAQMD; (3) disturbed soil with concentrations greater than 1,000 ppmv will be (a) sprayed with water and vapor suppressant and (b) loaded for immediate offsite disposal.

The LARWQCB further provided the following conditions regarding the Revised Soil Reuse Plan (1) soil stockpiles will be sampled in accordance with the DTSC (2001) Information Advisory for Clean Imported Fill Material, (2) in-situ soil borings also will be collected and may be used for characterization if (a) samples are representative of the soil in the stockpile being considered for reuse and (b) the sampling frequency meets the DTSC Information Advisory for Clean Imported Fill Material criteria, (3) soil determined to have VOCs, TPH and PAHs less than the screening levels and/or treated via ex-situ methods may be reused anywhere onsite.

The LARWQCB provided an estimated timeline including for site grading including the stipulation that work is to proceed ONLY after the City of Signal Hill's CEQA process is complete. Soil grading is estimated to take between three to four months; the analytical data from soil stockpiles is due to the LARWQCB 14 days prior to determining (1) whether the soil is reusable onsite, (2) must be remediated or (3) must be disposed offsite; a report documenting the activities associated with excavated soil, laboratory analyses and final disposition of reused



soil is to be submitted within 45 days after completion of grading; and the Ex-Situ Soil Treatment Workplan is due 60 days prior to the start of treating soil.

Lastly, the LARWQCB determined the Revised Soil Reuse Plan dated January 11, 2019 is satisfactory with the following conditions: (1) characterization of soil stockpiles must adhere to DTSC's 2001 guidance, (2) a soil vapor mitigation system workplan must be prepared that includes the installation of a robust network of vapor probes throughout the site, both vertically and laterally, to ensure soil vapor concentrations beneath the subsurface soil, including any and all backfill areas will not migrate and pose a vapor intrusion threat; the attenuation factor to apply for calculation of screening levels of VOCs subslab and in soil vapor is 0.03 for the most stringent of residential or industrial indoor air screening levels; if data from the soil vapor probe monitoring indicate VOC concentrations are detected at concentrations greater than the recommended screening levels either in the backfill or areas in the subsurface soil where the planned SVE system is not capturing soil vapor, additional action may be warranted; the soil vapor mitigation system workplan must include (a) a map identifying the locations and depths of soil vapor probes, (b) a schedule for monitoring the soil vapor probes, and (c) a contingency plan detailing appropriate actions to protect human health and the environment in the event vapor monitoring data indicates a threat to human health or a failure of the operation of the SVE system, (d) the soil vapor mitigation system workplan is due to the LARWQCB by January 15, 2020; (3) a photoionization detector (PID) shall be used for field screening VOCs during the excavation of the cut areas; if PID measurements indicate the presence of VOCs or if stained soil is observed (a) soil samples shall be collected at 5-feet below proposed grade and assessed to ensure the exposed area will not pose a threat to future landscape and construction workers via dermal contact, (b) laboratory analytical data shall be submitted to LARWQCB staff within 14 days of receipt, (c) if the analytical results indicate concentrations greater than the screening levels a contingency plan must be submitted within 60 days to address those newly identified areas of concern; (4) a report documenting the findings of the field work, laboratory analytical results, stockpile sample analysis, in-situ boring sample analysis and soil to be treated and/or disposed offsite is due to the LARWQCB by April 15, 2020, the report shall include details such as the quantity and identify the locations of reused soil as backfill; (5) a separate Ex-Situ Soil Treatment Work Plan is due to the LARWQCB by April 15, 2020 if ex-situ treatment of stockpiled soil is warranted, such treatment requires a WDR permit.

Summary of Environmental and Human Health Hazards

The identified onsite contaminants are TPH and VOCs in the soil matrix, in soil vapor and groundwater underlying the site. Based on the HHRA discussed above, concentrations of these contaminants exceed the applicable federal and state health risk-based screening levels. An additional contaminant in groundwater is a liquid that floats (a liquid non-aqueous phase liquid or LNAPL). The most common LNAPL related ground-water contamination problems result from the release of petroleum products. In general, LNAPLs represent potential long-term sources for continued ground-water contamination at many sites. The volatilization of petroleum products in LNAPL can result in health hazards due to exposure to hazardous volatile organic compounds via the inhalation exposure pathway.

Three areas have been identified onsite that will require remediation: (1) the Northwest Parcel, (2) the Southwest Parcel and (3) the East Parcel. Remediation is **not** proposed for the East Parcel. The remediation discussed below is specific to the Northwest and Southwest Parcels.



As TPH and VOCs in the soil matrix and groundwater degrade via microbial activity over time, volatiles in the vapor phase are produced. These vapors migrate via the path of least resistance in the interstitial pore spaces in the soil matrix. Volatiles in the vapor phase at the soil/water interface can migrate and impact groundwater and/or the soil matrix. Volatiles in the vapor phase in soil will travel via diffusion (from areas of high concentrations to areas of low concentrations) and advection (movement due to pressure differences, from areas of high pressure to areas of low pressure). Volatiles in the vapor phase accumulate subsurface of buildings due to the “capping effect” of the buildings. Due to the pressure differences (lower pressures inside the building) the vapor could enter the building via utility corridors, cracks and seams.

Remediation Measures to be Provided by Project

The proposed grading plan (provided in Appendix C of this Initial Study) is designed to minimize excavation of soil in areas with the greatest detected concentrations of soil matrix contamination and provide for a cap of clean import over the contaminated soils that will remain onsite. The plan estimates 35,756 cubic yards (cy) of soil will be cut and 68,877 cy of soil will be fill. Excavation will be conducted up to 10-feet below current grade. The plan indicates the following volumes of soil will be handled, exported and imported for the site:

1. **Soil Reuse:** 80% of the cut volume = $0.80 \times 35,756 \text{ cy} = 28,605 \text{ cy}$. Note that all soil reused on Site will go through sampling/screening and must meet the conditions of the Revised Soil Reuse Plan dated January 11, 2019 conditionally approved by the LARWQCB (LARWQCB February 13, 2019).
2. **Soil Export:** 20% of the cut volume + additional 1,400 cy = $0.2 \times 35,756 \text{ cy} + 1,400 \text{ cy} = 8,551 \text{ cy}$. Note the 1,400 cy of export is identified on page 8 of the Soil Removal Action Plan, Former ChemOil Refinery, , Site Cleanup Program Number 0453A Site ID No. 2047W00 Global ID SL 2047W2348 2020 Walnut Avenue, Signal Hill, California 90755; dated July 16, 2019; prepared by Apex LLC.
3. **Soil Import:** Fill volume + additional 1,400 cy – Soil Reuse = $68,877 \text{ cy} + 1,400 \text{ cy} - 28,605 \text{ cy} = 41,672 \text{ cy}$.

TGR Geotechnical, Inc. prepared a Geotechnical Work Plan for the site in June 2019. The Geotechnical Work Plan provides grading recommendations to address undocumented fill, construction debris, piping runs, concrete debris and other voids. The current proposed grading (CA Engineering 2019) consists of cuts and fills to reach design grades for nine small industrial office buildings with associated surface level parking. The proposed grading plan includes placement of import, up to 10-feet on the northwest parcel, up to 7-feet on the southwest parcel and between 1 to 4-feet on the southern portion of the eastern parcel. Cut areas include up to 7-feet on the northwest parcel, 1-foot along the southern boundary of the southwest parcel and up to 9-feet in the northern portion of the eastern parcel. Additional areas will be cut due to identified debris or free product. Geotechnical preparation of the site will include heavy ripping and cross-ripping to at least 2-feet below ground surface, and all debris encountered during the geotechnical preparation is to be removed.

Apex Companies, LLC prepared a Soil Removal Plan dated July 16, 2019 to direct the handling and management of impacted soil, potentially impacted soil, commingled construction debris, and other waste if encountered during redevelopment activities. The Soil Removal Plan identifies impacted soil as: (1) soil that exceeds the AQMD Rule 1166 thresholds of 50 parts per million



by volume (ppmv) and/or 1,000 ppmv when field measured using a handheld vapor monitoring instrument, and (2) soil with concentrations of contaminants exceeding the soil screening levels for the various chemicals of concern, as noted in the last column of *Table IX-1*.

Proposed onsite soil vapor remediation includes installation and operation of a soil vapor extraction system (SVE). The concept is to extract volatiles in the vapor phase from the interstitial pore spaces of the soil matrix using a vacuum driven extraction system. The extracted air, impacted with volatiles, is treated onsite prior to discharge to the atmosphere. The treatment system (typically oxidation or carbon treatment) will be operated and monitored under a South Coast Air Quality Management District permit. The efficacy of the SVE, i.e., the mass of volatiles removed, is driven by the soil vapor concentration, the type of volatiles in the vapor phase and the soil type. Usually the largest volume of volatiles are removed in the first years of operation of the SVE. Eventually the volatiles in the vapor phase will achieve “asymptote,” i.e., a level where operation of the SVE system will be too costly for the volume of volatiles removed. The SVE operation can be cycled, allowing the volatiles in the vapor phase to rebound for more efficient extraction between pulsed operating periods; but at some point, the volume removed will not justify the operating costs of the SVE system. There will be volatiles remaining in the vapor phase after the SVE system is shut down and dismantled. As the remediation proposed does not include soil removal after the SVE is no longer effective, impacted soil will remain onsite and act as a secondary source of volatiles as the TPH in the soil matrix continues to degrade over time.

Onsite groundwater remediation includes air-sparging along the downgradient, southern and western edges of the site to act as a barrier and prevent additional offsite migration of groundwater contaminants. Air-sparging as proposed includes adding oxygen, through the injection of air into groundwater to facilitate air stripping and microbial degradation of TPH and VOCs. The air will be injected into 64 wells, 32 targeting the shallow zone (less than 45 feet) and 32 targeting a groundwater depth up to 70 feet. The injected air volatilizes dissolved VOCs in groundwater and moves upward into the vadose zone. SVE wells are used to capture this air, which is treated as part of the SVE system, described in the paragraph above.

The LNAPL will be collected from the groundwater using hand bailing or passive skimmers as needed. Monitoring wells are installed in the LNAPL areas and are inspected regularly to determine when LNAPL is present and requires removal. LNAPL that is removed from the groundwater is collected in drums and disposed of at a licensed recycling or disposal facility. Concentrations of groundwater contaminants are expected to decline based on the proposed remedial technologies and eventually be allowed to naturally attenuate.

Offsite groundwater remediation includes monitored natural attenuation based on the following rationale: (1) The current offsite downgradient soil vapor concentrations do not pose a significant potential risk to residential human health based on USEPA criteria, (2) Groundwater is not considered as a source of drinking water in the site vicinity. (3) Concentrations of petroleum contaminants downgradient from the site are expected to stabilize and subsequently decline as onsite source removal/remediation occurs. (4) There are no groundwater supply wells in the vicinity of and downgradient from the site.



The proposed soil vapor and groundwater treatment technologies are:

1. **Soil Vapor Extraction (SVE)** – Using 21 soil vapor extraction wells (14 on the Northwest Parcel and 7 on the Southwest Parcel); sample influent and post-treatment volatiles in the vapor phase monthly and analyze for TPH and VOCs.
2. **Groundwater Air Sparging** – Using 64 air injection points; extract volatiles from the groundwater and route to the SVE system.
3. **Groundwater Liquid Non-Aqueous Phase Liquid (LNAPL) Removal** – Using LNAPL recovery wells and using hand bailing or skimming techniques to remove LNAPL.
4. **Offsite Groundwater Monitoring Natural Attenuation (MNA)** – Conduct monitoring using an offsite groundwater monitoring well network of 8 wells. Allow natural attenuation of the constituents detected in offsite groundwater to continue. Sample groundwater semi-annually and evaluate trends over time.

The proposed institutional and engineering controls are:

1. **An Active Vapor Barrier System** to be installed subslab of all proposed onsite buildings. The active vapor barrier system will consist of a gravel blanket within which a perforated horizontal PVC pipe is laid underlying the impermeable vapor barrier. The horizontal piping run will be tied into vertical vent risers. A subslab monitoring network will be installed to monitor the effectiveness of the vapor barrier system.
2. **A Land Use Covenant (LUC)** restriction limiting future land use to commercial/industrial and requiring notification to the LARWQCB prior to future excavation for renovations, demolitions, remodeling, maintenance, etc.

In summary, the planned remedial activities include capping contaminated soil with clean import up to 10-feet thick, extracting volatiles in the vapor phase from the soil and groundwater, enhancing microbial degradation of contaminants in the groundwater, extracting the liquid contaminant from the groundwater, mitigating vapor intrusion concerns using an engineering vapor barrier system, and allowing natural attenuation to occur after the remedial activities have been determined to have cost-effectively remediated the soil and groundwater onsite to the extent practicable.

Project Impacts

The results of the HHRAs indicate potential adverse health impacts due to exposure to TPH and/or VOCs in the soil matrix and to VOCs in soil vapor and groundwater for construction workers, future construction maintenance workers, future building occupants and offsite residential occupants.

Capping existing contaminated soil with imported clean fill material mitigates the environmental hazard posed by direct exposure to the contaminated soil matrix for construction workers and future construction maintenance workers to less than significant. This also mitigates the environmental hazard posed by inhalation of VOCs from the contaminated soil matrix and from soil vapor for construction workers to less than significant.



As the remediation proposed does not include soil removal after the SVE is no longer effective, impacted soil will remain onsite and act as a secondary source of volatiles as the TPH in the soil matrix continues to degrade over time. It is unknown if capping existing contaminated soil mitigates the environmental hazard posed by inhalation of VOCs from the contaminated soil matrix and/or soil vapor by future construction maintenance workers to less than significant.

The subslab SVE system and vapor barriers are expected to prevent the vertical migration of VOCs from soil vapor into the proposed buildings. Therefore, the potential adverse health impacts due to exposure to VOCs from soil vapor to future building occupants would be mitigated to less than significant.

The air-sparging system, subslab SVE system and vapor intrusion barriers are expected to prevent vertical migration of VOCs from shallow groundwater into the proposed buildings. Therefore, the potential adverse health impacts due to exposure to VOCs from shallow groundwater and soil vapor to future building occupants would be mitigated to less than significant.

It is unknown if the proposed onsite remediation of shallow groundwater in conjunction with monitored natural attenuation would sufficiently mitigate the environmental hazard posed by VOCs in groundwater to offsite residents.

Operation of the remedial systems and monitoring are crucial in evaluating the efficacy of the remedial strategies. As implementation of the remedial technology is concurrent with the proposed development, it will not be possible to alter the subslab SVE system once installed, nor to excavate contaminated soils subslab once the SVE system is unable to extract VOCs due to asymptotic conditions. Therefore, the site will always have contaminated soils which will continue to offgas VOCs due to biodegradation of TPH and this could potentially leach into groundwater. This represents a potential for further significant impacts to the environment and human health.

Mitigation Measures – The following mitigation measures are proposed to address potentially significant impacts during construction and over the long-term operating life of the project and are in addition to the remedial measures included in the project design, as discussed above. Successful implementation of these measures would reduce the project's short-term and long-term impacts to less than significant.

Construction Measures

MM IX-1: All soil disturbance, including but not limited to ripping and cross-ripping, removal of debris, voids, free product in soil, rubble and trash, must be conducted under the AQMD Rule 1166 Site Specific permit and Compliance Plan. All debris (including vegetation), free product in soil, rubble, trash, piping, piping runs, structures, such as, but not limited to, sumps and clarifiers, below ground surface to a depth of 10-feet below current elevation must be removed and disposed appropriately if encountered.

MM IX-2: All soil disturbance, including but not limited to ripping and cross-ripping, removal of debris, voids, free product in soil, rubble and trash, shall be conducted in accordance with the requirements of the Los Angeles Regional Water Quality Control Board, as follows:



- a) Any disturbed soil shall be preliminarily screened with a PID, soil with concentrations of VOCs 50 ppmv or less will be stockpiled for reuse pending further characterization that consists of the following – (1) the excavated soil must meet the soil screening levels specified in *Table IX-1*, below and soil samples will be analyzed in a California certified laboratory for VOCs, TPH and polycyclic aromatic hydrocarbons (PAHs), (2) VOCs, TPH and PAHs in this disturbed soil that exceed the screening levels will be treated via ex-situ treatment methods or disposed offsite, (3) soils disposed offsite must be sent to a facility that has a current permit to accept such soil, (4) a separate Ex-Situ Soil Treatment Workplan will be submitted to the LARWQCB prior to consideration for reuse of such soils onsite, treated soil must meet the screening levels for commercial/industrial land use, and (5) impacted soil volumes treated and reused onsite greater than an amount to be specified by the LARWQCB will be subject to Waste Discharge Requirements ;
- b) Disturbed soil with concentrations of VOCs greater than 50 ppmv and less than 1,000 ppmv will be sprayed with water and/or vapor suppressant, placed in segregated stockpiles for additional laboratory analyses, covered with plastic sheeting weighted with sandbags, and reused as backfill onsite ONLY with prior approval from the LARWQCB and SCAQMD;
- c) Disturbed soil with concentrations greater than 1,000 ppmv will be sprayed with water and vapor suppressant and loaded for immediate offsite disposal;
- d) Soil stockpiles will be sampled in accordance with the DTSC (2001) Information Advisory for Clean Imported Fill Material;
- e) In-situ soil borings shall also be collected and may be used for characterization if samples are representative of the soil in the stockpile being considered for reuse and the sampling frequency meets the DTSC Information Advisory for Clean Imported Fill Material criteria;
- f) Soil determined to have VOCs, TPH and PAHs less than the screening levels and/or treated via ex-situ methods may be reused anywhere onsite.
- g) The analytical data from soil stockpiles is due to the LARWQCB 14 days prior to determining whether the soil is reusable onsite, must be remediated or must be disposed offsite. A report documenting the activities associated with excavated soil, laboratory analyses and final disposition of reused soil shall be submitted to LARWQCB and the City within 45 days after completion of grading; and the Ex-Situ Soil Treatment Workplan is due 60 days prior to the start of treating soil. If soil is to be reused onsite after *ex-situ* treatment, a map documenting the quantity and location of the reused soil shall be produced and maintained onsite.



Table IX-1 Soil Screening Levels Governing Soil Disturbance and Reuse

Chemical	Direct Contact with Soil					Protection of Groundwater, Aquifer is Not a Source of Drinking Water				Final Screening Levels ⁷		
	Residential		Construction	Commercial/Industrial		SFBRWQCB ESL ³ (mg/kg)	USEPA RSL ⁴ (mg/kg)	Groundwater at 20 feet bgs ⁶		Residential (mg/kg)	Construction (mg/kg)	Commercial Industrial (mg/kg)
	SFBRWQCB ESL ¹ (mg/kg)	USEPA RSL/DTSC SL ² (mg/kg)	SFBRWQCB ESL ¹ (mg/kg)	USEPA RSL/DTSC SL ² (mg/kg)	100X LARWQCB Soil SLs ⁵							
					(0 to 10 ft bgs)			(10 to 20 ft bgs)				
								LARWQCB Soil SL ⁵ (mg/kg)	LARWQCB Soil SL ⁵ (mg/kg)			
Total Petroleum Hydrocarbons (TPH)												
TPH (C4-C12)	7.4E+02	8.2E+01	2.8E+03	3.9E+03	4.2E+02	--	--	1.0E+03	1.0E+03	8.2E+01	1.0E+03	4.2E+02
TPH (C5-C12)	7.4E+02	8.2E+01	2.8E+03	3.9E+03	4.2E+02	--	--	1.0E+03	1.0E+03	8.2E+01	1.0E+03	4.2E+02
TPH (C13-C22)	2.3E+02	9.6E+01	8.8E+02	1.1E+03	4.4E+02	--	--	1.0E+04	1.0E+04	9.6E+01	8.8E+02	4.4E+02
TPH (C23-C44)	1.1E+04	2.5E+03	3.2E+04	1.4E+05	3.3E+04	--	--	5.0E+04	5.0E+04	2.5E+03	3.2E+04	3.3E+04
Volatile Organic Compounds (VOCs)												
Acetone	5.9E+04	6.1E+04	2.6E+05	6.3E+05	6.7E+05	--	--	1.6E+02	1.5E+02	1.5E+02	1.5E+02	1.5E+02
Benzene	2.3E-01	3.3E-01	2.4E-01	1.0E+00	1.4E+00	--	--	6.2E-01	1.5E-01	1.5E-01	1.5E-01	1.5E-01
(8) TBA	NV	1.3E+05	NV	NV	1.5E+05	--	--	1.3E+00	1.2E+00	1.2E+00	1.2E+00	1.2E+00
tert-Butylbenzene	NV	2.2E+03	NV	NV	1.2E+04	--	--	2.8E+01	2.6E+01	2.6E+01	2.6E+01	2.6E+01
sec-Butylbenzene	NV	2.2E+03	NV	NV	1.2E+04	--	--	2.8E+01	2.6E+01	2.6E+01	2.6E+01	2.6E+01
n-Butylbenzene	NV	3.9E+03	NV	NV	1.8E+04	--	--	2.8E+01	2.6E+01	2.6E+01	2.6E+01	2.6E+01
Ethylbenzene	5.1E+00	5.8E+00	4.8E+02	2.2E+01	2.5E+01	--	--	6.8E+01	3.2E+01	5.1E+00	3.2E+01	2.2E+01
Isopropylbenzene	NV	NV	NV	NV	NV	--	--	8.4E+01	7.7E+01	7.7E+01	7.7E+01	7.7E+01
(9) 4-Isopropyltoluene	NV	NV	NV	NV	NV	--	--	8.4E+01	7.7E+01	7.7E+01	7.7E+01	7.7E+01
MTBE	4.2E+01	4.7E+01	3.7E+03	1.8E+02	2.1E+02	--	--	1.3E+00	1.3E+00	1.3E+00	1.3E+00	1.3E+00
n-Propylbenzene	NV	3.8E+03	NV	NV	2.4E+04	--	--	2.6E+01	2.6E+01	2.6E+01	2.6E+01	2.6E+01
Toluene	9.7E+02	1.1E+03	4.1E+03	4.6E+03	5.3E+03	--	--	2.5E+01	1.6E+01	1.6E+01	1.6E+01	1.6E+01
1,3,5-TMB	NV	2.7E+02	NV	NV	1.5E+03	--	--	3.6E+01	3.3E+01	3.3E+01	3.3E+01	3.3E+01
1,2,4-TMB	NV	3.0E+02	NV	NV	1.8E+03	--	--	3.6E+01	3.3E+01	3.3E+01	3.3E+01	3.3E+01
o-Xylene	NV	6.5E+02	NV	NV	2.8E+03	--	--	NV	NV	6.5E+02	0.0E+00	2.8E+03
(10) m,p-Xylenes	NV	5.5E+02	NV	NV	2.4E+03	--	--	NV	NV	5.5E+02	0.0E+00	2.4E+03
Total Xylenes	5.0E+02	5.8E+02	2.4E+03	2.4E+03	2.5E+03	--	--	2.3E+02	1.8E+02	1.8E+02	1.8E+02	1.8E+02
Polycyclic Aromatic Hydrocarbons (PAHs)												
Acenaphthene	3.6E+03	3.6E+03	1.0E+04	4.5E+04	4.5E+04	1.9E+01	5.5E+00	NV	NV	5.5E+00	5.5E+00	5.5E+00
(11) Acenaphthylene	3.6E+03	3.6E+03	1.0E+04	4.5E+04	4.5E+04	1.3E+01	5.5E+00	NV	NV	5.5E+00	5.5E+00	5.5E+00
Anthracene	1.8E+04	1.8E+04	5.0E+04	2.3E+05	2.3E+05	2.8E+00	5.8E+01	NV	NV	2.8E+00	2.8E+00	2.8E+00
Benzo(a)anthracene	1.6E-01	1.1E+00	1.6E+01	2.9E+00	2.1E+01	1.2E+01	4.2E-03	NV	NV	4.2E-03	4.2E-03	4.2E-03
Benzo(a)pyrene	1.6E-02	1.1E-01	1.6E+00	2.9E-01	2.1E+00	1.3E+02	4.0E-03	NV	NV	4.0E-03	4.0E-03	4.0E-03
Benzo(b)fluoranthene	1.6E-01	1.1E+00	1.6E+01	2.9E+00	2.1E+01	6.4E+02	4.1E-02	NV	NV	4.1E-02	4.1E-02	4.1E-02
Benzo(g,h,i)perylene	NV	NV	NV	NV	NV	2.7E+01	NV	NV	NV	2.7E+01	2.7E+01	2.7E+01
Benzo(k)fluoranthene	1.6E+00	1.1E+01	1.5E+02	2.9E+01	2.1E+02	3.7E+01	4.0E-01	NV	NV	4.0E-01	4.0E-01	4.0E-01
Chrysene	1.5E+01	1.1E+02	1.5E+03	2.6E+02	2.1E+03	2.3E+01	1.2E+00	NV	NV	1.2E+00	1.2E+00	1.2E+00
Dibenzo(a,h)anthracene	1.8E-02	1.1E-01	1.6E+00	2.9E-01	2.1E+00	1.4E+02	1.3E-02	NV	NV	1.3E-02	1.3E-02	1.3E-02
Fluoranthene	2.4E+03	2.4E+03	6.7E+03	3.0E+04	3.0E+04	6.0E+01	8.9E+01	NV	NV	6.0E+01	6.0E+01	6.0E+01
Fluorene	2.4E+03	2.4E+03	6.7E+03	3.0E+04	3.0E+04	8.9E+00	5.4E+00	NV	NV	5.4E+00	5.4E+00	5.4E+00
Indeno(1,2,3-cd)pyrene	1.6E-01	1.1E+00	1.6E+01	2.9E+00	2.1E+01	7.0E+01	1.3E-01	NV	NV	1.3E-01	1.3E-01	1.3E-01
Naphthalene	3.3E+00	3.8E+00	3.5E+02	1.4E+01	1.7E+01	--	--	1.8E+00	1.7E+00	1.7E+00	1.7E+00	1.7E+00
(12) Phenanthrene	1.8E+04	1.8E+04	5.0E+04	2.3E+05	2.3E+05	1.1E+01	5.8E+01	NV	NV	1.1E+01	1.1E+01	1.1E+01
Pyrene	1.8E+03	1.8E+03	5.0E+03	2.3E+04	2.3E+04	8.5E+01	1.3E+01	NV	NV	1.3E+01	1.3E+01	1.3E+01
Metals												
Lead	8.0E+01	8.0E+01	1.6E+02	3.2E+02	3.2E+02	NV	NV	NV	NV	8.0E+01	1.6E+02	3.2E+02

Notes:

C4-C12 = Carbon range.

ft bgs = feet below ground surface.

mg/kg = milligram per kilogram.

NV = No published value.

100X = One hundred times.

TPH_g = TPH as gasoline.

TBA = tert-Butyl alcohol.

MTBE = Methyl-tert-butyl ether.

TMB = Trimethylbenzene.

USEPA RSL = U.S. Environmental Protection Agency Regional Screening Level (USEPA, 2018).

LARWQCB Soil SL = Los Angeles Regional Water Quality Control Board Soil Screening Level (LARWQCB, 1996).

DTSC SL = Department of Toxic Substances Control Screening Level (DTSC, 2018).

SFBRWQCB ESL = San Francisco Bay Regional Water Quality Control Board Environmental Screening Level (SFBRWQCB, 2016).

¹ SFBRWQCB ESLs for soil for direct contact exposure pathways. Screening levels for TPH (C5-C12), TPH (C13-C22), and TPH (C23-C44) represent ESLs for TPH gasoline (C5-C12), TPH diesel (C10-C24), and TPH motor oil (C24-C36), respectively.² USEPA RSLs/DTSC SLs for soil for direct contact exposure pathways represents the lowest of the available DTSC SL or USEPA RSL. Screening levels for TPH (C5-C12), TPH (C13-C22), and TPH (C23-C44) represent lowest of aliphatic and aromatic USEPA RSLs for TPH Low (C5-C8), TPH Middle (C9-C18), and TPH High (C17-C32), respectively.³ SFBRWQCB ESL represents soil SL for protection of groundwater, assuming groundwater aquifer is not a source of drinking water. Screening levels for TPH (C5-C12), TPH (C13-C22), and TPH (C23-C44) represent ESLs for TPH gasoline (C5-C12), TPH diesel (C10-C24), and TPH motor oil (C24-C36), respectively.⁴ USEPA RSL represents soil SL for protection of groundwater, assuming groundwater aquifer is not a source of drinking water. Screening levels for TPH (C5-C12), TPH (C13-C22), and TPH (C23-C44) represent lowest of aliphatic and aromatic USEPA RSLs for TPH Low (C5-C8), TPH Middle (C9-C18), and TPH High (C17-C32), respectively.⁵ LARWQCB SL represents soil SL for protection of groundwater at 20 ft bgs, assuming groundwater aquifer is not a source of drinking water. As recommended by LARWQCB (1996), for non-drinking water aquifers, screening level for TPH carbon ranges represent the LARWQCB SLs for TPH where distance above groundwater is greater than 150 feet (>150 feet). Values from LARWQCB (1996) for PAHs were not available.⁶ As recommended by LARWQCB (1996), for non-drinking water aquifers, benzene, toluene, ethylbenzene, and xylene (BTEX) screening levels are set at 100 times (100X) respective maximum contaminant levels (MCLs) as preliminary levels to be protection of human health and the environment. This method was applied to all VOCs.⁷ Final screening level represents the lowest available screening level for each exposure scenario/receptor.⁸ If screening level for tert-butyl alcohol was not available, therefore, the value for sec-butyl alcohol was used.⁹ If screening level for 4-isopropyltoluene was not available, therefore, the value for isopropylbenzene was used.¹⁰ Screening level for m-xylenes represents the value for m-xylene.¹¹ If screening level for acenaphthylene was not available, therefore, the value for acenaphthene was used.¹² If screening level for phenanthrene was not available, therefore, the value for anthracene was used.

References:

DTSC. 2018. Human Health Risk Assessment (HHRA) Note Number 3, DTSC-modified Screening Levels (DTSC SLs). Human and Ecological Risk Office (HERO), June.

LARWQCB. 1996. Interim Site Assessment & Cleanup Guidebook. California Regional Water Quality Control Board, Los Angeles and Ventura Counties, Region 4, May 1996.

SFBRWQCB. 2016. Environmental Screening Levels (ESLs). San Francisco Bay Regional Water Quality Control Board, Revision 3, February.

USEPA. 2018. Regional Screening Levels (RSLs) (TR-1E-06, HQ=1). November.

Source: Apex, 2019

Apex Companies, LLC



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*Project Design/Operations*

MM IX-3: Soil vapor probes shall be installed in the cap of documented clean import and sampled and analyzed for VOCs semi-annually during operation of the SVE system and after the SVE system is shut down to determine whether VOCs are migrating from the contaminated soil matrix and soil vapor below the clean cap and impacting the clean cap. The triple nested soil vapor probes must be installed at 5-ft, 10-ft and 15-ft bgs, in accordance with the Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance), DTSC, October 2011 and the Advisory Active Soil Gas Investigations (DTSC, LARWQCB, SFRWQCB, June 2015). If the data generated from the semi-annual soil vapor monitoring indicate VOCs in the vapor phase have migrated into the clean cap and are present at concentrations that exceed Regional Screening Levels and Environmental Screening Levels protective of human health, an SVE system shall be constructed to remove these VOCs.

MM IX-4: The SVE system shall operate until the LARWQCB issues an order indicating that “No Further Action” is required for this land use. Should the SVE system reach asymptote, and the soil matrix and/or soil vapor data collected and submitted to the LARWQCB to determine whether cessation of operation of the SVE system is warranted indicate concentrations of constituents remain in place in exceedance of the clean-up goals identified in *Table IX-1* and/or Regional Screening Levels and Environmental Screening Levels protective of human health, the City reserves the right to require the property owner to treat and/or remove the contaminated media in order to prevent damage to life, health and property. Should the LARWQCB determine cessation of the SVE system is warranted, triple nested soil vapor probes must be installed at 5-ft, 10-ft and 15-ft bgs, in accordance with the Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance), DTSC, October 2011 and the Advisory Active Soil Gas Investigations (DTSC, LARWQCB, SFRWQCB, June 2015) in the contaminated media and sampled semi-annually for VOCs in the vapor phase. Should the results of the semi-annual sampling indicate VOCs present in the vapor phase at concentrations that exceed the clean-up goals identified in the US EPA Regional Screening Levels and Environmental Screening Levels protective of human health, the SVE system must be restarted and operated until the concentrations of VOCs are less than the clean-up thresholds.

MM IX-5: A groundwater monitoring plan shall be submitted for approval by the LARWQCB and the City, pursuant to Section 10 of the July 13, 2017 *Response Plan and Remedial Technology Evaluation, Former ChemOil Refinery, Signal Hill, CA* prepared by The Source Group and the LARWQCB June 7, 2013 *Comments on Proposed Modifications to Routine Groundwater Monitoring Program, Former Chemoil Refinery Facility, 2020 Walnut Avenue, Signal Hill, California* (SCP No. 0453A, Site ID No. 2047W00). Semi-annual groundwater monitoring of wells MW-1, MW1-A, MW-2, MW-3, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, BMW-2, BMW-5, BMW-8 and BMW-11 shall occur, and if any of these wells has been destroyed, a replacement well shall be installed to comply with the semi-annual groundwater sampling. The groundwater samples shall be submitted for analysis of VOCs including fuel oxygenates via USEPA method 8260B, SVOCs via USEPA method 8270C, TPHg and TPHd via USEPA method 8015B. The semi-annual groundwater monitoring report shall be submitted to the LARWQCB, the City and the designated person who represents the on-site property owners association (see MM IX-7, below regarding the



“designated person”). The analytical data shall be compared to the MCLs, if the data exceed the MCLs, remediation of groundwater is required.

MM IX-6: The areas of LNAPL onsite shall be remediated during construction activities. A LNAPL remediation plan shall be prepared and submitted to the City for review and approval prior to implementation.

MM IX-7: A dynamic Operations & Maintenance (O & M) Plan for the SVE system, air sparging system and passive vapor intrusion system installed subslab all buildings shall be prepared by a “designated person,” on behalf of the Industrial Property Owners Association, and submitted to the City of Signal Hill. The dynamic O & M Plan shall include the stipulation that an annual report must be generated and provided to the City of Signal Hill. This annual report shall include, at a minimum, summaries of the mass of volatiles removed from the SVE system, the efficacy of the air sparging system, the results of the quarterly measured VOCs from sampling ports in the vapor intrusion system, and from the soil vapor probes in the SVE system, a map showing the locations and depths of the soil vapor probes, and a contingency plan if the analytical results indicate the vapor intrusion barrier and/or SVE system are malfunctioning and VOCs are entering the building. The dynamic O & M Plan shall include direction to dismantle and repair the SVE and air sparging systems in the event the systems fail or require upgrades. The dynamic O & M Plan, the quarterly sampling reports and the annual report also must be maintained onsite.

The “designated person” must be familiar with the environmental history of the site and is responsible for maintaining copies of environmental reports (historic, recent and yet to be produced) onsite. This designated person shall be responsible for briefing site maintenance workers regarding potential risks, prior to excavation into subsurface soil materials.

MM IX-8: Recordation of the final subdivision map shall include a land use covenant to prohibit any non-commercial/industrial land uses on the site, shall require notification to the LARWQCB regarding future excavation, and require disclosures to all owners and tenants that any work involving excavations or trenching shall require prior notification to the LARWQCB and the City and may require additional assessment, investigation and remediation.

MM IX-9: All post-construction soil disturbance involving excavation and trenching conducted by maintenance workers, utility workers, landscapers, etc. shall be conducted under a SCAQMD Rule 1166 Site Specific permit and Compliance Plan that stipulates monitoring of soil every 15 minutes with a handheld instrument such as a PID or OVA held a minimum of 3-inches above disturbed soil and stockpiling soil that exceeds the threshold of 50 ppmv for offsite disposal. It is recommended that the Rule 1166 Permit be structured to apply proactively for a specified period, and is regularly renewed, in case emergency repairs are required to utilities in trenches.



- 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?**

Less than Significant Impact. The nearest public use airport is Long Beach Municipal Airport, located approximately two-miles to the northeast. The project would introduce new light industrial land uses. The Los Angeles County Airport Land Use Commission establishes Airport Influence Areas (AIA) to identify areas likely to be impacted by noise and flight activity created by aircraft operations at and airport. The project site is not within the AIA for Long Beach Municipal Airport (Los Angeles County Airport Land Use Commission 2003). Thus, people working on the project site would not be exposed to any safety hazards or excessive noise associated with the operation of the airport. The impact due to proximity to the airport would be less than significant.

- f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

Less Than Significant Impact. The Signal Hill Hazard Mitigation Plan (2018) documents strategies and approaches designed to reduce loss of life and property in the event of a disaster or emergency. Key action items in the plan include improving communication and strengthening emergency operations by increasing collaboration and coordination among the various agencies and organizations involved in emergency planning, identifying funding to implement prevention plans and programs, and continuing the education and outreach efforts. The proposed project would have no effect on the communications and operational elements of the Plan, which are implemented by public safety personnel. Project implementation would not interfere with the implementation the plan because the proposed development does not introduce any new land uses not considered in the implementation of the plan, it does not place the proposed land uses in an area that would require any specialized response, nor does it place new land uses in an area that is subject to potential threats from a natural or man-made disaster, such as wildland fires , flooding, earthquake fault rupture, etc.

As for emergency evacuation, the roadway grid in and around Signal Hill provides multiple means of evacuation from natural, technological, or human-caused disasters (Emergency Planning Consultants 2018). As identified in the Signal Hill General Plan Safety Element (2016), existing evacuation routes are adequate to serve the city's population, and no major improvements are considered necessary to maintain emergency access. Several of the local arterial roadways and Interstate 405 (I-405) are major evacuation routes. As shown on Figure 2 of the General Plan Safety Element (2016), two arterial roadways are designated as major evacuation routes in the immediate vicinity of the project site: Hill Street to the north and Walnut Avenue, which bisects the site. Hill Street is a two-lane undivided minor arterial and Walnut Avenue is a two-way divided/undivided roadway minor arterial. Given the site location, the project would have no direct physical impact to Hill Street. The project would dedicate additional right-of-way and construct ultimate half-width street improvements along its two Walnut Avenue frontages. Site access is proposed via four driveways connected to Walnut Avenue, with stop controls at each driveway. Based on the assessment of peak hour traffic conditions in the Traffic Impact Analysis prepared for this project (see Appendix H), project-generated traffic would not result in significant congestion impacts during either peak period.



Project-related impacts to the evacuation route functions of Walnut Avenue and Hill Street would be less than significant.

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

No Impact. The California Department of Forestry and Fire Protection (Cal Fire) has mapped fire hazard severity zones throughout the state. Designations include Unzoned (the lowest wildland fire risk), Moderate, High, and Very High. As shown in Figure 7 of the Signal Hill General Plan Safety Element, which is based on the CalFire mapping, property within the Signal Hill city boundaries is Unzoned, indicating a low potential for wildland fire; there are no Moderate, High, or Very High fire hazard zones in the city. Thus, the project would not expose people or structures either directly or indirectly to significant loss, injury, or death involving wildland fires. There would be no impact.

X. Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY:				
<i>Would the project:</i>				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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 substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
iv) impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a) Would the project 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 located within the jurisdiction of the Los Angeles Regional Water Quality Control Board (LARWQCB), who prepares and maintains a basin plan which identifies narrative and numerical water quality objectives to protect all beneficial uses of the waters of that region. The basin plan is intended to achieve the identified water quality objectives through implementation of Waste Discharge Requirements (WDRs) and by employing three strategies for addressing water quality issues: control of point source pollutants, control of nonpoint source pollutants, and remediation of existing contamination.

Point sources of pollutants are well-defined locations at which pollutants flow into water bodies (discharges from wastewater treatment plants and industrial sources, for example). These sources are controlled through regulatory systems including permitting under California's WDRs and the National Pollutant Discharge Elimination System (NPDES) program; permits are issued by the appropriate RWQCB and may set discharge limitation or other discharge provisions.

According to the Basin Plan, nonpoint sources of pollutants are typically derived from project site runoff caused by rain or irrigation and have been classified by the USEPA into one of the following categories: agriculture, urban runoff, construction, hydromodification, resource extraction, silviculture, and land disposal. This type of pollution is not ideally suited to be addressed by the same regulatory mechanisms used to control point sources. Instead, California's Nonpoint Source Management Plan describes a three-tiered approach, including the voluntary use of best management practices (BMPs), the regulatory enforcement of the use of BMPs, and effluent limitations. Generally speaking, each RWQCB implements the least restrictive tier until more stringent enforcement is necessary.

The LARWQCB addresses on-site drainage through its construction, industrial, and municipal permit programs. These permits require measures to minimize or prevent erosion and reduce the volume of sediments and pollutants in a project's runoff and discharges based upon the size of the project site.

During the construction phase of a proposed project, the pollutants of greatest concern are sediment, which may run off the project site due to site grading or other site preparation activities, and hydrocarbon or fossil fuel remnants from the construction equipment. In addition, on-site watering activities to reduce airborne dust could contribute to pollutant loading in surface runoff. Accordingly, project construction activities could have the potential to result in adverse effects on water quality. However, construction runoff is regulated by the NPDES Construction General Permit, which requires identification of a variety of water quality control BMPs to be specified on construction plans



and implemented throughout construction. Measures are required to keep stormwater out of construction zones, to conduct regular site maintenance and “good housekeeping practices” to prevent, minimize and dispose of solid and liquid wastes, to capture and control any site runoff so that water pollutants don’t enter storm drains, and to have response procedures in place in the event of accidental spills of water contaminants. This permit applies to all construction which disturbs an area of at least one acre and is administered by the RWQCB. Through this existing, mandatory regulatory compliance measure, potential water quality impacts during construction would be avoided or reduced to less than significant levels and would avoid conflicts with water quality standards established by the RWQCB.

The Los Angeles County Low Impact Development (LID) Ordinance is designed to promote sustainability and improve the County’s watersheds by preserving drainage paths and natural water supplies in order to “retain, detain, store, change the timing of, or filter stormwater or runoff.” The City of Signal Hill implements the provisions of the County’s ordinance for all new development projects. The project is categorized by the County’s Low Impact Development (LID) Ordinance as a Designated Project, within the category of an industrial park consisting of 10,000 square feet or more of building area. Pollutants of concern for such a project include: Suspended Solids, Total Phosphorous, Total Nitrogen, Total Kjeldahl Nitrogen, Cadmium, Chromium, Lead, and Zinc. As a result, the project would be required to prohibit the discharge of pollutants from the project site and to meet the requirements of the County’s LID Standards Manual, including the installation and maintenance of post-construction treatment controls and best management practices (BMPs). Consistent with the provisions of the County’s LID Ordinance, all Designated Projects must control runoff through infiltration, bioretention, biofiltration, and/or rainfall harvest and use. Due to the soil contamination from past oil refinery activities that occurs throughout the site, infiltration methods are considered to be infeasible. Accordingly, a LID Plan has been prepared for the project (CA Engineering, 2019b), that relies on biofiltration as the key water quality treatment mechanism, as described below.

A biofiltration area is a vegetated shallow depression that is designed to receive and treat stormwater runoff from downspouts, piped inlets, or sheet flow from adjoining paved areas. A shallow ponding zone is provided above the vegetated surface for temporary storage of stormwater runoff. During storm events, stormwater runoff accumulates in the ponding zone and gradually infiltrates the surface and filters through the biofiltration soil media before being collected by an underdrain system. Stormwater runoff treatment occurs through a variety of natural mechanisms as stormwater runoff filters through the vegetation rootzone. In biofiltration areas, microbes and organic material in the biofiltration soil media help promote the adsorption of pollutants (e.g., dissolved metals and petroleum hydrocarbons) into the soil matrix. Plants utilize soil moisture and promote the drying of the soil through transpiration. Biofiltration areas are typically planted with native, drought-tolerant plant species that do not require fertilization and can withstand wet soils for at least 96 hours.

The proposed drainage system generally follows the existing flow characteristics and divides the site into three drainage areas which comprise, collectively, 352,021 square feet. The following portions of the proposed project area have been excluded from the drainage areas: 13,103 square feet of self-retaining landscaping located at certain borders of the project, and 13,390 square feet of project area that will be dedicated to public right of ways at Walnut Avenue, Gundry Avenue, and 20th Street. Roof runoff and most of the impervious surface areas are designed to flow into landscape areas, where possible. The drainage areas and excluded project areas are identified on the Site Plan included in Section 6 of the project’s LID Plan.



The development is proposing to install a biofiltration planter in each drainage area as the stormwater quality control measure to mitigate the first flush flows. For each area, the onsite flows will be captured by catch basins with proprietary filter inserts and then directed to 60-inch diameter underground storage pipes via low-flow pipes. The 60-inch detention pipes will be sized to store 1.5 times the design-year storm flows for each drainage area. The detained storm water will then be pumped into the biofiltration planters which will be lined due to the contaminated soil at the site.

The biofiltration planters will be designed and sized in accordance with the requirements of Stormwater Quality Control Measure Fact Sheet—BIO-1: Biofiltration (2014 LID Standards Manual). The planters' underdrains will convey the treated stormwater flows from the two drainage areas on the west side of Walnut Avenue to the existing storm drain system in Walnut Avenue and will convey the treated stormwater flows from the portion on the east side of Walnut Avenue to the existing storm drain system in Alamitos Avenue. During storm events when the hydraulic grade line exceeds the storage pipe capacity, the water will overflow into the existing storm drains via high-flow pipes.

The proposed LID Plan includes both structural and non-structural source controls to prevent and minimize potential water contaminants that could be carried in stormwater runoff. These measures are summarized in *Table X-1*, below.

Table X-1 Structural and Non-Structural Source Control Measures

Structural Source Control Measures	Non-Structural Source Control Measures
Storm Drain Message and Signage	Education for Property Owners, Tenants and Occupants
Outdoor Trash Storage/Waste Handling Area	Activity Restrictions
Landscaping Irrigation Practices	Common Area Landscape Management
Building Materials Selection	Maintenance of Source Control and Stormwater Quality Control Measures
	Spill Contingency Plan
	Uniform Fire Code Implementation
	Common Area Litter Control
	Employee Training
	Common Area Catch Basin Inspection
	Street Sweeping Private Streets and Parking Lots

Source: LID Plan for Signal Hill Business Park Project, Section 3.2. CA Engineering. August 2019.

With conformance to the County's LID requirements and incorporation of required construction and post-construction BMPs, no impacts related to the violation of any water quality standards or waste discharge requirements are anticipated and project-related impacts to water quality would be less than significant.

b) Would the project 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. The project site has not been part of any groundwater recharge or management resources or programs and with a history of soil contamination associated with past oil refinery activities, it is not a good candidate to support groundwater resource management. There are



no groundwater extraction wells at present and none are proposed as part of this project. All water demands would be served through connections to the City's water transmission network. The site development, as proposed, would establish impervious surfaces over most of the project site, reducing potential infiltration compared to the existing undeveloped condition with mostly bare soils that allow for extensive infiltration during rainstorms. Because the site is not part of any groundwater recharge or management efforts, the reduction in infiltration capacity due to site development would result in less than significant impacts on groundwater resources.

c)i) *Would the project 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 result in substantial erosion or siltation on- or off-site?*

- i) **No Impact.** The proposed drainage system would mimic existing drainage patterns of the undeveloped site, which is surrounded by developed properties and streets, where there are no streams or rivers or any kind of surface drainage courses. The project would not require alteration of the course of any stream or river. There would be no impacts involving such alterations.

c)ii) *Would the project 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 substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?*

- ii) **No Impact.** The proposed drainage system would mimic existing drainage patterns of the undeveloped site, which is surrounded by developed properties and streets, where there are no streams or rivers or any kind of surface drainage courses. The project would not require alteration of the course of any stream or river. There would be no impacts involving such alterations

c)iii) *Would the project 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 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?*

- iii) **Less than Significant Impact.** As noted in the two preceding responses, the proposed drainage improvements would mimic existing drainage patterns on site and would not involve any alterations to the course of a stream or river. The project would increase the amount of impervious surface coverage from the current undeveloped condition, with approximately 4 percent impervious surfaces, to a fully developed condition, with impervious surfaces covering approximately 78 percent of the site. The proposed storm drainage system is designed to capture and treat runoff by collecting and conveying runoff from hard surfaces into three biofiltration areas where the runoff would be filtered prior to discharge to the adjacent municipal storm drain systems in Walnut Avenue and Alamitos Avenue. As discussed in the earlier response to a), the drainage improvements



are designed to comply with the provisions of the Los Angeles County LID regulations, which would provide adequate treatment of water contaminants in site runoff.

An analysis of pre-versus post development runoff conditions was prepared as part of the preliminary hydrology report for the project. That analysis determined that the peak flows would increase from the existing condition to the proposed condition, due to the increase of impervious area when compared to existing conditions. However, the proposed drainage improvements would provide more than enough storage due to water quality requirements to mitigate the increase in volume for the storm events. The proposed storage for water quality is a combined volume of 25,425 CF. This storage volume is greater than the net volume increase of 16,240 CF for the 85th percentile storm event (CA Engineering, 2019a). Runoff from the developed site would not exceed the capacity of the Walnut Avenue storm drain and the project's impact would be less than significant.

c)iv) Would the project 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 impede or redirect flood flows?

- iv) **Less than Significant Impact.** Please see the response to c)iii, above. The proposed on-site storm drain system is sized to accommodate the 10-year storm event via 24-inch conduits which would outlet to the existing storm drain system. During a 50-year storm event, the on-site storage and high flow conduits may overflow and sheet flow into the existing storm drain system; the site may experience slight ponding during this larger storm event (CA Engineering, 2019a). Since the project site is not within a flood hazard zone, the occasional onsite ponding and overflows into the street drainage systems would not affect flood flows.

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

No Impact. The project site is within a Zone "X" designation depicted on FEMA Map 06037C1970F, dated September 26, 2008. This designation indicates an area of minimal flood hazard, and slightly overlaps an area with reduced flood risk due to levee (CA Engineering, August 2019). The site is not near any water bodies that could inundate the site during a major seismic ground shaking event. Since the site is located many miles inland from the Pacific Ocean, it is not exposed to the threat of a tsunami. Give these circumstances, there would be no impacts involving a release of pollutants into water bodies during one of these events.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

No Impact. As discussed in the response to a), earlier in this section, the project's preliminary LID Plan is consistent with the standards set forth in the Los Angeles County LID Ordinance, which is structured to address and achieve water quality objectives set forth in the LARWQCB Basin Plan. There are multiple structural and non-structural source controls included in the project's LID Plan that would prevent or sufficiently minimize the release of water contaminants from the developed site runoff; therefore, the project would not conflict with or obstruct implementation of the regional Basin Plan. As discussed in the earlier response to b) in this section, the project site has not supported any



groundwater management programs and given the soil and groundwater contamination that have been documented on site (see discussions in Section IX. Hazards and Hazardous Materials), this site is not a candidate for any kinds of sustainable groundwater management efforts. Further, there is no sustainable groundwater management plan in place for the project area. As such, the project would not conflict with or obstruct implementation of a sustainable groundwater management plan.

XI. Land Use and Planning

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
LAND USE AND PLANNING:				
<i>Would the project:</i>				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a) *Would the project physically divide an established community?*

No Impact. The project site is currently vacant. Surrounding land uses include a recently developed apartment complex and the American University of Health Sciences office complex to the north; the Jenni Rivera linear park, single- and multifamily residences, a Los Angeles County Sanitation District pump house, and school district bus maintenance facility to the south; an office complex and gated townhomes and apartments to the east; and a mix of light industrial land uses to the west.

Access to the project site is provided via the existing circulation network, with Hill Street to the north, Alamos Avenue and 20th Street to the south, Gaviota Avenue to the east, and Gundry Avenue to the west. Walnut Avenue, which runs north/south, bisects the site, creating two distinct development sites on the east and west.

The physical division of an established community is typically associated with the construction of a linear feature, such as a major highway, regional flood control channel, or railroad tracks, or the removal of a means of access, such as a local road or bridge, which would impair mobility within an existing community or between a community and an outlying area.

As noted in the project description of this Initial Study, 21st Street, currently a two-way/two-lane public street extending between Walnut Avenue and Gundry Avenue, would be vacated and incorporated into the project site plan as a two-way/two-lane private drive. It would continue to provide vehicle access between Walnut Avenue and Gundry Avenue, and would be lined with parking spaces. As such, local vehicular circulation and access to the existing light industrial uses along Gundry Avenue would still be provided. No other modifications to existing off-site infrastructure facilities or the removal of any such facilities would be required, and there would be no infrastructure-related improvements or removals that could result in a physical disruption to an established land use or the local pattern of development.



The proposed project would result in conversion of vacant land into light industrial land uses that would not intrude into the established neighborhoods that surround the project site. No features of the proposed project would disrupt the existing surrounding land uses from continuing to operate as-is. As such, the development of the proposed project and the conversion of 21st Street to a private drive would not result in an impact involving the physical division of an established community.

b) Would the project 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?

No Impact. The Signal Hill General Plan Land Use Element (2001) and the City's Official Zoning Map designate and zone the western portion of the project site as Light Industrial and the eastern portion of the project site is designated and zoned as Commercial Office. As such, the project would require a General Plan amendment and zone change on the 2.56 acres on the eastern portion of the project site to allow for the proposed light industrial land uses. Thus, while the project includes the modification of allowable land uses on the eastern portion of the project site, the project site is identified by the City as an area that is planned for development of industrial or commercial office uses. Further, the Signal Hill General Plan Environmental Resources Element (1986), which was amended to include the City's Park and Recreation Master Plan, does not identify any land use restrictions for the project site that would require conservation of any part of the site as permanent open space or park space for habitat protection, recreation, or hazard avoidance purposes. The project site is not in an area subject to a local coastal program. Additionally, as discussed in Section IV.f, Biological Resources of this Initial Study, the project site is not within a habitat conservation plan, natural community conservation plan, or other approved environmental resource conservation plan.

Therefore, the project would not 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.

XII. Mineral Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
MINERAL RESOURCES:				
<i>Would the project:</i>				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>



Discussion

a) *Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*

No Impact. Mineral resources are commonly defined as a concentration or occurrence of natural, solid, inorganic, or fossilized organic material in or on the earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. Mineral resources can be categorized into three classes: fuel, metallic, and non-metallic. Fuel resources include coal, oil, and natural gas. Metals include such resources as gold, silver, iron, and copper. Lastly, non-metal resources include industrial minerals and construction aggregate. Industrial minerals include boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone. Construction aggregate includes sand and gravel, and crushed stone.

Signal Hill lies within the Long Beach Oil Field, where oil production dates to 1919 when oil was first discovered in the area. The Long Beach Oil Field is termed a “mega giant” field, which is a field that produces over 1 million barrels a day. Currently, the Long Beach Oil Field is considered moderately productive as oil wells are gradually being converted to urban development. While the project site has historically supported land uses that have assisted in oil refinery, the site itself does not have a history of oil production. Additionally, subsurface investigations that have been conducted at the project site, such as the geotechnical report prepared by TGR (see Appendix D), have not identified any oil wells or other oil extraction infrastructure that would indicate that the site has been used for oil extraction and production. The project site is not known to support any other forms of mineral resources. Thus, given the lack of known mineral resources on the site, the project would have no impact on the loss of availability of a known mineral resource that would be of value to the region or residents of the state.

b) *Would the project 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 Surface Mining and Reclamation Act of 1975 (SMARA) is the primary regulator for surface mining in the state. The act requires the State Geologist (California Geological Survey) to identify all mineral deposits in the state and to classify them based on their significance. SMARA defines a mineral deposit as a naturally occurring concentration of minerals in amounts or arrangement that under certain conditions may constitute a mineral resource. The concentration may be of value for its chemical or physical characteristics. The classification of these mineral resources is a joint effort of the state and local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as a Mineral Resource Zone (MRZ), Scientific Resource Zone (SZ), or Identified Resource Area (IRA), described below:

- MRZ-1: A Mineral Resource Zone where adequate information indicates that no significant mineral deposits are present or likely to be present.
- MRZ-2: A Mineral Resource Zone where adequate information indicates than significant mineral deposits are present, or a likelihood of their presence and development should be controlled.
- MRZ-3: A Mineral Resource Zone where mineral resource significance is undetermined.



- MRZ-4: A Mineral Resource Zone where there is insufficient data to assign any other MRZ designation.
- SZ Areas: Containing unique or rare occurrences of rocks, minerals, or fossils that are of outstanding scientific significance shall be classified in this zone.
- IRA Areas: County or State Division of Mines and Geology Identified Areas where adequate production and information indicate that significant minerals are present.

As shown on the Mineral Classification Map prepared by the California Division of Mines and Geology (1982), the project site is classified as MRZ-4, an area of insufficient data to assign to any other category. A review of the City's General Plan did not identify this area as having significant mineral deposits of any kind, or in an area that is delineated as a mineral resource recovery site, pursuant to SMARA. Therefore, since there are no known significant mineral resources and the project site is not a designated mineral resource recovery site as identified by SMARA or in the City's General Plan, the project would have no impact upon 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.

XIII. Noise

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
NOISE: <i>Would the project result in:</i>				
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air and is characterized by both its amplitude and frequency (or pitch). The human ear does not hear all frequencies equally. In particular, the ear de-emphasizes low and very high frequencies. To better approximate the sensitivity of human hearing, the A-weighted decibel scale (dBA) has been developed. On this scale, the human range of hearing extends from approximately 3 dBA to around 140 dBA.

Noise is generally defined as unwanted or excessive sound, which can vary in intensity by over one million times within the range of human hearing; therefore, a logarithmic scale, known as the decibel scale (dB), is used to quantify sound intensity. Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, and airplanes, and stationary sources such as



construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates (is reduced) at a rate between 3 dBA and 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate between 6 dBA and about 7.5 dBA per doubling of distance.

There are a number of metrics used to characterize community noise exposure, which fluctuate constantly over time. One such metric, the equivalent sound level (L_{eq}), represents a constant sound that, over the specified period, has the same sound energy as the time-varying sound. Noise exposure over a longer period of time is often evaluated based on the day-night sound level (L_{dn}). This is a measure of 24-hour noise levels that incorporates a 10 dBA penalty for sounds occurring between 10:00 p.m. and 7:00 a.m. The penalty is intended to reflect the increased human sensitivity to noises occurring during nighttime hours, particularly at times when people are sleeping and there are lower ambient noise conditions. Typical L_{dn} noise levels for light- and medium-density residential areas range from 55 dBA to 65 dBA.

Regulatory Framework

State

The Governor's Office of Planning and Research (OPR) 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 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 the community noise equivalent level (CNEL).

Local

City of Signal Hill General Plan

The General Plan Noise Element provides guidance for the control of noise to protect residents, workers, and visitors from potentially adverse noise impacts. The City of Signal Hill has adopted local guidelines based on the community noise compatibility guidelines established by the California Department of Health Services for use in assessing the compatibility of various land use types with a range of noise levels; refer to *Table XIII-1, Land Use Compatibility for Community Noise Environments*.

Table XIII-1 Land Use Compatibility for Community Noise Environments

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 – Motel, Hotels	50 – 65	60 – 70	70 – 80	80 – 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 – 70	70 – 80	80 – 85
Auditoriums, Concert Halls, Amphitheaters	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



Notes: NA = not applicable; Ldn = day/night average; CNEL = community noise equivalent level; dBA = A-weighted decibels

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.

Source: OPR 2003.

Further, the General Plan includes interior and exterior noise standards as summarized in *Table XIII-2, Noise Compatibility Criteria by Land Use*. *Table XIII-2* shows standards and criteria that specify acceptable limits of noise for various land uses throughout the City of Signal Hill. The City uses the standards identified in *Table XIII-1* and *Table XIII-2* as the primary tools to ensure compatibility between land uses and outdoor ambient noise.

Table XIII-2 Noise Compatibility Criteria by Land Use

Land Use	Compatibility Criteria
Residential	
Exterior	Outdoor living areas must be mitigated to 65 dB CNEL or less.
Interior	Habitable rooms must be mitigated to 45 dB CNEL or less.
Other Noise-Sensitive Uses	
Exterior	Same as residential criterion.
Interior	Same as residential criterion.
Commercial	
Exterior	A noise level of 70 dB CNEL or less, or one that does not interfere with normal business activity.
Industrial	
Exterior	A noise level of 75 dB CNEL or less, or one that does not interfere with normal business activity. Public access areas should be 65 dB CNEL or less.

Source: Signal Hill 2009.

The Noise Element of the General Plan includes the following policies that are applicable to the development of the proposed project:

Policy 1.a: The City will consider the severity of noise exposure in the community planning process to prevent or minimize noise impacts to existing and proposed land uses.

Policy 1.d: The City will inform those living and working within the city of the effects of noise pollution and will cooperate with all levels of government to reduce or minimize impacts.

Policy 1.e: Require noise mitigation to ensure that noise-sensitive land uses are not exposed to noise levels of greater than 45 dB in habitable rooms and 65 dB in outdoor living areas.

City of Signal Hill Municipal Code

Chapter 9.16 of the City of Signal Hill Municipal Code contains noise control regulations that would have a limited application to the project's construction noise impacts, as the Municipal Code exempts construction activities from the chapter's provisions during daytime hours when these activities would



occur. Construction noise near residential areas is exempt on weekdays as stated in Municipal Code Section 9.16.050.

9.16.050 – Construction or repairing of buildings.

- B. *Limitation of Activity.* No person shall carry on any construction activities, including the erection, demolition, excavation, modification, alteration or repair of any building or structures, or any other activities creating construction noise as defined in this section other than between the hours of seven a.m. and six p.m. on weekdays, except as otherwise permitted in this section.
- D. *Exceptions.* Notwithstanding any other provision of this section, construction activities are permitted as follows:
3. *Construction activities creating construction noise may be authorized between the hours of six p.m. and seven a.m. on weekdays or at any time on any other days if a permit for such construction activities is issued by the building official of the city or his designee in accordance with the provisions contained in this section, and is not revoked.*
- E. *Permit Procedure to Authorize Construction Activities at Times other than Permitted Hours on Weekdays.*
1. *The building official or his designee may issue a permit authorizing construction activities at times not otherwise permitted by this section only when the issuing official determines that the construction activity will not produce construction noise which will interfere with the peaceful enjoyment of persons occupying surrounding properties. The issuing official shall consider the nature of surrounding property, type of construction activity, time of construction activity, existence of buildings, structures, natural features and topography which will buffer the impacts of construction noise on surrounding properties, and any other matters affecting the impact of the construction noise on surrounding properties, and may impose any conditions deemed reasonable to mitigate such impacts. A copy of any permit issued pursuant to this section shall be filed by the issuing official with the police department.*
 2. *Where appropriate mitigating measures are taken, a permit should generally be granted for construction activities other than the following:*
 - a. *Motorized earth-moving equipment;*
 - b. *Framing;*
 - c. *Concrete placement;*
 - d. *Mixing equipment;*
 - e. *Stuccoing;*
 - f. *Roofing;*
 - g. *Any activity requiring compressors;*
 - b. *Any activity producing similarly adverse noise impacts.*
 3. *The general contractor responsible for the construction activity, or where there is no general contractor, the property owner, shall apply for the permit prior to the performance of such construction activity, shall certify that he understands and agrees to the terms thereof, and shall post a copy of said permit at the job site in a manner reasonably visible to the public. Such person shall be the permittee and is responsible for assuring compliance with all terms and provisions of the permit.*



Existing Conditions

Stationary Sources

Noise sources in the project area include the use of mechanical equipment (use of heating, ventilation, and air conditioning [HVAC] units, etc.) and parking lot noise (cars parking, open and closing doors, etc.) at industrial, commercial, and residential land uses surrounding the project site. The noise associated with these sources may represent a single-event noise occurrence, short-term, or long-term/continuous noise.

Mobile Sources

The majority of the existing noise in the project area is generated from vehicle sources along Hill Street and Walnut Avenue. According to the General Plan, traffic noise levels along Hill Street and Walnut Avenue range from 60 to 65 dBA CNEL (Signal Hill 2009, Figure 6: Traffic Noise Impact Distances). Additionally, aircraft overflights are a source of mobile noise in the City of Signal Hill.

Noise Measurements

In order to quantify existing ambient noise levels in the vicinity of the project site, four noise measurements were taken on March 28, 2019; refer to *Table XIII-3, Noise Measurements* and to *Figure 11 Noise Measurement Locations*. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the project site. Ten-minute measurements were taken, between 10:55 a.m. and 12:03 a.m. Short-term (L_{eq}) measurements are considered representative of the noise levels throughout the day.

Table XIII-3 Noise Measurements

Site No.	Location	L_{eq} (dBA)	L_{min} (dBA)	L_{max} (dBA)	Peak (dBA)	Time
1	Along Gundry Avenue approximately 216 feet south of Hill Street near the western boundary of the project site.	51.4	46.0	63.3	86.0	10:55 a.m.
2	Along Walnut Avenue approximately 346 feet south of Hill Street, adjacent to a medical office.	65.3	56.1	77.7	98.3	11:21 a.m.
3	Along Gaviota Avenue approximately 96 feet north Alamos Avenue, adjacent to a multifamily residential use.	57.1	49.0	75.1	95.8	11:37 a.m.
4	Jenni Rivera Memorial Park, approximately 183 feet northwest of 20 th Street.	53.8	47.6	67.2	92.2	11:53 a.m.

Source: Michael Baker International, March 28, 2019.

Meteorological conditions were partly cloudy, cool temperatures, moderate wind speeds, and low humidity. Noise monitoring equipment used for the ambient noise survey consisted of a Brüel & Kjær Hand-held Analyzer Type 2250 equipped with a Type 4189 pre-polarized microphone. The monitoring equipment complies with applicable requirements of the American National Standards Institute for sound level meters. The results of the field measurements are included in Appendix F, *Noise Analysis*.





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Project Impact Analysis

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

Less than Significant Impact with Mitigation Incorporated.

Construction

Construction activities would generate perceptible noise levels during the grading, paving, and building construction phases. High groundborne noise levels and other miscellaneous noise levels can be created by the operation of heavy-duty trucks, backhoes, bulldozers, excavators, front-end loaders, scrapers, and other heavy-duty construction equipment. *Table XIII-4 Maximum Noise Levels Generated by Construction Equipment*, indicates the anticipated noise levels of construction equipment. The average noise levels presented are based on the quantity, type, and acoustical use factor for each type of equipment that is anticipated to be used.

Construction activities would require approximately 35,756 cubic yards of cut and 68,877 cubic yards of fill. The primary noise sources would be during earthwork activities (use of graders and dozers) and building construction (use of loaders, tractors/loaders/backhoes, and a crane). Graders typically generate the highest noise levels, emitting approximately 85 dBA at a distance of 50 feet. Point sources of noise emissions are atmospherically attenuated by a factor of 6 dBA per doubling of distance. This assumes a clear line-of-sight and no other machinery or equipment noise that would mask project construction noise. Buildings and other barriers that interrupt line-of-sight conditions further reduce noise levels from point sources.

Table XIII-4 Maximum Noise Levels Generated by Construction Equipment

Type of Equipment	Acoustical Use Factor ¹	L _{max} at 40 Feet (dBA)
Crane	16	83
Concrete Mixer Truck	40	81
Dump Truck	40	86
Backhoe	40	80
Dozer	40	84
Excavator	40	83
Forklift	40	80
Paver	50	79
Roller	20	82
Tractor	40	86
Water Truck	40	82
Grader	40	87
General Industrial Equipment	50	87

Note:

1 – Acoustical use factor (percent): Estimates the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Source: Federal Highway Administration 2006.

Construction noise levels in the project vicinity would fluctuate depending on the particular type, number, and duration of usage for the varying equipment. The effects of construction noise largely depend on the type of construction activities occurring on any given day, noise levels generated by



those activities, distances to noise-sensitive receptors, and the existing ambient noise environment in the receptor's vicinity. Construction generally occurs in several discrete phases, with each phase requiring different equipment with varying noise characteristics. These phases alter the characteristics of the noise environment generated on the proposed project site and in the surrounding community for the duration of the construction process.

Construction noise impacts generally happen when construction activities occur in areas immediately adjoining noise-sensitive land uses, during noise-sensitive times of the day, or when construction durations last over extended periods of time. The closest existing sensitive receptors are residents of the Zinnia apartments located approximately 40 feet north of the project site (Site 1). As indicated in *Table XIII-4*, typical construction noise levels would range from approximately 79 to 87 dBA at this distance. These noise levels could intermittently occur for a few days when construction equipment is operating closest to the residential uses. The remainder of the time, the construction noise levels would be much less because the equipment would be working in a large area farther away from the existing sensitive uses.

The City of Signal Hill has established noise standards for construction activity in Chapter 9.16 of the Municipal Code. Pursuant to Chapter 9.16, construction noise is prohibited between the hours of 6:00 p.m. and 7:00 a.m. on weekdays, and/or any time on Saturday, Sunday, or a holiday.¹⁸ The project would be required to comply with these allowable hours for construction. Although construction noise is allowed during the City's allowable construction hours and is not considered to be a significant impact during those hours, the project could expose adjoining residential uses to temporary high noise levels (79 to 87 dBA) during construction activities. However, Mitigation Measure NOI-1 would reduce short-term construction noise impacts through noise reduction methods. Mitigation Measure NOI-1 requires equipping all construction equipment with properly operating and maintained mufflers; locating stationary construction equipment so that emitted noise is directed away from the nearest noise-sensitive receptors; locating equipment staging in areas farthest away from sensitive receptor; and limiting haul truck deliveries to the same hours specified for construction equipment (between the hours of 7:00 a.m. to 6:00 p.m. on weekdays only). Compliance with Mitigation Measure NOI-1 would reduce construction noise impacts at nearby sensitive receptors to ensure normal residential activities are not interfered with. Therefore, although construction noise impacts that occur within the weekday time periods allowed by the Municipal Code are not considered to be significant, this mitigation measure will be imposed to minimize the project's temporary construction noise impacts at surrounding land uses.

Operational

Mobile Noise

Future development generated by the proposed project would result in additional traffic on adjacent roadways, thereby increasing vehicular noise in the vicinity of existing and proposed land uses. According to the Highway Traffic Noise Analysis and Abatement Policy and Guidance, a doubling of traffic volumes would result in a 3 dB increase in traffic noise levels, which is barely detectable by the human ear (U.S. DOT 2017). Based on the *Signal Hill Business Center Traffic Impact Analysis* (Traffic Impact Analysis) prepared by Kunzman Associates, Inc. (revised June 22, 2018), the proposed project is projected to generate a total of approximately 2,668 passenger car equivalent trips per day, which includes approximately 244 a.m. peak hour trips and approximately 246 p.m. peak hour trips. As

¹⁸ "Holidays" is defined to include the following seven days: Christmas, Thanksgiving, New Year's, July 4th, Memorial Day, Labor Day, and Veterans Day.



shown in *Table XIII-5 Existing and Project Traffic Volumes*, existing average daily trips (ADTs) along Hill Street (from Orange Avenue to Walnut Avenue) in the project vicinity is approximately 4,101 vehicles per day and ADTs along Walnut Avenue (South of Hill Street) is approximately 5,845 vehicles per day. As such, the project's trip generation (approximately 2,668 trips per day) would not double existing traffic volumes along Hill Street and Walnut Street and any increase in traffic noise along local roadways would be imperceptible.

Table XIII-5 also depicts existing and project-generated peak hour intersection turning movement volumes in the project vicinity. As shown, existing peak hour intersection turning movement volumes at the intersection of Gundry Avenue/Hill Street would be doubled as a result of the proposed project during afternoon hours (4:00 p.m. to 6:00 p.m.). Consequently, a 3 dB increase in traffic noise levels may occur in the immediate vicinity of that intersection (including the Zinnia apartments located at the southeast corner of the Gundry Avenue/Hill Street intersection) during the afternoon peak period. However, based on the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108),¹⁹ the Existing Plus Project traffic noise levels along Gundry Avenue (south of Hill Street) would be approximately 47.1 dBA. As such, noise levels would not exceed the City's residential exterior noise standard of 65 dB and impacts would be less than significant.

Table XIII-5 Existing and Project Traffic Volumes

Segment	Existing	Project	Doubling of Traffic Volumes?
Daily Trips			
Hill Street (Orange Avenue to Walnut Avenue)	4,101 ¹	2,668	No
Walnut Street (South of Hill Street)	5,845 ¹	2,668	No
Peak Hour Intersection Turning Movement Volumes²			
Gundry Avenue/Hill Street	32 a.m.	49 a.m.	No
	18 p.m.	50 p.m.	Yes
Walnut Avenue/Hill Street	417 a.m.	95 a.m.	No
	505 p.m.	93 p.m.	No
Walnut Avenue/20th Street/Alamitos Street	459 a.m.	88 a.m.	No
	519 p.m.	88 p.m.	No
Gaviota Avenue/Hill Street	32 a.m.	0 a.m.	No
	19 p.m.	0 p.m.	No

Notes:

- Existing daily trips are expressed as average daily trips (ADT) along each segment.
- Project daily trips is measured in total passenger car equivalent trips per day generated by the proposed project.

Sources:

- Existing daily trips: Signal Hill 2009.
- Peak hour intersection turning movement volumes: Kunzman Associates 2018.

Stationary Noise Impacts

The project proposes the development of nine light industrial buildings comprising approximately 151,075 square feet. Stationary noise sources associated with the proposed project would include mechanical equipment, slow-moving trucks, and parking activities. These noise sources are typically

¹⁹ Mobile source noise was modeled using the Federal Highway Administration's Highway Noise Prediction Model (FHWA RD-77-108), which incorporates several roadway and site parameters. A 40 mile per hour average vehicle speed along Gundry Avenue (south of Hill Street) was assumed for existing conditions based on empirical observations and posted maximum speeds. Refer to Appendix F, *Noise and Vibration Analysis*.



intermittent and short in duration and would be comparable to existing sources of noise experienced at the light industrial uses to the west of the project site. Further, all stationary noise activities would be required to comply with Municipal Code Chapter 9.16 and General Plan Noise Element Policy 1.e pertaining to noise control regulations. A discussion of the project's stationary noise sources is provided below.

Mechanical Equipment

The project would include HVAC units located on the roof of each of the nine proposed buildings. Typically, mechanical equipment, such as HVAC units, generate noise levels of 55 dBA at 50 feet from the source (U.S. EPA 1971). The HVAC units would be located approximately 50 feet from the nearest residential property to the north of the project site. As such, noise levels from the HVAC units would be approximately 55 dBA at the nearest residential properties to the north. Thus, the City's exterior noise standards (65 dBA) would not be exceeded as a result of HVAC units at the project site. Impacts would be less than significant in this regard.

Slow-Moving Trucks

Although future tenants of the proposed project are not known at the time of this analysis, it is anticipated that the project could receive occasional deliveries from trucks. Typically, a medium 2-axle truck used to make deliveries can generate a maximum noise level of 75 dBA at a distance of 50 feet.²⁰ These are levels generated by a truck that is operated by an experienced "reasonable" driver with typically applied accelerations. Delivery noise would be consistent with the activities already occurring at light industrial uses in the surrounding area. Additionally, slow-moving truck noise would be intermittent, short in duration, and would not generate excessive noise levels over an extended period of time. Impacts resulting from truck delivery activities would be less than significant.

Parking Areas

Traffic associated with parking lots is typically not of sufficient volume to exceed community noise standards, which are based on a time-averaged scale such as the CNEL scale. However, the instantaneous maximum sound levels generated by a car door slamming, engine starting up, and car pass-bys may be an annoyance to adjacent noise-sensitive receptors. Estimates of the maximum noise levels associated with some parking lot activities are presented in the table below.

Table XIII-6 Typical Maximum Noise Levels Generated by Parking Lots

Noise Source	Maximum Noise Levels at 50 Feet from Source
Car door slamming	61 dBA L _{eq}
Car starting	60 dBA L _{eq}
Car idling	53 dBA L _{eq}

Source: Kariel 1991, p. 3-10.

As shown in *Table XIII-6*, parking lot noise levels would range between 53 dBA and 61 dBA at a distance of 50 feet, which is below the City's exterior (65 dB) and interior (45 dB) noise standards per General Plan Policy 1.e.²¹ Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 48 feet for normal speech

²⁰ Measurements taken by Michael Baker International, 2006.

²¹ Assuming a 20 dB outdoor-indoor attenuation rate for indoor noise levels based on standard construction practices.



to 50 dBA at 50 feet for very loud speech, which are below the City's exterior (65 dB) and interior (45 dB) noise standards per General Plan Policy 1.e. As such, parking lot noise levels would be nominal at the nearby residential uses. A less than significant impact would occur in this regard.

Mitigation Measures

MM XIII-1 To reduce noise levels during construction activities, the applicant shall demonstrate, to the satisfaction of the City of Signal Hill Building Official, that the project complies with the following:

- Construction contracts must specify that all construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers and other state-required noise attenuation devices.
- A sign, legible at a distance of 50 feet, shall be posted at the project construction site providing a contact name and a telephone number where residents can inquire about the construction process and register complaints. This sign shall indicate the dates and duration of construction activities. In conjunction with this required posting, a noise disturbance coordinator shall be identified to address construction noise concerns received. The coordinator shall be responsible for responding to any local complaints about construction noise. When a complaint is received, the disturbance coordinator shall notify the City within 24 hours of the complaint and determine the cause of the noise complaint (starting too early, malfunctioning muffler, etc.) and shall implement reasonable measures to resolve the complaint, as deemed acceptable by the City. All signs posted at the construction site shall include the contact name and the telephone number for the noise disturbance coordinator.
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers.
- The construction contractor shall limit haul truck deliveries (including trucks transporting import soil materials, machinery and construction materials) to the same hours specified for construction equipment (between the hours of 7:00 a.m. to 6:00 p.m. on weekdays with no activity allowed on Saturdays, Sundays, or holidays). A haul route exhibit shall be submitted for City approval to identify routes that minimize the exposure of sensitive land uses or homes to delivery truck-related noise.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Project construction can generate varying degrees of groundborne vibration, depending on the construction procedure and the construction equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings in the vicinity of a construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Groundborne vibrations from construction activities rarely reach levels that damage structures.



Significance thresholds concerning construction vibration levels have not been adopted by the City of Signal Hill; therefore, this analysis relies on Federal Transit Administration (FTA) guidance regarding vibration velocities for construction equipment operations. In general, the FTA architectural damage criterion for continuous vibrations (i.e., 0.20 inch-per-second) appears to be conservative. The types of construction vibration impact include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Typical vibration produced by construction equipment is illustrated in *Table XIII-7 Typical Vibration Levels for Construction Equipment*.

The highest degree of groundborne vibration would be generated during the grading and paving construction phases due to the operation of a vibratory roller. The nearest structure would be the residential uses located approximately 40 feet north of the north boundary line of the western side (Site 1) of the project site. As indicated in *Table XIII-7*, based on the FTA data, vibration velocities from typical heavy construction equipment range from 0.001 to 0.104 in/sec peak particle velocity (PPV) at 40 feet from the source of activity. Therefore, vibration from construction activities experienced at the closest structure would be below the 0.20 inch-per-second PPV significance threshold and impacts would be less than significant.

The fully developed, occupied, and operational project would not include any interior or exterior activities involving sources of high groundborne vibration. Occasional truck movements that may occur in conjunction with transport of materials into or out of the site would generate minor levels of vibration, for very short time periods, which would not result in significant impacts on- or off-site.

Table XIII-7 Typical Vibration Levels for Construction Equipment

Equipment	Approximate peak particle velocity at 40 feet (inch-per-second)
Large bulldozer	0.044
Loaded trucks	0.038
Small bulldozer	0.001
Jackhammer	0.017
Vibratory roller	0.104

Notes:

Calculated using the following formula:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

where: PPV (equip) = the peak particle velocity in inch-per-second of the equipment adjusted for the distance

PPV (ref) = the reference vibration level in inch-per-second from Table 12-2 of the FTA Transit Noise and Vibration Impact Assessment Guidelines

D = the distance from the equipment to the receiver

Source: Federal Transit Administration 2006, Table 12-2.

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 airport to the project site is the Long Beach Airport, located approximately 1.3 miles to the northeast. According to the General Plan, the 65 dBA noise contours from the Long Beach Airport do not extend into the City of Signal Hill. Additionally, the project site is not located



within the vicinity of a private airstrip or related facilities. Therefore, project implementation would not expose people residing or working in the project area to excessive noise levels associated with aircraft. No impacts would occur in this regard.

XIV. Population and Housing

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
POPULATION AND HOUSING: <i>Would the project:</i>				
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)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a) *Would the project 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. Growth-inducing impacts are caused by those characteristics of a project that foster or encourage population and/or economic growth, such as new housing, creation of a new job center, or construction of new infrastructure that could support additional development beyond the project site. The project would result in the development of 151,075 square feet of light industrial building space, housed in nine separate concrete tilt-up structures, each of which could be occupied by one or more businesses. While the project would create new spaces for employment, none of the individual units would be of a size that would attract a large employment generator that would recruit potential employees from outside of the area. Since the number of parking spaces is an indication of the likely level of employment on-site, if 90 percent of the 260 spaces are used by employees driving single-occupant vehicles, that equates to 234 total employees. Further, while a General Plan amendment and zone change is required to allow the proposed light industrial land uses on Site 2, that would not represent a significant change in employment intensity from the current Commercial Office (CO) designations; it may actually result in a lower overall employment intensity compared to what is possible under the CO regulations, since offices typically have higher levels of employment intensity than light industrial uses. Thus, the project would not induce substantial unplanned population growth due to the proposed type or intensity of land uses.

The project site is in a built-up urban environment with an existing roadway network that would serve the project site. Other utilities infrastructure, such as municipal water, sewer and storm drainage facilities, occur in the adjacent streets and are sized to handle loads from multiple development sites in the vicinity. The project includes new on-site underground utility lines that would connect to existing mainline facilities in the adjacent streets. No upsizing of existing municipal infrastructure would be required for this project; therefore, there would be no expansions of infrastructure capacity that could support additional growth beyond the project site. Hence, the project would not indirectly



induce substantial unplanned growth in the area due to construction of major new infrastructure facilities.

Given that the proposed project would not directly or indirectly induce substantial unplanned population growth in the area, no impact would occur.

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

No Impact. There is no housing on the vacant project site and therefore the project would not displace any people or housing. No impact would occur.

XV. Public Services

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
PUBLIC SERVICES:				
a) 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:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
i) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ii) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iii) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
iv) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
v) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a)i) 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 fire protection?

- i) **Less than Significant Impact.** The City of Signal Hill contracts with the Los Angeles County Fire Department (LACoFD) for fire protection services in the city. Primary response to incidents in Signal Hill is provided by Fire Station No. 60, located at 2300 E. 27th Street, which is 1.2 miles northeast of the project site. Station No. 60 houses one Type I engine and is manned by four firefighters, including a captain, an engineer and two firefighter/paramedics. The estimated response time for this station is up to 3 to 4 minutes



to any location in Signal Hill (Signal Hill 2016). In the event of fires or emergency medical incidents, the entire resources of the LACoFD are available to provide responses throughout Signal Hill. In addition, the LACoFD maintains mutual aid agreements with other regional fire agencies, including the Long Beach Fire Department, which has stations near Signal Hill and can respond to calls for service (Signal Hill 2016).

The project will add new light industrial land uses, all of which will demand some level of fire protection services. As shown on Figure 7, Fire Hazards Map, of the Signal Hill General Plan Safety Element, the project site is in an area of lowest risk for fire hazards.

The proposed light industrial project is in an urbanized area with a mixture of light industrial, residential, educational, and park land uses and is 1.2 miles southwest of Fire Station No. 60. The project does not represent a unique land use or type of construction that would require additional fire department resources, would not have a significant impact involving fire response times, and would not otherwise create a substantially greater need for fire protection services than already exists. Because Signal Hill contracts for fire protection services with the LACoFD, project applicants are required to submit project plans to the LACoFD for review and plan check approval with respect to applicable fire protection standards set forth in Title 32 (Fire Code), Section 105.7 of the Los Angeles County Code. LACoFD approval is required prior to the issuance of building permits. Through this routine process, the LACoFD confirms that the project is designed in conformance with the applicable safety codes and will have sufficient fire flow in local fire hydrants and sufficient emergency access for fire engines and crews. Project-related impacts involving fire protection resources would be less than significant and would not require construction of any new fire department facilities.

a)ii) 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 police protection?

- ii) **Less than Significant Impact.** Police protection in Signal Hill is provided by the Signal Hill Police Department (SHPD). As of 2016, the SHPD has 34 sworn officers and 19 civilian staff (14 full-time and 5 part-time) operating from one station located at 2745 Walnut Avenue, approximately 0.6 miles northwest of the project site (Signal Hill 2016). Mutual aid agreements are in place with the Long Beach Police Department, Los Angeles County Sheriff's Department, and other regional law enforcement agencies. These agreements allow for assistance from other agencies in the event of a major crime or natural disaster that could not effectively be handled with the resources available to the SHPD (Signal Hill 2016).

The project's light industrial land uses could potentially generate a demand for police protection services in relation to potential criminal activity (property crimes or crimes against persons). However, the proposed land uses would not result in any unique or more extensive crime problems that could not be handled with the existing level of SHPD resources. As such, development of the proposed project is not expected to result in a need for new or expanded SHPD facilities or additional officers. Thus, the project would



not adversely affect the SHPD's ability to continue to provide adequate service to the project area. Therefore, impacts would be less than significant and no additional police department facilities would need to be constructed.

a)iii) 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 schools?

- iii) **Less than Significant Impact.** The project includes the development of 151,075 square feet of light industrial land uses in nine tilt-up concrete buildings, to be occupied by a variety of businesses. While future tenants are unknown, the individual units would not be of a size that would attract large employment generators that would be recruiting potential employees from outside of the Signal Hill area. There is a possibility that a small number of future employees or business owners could relocate locally and have school-age children who would attend local schools within the Long Beach Unified School District (LBUSD). This would have a minor and less than significant impact on the local school district facilities.

As with most development in Signal Hill, the proposed project would be subject to the provisions set forth in the California Code of Regulations Section 65995 and California Education Code Section 17620. These codes allow school districts the authority to collect statutory school fees from commercial and industrial development if a justification study is prepared and certain nexus findings are made. As of the date of its last justification study in 2018, LBUSD has adopted the fee of \$0.61 per square foot for any commercial/industrial development (Cooperative Strategies, 2018). The project applicant will be required to pay the fee and be in receipt of a Certificate of Compliance from the LBUSD prior to the issuance of building permits.

Given that the proposed project would have, at most, a minor effect on local school district facilities and must pay the applicable LBUSD development impact fee, impacts involving school services and facilities would be less than significant.

a)iv) 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 parks?

- iv) **No Impact.** The proposed project is 151,075 square feet of light industrial land uses and does not involve park development or displacement. Since demand for parks is determined almost entirely by the residential population within a given area and the project would not add dwelling units or cause an increase in the residential population of the surrounding community, there would be little or no demand for existing or new parks. If there are occasional visits to local parks by on-site employees during lunch hours or before or after work hours, that would represent a negligible level of activity at the affected parks. As such, no impact would occur relative to this threshold.



a)v) 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 other public facilities?

- v) **No Impact.** As mentioned above, the proposed project would not increase residential population in the project area and would therefore not require the use or maintenance of other public facilities that are provided to benefit residents. Therefore, no impact to other public facilities would occur.

XVI. Recreation

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

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?

No Impact. As discussed in Section XIV, Population and Housing of this IS/MND, the proposed project would not be directly or indirectly growth-inducing. Thus, the project would not introduce a residential population into the area that would increase the use of existing parks or recreational facilities. There could be occasional and limited visits to local parks by on-site employees during their lunch hours or before or after work hours, but that would involve small numbers of people for short periods of time, with minimal effect on the parks. Given these circumstances, the project would not contribute to or accelerate the substantial physical deterioration of any parks or recreational facilities in the area. No impact would occur.

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?

No Impact. The proposed project is the development of 151,075 square feet of light industrial land uses and associated improvements. It does not include the construction or expansion of recreational



facilities and thus it would not have an adverse effect on the environment in relation to the construction or expansion of recreational facilities. No impact would occur.

XVII. Transportation/Traffic

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

Discussion

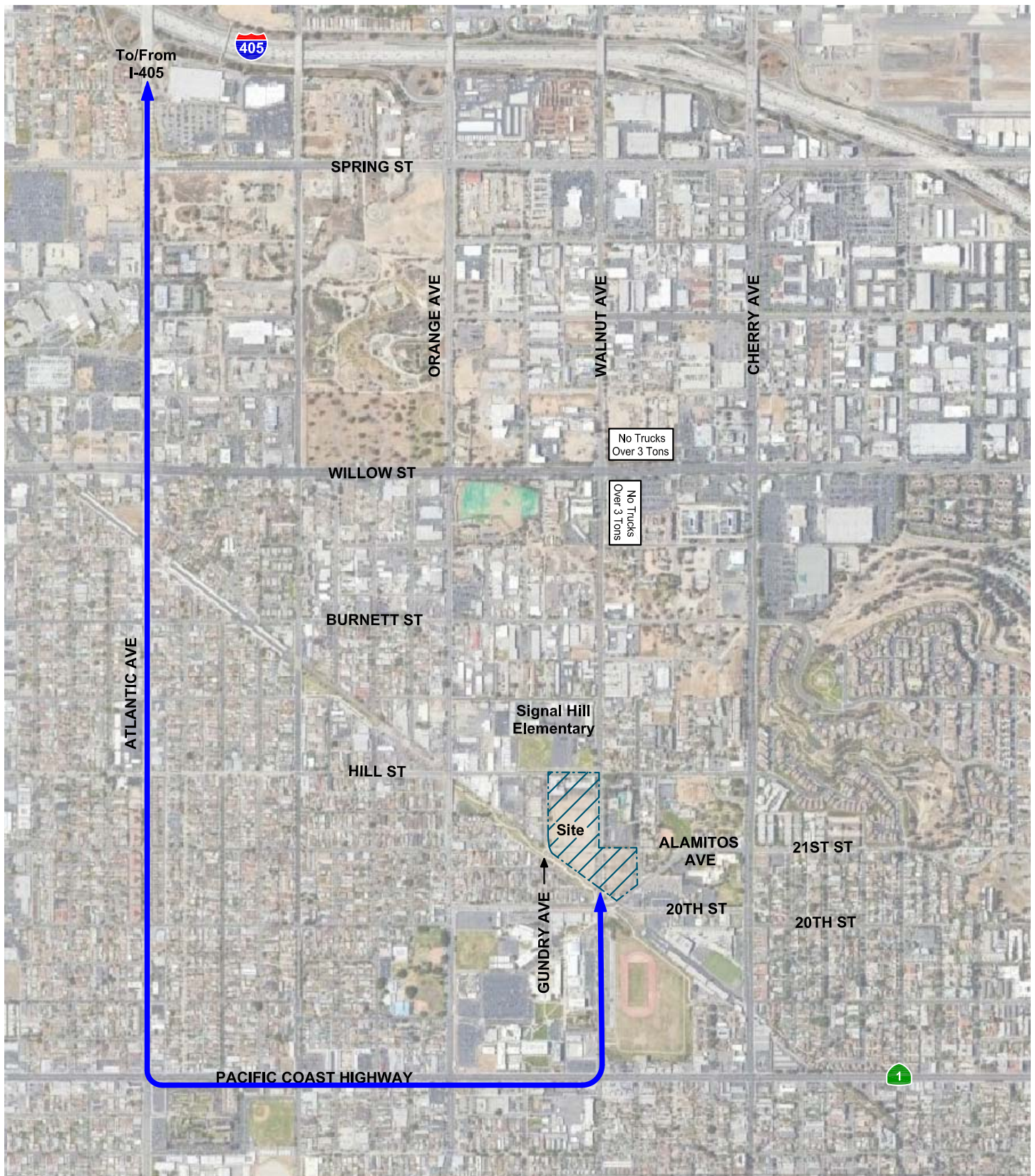
- a) *Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, taking into account all modes of transportation including transit, roadways, bicycle and pedestrian facilities??***

Less than Significant Impact With Mitigation Incorporated.

Roadway Network

Temporary Construction Traffic Impacts

Throughout the construction phases, there will be varying levels of passenger vehicle, light, medium and heavy truck traffic generated that will add to the volume of traffic on the surrounding street network. The volumes will fluctuate depending on the construction activities involved, size of work crews, and the amount of truck transport required on a given day. The most intensive construction traffic would involve trucks exporting contaminated soils from the site and transporting clean fill materials to the project site during the initial grading phase. With an average load volume of 15 cubic yards, a total of approximately 3,348 dump truck loads would occur during the 5-6 month grading phase, which translates into approximately 6,696 total truck trips (one incoming one outgoing for each dump truck). Because this added traffic would occur intermittently during construction and would have no permanent effects on the street network, temporary construction traffic impacts are not evaluated in the same manner that the project's permanently added traffic is, with respect to increasing traffic congestion and levels of service on affected intersections. Instead, the emphasis is on restricting the amount of construction traffic, especially heavy truck traffic, that could adversely impact traffic flows, occur on residential streets or add to delays during the peak hours. The City's Public Works Department has determined that construction-related truck traffic shall arrive/depart the project site via Walnut Street-Pacific Coast Highway- Atlantic Avenue-I-405 Freeway, as shown on *Figure 12*.



Legend

← Truck Route





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Travel Delay and Level of Service Impacts for Developed and Fully Operational Project

A comprehensive Traffic Impact Analysis (TIA) was prepared to assess the impacts of the project-generated traffic on the performance of the surrounding streets and highway network. The TIA uses two methodologies for evaluating intersection performance in the project area: intersection capacity utilization (ICU) and level of service (LOS). In general, ICU compares the volume of traffic using an intersection to the capacity of the intersection, resulting in a volume-to-capacity ratio. LOS is used to qualitatively describe the performance of a roadway facility, with values ranging from LOS A (free-flowing conditions) to LOS F (extreme congestion and system failure).

The TIA is a package of studies comprising a TIA completed by Kunzman Associates, Inc. and dated July 2019 and three supplemental analyses, which are available in Appendix H of this Initial Study. The supplemental studies focus on potential traffic impacts during the afternoon school peak hour (Kunzman 2018a); the potential for cut-through traffic impacts on Gaviota Avenue (Kunzman 2018b); and the potential for the project to exceed three specific thresholds of significance identified by City of Signal Hill staff (Ganddini 2019a). This final supplemental analysis focused on whether the project would exceed the significance thresholds of a drop of 0.02 (2 percent) in LOS (ICU); 40 vehicles added to an intersection; or result in a left-turn queue length that is greater than existing storage length. Finally, the TIA includes a signal warrant analysis (Ganddini 2019b), which discussed whether the project would require installation of a traffic signal at the intersection of Walnut Avenue and Hill Street.

These analyses and supplemental studies were completed at the direction of the City of Signal Hill and were subjected to peer review by W.G. Zimmerman Engineering and Michael Baker International.

Project traffic impacts relative to the performance of the surrounding street network were analyzed for three scenarios:

- Existing – Plus Project
- Opening Year – Plus Project
- General Plan Buildout – With Project

Existing Conditions

Regional access to the project area is provided by I-405, approximately 1.3 miles north of the project site and Pacific Coast Highway (State Route 1) approximately 0.4 miles to the south. Key north-south roadways providing local circulation include Orange Avenue, Gundry Avenue, Walnut Avenue, Gaviota Avenue, and Cherry Avenue. Key east-west roadways providing local circulation include Spring Street, Willow Street, Burnett Street, Hill Street, and Pacific Coast Highway. Of these local roadways, Pacific Coast Highway, Willow Street, and Spring Street are designated as truck routes by the City of Long Beach. Pacific Coast Highway, Spring Street, Willow Street, Cherry Avenue, California Avenue, and Temple Avenue are designated as truck routes by the City of Signal Hill.



The TIA, available in Appendix G1 of this Initial Study, evaluates existing conditions in the area, the findings of which are displayed in *Table XVII-1*, below.

Table XVII-1 Existing Intersection Capacity Utilization/Delay and Levels of Service

Intersection	Traffic Control ¹	Intersection Approach Lanes ²												Peak Hour V/C [Delay]-LOS ³	
		Northbound			Southbound			Eastbound			Westbound			Morning	Evening
		L	T	R	L	T	R	L	T	R	L	T	R		
Orange Avenue (NS) at:															
Spring St. (EW) - #1	TS	1	2	1	1	1	1	1	2	d	1	2	d	0.791-C	0.812-D
Willow St. (EW) - #2	TS	1	1	1	1	1	1	1	2.5	0.5	1	2.5	0.5	0.733-C	0.846-D
Burnett St (EW) - #3	TS	1	1	d	1	1	d	-	<1>	-	-	<1>	-	0.633-B	0.608-B
Hill St. (EW) - #4	TS	1	0.5	0.5	1	0.5	0.5	0.5	0.5	1	0.5	0.5	d	0.704-C	0.632-B
Pacific Coast Highway (EW) - #5	TS	1	2	1>	1	2	1	1	2.5	0.5	1	2.5	0.5	[23.0]-C	[21.1]-C
Gundry Avenue (NS) at:															
Hill St. (EW) - #6	CSS	0.5	-	0.5	-	-	-	-	0.5	0.5	0.5	0.5	-	[12.5]-B	[11.0]-B
Walnut Avenue (NS) at:															
Spring St. (EW) - #7	TS	1	1	d	1	0.5	0.5	1	1.5	0.5	1	1.5	0.5	0.621-B	0.656-B
Willow St. (EW) - #8	TS	1	1.5	0.5	1	2	d	1	2.5	0.5	1	2.5	0.5	0.508-A	0.650-B
Burnett St. (EW) - #9	AWS	0.5	0.5	d	0.5	0.5	d	-	<1>	-	-	<1>	-	[14.9]-B	[13.3]-B
Hill St. (EW) - #10	AWS	-	<1>	-	0.5	0.5	1	-	<1>	-	-	<1>	-	[12.2]-B	[11.9]-B
20th St./Alamitos Ave. (EW) - #11	TS	1	0.5	0.5	1	0.5	0.5	-	<1>	-	-	<1>	-	0.541-A	0.493-A
Pacific Coast Highway (EW) - #12	TS	-	<1>	-	-	<1>	-	1	2.5	0.5	1	2.5	0.5	[8.9]-A	[9.0]-A
Gaviota Avenue (NS) at:															
Hill St. (EW) - #13	CSS	-	<1>	-	-	<1>	-	-	<1>	-	-	<1>	-	[11.5]-B	[12.2]-B
Cherry Avenue (NS) at:															
Spring St. (EW) - #14	TS	1	2.5	0.5	2	2.5	0.5	1	2.5	0.5	1	2.5	1.5	0.751-C	0.729-C
Willow St. (EW) - #15	TS	1	3	1>	2	2.5	0.5	2	2.5	0.5	2	2.5	0.5	0.714-C	0.853-D
Burnett St. (EW) - #16	TS	1	2	1	1	2	1	-	<1>	-	0.5	0.5	1	0.624-B	0.608-B
Hill St. (EW) - #17	TS	1	2	d	1	2	1	-	<1>	-	-	<1>	-	0.591-A	0.626-B
21st St. (EW) - #18	TS	1	2	d	1	2	1	0.5	0.5	d	1	0.5	0.5	0.653-B	0.593-A
20th St. (EW) - #19	TS	1	1.5	0.5	1	1.5	0.5	1	0.5	0.5	-	<1>	-	0.525-A	0.491-A
Pacific Coast Highway (EW) - #20	TS	1	1.5	0.5	1	2	1>	1	2.5	0.5	1	2.5	0.5	[27.8]-C	[25.0]-C

Notes:

¹TS = Traffic Signal; CSS = Cross Street Stop; AWS = All Way Stop;

²L = Left; T = Through; R = Right; d = De Facto Right Turn Lane; <1> = Shared Left/Through/Right Lane; > = Right Turn Overlap

³V/C = Volume/Capacity; Delay shown in [seconds/vehicle]; LOS = Level of Service; [Delay]-LOS is reported for intersections under California Department of Transportation jurisdiction and intersections with stop control. Per the Highway Capacity Manual, overall average intersection delay and LOS are shown for intersections with traffic signal or all way stop control. For intersections with cross street stop control, Level of Service is based on average delay of the worst individual lane (or movements sharing a lane).

Source: Kunzman Associates, Inc. June 2018.

As shown in *Table XVII-1*, the study intersections currently operate within acceptable LOS (D or better) during the peak hours for existing traffic conditions. Specifically, all study intersections are



operating at efficient levels of service (i.e., LOS A–C), except for the following three locations, which are operating at LOS D, which is acceptable but considered to be approaching serious congestion: Orange Avenue and Spring Street during the evening peak hour; Orange Avenue and Willow Street during the evening peak hour; and Cherry Avenue and Willow Street during the evening peak hour.

Project Trip Generation and Distribution

The TIA calculates the project's anticipated trip generation, which is based on nationwide surveys of trip generation by similar land uses by the Institute of Transportation Engineers (ITE) and published in the ITE Trip Generation Manual (2017). The number of trips forecast to be generated by the proposed land use are determined by inserting an appropriate land use category for the project (in this case, the analysis used Land Use Code Business Park, which assumes an average mix of 20 to 30 percent office/commercial and 70 to 80 percent industrial/warehousing uses) into the ITE model. The TIA also estimates the average percentage of truck trips generated by the project in its determination of circulation impacts. The TIA states that truck trips account for an average of 13 percent of weekday trips generated by typical industrial park land uses. To provide a conservative analysis, the project trip generation calculations assumed trucks will comprise 15 percent of the site-generated trips, with passenger vehicles accounting for the remaining 85 percent. The site-generated truck trips have been converted to passenger car equivalent trips based on a factor of 2.0 to account for the larger spatial implications of truck trips in analyzing potential LOS impacts at study area intersections.

Table XVII-2, below, shows the results of the project trip generation modeling, as described in the TIA. In short, the proposed project is forecast to generate a total of approximately 2,668 daily trips in passenger car equivalents, including 244 passenger car equivalent trips during the morning peak hour and 246 passenger car equivalent trips during the evening peak hour.

Table XVII-2 Project Trip Generation

Land Use	Source ¹	Setting ²	Trip Generation Equations ³	Directional Distribution	
				Inbound	Outbound
Business Park	ITE 770	GU/S			
Morning Peak Hour			$\text{Ln}(T) = 0.97 \text{ Ln}(X) + 0.49$	85%	15%
Evening Peak Hour			$\text{Ln}(T) = 0.90 \text{ Ln}(X) + 0.85$	26%	74%
Daily			$T = 10.62 (X) + 715.67$	50%	50%

Land Use/Time Period	Quantity	Units ⁴	Vehicle Trips Generated		
			Total	Inbound	Outbound
Business Park	151.080	TSF			
Morning Peak Hour			212	180	32
Cars (85%)			180	153	27
Trucks (15%)			32	27	5
Evening Peak Hour			214	56	158
Cars (85%)			182	48	134
Trucks (15%)			32	8	24
Daily			2,320	1,160	1,160
Cars (85%)			1,972	986	986
Trucks (15%)			348	174	174



Time Period	PCE Factor	PCE Trips Generated ⁵		
		Total	Inbound	Outbound
Morning Peak Hour				
Cars	1.0	180	153	27
Trucks	2.0	64	54	10
Total		244	207	37
Evening Peak Hour				
Cars	1.0	182	48	134
Trucks	2.0	64	16	48
Total		246	64	182
Daily				
Cars	1.0	1,972	986	986
Trucks	2.0	696	348	348
Total		2,668	1,334	1,334

Notes:

¹ITE = Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017; ### = Land Use Code

²GU/S = General Urban/Suburban

³T = Trips; X = Thousand Square Feet

⁴TSF = Thousand Square Feet

⁵PCE = Passenger Car Equivalent

Source: Kunzman Associates, Inc. June 2018

Figures 14 through 17 of the TIA, included in Appendix H of this Initial Study (Kunzman, 2019a), show the forecasted directional distribution patterns for the project-generated passenger cars and trucks (both inbound and outbound). Morning and evening peak hour intersection turning movement volumes expected from the project are shown on Figures 18 and 19 of the TIA. Morning and evening peak hour intersection turning movement volumes of trucks (in passenger car equivalent trips) expected from the project are shown on Figures 20 and 21 of the TIA. The morning and evening peak hour intersection turning movement volumes for the combined passenger car and truck trips expected from the project are shown on Figures 22 and 23 of the TIA.

While the proposed project does not propose any access points on Gaviota Avenue, the City of Signal Hill staff identified citizen concerns regarding cut-through traffic onto Gaviota Avenue associated with traffic diversion to avoid congestion at the Walnut Avenue and Hill Street intersection during peak commute and school hours. The TIA determined that project trips seeking to avoid the intersection of Walnut Avenue and Hill Street are more likely to use other, more convenient routes, such as Alamos Avenue or 20th Street, rather than Gaviota Avenue. As stated in the supplemental analysis investigating this exact issue, completed in August 2018 and included in Appendix H of this Initial Study (Kunzman 2018b), diverting traffic “is not expected to use Gaviota Avenue since that will likely result in longer travel time compared to using Alamos Avenue/21st Street or 20th Street.” The supplemental analysis continues, stating that, for example, “a vehicle exiting the project site from Alamos Avenue and travelling to northbound Cherry Avenue would have to yield to oncoming traffic before turning left on Gaviota, then stop before turning right at Hill Street, whereas staying on Alamos Avenue/21st Street would not require any yields or stops for the same vehicle to access Cherry Avenue.”

The TIA also describes the project’s potential impact on traffic and circulation in the context of future traffic volume scenarios. Such scenarios include regional ambient growth, where the TIA increased



traffic volumes by a growth rate of 1 percent per year over the two years for opening year conditions, and other developments, where the TIA assesses cumulative traffic conditions by accounting for trips generated by other pending or approved development projects within a 1.5-mile radius of the proposed project site. *Table XVII-3*, below, summarizes the location, land use characteristics, and estimated trip generation of eight projects in the City of Signal Hill, consisting of automobile sales, single- and multifamily residential, and mixed-use projects, plus three projects in the City of Long Beach (manufacturing, adult day care, and public park projects). Locations of these projects are displayed in Figure 24 of the TIA, also provided in Appendix H of this Initial Study (Kunzman 2019a).

Thresholds of Significance

For signalized study intersections within the City of Signal Hill or City of Long Beach jurisdictions, a project impact is considered significant if: the addition of project-generated trips is forecast to cause an intersection to deteriorate from acceptable LOS (D or better) to unacceptable LOS (E or F); or the addition of project-generated trips is forecast to cause an increase in volume-to-capacity of 0.02 or greater when the intersection is operating at an unacceptable LOS (E or F) in the baseline condition.

Further, Caltrans established performance standards, stating that a potentially significant traffic impact is defined to occur if the addition of project-generated trips is forecast to cause the performance of a State Highway study intersection to change from acceptable operation (LOS D or better) to deficient operation (LOS E or F).

It is noted that many jurisdictions, including the Cities of Signal Hill and Long Beach, do not have established significant impact thresholds for unsignalized intersections. The TIA assumed that a project impact at an unsignalized intersection is considered significant if the addition of project-generated trips is forecast to cause or worsen to LOS E or F and installation of a traffic signal is warranted.

In addition to the above thresholds, the City of Signal Hill has three traffic study criteria established to assess significance of project-level impacts. These include a decline of 0.02 (2 percent) or more in ICU; 40 vehicles added to an intersection; and a left-turn queue length greater than the existing storage length.



Table XVII-3 Other Development Trip Generation

City	ID	Address/Name	Land Use	Quantity	Units ¹	Source ²	Morning Peak Hour			Evening Peak Hour			Daily
							In	Out	Total	In	Out	Total	
City of Signal Hill	SH1	2351 Walnut Avenue	Warehouse	7.904	TSF	ITE 150	1	0	1	0	2	2	14
			Office	2.051	TSF	ITE 710	2	0	2	0	2	2	20
			Subtotal				3	0	3	0	4	4	34
	SH2	1500 E. Spring St, Honda Expand	Automobile Sales	2.364	TSF	ITE 840	3	1	4	2	4	6	66
	SH3	1400 Spring St, Mazda Dealer	Automobile Sales	32.385	TSF	ITE 840	26	9	35	18	28	46	526
	SH4	Crescent Square	Single-Family Detached Residential	25	DU	ITE 210	5	14	19	16	9	25	236
	SH5	Zinnia	Multi-Family Affordable Housing	72	DU	[1]	14	22	36	14	10	24	294
	SH6	1939 Temple Ave, The Courtyard	Multi-Family Housing	10	DU	ITE 220	1	4	5	4	2	6	73
	SH7	2599 Pacific Coast Highway	Single-Family Detached Residential	7	DU	ITE 210	1	4	5	4	3	7	66
	SH8	Heritage Square	Supermarket	14.000	TSF	ITE 850	32	21	53	66	63	129	1,495
			Restaurant	18.100	TSF	ITE 931	7	6	13	95	46	141	1,518
			Retail	10.700	TSF	ITE 820	6	4	10	20	21	41	404
			Multi-Family Housing	199	DU	ITE 220	22	70	92	70	41	111	1,457
			Single-Family Detached Residential	4	DU	ITE 210	1	2	3	2	2	4	38
			- Internal Capture Trips			[2] ³	-6	-6	-12	-91	-92	-183	-195
			- Commercial Pass-By (34% PM, 10% AM/Daily)			[2] ⁴	-6	-10	-16	-55	-28	-83	-472
			Subtotal				56	87	143	107	53	160	4,245
City of Long Beach	LB1	2300 Redondo Avenue	Manufacturing	427.565	TSF	ITE 140	205	60	265	90	196	286	1,680
			- Cars (80%)				164	48	212	72	157	229	1,344
			- Trucks in PCE (20%, PCE = 2.0)				82	24	106	36	78	114	672
			Subtotal (PCEs)				246	72	318	108	235	343	2,016
	LB2	3311 Willow Street	Adult Day Care Facility	3.960	TSF	[3]	3	3	6	-4	0	-4	-83
	LB3	Willow Springs Park	Public Park	48.0	AC	ITE 411	0	1	1	3	2	5	37
Total Other Development Trips Generated							358	217	575	272	350	622	7,510

Notes:

¹TSF = Thousand Square Feet; DU = Dwelling Units; AC = Acres

²ITE = Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, 2017; ### = Land Use Code. Based on General Urban/Suburban data, unless otherwise noted.

[1] = Los Angeles Department of Transportation, Transportation Impact Study Guidelines, December 2016.

[2] = Institute of Transportation Engineers, Trip Generation Handbook, 3rd Edition, 2017.

[3] = Focused Traffic Analysis for the 3311 E. Willow Street Adult Day Care Facility, LLG Engineers, December 2016.

³Internal capture percentages were calculated from the spreadsheet tool for mixed-use developments in accordance with the ITE Trip Generation Handbook.

⁴Per ITE Trip Generation Handbook, the average percent of pass-by trips ranges from 34% to 44% for the proposed commercial uses. A rate of 25% was used to provide a conservative analysis.

Source: Kunzman Associates, Inc., June 2018.



The TIA provides data regarding ICU and LOS for existing conditions plus the proposed project, and opening year conditions plus the proposed project. For the existing conditions plus project scenario, the TIA determined that all study intersections would continue to operate at efficient levels of service (i.e., LOS A–C), except for the following three locations, which are projected to operate at LOS D: Orange Avenue and Spring Street during the morning and evening peak hours; Orange Avenue and Willow Street during the evening peak hour; and Cherry Avenue and Willow Street during the evening peak hour. This represents a change of only one intersection to LOS D (Orange Avenue and Spring Street during the morning peak hour) when compared with existing conditions without the project. The detailed findings of this analysis are shown in *Table XVII-4*, below. As all intersections are projected to operate at a LOS D or better, there would be no significant ICU or LOS impact associated with the existing conditions plus proposed project scenario.

Further, supplemental analysis completed by Ganddini (2019a) determined that the project's added traffic would not result in a significant impact involving a decline in intersection capacity utilization of 0.02 (2 percent) or more; 40 vehicles added to an intersection, or a left-turn queue length greater than the existing storage length).

Table XVII-4 Existing Plus Project Level of Service Impact Evaluation

Signalized Intersections							
Intersection	Peak Hour V/C [Delay]-LOS¹				Change in V/C or Delay		Significant Impact?
	Without Project		With Project		Morning Peak Hour	Evening Peak Hour	
	Morning	Evening	Morning	Evening			
Orange Avenue (NS) at:							
Spring Street (EW) - #1	0.791-C	0.812-D	0.810-D	0.818-D	+0.019	+0.006	No
Willow Street (EW) - #2	0.733-C	0.846-D	0.748-C	0.865-D	+0.015	+0.019	No
Burnett Street (EW) - #3	0.633-B	0.608-B	0.639-B	0.618-B	+0.006	+0.010	No
Hill Street (EW) - #4	0.704-C	0.632-B	0.736-C	0.634-B	+0.032	+0.002	No
Pacific Coast Highway (EW) - #5	[23.0]-C	[21.1]-C	[23.0]-C	[21.2]-C	0.0	+0.1	No
Walnut Avenue (NS) at:							
Spring Street (EW) - #7	0.621-B	0.656-B	0.626-B	0.660-B	+0.005	+0.004	No
Willow Street (EW) - #8	0.508-A	0.650-B	0.509-A	0.652-B	+0.001	+0.002	No
20th St/Alamitos Ave (EW) - #11	0.541-A	0.493-A	0.588-A	0.521-A	+0.047	+0.028	No
Pacific Coast Highway (EW) - #12	[8.9]-A	[9.0]-A	[9.8]-A	[10.7]-B	+0.9	+1.7	No
Cherry Avenue (NS) at:							
Spring Street (EW) - #14	0.751-C	0.729-C	0.752-C	0.734-C	+0.001	+0.005	No
Willow Street (EW) - #15	0.714-C	0.853-D	0.719-C	0.859-D	+0.005	+0.006	No
Burnett Street (EW) - #16	0.624-B	0.608-B	0.628-B	0.624-B	+0.004	+0.016	No
Hill Street (EW) - #17	0.591-A	0.626-B	0.598-A	0.656-B	+0.007	+0.030	No
21st Street (EW) - #18	0.653-B	0.593-A	0.655-B	0.601-B	+0.002	+0.008	No
20th Street (EW) - #19	0.525-A	0.491-A	0.525-A	0.491-A	0.000	0.000	No
Pacific Coast Highway (EW) - #20	[27.8]-C	[25.0]-C	[27.9]-C	[25.0]-C	+0.1	0.0	No



Unsignalized Intersections							
Intersection	Peak Hour Delay-LOS				Acceptable LOS?	Traffic Signal Warranted?	Significant Impact?
	Without Project		With Project				
	Morning	Evening	Morning	Evening			
Gundry Avenue (NS) at:							
Hill Street (EW) - #6	12.5-B	11.0-B	13.4-B	11.7-B	Yes	-	No
Walnut Avenue (NS) at:							
Burnett Street (EW) - #9	14.9-B	13.3-B	15.0-B	13.5-B	Yes	-	No
Hill Street (EW) - #10	12.2-B	11.9-B	14.3-B	13.4-B	Yes	-	No
Gaviota Avenue (NS) at:							
Hill Street (EW) - #13	11.5-B	12.2-B	12.2-B	13.0-B	Yes	-	No

Notes:

¹V/C = Volume/Capacity; Delay shown in [seconds/vehicle]; LOS = Level of Service; see Tables 1 and 4.

Source: Kunzman Associates, Inc. June 2018

The TIA also analyzed ICU and LOS for the anticipated opening year of the project, including the proposed project. The TIA analyzed opening year for the project as 2020; however, it is more likely that the opening year of the project would occur in 2021. This is due to the time required to complete necessary project approvals, permitting, and construction, as well as the process of sales/leasing and occupancy of all building spaces by tenants. The analysis in the TIA is considered sufficient since there would be minor, incremental differences in traffic forecasts between 2020 and 2021. For the opening year plus project scenario, the TIA determined that all study intersections would continue to operate at efficient levels of service (i.e., LOS A–C), except for the following three locations, which are projected to operate at LOS D: Orange Avenue and Spring Street during the morning and evening peak hours; Orange Avenue and Willow Street during the evening peak hour; and Cherry Avenue and Willow Street during the evening peak hour. This represents a change of two intersections to LOS D (Orange Avenue and Spring Street at the morning peak hour, and Orange Avenue and Willow Street during the evening peak hour) when compared with opening year conditions without the project. The detailed findings of this analysis are shown in *Table XVII-5*, below. As all intersections are projected to operate at a LOS D or better, **there would be no significant ICU or LOS impact associated with the opening year plus proposed project scenario.**

Further, supplemental analysis completed by Ganddini (2019a) determined that the project's added traffic would not result in a significant impact involving a decline in intersection capacity utilization of 0.02 (2 percent) or more; 40 vehicles added to an intersection, or a left-turn queue length greater than the existing storage length).



Table XVII-5 - Opening Year Plus Project Level of Service Impact Evaluation

Signalized Intersections							
Intersection	Peak Hour V/C [Delay]-LOS ¹				Change in V/C or Delay		Significant Impact?
	Without Project		With Project		Morning Peak Hour	Evening Peak Hour	
	Morning	Evening	Morning	Evening			
Orange Avenue (NS) at:							
Spring Street (EW) - #1	0.812-D	0.845-D	0.832-D	0.851-D	+0.020	+0.006	No
Willow Street (EW) - #2	0.764-C	0.871-D	0.773-C	0.890-D	+0.009	+0.019	No
Burnett Street (EW) - #3	0.668-B	0.635-B	0.673-B	0.646-B	+0.005	+0.011	No
Hill Street (EW) - #4	0.736-C	0.666-B	0.768-C	0.668-B	+0.032	+0.002	No
Pacific Coast Highway (EW) - #5	[23.7]-C	[21.7]-C	[23.7]-C	[21.9]-C	0.0	+0.2	No
Walnut Avenue (NS) at:							
Spring Street (EW) - #7	0.633-B	0.669-B	0.638-B	0.674-B	+0.005	+0.005	No
Willow Street (EW) - #8	0.520-A	0.675-B	0.520-A	0.677-B	0.000	+0.002	No
20th Street/Alamitos Avenue (EW) - #11	0.551-A	0.505-A	0.598-A	0.531-A	+0.047	+0.026	No
Pacific Coast Highway (EW) - #12	[9.3]-A	[9.4]-A	[10.4]-B	[11.2]-B	+1.1	+1.8	No
Cherry Avenue (NS) at:							
Spring Street (EW) - #14	0.768-C	0.744-C	0.768-C	0.746-C	0.000	+0.002	No
Willow Street (EW) - #15	0.732-C	0.879-D	0.737-C	0.885-D	+0.005	+0.006	No
Burnett Street (EW) - #16	0.641-B	0.625-B	0.645-B	0.643-B	+0.004	+0.018	No
Hill Street (EW) - #17	0.609-B	0.642-B	0.617-B	0.672-B	+0.008	+0.030	No
21st Street (EW) - #18	0.674-B	0.615-B	0.675-B	0.622-B	+0.001	+0.007	No
20th Street (EW) - #19	0.541-A	0.505-A	0.541-A	0.505-A	0.000	0.000	No
Pacific Coast Highway (EW) - #20	[28.6]-C	[25.4]-C	[28.6]-C	[25.5]-C	0.0	+0.1	No

Unsignalized Intersections							
Intersection	Peak Hour Delay-LOS				Acceptable LOS?	Traffic Signal Warranted?	Significant Impact?
	Without Project		With Project				
	Morning	Evening	Morning	Evening			
Gundry Avenue (NS) at:							
Hill Street (EW) - #6	12.9-B	11.2-B	13.9-B	12.0-B	Yes	-	No
Walnut Avenue (NS) at:							
Burnett Street (EW) - #9	17.2-C	14.8-B	17.5-C	15.0-B	Yes	-	No
Hill Street (EW) - #10	12.8-B	12.3-B	15.4-C	14.0-B	Yes	-	No
Gaviota Avenue (NS) at:							
Hill Street (EW) - #13	11.6-B	12.3-B	12.4-B	13.2-B	Yes	-	No

Notes:

¹V/C = Volume/Capacity; Delay shown in [seconds/vehicle]; LOS = Level of Service; see Tables 6 and 7.

Source: Kunzman Associates, Inc. June 2018.

The TIA also analyzed ICU and LOS for the General Plan Buildout (year 2040), including the proposed project. For this scenario, the TIA determined that the majority of study intersections would continue to operate at efficient levels of service (i.e., LOS A–C), except for six locations which would operate at LOS D, one location which would operate at LOS E and two locations that would operate at LOS F. Locations projected to operate at LOS D include Orange Avenue and Willow Street during the morning peak hour; Orange Avenue and Hill Street during the morning peak hour; Cherry Avenue



and Spring Street during the morning and evening peak hours; Cherry Avenue and Willow Street during the morning peak hour; Cherry Avenue and Pacific Coast Highway during the morning peak hour; and Walnut Avenue and Burnett Street during the morning peak hour. The location projected to operate at LOS E is Orange Avenue and Spring Street during the morning and evening peak hours. The locations projected to operate at LOS F include Orange Avenue and Willow Street during the evening peak hour and Cherry Avenue and Willow Street during the evening peak hour. Each intersection studied in General Plan Buildout scenario is projected to operate at the same LOS without or with the project's traffic, apart from one intersection (Gundry Avenue and Hill Street), which is would operate at LOS B under the General Plan Buildout without project scenario and LOS C under the General Plan Buildout with project scenario. The detailed findings of this analysis are shown in *Table XVII-6*, below. Because implementation of the project would not cause a study intersection to change from acceptable operation (LOS D or better) to a deficient operation (LOS E or F), and installation of a traffic signal is not warranted, **there would be no significant ICU or LOS impact associated with the General Plan Buildout scenario.**

Table XVII-6 General Plan Buildout (Year 2040) Level of Service Impact Evaluation

Signalized Intersections							
Intersection	Peak Hour V/C [Delay]-LOS ¹				Change in V/C or Delay		Significant Impact?
	Without Project		With Project		Morning Peak Hour	Evening Peak Hour	
	Morning	Evening	Morning	Evening			
Orange Avenue (NS) at:							
Spring Street (EW) - #1	0.950-E	0.988-E	0.969-E	0.994-E	+0.019	+0.006	No
Willow Street (EW) - #2	0.890-D	1.020-F	0.898-D	1.039-F	+0.008	+0.019	No
Burnett Street (EW) - #3	0.774-C	0.738-C	0.780-C	0.748-C	+0.006	+0.010	No
Hill Street (EW) - #4	0.856-D	0.771-C	0.889-D	0.773-C	+0.033	+0.002	No
Pacific Coast Highway (EW) - #5	[28.6]-C	[26.9]-C	[28.7]-C	[27.1]-C	+0.1	+0.2	No
Walnut Avenue (NS) at:							
Spring Street (EW) - #7	0.737-C	0.780-C	0.742-C	0.785-C	+0.005	+0.005	No
Willow Street (EW) - #8	0.602-B	0.785-C	0.602-B	0.787-C	0.000	+0.002	No
20th St/Alamitos Ave (EW) - #11	0.619-B	0.563-A	0.666-B	0.586-A	+0.047	+0.023	No
Pacific Coast Highway (EW) - #12	[13.1]-B	[12.6]-B	[17.2]-B	[15.4]-B	+4.1	+2.8	No
Cherry Avenue (NS) at:							
Spring Street (EW) - #14	0.898-D	0.868-D	0.899-D	0.870-D	+0.001	+0.002	No
Willow Street (EW) - #15	0.855-D	1.030-F	0.860-D	1.036-F	+0.005	+0.006	No
Burnett Street (EW) - #16	0.746-C	0.727-C	0.750-C	0.744-C	+0.004	+0.017	No
Hill Street (EW) - #17	0.708-C	0.748-C	0.715-C	0.778-C	+0.007	+0.030	No
21st Street (EW) - #18	0.784-C	0.714-C	0.786-C	0.722-C	+0.002	+0.008	No
20th Street (EW) - #19	0.627-B	0.583-A	0.627-B	0.583-A	0.000	0.000	No
Pacific Coast Highway (EW) - #20	[38.6]-D	[30.7]-C	[39.2]-D	[30.9]-C	+0.6	+0.2	No



Unsignalized Intersections							
Intersection	Peak Hour Delay-LOS				Acceptable LOS?	Traffic Signal Warranted?	Significant Impact?
	Without Project		With Project				
	Morning	Evening	Morning	Evening			
Gundry Avenue (NS) at:							
Hill Street (EW) - #6	14.4-B	11.9-B	15.7-C	12.9-B	Yes	-	No
Walnut Avenue (NS) at:							
Burnett Street (EW) - #9	32.8-D	22.2-C	33.7-D	23.0-C	Yes	-	No
Hill Street (EW) - #10	17.3-C	16.0-C	23.9-C	19.7-C	Yes	-	No
Gaviota Avenue (NS) at:							
Hill Street (EW) - #13	12.3-B	13.4-B	13.3-B	14.5-B	Yes	-	No

Further, supplemental analysis completed by Ganddini (2019a) determined that the project would contribute 40 or more peak hour trips under the General Plan Buildout scenario at the following intersections: Orange Avenue and Willow Street; Orange Avenue and Burnett Street; Orange Avenue and Hill Street; Gundry Avenue and Hill Street; Walnut Avenue and Hill Street; Gaviota Avenue and Hill Street; Cherry Avenue and Willow Street; Cherry Avenue and Burnett Street; and Cherry Avenue and Hill Street. The TIA supplemental analysis found that the left-turn queue length needed is projected to be greater than the existing storage length under the General Plan Buildout with project scenario at the Intersection of Orange Avenue and Hill Street, as well as the intersection of Cherry Avenue and Willow Street. Therefore, the following mitigation measure is necessary to address the above-described project impacts under the General Plan Buildout (2040) with project scenario.

Mitigation Measures

MM XVII-1: Payment of the Project's Fair Share of Future Street System Improvements.

Under the General Plan Buildout (2040) with project scenario, the following six intersections would require signal timing improvements to reduce project impacts to less than significant: Orange Avenue and Willow Street, Orange Avenue and Burnett Street, Orange Avenue and Hill Street, Cherry Avenue and Willow Street, Cherry Avenue and Burnett Street, and Cherry Avenue and Hill Street. Further, the intersections of Orange Avenue and Hill Street, Walnut Avenue and Hill Street, and Cherry Avenue and Willow Street require street improvements to improve intersection efficiency. Such improvements include extending the southbound left turn lane striping at Orange Avenue and Burnett Street; extending the no parking restriction on the northbound approach to 100 feet south of the intersection of Walnut Avenue and Hill Street (creating a de facto right turn lane); and modifying the westbound raised median to accommodate additional storage length at Cherry Avenue and Willow Street. Because this project's traffic represents a relatively minor share of the long-range need to provide upgraded signal timing, additional vehicle storage length, or another turn lane at the affected intersections, the required mitigation is payment of the project's fair share of these future signal timing and street improvements, calculated based on the project's percentage of new traffic. Extending the no parking restriction on the northbound approach of Walnut Avenue at Hill Street to 100 feet south of that intersection, however, shall be accomplished prior to a certificate of occupancy for any of the proposed buildings.



Afternoon School Peak Hour Analysis

Finally, the supplemental analysis completed by Kunzman (2018a) assessed the potential traffic impacts associated with the project during the afternoon school peak hour (determined in the supplemental analysis to be 2:15 p.m. to 3:15 p.m.) to examine project impacts in context with existing school-generated traffic. For existing conditions plus the proposed project, the supplemental study found that the proposed project is forecast to result in no significant traffic impacts at the study intersections, as all study intersections were projected to operate at LOS D or better. For the opening year including the proposed project, the supplemental study determined that the study intersections are projected to operate at acceptable LOS D or better during the afternoon school peak hour. Therefore, the proposed project is forecast to result in no significant traffic impacts at the study intersections for this opening year scenario.

Congestion Management Program

As described in the TIA, the 2010 Los Angeles County Congestion Management Program (CMP), provides the following criteria to determine if a CMP-monitored facility requires analysis for potential project-related transportation impacts: all CMP arterial monitoring intersections where the proposed project will add 50 or more trips during either the morning or evening weekday peak hours; or mainline freeway monitoring locations where the project will add 150 or more trips, in either direction, during either the morning or evening weekday peak hours. The proposed project is forecast to meet the above criteria for the CMP-monitored intersection of Orange Avenue and Pacific Coast Highway.

A significant CMP transportation impact occurs if the proposed project increases traffic demand on a CMP facility by 2 percent or more of capacity (i.e., increases in the volume-to-capacity ratio greater than or equal to 0.02), causing or worsening to LOS F.

As described in the TIA, the CMP study intersection (Orange Avenue and Pacific Coast Highway) volume-to-capacity and LOS for the existing conditions and the opening year scenarios are projected to be less than significant. For the existing conditions scenario, the increase in volume-to-capacity ratio associated with the proposed project would be 0.002 during the morning peak hour and 0.007 during the evening peak hour. For the opening year scenario, the increase in volume-to-capacity ratio associated with the proposed project would be 0.002 during the morning peak hour and 0.007 during the evening peak hour. Because the with-project volume-to-capacity values are less than 0.02, **there would not be a significant impact associated with the proposed project on a CMP-monitored intersection.**

21st Street Vacation

As noted in the project description presented in Section A of this Initial Study, 21st Street would be vacated and incorporated into the project site plan as a two-way/two-lane private drive. This action is consistent with the City of Signal Hill General Plan Circulation Element (2009) Policy 2b, which encourages that redundant or unnecessary roadways be vacated during new development to allow private roadways to reduce short- and long-term maintenance costs.

Transit

Public bus and light rail transit are available in Signal Hill and the greater surrounding area. Public bus transit service is currently provided by Long Beach Transit, which serves areas of Long Beach, Signal Hill, and Lakewood. The nearest bus routes are routes 171, 172, 173, 174, 71, 21, and 22. Routes 171, 172, 173, and 174 run along Pacific Coast Highway, which is approximately one-third of a mile south of the project site. Route 71 provides service along Orange Avenue with southbound and northbound



stops at Hill Street northwest of the project site and 20th Street southwest of the project site. This route connects to Lakewood north of the project site and to downtown Long Beach, south of the project site. Routes 21 and 22 provide service along Cherry Avenue with southbound and northbound stops at Hill Street northeast of the project site and 21st Street southeast of the project site. Routes 21 and 22 connect to Downey and Paramount to the north and downtown Long Beach to the south. There are bus stops for routes 71, 21, and 22 within one-quarter mile of the project site. The Blue Line Metro light rail station is located approximately one-mile west of the project site at Long Beach Boulevard/Pacific Coast Highway. There are no programs, plans, ordinances, or policies concerning bus and light rail transit that are applicable to the proposed project.

Figure 9 of the City of Signal Hill General Plan Circulation Element (2009) identifies all of Site 1 and a portion of Site 2 as being in an area that may be most appropriate for transit-oriented development (TOD). Further stated in the Circulation Element (2009), areas considered for TOD by the City were chosen based on three factors:

- Population density, with higher-density areas being more conducive to mixed-use projects and TODs
- Transit corridors, with areas closest to bus routes and the Blue Line light rail being most appropriate for TOD, and
- Major traffic generators, including large employers, Long Beach Memorial Medical Center, and Long Beach City College, with locations closest to traffic generators being most appropriate for TOD.

The project site is not optimally located with respect to the nearest segment of the Metro Blue line train route, which is more than 1 mile away and thus not convenient for walking to and from the project site. The proposed light industrial uses would comprise a number of small businesses and would not result in a concentration of high employment that might take advantage of transit services in this area. It is likely that the employees and few visitors to the on-site businesses would rely primarily on automobile travel, with little effect on existing transit services. Modeling conducted for the TIA prepared for the proposed project identified that the project would include approximately 97 daily transit trips, with eight being during the morning peak hour and nine during the evening peak hour. Given that the seven bus routes that serve the project area run at regular intervals throughout the day beginning at approximately 5 a.m. and ending around 9 p.m., the dispersal of 97 daily transit trips throughout the day on the various transit routes could be accommodated by the existing system.

The adjacent affordable, 72-unit apartment development, at the southwestern corner of Hill Street and Walnut Avenue, is considered to be a TOD due to the high population concentration and probability that fewer residents would own and/or regularly drive personal automobiles. Those residents may, therefore, be more likely to take advantage of the nearest bus stops and routes along Orange and Cherry Avenues. That project is implementing the objectives for the Transit Opportunities Area, shown in Figure 9 of the Circulation Element.

The proposed project would not be a form of TOD; however, it would not conflict with the purpose or policies established for the Transit Opportunities Area. The project's impact relative to consistency with the Transit Opportunities Area policy framework would be less than significant.



Bicycle Routes

The City of Signal Hill General Plan Circulation Element (2009) indicates that bikeways are intended to encourage an alternative to the use of automobiles and are planned to link employment, shopping, educational, and recreational locations. There are no existing or planned bike lanes within the project site or along the streets that abut the project site. However, Figure 6 in the Circulation Element designates a Class I bike lane through Jenni Rivera Park south of the project site and a Class III bike lane along Orange Avenue west of the project site (Signal Hill 2009).²² The project would not impede, obstruct, or otherwise alter the configuration of these bike lanes. It may, however, result in a small amount of additional bicycle and vehicle traffic on Orange Avenue, a shared roadway, or additional bicyclists on the Class I bike lane through Jenni Rivera Park. This would be consistent with a policy stated in the General Plan Circulation Element, i.e., the infill of vacant lots close to transportation and municipal facilities is encouraged. Consistent with this, the project site would be providing employment opportunities within the vicinity of these bike lanes, offering the opportunity for employees to utilize bicycles as a mode of travel to and from the project site.

Pedestrian Sidewalks and Pathways

Figure 7 of the City's General Plan Circulation Element (2009) identifies a recreation-focused pedestrian trail system, mostly concentrated near the hilltop area southeast of the project site. The system connects to area parks and monuments, such as Hilltop Park, Sunset View Park, and Discovery Well Park, as well as to the approximately 1 mile-long Panorama Promenade trail on the top of Signal Hill. In addition, Figure 12 of the Signal Hill General Plan Circulation Element (2009) identifies primary pedestrian routes around schools, which include Hill Street north of the site, Walnut Avenue, which bisects the site, and Alamos Avenue south of the site. During construction, there may be temporary disturbance or limited access to one or more of the sidewalks along these roadways that could displace pedestrian traffic along the site frontages, which may include school-aged children traveling to and from Signal Hill Elementary school north of the project site or Alvarado Elementary School southeast of the project site. Prior to the issuance of a grading permit, the project is required to submit for review and approval a construction traffic control plan that includes a pedestrian mobility element providing for maintenance of existing walkways or provision of safe alternative routes while existing walkways are affected by project construction activities. Compliance with this routine and mandatory construction permit requirement will adequately provide for maintenance of pedestrian circulation throughout the periods of project construction.

Currently, pedestrian travel along the project site is accessible via sidewalks along Walnut Avenue, Gaviota Avenue, Alamos Street, Hill Street, and the northern portion of Gundry Avenue. The southern portion of Gundry Avenue currently has no sidewalk on either the east or west side of the street. The City of Signal Hill Municipal Code Chapter 12.04 mandates the construction of sidewalks concurrent with new development, and the proposed plan includes construction of a sidewalk along the Gundry Avenue site frontage where none currently exists. Thus, the entire site would be pedestrian-accessible.

The proposed project would result in no permanent impacts to the existing or planned pedestrian routes and would result in less than significant temporary construction impacts.

²² A Class I Bike Lane is defined by Caltrans as a completely separated right-of-way for the exclusive use of bicycles and pedestrians with crossflow by motorists minimized. A Class III Bike Lane is defined by Caltrans as a shared use facility for pedestrian and motor vehicle traffic.



Compliance With Section 20.20.075 Signal Hill Municipal Code

The project is subject to compliance with Section 20.20.075 of the Signal Hill Municipal Code, which requires property owners of non-residential developments over 100,000 square feet in area to provide information to employees to make them aware of local transit and other alternative modes of travel, and to provide physical connections to off-site pedestrian and transit connections, where appropriate. Information posting must consist of a bulletin board, display case or kiosk displaying transportation information located where the number of employees are likely to see it. Information in the area shall include, but is not limited to, the following:

- a. Current maps, routes and schedules for public transit routes serving the site;
- b. Telephone numbers for referrals on transportation information including numbers for the regional ridesharing agency and local transit operators;
- c. Ridesharing promotional material supplied by commuter-oriented organizations;
- d. Bicycle route and facility information, including regional/local bicycle maps and bicycle safety information;
- e. A listing of facilities available for carpoolers, vanpoolers, bicyclists, transit riders and pedestrians at the site.

Physical connections to facilitate pedestrian, bicycle and transit travel must include the following:

- a. Sidewalks or other designated pathways following direct and safe routes from the external pedestrian circulation system to each building in the development, and from on-site parking areas to each building in the development.
- b. If determined necessary by the public works director to mitigate project impacts, bus stop improvements for developments to be located adjacent to major highways, secondary highways, and established bus routes; the city will consult with local bus service providers in determining appropriate improvements;
- c. Safe and convenient access from the external circulation system to bicycle parking facilities on-site.

b) Would the project conflict with CEQA Guidelines Section 15064.3, subdivision (b)?

Less than Significant Impact. As of July 1, 2020, TIAs prepared in accordance with CEQA will be required to determine if a proposed project would conflict with CEQA Guidelines Section 15064.3(b). This section outlines criteria for analyzing transportation impacts using vehicle miles traveled (VMT) as the primary measure of transportation impact, which is generally defined as the amount and the distance of automobile travel associated with a project. The City has not developed local methods and procedures to analyze a project's using VMT as a measure. As such, the traffic analysis prepared for this project does not include an analysis of VMT-based impacts related to CEQA Guidelines Section 15064.3(b).

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

Less than Significant Impact. Project development includes the construction of nine tilt-up concrete buildings to support various light industrial land uses as well as associated site improvements. Surrounding land uses, which are urban in nature (commercial office, light industrial, mixture of residential, educational, and a park), do not involve incompatible uses that would include farm



equipment or other slow-moving vehicles that may be traveling along project area roadways. As such, there would be no risk of hazards associated with traffic generated by incompatible uses (such as farm equipment) occurring as a result of this development.

The proposed development plan includes in/out driveways on Gundry Avenue, Walnut Avenue, and Alamitos Avenue, but no modifications to the geometrics of any surrounding streets or intersections. The City has established design standards for new development projects to ensure that new points of access to public streets are safely placed and oriented to provide sufficient sight distance to ensure that motorists have adequate visibility to see oncoming traffic as they exit the site, and adequate space for turning movements. The proposed plan must comply with all applicable geometric design standards at every site driveway, prior to the issuance of construction permits. Compliance with those existing standards will ensure that the project would not result in significant impacts involving geometric design features.

d) Would the project result in inadequate emergency access?

Less than Significant Impact. The project's ingress/egress and circulation are required to meet the Los Angeles County Fire Department's standards, which ensure that new developments provide adequate access and circulation for fire engines and other emergency vehicles and provide adequate space for appropriate positioning of emergency response crews during emergencies. Therefore, since the proposed site plan is subject to review and approval by the Los Angeles County Fire Department and required to demonstrate compliance with standards pertaining to emergency access, prior to the issuance of a construction permit, the project would have a less than significant impact in relation to inadequate emergency access.



XVIII. Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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 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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

a)i) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)?

No Impact. To determine whether any tribal cultural resources have been previously documented as a historical resource in this area, a records search of the California Historical Resources Information System at the South Central Coastal Information Center (SCCIC) was conducted on March 26, 2019. This search included a review of all previously recorded cultural resources, as well as previously conducted cultural resources studies that occurred on the project site and within a 0.5-mile radius surrounding the site. The SCCIC records search and historic map review identified no historical resources as defined by CEQA Section 15064.5(a) on or near the project site. As such, there are no recorded tribal cultural resources documented within the project site as part of a local or state or register of historic resources. There would thus be no impact concerning this threshold.



a)ii) 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 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.

No Impact. In accordance with AB 52 (Public Resources Code Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, and 21084.2), the City of Signal Hill initiated communication with the San Gabriel Band of Mission Indians to determine if the project site is within their ancestral tribal settlements and/or trade routes or otherwise of importance to Native Americans, which indicate a potential for encountering tribal cultural resources within the project site. The Band did not respond. In addition, a search of the Sacred Lands File maintained by the Native American Historic Commission was conducted and there is no record of any Native American resources in that database. Based on these efforts, it is concluded that this project would have no effects on tribal cultural resources.

XIX. Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS:				
<i>Would the project:</i>				
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>



	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion

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

Less than Significant Impact. On-site, the project would require the replacement of old and the installation of new utility infrastructure to serve the proposed light industrial land uses. The installation of infrastructure would occur during site construction and the depths and locations were considered in the grading plan, which has been evaluated as part of this project. For instance, earthwork, including utilities improvements, is considered in the analysis of Section III, Air Quality, Section V, Cultural Resources, Section VII, Geology and Soils, and Section XVIII, Tribal Cultural Resources. Impacts related to construction of on-site utilities infrastructure would not result in any unique or more intensive types of impacts than general earthwork and would be less than significant.

Off-site, the proposed project would require localized connections to the existing municipal storm drain, water, and wastewater facilities, as well as electricity lines and natural gas mains within the surrounding roadways. No other modifications to existing off-site infrastructure facilities would be required. The construction associated with the utility service extensions and connections would likely result in generating dust, noise, and/or circulation impacts. These impacts would be temporary and short-term, occurring only for portions of a normal construction work day and only in those areas where utility improvements are being constructed. As discussed in Section III, Air Quality, the project would implement dust control measures required by AQMD Rule 403, and in Section XIII, Noise, construction-related noise would be limited by the operating hour restrictions set forth in the City's Municipal Code Section 9.16.050 and by site-specific control measures identified in mitigation measure XIII-1. There could be periods of time when construction of off-site utility connections would disrupt through traffic, if the construction requires opening up the street surface or other temporary lane closures. Such disruptions would be temporary and the contractor would be obligated to provide measures to maintain adequate circulation and access by emergency vehicles at all times, in accordance with standard construction specifications for work in public streets. Since the proposed project would not require the relocation or upgrade of utility services off-site and the impacts associated with the installation and extension of infrastructure on-site as well as the off-site connections would be temporary and conducted in accordance with the routine construction control methods noted above, the project would have a less than significant impact in relation to this issue.



b) *Would the project 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. Water demand for the proposed project would consist of interior plumbing devices, such as toilets, urinals, and sinks, and also outdoor irrigation of landscape areas. Consumption rates would depend on the individual tenant composition and the number of plumbing fixtures installed in each of the buildings. An estimate of potential interior water consumption, assuming two water closets, two lavatories, and one urinal for each of the 21 tenant spaces, is approximately 7 acre-feet/year (af/yr) (GAA Architects 2019). Estimated irrigation demand for the proposed landscape areas, assuming compliance with the City's water conservation in landscaping standards, is approximately 1.76 af/yr (Hunter Landscape 2019) The total estimated annual water demand is therefore approximately 8.8 af/yr.

The City is in the process of preparing an Urban Water Management Plan, pursuant to California Water Code Sections 10610–10656, since it now provides water service to more than 3,000 service connections. To forecast water supply needs over time, it will incorporate land use assumptions in the City's General Plan, along with regional growth forecasts and current development trends. The proposed light industrial land use is consistent with the City's General Plan land use policies for the area on the west side of Walnut Avenue. A General Plan amendment is required to allow these types of uses on the east side, which is currently designated for General Office uses. Because office uses are often more employee-intensive than the relatively small-scale light industrial tenant spaces proposed by this project, it is likely that the interior water demand for a comparable amount of office space on the eastern site would be higher than what is estimated for the proposed project. Irrigation water demand may be similar, or possibly higher, if a greater amount of landscaping were included in an office development. The City's water supplies are considered to be stable and sufficient to support modest additional growth that could occur over the next several years. Since the proposed project would not result in a more water intensive type of land use than what is currently envisioned by the City's General Plan land use policies, it would not have a significant effect on the City's water supplies during normal, dry, and multiple dry years.

c) *Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

Less than Significant Impact. Signal Hill sanitary sewers connect to the City of Long Beach sewer line, which flows into regional wastewater facilities maintained by the Los Angeles County Sanitation District 29. The project site has been vacant since the late 1990s. Thus, the conversion of the site to the proposed light industrial land uses would generate an increase in the volume of wastewater generated at the site, which would be directly discharged into the District's Alamitos Pumping Plant sewer for conveyance to the Joint Water Pollution Control Plant (JWPCP) in Carson. The County Sanitation District reviewed the proposed project and determined it would generate 7,627 gallons per day (gpd) and that there is sufficient capacity in the regional wastewater collection and conveyance lines and at the JWPCP to treat the volume of wastewater generated by the proposed project (LACoSD 2019). A connection fee must be paid by the project developer to the Sanitation District to offset the incremental impact of increasing the volume of wastewater to be collected and treated by the District's wastewater facilities. Therefore, since the project's wastewater can be accommodated by the existing



infrastructure and facilities in addition to the District's existing commitments, the project's impact in relation to this issue is less than significant.

d) *Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Less than Significant Impact. In relation to solid waste standards, the California Department of Resources Recycling and Recovery (CalRecycle) reports target per capita disposal goals which are expressed in pounds per day (ppd) per employee to track the solid waste generation of nonresidential land uses, such as the proposed light industrial project. As of 2016, the most recent reporting year, CalRecycle reported that Signal Hill had an average waste disposal rate of 4.3 ppd per employee, surpassing the City's per capita disposal target of 8.2 ppd per employee. The proposed project would generate additional solid waste; however, there are no unique characteristics of the proposed land use which would result in a higher than normal level of waste generation and disposal, compared to other similar land uses in the city.

The County of Los Angeles, Department of Public Works is responsible for continuing to ensure there is adequate landfill capacity for disposal of municipal wastes generated throughout the region. Through its Countywide Integrated Waste Management Plan (IWMP), the County regularly conducts needs assessments, forecasts of future waste generation and disposal patterns, and projections of landfill disposal capacities. Analysis prepared for the County's IWMP most recent 2016 annual report determined that there are at least 15 years of remaining landfill capacity on a countywide basis.

Because there are no unique solid waste generation characteristics of the proposed project, it would not impair the City's continuing efforts to achieve and surpass its target rate for rates of waste generation for nonresidential land uses. As such, the project would not significantly affect the capacity of the landfills serving this area, and the proposed project would not generate solid waste in excess of the capacity of local infrastructure or otherwise impair the attainment of solid waste goals.

e) *Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*

Less than Significant Impact. In the short term, the project would generate construction-related waste. Section 8.08.55 of the City's Municipal Code requires construction and demolition debris generated in Signal Hill to be recycled to the greatest extent feasible to comply with state-mandated waste diversion requirements. Pursuant to Section 5.408 of the 2016 California Green Building Standards Code, at least 65 percent of all nonhazardous construction and demolition waste must be recycled or salvaged to avoid landfill disposal. A construction waste management plan must be submitted and implemented, with verification by the City's Building Official, to comply with this requirement.

Operation of the proposed project would comply with the City's solid waste reduction programs, which are designed to comply with federal, state, and local statutes and regulations related to solid waste. These statutes and regulations include the California Integrated Solid Waste Management Act, the California Beverage Container Recycling and Litter Reduction Act, and the City's solid waste disposal policies and practices. The California Integrated Solid Waste Management Act requires that jurisdictions maintain a 50 percent or better diversion rate for solid waste. EDCO offers recycling programs to Signal Hill businesses that allow employees and/or tenants to collect a variety of



recyclable materials. Interested businesses would contract directly with EDCO to devise a recycling program tailored to the business and/or tenant (EDCO 2019).

The proposed project is required to comply with the current solid waste franchise's recycling system; therefore, it would comply with the City's and California's solid waste disposal regulations. As such, the proposed project would not result in a significant impact involving compliance with solid waste regulatory standards.

XX. Wildfire

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
WILDFIRE: <i>If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:</i>				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion

- a) *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?*
- b) *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, 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?*



- c) ***If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?***
- d) ***If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?***

No Impact. The project site is not located in or adjacent to an area designated as a very high fire hazard severity zone or any other type of wildfire hazard. Since the four thresholds only apply if a project site is located in a designated wildland fire hazard area and this site is not in such a place, the project would have no impacts concerning wildfire hazards.

XXI. Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Discussion

- 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 with Mitigation Incorporated. No significant, unavoidable impacts have been identified for any of the topics evaluated throughout this Initial Study; therefore, the project would not substantially degrade the quality of the environment.

As discussed in the response to IV. Biological Resources, there is no remaining natural, undisturbed habitat onsite and the few ruderal plants and trees that occur are not considered to be biologically sensitive or important resources. Any wildlife presence would be limited to common, urban-adapted species rather than rare, threatened or endangered species protected under California or federal statutes. There are no surface drainage features or any wetland features on or near the site, and thus no habitat to support any aquatic species. Since this site is in a fully urbanized area, surrounded by developed land, the site does not provide resources for wildlife migration or movement. As such, removal of the few non-sensitive plants and trees would not result in a reduction of 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, or substantially reduce the number or restrict the range of a rare or endangered plant or animal.

As discussed in the response to V. Cultural Resources, no prehistoric or historic resources have been identified within the vacant site. A former oil refinery that was operated onsite between 1922 and 1994 was demolished and all site improvements associated with that past land use were removed in the late 1990s. A search of cultural resources archives at the South Central Coastal Regional Information Center determined that the project site has not been surveyed to determine the potential for discovery of archaeological resources. Although it is considered unlikely that the relatively shallow excavations into native materials proposed as part of the project's grading plan would disturb archaeological materials, Mitigation Measure CUL-1 will be imposed to retain a qualified archaeologist to examine suspected archaeological materials that might be uncovered during site excavation, and to determine whether further analysis and recovery efforts are warranted to prevent destruction of significant resources. Compliance with this measure will avoid significant impacts to potential subsurface cultural resources that might provide important information concerning major periods of California's history or prehistory.

- 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 with Mitigation Incorporated. There are numerous applications under review by the City of Signal Hill, regarding a range of new construction proposals. Most are considered very minor, such as building additions, remodels, modifications to existing site layouts, or



additions of accessory dwelling units to an existing single-family residential property. Since those represent limited changes to the environment with minor impacts, they are not further considered with respect to cumulative impacts associated with the proposed project.

There are also several other projects pending City approval that are considered substantial enough to warrant further review concerning potential cumulative impacts associated with the proposed project; these are listed below.

- 3,013 sf single family dwelling at 1900 Temple Avenue
- Three single family dwellings at 2750 E. 20th St.
- Duplex at 2250 Ohio Avenue
- 9 condominium homes at 1939 Temple Avenue
- Residential Specific Plan for 7 homes at 2599 Pacific Coast Highway
- Subdivision for development of 16 single family dwellings at 1375 E. 23rd St

None of these other pending projects are close enough to the project site to generate temporary construction impacts that would interact with the localized effects of the impacts that would occur during construction at the project site. Similarly, none are close enough to affect the same municipal water, sewer or storm drainage facilities that the proposed project would connect to. Cumulative impacts involving utilities connections would not occur. Given the small scale of these other projects, the combined increase in water demand and wastewater generation would have a less than significant impact on the capacities of the City's water supplies and water transmission infrastructure or on the local or regional wastewater conveyance and treatment facilities.

All project impacts involving the alteration to the land surface and subsurface and construction of site improvements would be limited to the boundaries of the project site and would not contribute to cumulative impacts involving biological or cultural resources, nor would there be any cumulative effects involving the site's geological conditions, hazards, land use, agriculture, mineral resources, recreation or tribal cultural resources, or aesthetics.

The traffic impact analyses prepared for this project included forecasts for additional traffic growth on the surrounding street network from other pending development projects and general background growth. As discussed in Section XVII, the project's traffic would combine with other existing and future traffic that could result in substandard levels of service at affected intersections in the long-range General Plan scenario (Year 2040). The project would pay fair share fees to offset its incremental portion of that long range impact, as specified in Mitigation Measure MM XVII-1. The forecast increase in traffic volumes on the surrounding street network were included in the assessment of roadway noise impacts and no significant impacts were identified.

The assessment of the project's air quality impacts examined the volumes of criteria air pollutants that would be generated during the construction and long-term operating life of the project, compared to the regional significance thresholds recommended by the South Coast Air Quality Management District. Those thresholds were established as a mechanism to assess the project level and cumulative impact significance of a new land use proposal. Since the project's emissions were found to be well below all applicable regional significance thresholds, (including the reduction in grading phase NO_x emissions pursuant to MM III-1), the project's air pollutant emissions would not be cumulatively considerable.



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

Less than Significant with Mitigation Incorporated. As discussed in the response to III. Air Quality, localized concentrations of all analyzed construction and long-term emissions would be well below the SCAQMD's Localized Significance Thresholds. This indicates there would be less than significant effects on human beings as a result of construction and long-term emissions of criteria air pollutants. As discussed in IX. Hazards and Hazardous Materials, the proposed remedial activities include capping contaminated soil with clean import up to 10-feet thick, extracting volatiles in the vapor phase from the soil and groundwater, enhancing microbial degradation of contaminants in the groundwater, extracting the liquid contaminant from the groundwater and allowing natural attenuation to occur after the remedial activities have been determined to have cost-effectively remediated the soil and groundwater onsite to the extent practicable. Even with these proposed remedial measures, potential harmful releases of environmental contaminants could occur during construction soil disturbing activities, which could adversely affect the health of construction workers. This impact would be mitigated to a less than significant level through the construction control measures specified in MM IX-1 and MM IX-2. As a result of the proposed project design, which would cover rather than remove existing contaminated soils, there could be future releases of harmful soil gas that could adversely affect the health of indoor workers and outdoor construction or maintenance workers when engaged in soil disturbing activities. Placement of buildings over contaminated soils could also impede potential future efforts to remove the impacted material, should that be warranted as indicated by ongoing monitoring efforts. Groundwater quality could be negatively impacted by the remnant soil contamination and by light non-aqueous phase liquid materials that would also remain in place, as proposed. These potential long-term impacts would be mitigated to a less than significant level through the measures specified in MM IX-3 thru IX-9. As discussed in XIII. Noise, temporary, nuisance-level noise impacts during construction would be minimized to acceptable levels through restrictions on locations and operations of noisier construction machinery and on restrictions to timing and routing of heavy trucks. Those restrictions are specified in Mitigation Measure NOI-1. Also, as discussed in XIII. Noise, it was determined that noise levels generated by onsite activities and off-site traffic would be less than significant. No other environmental impacts resulting from the project were determined to result in potentially adverse impacts to human beings.



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